



**USAID**  
FROM THE AMERICAN PEOPLE

# GLOBAL BROADBANDS AND INNOVATIONS PROGRAM

USAF CAPACITY BUILDING MODULE: STRATEGIC  
PLANNING

OCTOBER 2012

**October 2012**

This publication was produced for review by the United States Agency for International Development. It was prepared by Integra Government Services International, LLC.



# GLOBAL BROADBAND AND INNOVATIONS PROGRAM

USAF CAPACITY BUILDING MODULE: STRATEGIC  
PLANNING

OCTOBER 2012

## DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



# CONTENTS

<b>Introduction</b>	<b>2</b>
<i>Module Objectives, Contents</i>	2
<b>Component I: Strategic Plan Overview, Outline, Key Concepts</b>	<b>4</b>
<i>What is a USAF Strategic Plan?</i>	4
<i>Strategic Plan Outline</i>	5
<i>Key Concepts</i>	6
<b>Component II: Strategic Planning Process</b>	<b>11</b>
<i>Planning Team</i>	11
<i>Transparency and Consultations</i>	12
<i>Timetable</i>	14
<b>Component III: ICT Market Assessment</b>	<b>16</b>
<i>Sector Status Review</i>	16
<i>Gap Analysis</i>	17
<i>Financial Forecasts</i>	19
<b>Component IV: Setting Objectives and Targets</b>	<b>21</b>
<i>Establishing Strategic Objectives (= Long-Term Targets)</i>	21
<i>Identifying Short-Term Targets</i>	22
<b>Component V: Defining Programs and Projects</b>	<b>24</b>
<i>Programs' Scope and Parameters</i>	24
<i>Program Priorities and Fund Allocation</i>	26
<i>Defining Projects</i>	27
<i>Priority Project Selection</i>	28
<b>Annex 1 – Summary Strategic Plan Template</b>	<b>31</b>
<b>Annex 2 – Market Assessment Template</b>	<b>32</b>

## INTRODUCTION

This is Capacity Building Module #1 of the USAID/GBI program to support enhancement of Universal Service and Access Funds (USAFs) as a resource to promote ICT development. This module addresses **USAF Strategic Planning**. Other modules in this series address the following topics:

Module #2: USAF Program Concepts

Module #3: USAF Monitoring and Evaluation

Module #4: USAF Data Collection and Market Analysis

Collectively, these modules offer a set of useful information resources and practical tools, based upon international experience and best practices, in the management of Universal Service and Access Funds. Combined with other capacity building resources, including direct technical assistance from GBI and others, these modules can help USAF administrations and staff to enhance Fund operations, and improve the effectiveness of ICT development financing on many levels.

## MODULE OBJECTIVES, CONTENTS

The main objective of this module is to provide USAF administrators and planners with practical information and tools to help facilitate the strategic planning process. It describes the basic framework for what a Strategic Plan should look like, the elements it should include, and the procedures for creating it.

Naturally, these aspects will vary significantly from one Fund to another, depending upon local circumstances, and also upon whether a Fund is a new entity, creating a Strategic Plan for the first time, or an established operation that is revising its plans for the future. But the main components presented here are designed to guide USAFs in many different countries and settings, as a starting point that can be adapted and customized as needed.

Each of the module components, as listed below, describes a combination of key concepts and principles, required resources, step-by-step tasks, specific expected outcomes, likely challenges, and real-world examples to help support USAF planning exercises throughout the process. Further support may be required through outside expert Technical Assistance, collaboration with other, more experienced USAFs, and additional technical and information resources, all of which the USAID GBI program also offers to interested USAF Administrations.

### MODULE COMPONENTS

- **Component 1 = Strategic Plan Overview, Outline, Key Concepts:** Provides an introduction to USAF Strategic Plans. Includes an indicative outline of the main contents of a USAF Strategic Plan. Offers definitions of the most important concepts and terminology used in this module, and in the USAF strategic planning process in general.

- **Component 2 = Planning Process:** Describes the key steps and activities of the Strategic Planning process. Identifies appropriate planning team members and activities. Offers an illustrative timetable of planning tasks.
  
- **Component 3 = ICT Market Assessment:** Explains the market research and analysis needed to support the planning effort. Describes the role of Gap Analysis. Highlights the need for financial forecasts to support Fund planning and budgeting.
  
- **Component 4 = Setting Objectives and Targets:** Describes the process of determining the main objectives of the Fund. Explains the distinction between long-term and short-term targets for Fund outcomes. Provides examples of potential objectives and targets.
  
- **Component 5 = Defining Programs and Projects:** Presents the requirements for USAF Program definitions, and for determining Program priorities and Fund allocation. Describes the process for defining Fund Projects to implement Programs, and for setting priorities among candidate Projects.

## COMPONENT I: STRATEGIC PLAN OVERVIEW, OUTLINE, KEY CONCEPTS

This component introduces the overall idea of USAF Strategic Plan, as well as a sample Outline of a typical Plan: its structure, elements, and relationships. The purpose is to create a blueprint that shows the intended outcome of the Plan, to help guide the development of each section, while showing clearly how they all fit together.

This section also provides basic definitions of Key Concepts and terminology used in this Module, to ensure consistency of understanding.

### WHAT IS A USAF STRATEGIC PLAN?

A Strategic Plan for USAF operations is typically a relatively brief, succinct document that ultimately provides the answer to this basic question: “What is the Fund trying to achieve and how?” In its simplest, summary format, a well-formed Strategic Plan can potentially be presented on a single page or slide, highlighting the main themes and goals and budgets for the planning period. An example is provided in Annex 1.

Supporting this summary, of course, must be a strong process of analysis and planning, including consensus building among stakeholders and USAF officials, so that the resulting high-level plans are both realistic and appropriate in relation to the Fund’s overall mandate. Some of the deeper questions that this process, and the resulting full Strategic Plan, should answer, include:

- What is the current status of the ICT market, in particular in those segments that the Fund is intended to support?
- What are the main Objectives of the Fund, which it will seek to accomplish during the course of this Plan?
- What are the specific targets, long-term and short-term, that the Fund will aim to achieve?
- What operating Programs will be financed under the Fund?
- What key implementation Projects will the Fund support, in which locations, and in what sequence of priorities?
- How will the Fund’s overall budget be allocated during the term of the Plan?

When a clear and well-designed Strategic Plan is in place, the Fund Administration’s job, year-to-year and month-to-month, is readily defined. By extension, the roles and responsibilities of Fund staff are also easier to identify. And most important, it is possible for the Fund, its contributors in the ICT industry, the Government, and the public at large, to understand the Fund’s purpose and targets, and to evaluate how effectively it is conducting its mission.



## STRATEGIC PLAN OUTLINE

The Outline below highlights the main elements and sub-elements of a standard USAF Strategic Plan, as described in this Module. Each of the elements is elaborated in further detail in the sections that follow.

- 1) Executive Summary
  - a) Summary of Key Programs
  - b) Summary of Budget Forecast, Allocation
  - c) Summary of Target Results, by year
  
- 2) USAF Strategy Overview: Mission and Vision
  - a) USAF Mission Statement
  - b) Vision for ICT Sector
  
- 3) ICT Market Assessment
  - a) Current market status
  - b) Gap analysis
  - c) Forecasts
  
- 4) USAF Strategic Objectives and Targets
  - a) Strategic Objectives (Long-term targets)
  - b) Priorities (Short-term targets)
  
- 5) Fund Programs to be Implemented under the Plan
  - a) Program definitions, objectives, and parameters
  - b) Anticipated priority Projects, by Program
  - c) Budget allocations

## KEY CONCEPTS

This section provides explanations and definitions of certain key concepts and terminology associated with USAFs and strategic planning. Not all of these terms are used in exactly the same way by all Funds or practitioners, but the usage described here is fairly standard, and is applied consistently throughout this and the other GBI modules.

Defining precise language helps ensure clarity when discussing the relationships among different ideas, processes, and activities. The descriptions here also help illuminate the broader objectives and functions of a USAF, which are often left ambiguous by original enabling legislation or regulations. The concepts presented below are organized according to four categories, to help clearly differentiate where some terms and phrases are often linked together, and are sometimes used in confusing or interchangeable ways. Note that several of the terms defined here are further elaborated in subsequent sections of this module, where they are most relevant.

### USAF GOALS AND OBJECTIVES

These terms relate to the mission and underlying purpose of the Fund, in both a broad, “big picture” sense, and more narrowly with respect to specific, near-term goals. While different terminology may be used somewhat interchangeably, the basic concepts here are fairly common, and provide useful distinctions.

- **USAF Mandate:** The highest level, legally binding statement of the purpose of the Fund, typically embodied within its enabling legislation, constitution, or other statutory foundation. The language may often be general and open-ended in nature, but in some cases there may be specific obligations or constraints, which must be followed.
- **USAF Mission and Vision:** The Fund’s internal rules or establishment documents should normally include some form of Mission Statement, and this may also be incorporated, or revised, within the Strategic Plan. A Mission Statement is generally a broad, concise summary of the purpose and motivations of the Fund and its employees.

This is often accompanied by a Vision Statement, which goes beyond general goals to describe the ultimate medium- to long-term Vision of the Fund administration for the evolution of ICTs in the country.

- **Strategic Objectives:** These represent relatively high-level, but official, goals that are derived from the Fund’s basic mandate. They tend to be tied to categories of technology or service (e.g., telephony, broadband, etc.), and to establish the overall parameters for what the Fund hopes to accomplish during its existence (for example, Universal Access to Telephony). See Component IV below for more illustration of Strategic Objectives.
- **Targets:** Targets identify the specific quantitative end results under each category of objectives that the Fund aims to achieve within given time periods. The Strategic Plan should identify both long-term overall targets as well as year-by-year progressive targets, based upon available budget and resources. Targets should be both realistic and achievable, and flexible enough to adapt to changing market circumstances. (See Component IV below for more.)

- **Universal Access and Service:** These terms are used constantly in the work and planning of most Funds (even in their official names), but are not always clearly defined. In principle, “Universal” implies that 100% of a country’s population or geography will receive access or service; however, in practice it has rarely been possible to achieve such a complete objective. “Universality” thus is more of an ideal than a practical target.

The difference between “Access” and “Service” for various categories of ICTs can also be subject to varying definitions. In general, Access implies that a given service or technology is physically available to citizens or communities, that they can purchase or utilize it in one way or another, whether as private users or through public facilities such as pay phones, telecenters, or public offices. Universal Service, on the other hand, implies that all users actually do obtain service, on a private or individual basis.

### PLANS, PROCEDURES, AND REPORTS

These terms define the different types of standardized planning, operating, and reporting documents that Fund Administrations and staff should develop at various times, and which guide their operations.

- **USAF Strategic Plan:** The overall, high-level Strategy and objectives that the Fund will pursue across a 3 to 5 year time frame, identifying broad goals and targets, programs to be implemented, and estimated budget allocations.
- **USAF Operating Plan:** The annual implementation and action plan which translates the broad goals of the Strategic Plan into specific short-term targets and activities. Defines the Projects to be financed during the year, the budget to be spent, and the various other tasks to be undertaken.
- **USAF Operating Procedures:** A set of rules and methods for the USAF administration staff to follow in relation to their roles and responsibilities. The procedures determine, e.g., how Projects will be designed and contracts will be awarded, how plans will be made and priorities determined, etc.
- **USAF Annual Report:** The Annual Report is an official public document which describes the activities and expenditures of the Fund over the preceding fiscal year. The Annual Report should present a full and transparent accounting of all Fund income and expenditure, subject to independent audit, as well as a summary of all projects initiated and ongoing, and the Fund’s plans for the upcoming year.
- **Other USAF Reports:** The Fund administration and staff will typically produce a range of other reports periodically. These may include, for example: ICT Market Assessment, Monitoring and Evaluation reports on projects and programs, technical audits of project implementation, fund financial reports, and others.

## ICT MARKET STATUS AND ANALYSIS

As described under Component 3 below, analysis of the ICT market is an important input to USAF strategic planning. The terms listed here, and used in that section, are also further explained and illustrated in USAF Capacity Building Module #3, Data Collection and Market Analysis. The definitions here are provided primarily to help clarify the establishment of Fund strategic objectives and targets.

- **Coverage vs. Access vs. Service:** These terms, as indicated partly above, should be understood to describe have different, progressively increasing levels of ICT availability and penetration in a given area. “Coverage” means that a network has at least some presence in a region, and in the case of wireless services, that the radio signal reaches into the region with reasonable signal strength. “Access” means that most or all persons in a given area have the ability to utilize an ICT service or capability, at least in a public location. “Service” means direct connection, subscription, and/or use of an ICT-based service offering, by local individuals, households, businesses, and institutions.
- **Market Gap, Economic Gap:** In the context of ICT Gap Theory, when there are identifiable “gaps” in availability and delivery of ICT networks and services within a country or a region, these can generally be classified into two groups. The “Market Gap” refers to areas where there is potentially viable, profitable market demand for the ICT service in question, but so far, operators have been unwilling or unable to provide those services commercially (i.e., for non-economic reasons). The “Economic Gap” (or “true” Access Gap) represents locations where economic conditions (high costs, low demand, low incomes, etc.) prevent purely private, commercial delivery of access and services on a sustainable or profitable basis.
- **Unservd, Underserved:** These terms connect with the concepts of “gaps” above. A location is said to be “Unservd” by a particular network or service if there is no network presence whatsoever connecting to that area. A region is “Underserved” if the capacity or coverage of the service is insufficient to reach the entire area or population. A region could be “Underserved,” for example, if wireless signals only reach a portion of the geographic area, or if the signal strength is low and unreliable, or if transmission capacity for data/broadband services is below standard.
- **Sustainable:** In the context of ICT markets and business models, a service is considered “sustainable” within a defined market segment if that service generates enough income to pay for the costs of providing and maintaining the service to those customers. In this context, “income” may include direct payments from users, as well as any other sources of revenue that can be attributed to the deployment of the service. “Costs” in relation to sustainability typically mean direct, unavoidable operating expenses within the market segment in question.

## OPERATIONS AND IMPLEMENTATION

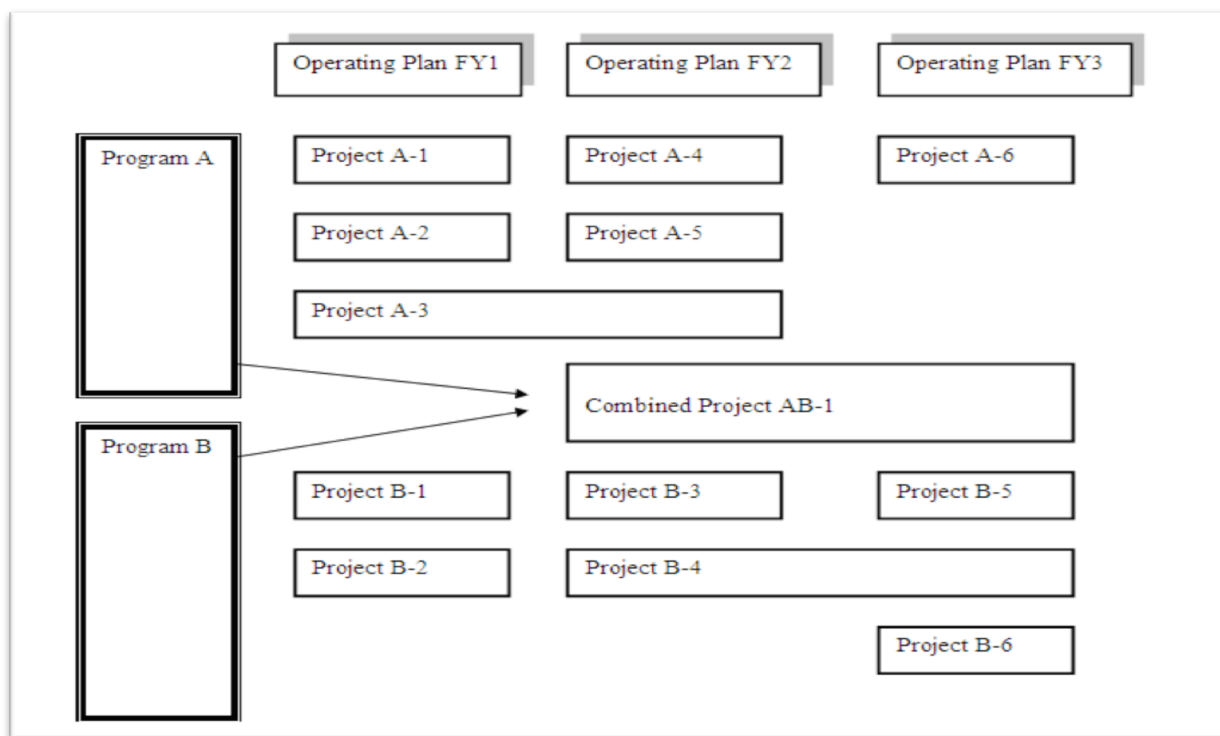
The terms and concepts in this category represent the practical aspects of USAF operational activities: i.e., the components of USAF administration that ultimately translate objectives into results. Some Funds use different labels for some of these concepts, or even use some terms interchangeably (e.g., “programs” vs. “projects”). The definitions here are intended to clarify the

different levels of USAF activities and outcomes, rather than impose rigid terminology in all cases.

- **Programs:** USAF Programs are defined herein as broad-scale initiatives undertaken by the Fund to address a category of key objectives, nationwide. A program may cover backbone infrastructure, for example, or installation of community telecenters, or ICT facilities in schools, or any other primary Fund activity. USAF Capacity Building Module #2, USAF Program Concepts, describes a set of representative programs for a typical USAF.
- **Projects:** In the context of USAF Programs, a Project is defined as a single implementation action, to deliver the outputs of a portion of the Program to a specific subset of users, typically in a specific geographic location. In most cases, full execution of a Program's goals will require conducting several Projects over a number of years.

The relationship between Programs and Projects, as the terms are defined here, is illustrated in the following basic diagram, which shows how several projects might be implemented under two distinct Fund Programs, over time:

**Figure 1.1: Strategic Plan Programs and Projects**



- **Project Contract or Concession:** Most USAF Projects are executed by private companies or third-party organizations, under a formal Contract with the Fund, which will be executed following an official procurement process. In cases where multiple Projects may follow standardized business models (see below), such contracts may take the form of Concessions.
- **Project Business Models, Business Plans:** USAF Projects should generally be implemented according to a pre-determined Business Model, which anticipates the structure, operating approach, management plan, and other key institutional arrangements under which contractors will establish and deliver the required facilities and services. There may be considerable flexibility in the individual Business Plans for specific Projects, but the Fund will typically establish the parameters and obligations for such plans.

## COMPONENT II: STRATEGIC PLANNING PROCESS

This component addresses the activities involved in the Strategic Planning process itself: the key tasks and responsibilities that must be undertaken in order to create a USAF Strategic Plan.

Naturally, each USAF organization is likely to have its own internal procedures and standards which will dictate the precise manner in which it implements a planning process. The elements outlined here provide a general overview of the main requirements for development of a Strategic Plan, which can be adapted to the unique circumstances of each agency.

The key elements addressed in this section are:

- **Planning Team:** The key personnel who should ideally contribute most to the Strategic Planning process.
- **Consultations and Transparency:** Principles and methods whereby ICT sector stakeholders and the public can understand and participate in the USAF's strategy development.
- **Timetable:** The timing and sequence of steps to create the strategy, with key milestones, as elaborated in subsequent sections of this module.

### PLANNING TEAM

The Planning Team should consist of at least 3-4 expert staff with complementary skills and experience. This can vary depending upon the roles and availability of different personnel, but a typical team might include, for example:

- **Team Leader:** A senior official, either the Fund Director or Assistant, with full knowledge and authority to direct the planning process;
- **Economist or Research Specialist:** A specialist with expertise in data collection and market analysis;
- **Program or Project Manager:** A manager with experience designing and implementing USAF programs and projects;
- **Public Relations/Industry Liaison:** A public relations or other official with good contacts in the ICT sector and experience at outreach.

The development of a USAF Strategic Plan is a responsibility that supersedes the normal, day-to-day functions of the USAF agency and its staff. Typically, such a Plan needs to be

developed only once every 3-to-5 years, so that the personnel involved in the planning process will have to take on these tasks separate from, and in addition to, their primary roles. It is important therefore to assign the responsibilities for creating the plan, and for the research and inputs needed to produce it, to an appropriate cross-section of USAF staff. This will not only allow representation of different perspectives and experience during the planning deliberations, but it should ensure that the burdens of creating the plan are shared reasonably among a variety of employees.

## PLANNING TEAM ACTIVITIES

The Planning Team should be responsible for all tasks involved in formulating the Strategic Plan, together with assistance as needed from other USAF staff (and outside consultants). In general, this implies fulfilling the sequence of activities described in the subsequent sections of this module. From a procedural point of view, these tasks can be accomplished by:

- Establishing a clear and complete Work Plan and timetable, with assignments and deadlines for each stage of the process;
- Holding regular team meetings, either weekly or bi-weekly, with clear agendas and progress milestones for all team members; other contributors to the process may attend relevant meetings;
- Conducting necessary research and market analysis, in collaboration with Fund staff responsible for data collection and market studies;
- Hosting an extensive retreat or workshop for all Fund staff and other key officials, to review past performance and brainstorm new directions;
- Undertaking public consultations (see below);
- Developing initial drafts and proposals for priority Fund programs and projects, for circulation among internal officials and external stakeholders;
- Incorporating feedback and further analysis into the final draft and official Fund Strategic Plan.

## TRANSPARENCY AND CONSULTATIONS

The success and effectiveness of a USAF and its strategy are critically dependent upon the support of stakeholders throughout the public and private sectors. In general, plans work best when everyone who will be affected by them contributes to their formulation, and knows what to expect from the outset. There are many ways to achieve this type of consensus, and each Fund's circumstances will be unique, but the recommendations below describe some of the fundamental principles of transparency and inclusion that should be embraced by any Fund.

### HOW TO ENSURE TRANSPARENCY IN THE PLANNING PROCESS:

Transparency in USAF planning is essential not only for purposes of good governance and public confidence, but it helps ensure the viability of USAF projects and the "buy-in" of industry



players and local communities. Indeed, a USAF Administration should have “nothing to hide” in its strategic deliberations, as its purpose is to serve the needs of the public, and thus the public has every reason to be fully informed of all Fund planning activities and decisions.

This is not to say that all parties will be happy with USAF decisions and priorities, simply because they are devised in a transparent manner. However, when the criteria and procedures for making decisions are open, clear, and objective, there is much less chance that such decisions will be seen as biased or unduly influenced. And stakeholders or public officials who might otherwise try to exert pressure on the process should be more reluctant to intervene.

Some of the key steps that the USAF can take to ensure transparency throughout the strategic planning process include:

- Maintain an open process, with public notification of all key steps;
- Establish a web-based framework for disseminating documents, inviting comments, and encouraging public debate;
- Circulate key draft documents when they are available, especially proposed Objectives and Programs;
- Reach out to the most critical stakeholder groups to encourage their participation, including both ICT industry suppliers, and local community officials;
- Conduct formal consultations (as outlined below);
- Publish the tentative Fund strategy and budget forecast, for public comment prior to finalizing.

### **STAKEHOLDER AND PUBLIC CONSULTATIONS:**

Consultations with all prospective stakeholders serve the purposes of both transparency and effective planning at the same time. The above policies to promote transparency during the strategic planning process seek to ensure that all stakeholders on both the supply and demand side of the USAF’s activities will have the ability to understand and contribute to the decisions that go into the Fund’s plans. Beyond making such information publicly available, the Fund Administration should also undertake affirmative outreach efforts to seek input from these stakeholders that will inform and enlighten Fund choices.

The consultation process is especially important to provide factual support for determining priority end-user needs as well as supplier capabilities, costs, and willingness to participate in the provision of Universal Access and Service. The Fund cannot set its goals in a vacuum, without extensive knowledge of the practical conditions and concerns of the communities it seeks to serve. And it should never attempt to launch programs or projects that will not, realistically, be taken on by at least some technology and service providers. The goal of consultations, therefore, is to help establish the most pragmatic and effective USAF strategy possible.

Again, such consultations will not guarantee support for all USAF policies and plans by all sides, but they will help minimize potential misunderstandings and controversy, while improving the visibility and reputation of the Fund. They will also reinforce relationships between Fund personnel and key decision makers and officials throughout the ICT sector, promoting greater long-term cooperation among all parties.

Consultations during the development of the USAF Strategic Plan can take several forms. Most typically, they should involve at least these steps:

1. Identify key stakeholders, including private sector companies, Government agencies, local community representatives, NGOs, and citizens' or users' groups, among others.
2. Develop Information Requests and Questions to distribute to stakeholders, pinpointing key data inputs that the Fund Administration requires to help it evaluate the market and its program options.
3. Prepare initial draft proposals and options for priority Fund activities and targets during the planning period, and distribute this to identified stakeholders (and the general public), with requests for comment.
4. Define a clear process with instructions and deadlines for feedback and input from stakeholders in response to questions and draft proposals.
5. Publicize the consultation, through direct contacts with identified stakeholders, public notices in the media, and web-based access to all documents, comments, and schedules.

## TIMETABLE

It is important to establish a clear and realistic timetable for the strategic planning process, with milestones and deadlines for completing the major tasks and for delivering the Draft and Final Strategic Plan. Without such constraints, the planning initiative could fall behind other responsibilities, or key inputs might be neglected, leading to delays or inadequate results. Fixing of the timetable for the process should thus be one of the first orders of business of the Planning Team.

The following is a representative Strategic Plan development schedule, which illustrates the types of milestones, and approximate time frames, that should be included. For a USAF that has just been established and/or is creating a Strategic Plan for the first time, the timetable should likely be longer – perhaps up to 6 months – whereas for an existing USAF that is preparing a new plan to replace an expiring one, a period of perhaps 3-4 months should be sufficient. The plan below assumes the longer time frame:

**Figure 2.1: Sample Timetable of USAF Strategic Planning Process**

<b>Time period (weeks)</b>	<b>Activity</b>	<b>Participants</b>
1-2	Form planning committee, initial meetings	All planning committee members
2-8	Conduct market assessment, gap analysis, financial forecasts	Economics research specialists, consultants
9	Conduct internal Fund Strategy planning workshop	Planning committee, Ministry and Regulator, key advisors
10-11	Define preliminary Fund objectives, programs for strategy period	Planning committee, Fund Director
12-13	Conduct public consultations on Fund objectives, programs, targets	Planning committee
14-15	Develop prospective Fund budget	Planning committee, Fund Director
16-17	Publish draft Strategic Plan, invite comments, official review	Planning committee, stakeholders
17-18	Revise, finalize Strategy	Planning committee, Fund Director

## COMPONENT III: ICT MARKET ASSESSMENT

The first major task involved in developing a USAF Strategic Plan is to conduct an assessment of the current status and recent trends of the ICT market in the country, particularly in relation to unserved and underserved segments that are the focus of the Fund's mandate.

Note: See Annex 2 for a sample template of a USAF Market Assessment. Also, a more detailed presentation of the Data Collection and Market Analysis activities of a USAF are described in GBI USAF Capacity Building Module #3.

The ICT Market Assessment serves several purposes:

- For a new Fund, the market assessment determines the baseline status of ICT access, and the scope of the challenges facing the Fund in deciding its agenda and priorities.
- For an established Fund, the assessment provides an up-to-date review of the most recent progress of market development, driven both by Fund projects and by market forces and other initiatives.
- In both cases, the main focus of the study should be to identify the size, scope, and nature of gaps in access to ICT infrastructure and services, including the underlying economic characteristics of those gaps.
- In addition, the market assessment should provide important insight into economic trends in the ICT sector that will directly affect the Fund's operations, such as revenue growth, which will ultimately feed into Fund budgeting and program planning.

This section summarizes the main requirements for conducting this market assessment and the outcomes of the analysis that are needed to support preparation of the USAF Strategic Plan.

### SECTOR STATUS REVIEW

Every USAF administration should maintain comprehensive and updated information on the status of the national ICT sector in relation to its development goals. This is a vital input into any decisions, and the driving motivation for the USAF's operations. Ideally, the USAF should publish an Annual Report which provides consistent statistical measures of ICT sector development, and particularly the impacts and cost-effectiveness of recent Fund investments.

For purposes of preparing the Strategic Plan, the type of data typically collected for the Annual Report should be expanded and further analyzed, with specific emphasis on evaluating the overall status of the ICT sector in relation to the Fund's strategic objectives. Ideally, the status report should identify current coverage (geographic and population) for each category of service, and the related gaps in access (see below). These should be broken down to the most granular geographic levels possible (towns, villages, settlements, etc.), and ideally illustrated on GIS-based maps, as well as in searchable databases.

In addition to the ICT coverage indicators, the market status report should provide correlating information on local demographic and socio-economic conditions in each area. It should also

include specific measurements and evaluations of the impacts of prior and ongoing USAF projects.

Annex 2 provides a sample template for a Market Assessment to support Strategic Plan development.

## GAP ANALYSIS

ICT Gap Analysis represents a relatively sophisticated approach to analyzing market conditions in the ICT sector, from the point of view of development and Universal Service objectives. The ideas and methods underlying Gap Analysis are presented in greater detail in GBI USAF Capacity Building Module #3. The following discussion summarizes the main elements and objectives of Gap Analysis as an input to USAF Strategic Planning.

### MARKET GAPS VS. ECONOMIC GAPS

In any developing ICT market, there are almost always geographic and/or demographic segments that are not covered by a given service, or for which service is only partly available or utilized. We can observe these conditions for distinct classes of service and types of network infrastructure, such as basic voice telephony (fixed and/or wireless), Internet access (public or private), and broadband services. Each will exhibit its own degree of coverage, and its own gaps in customer access and penetration.

Gap Theory then defines two categories to explain the gaps that are found in each market segment:

- The “**Market Gap**” represents those areas where commercial market forces could and should provide needed services on their own, without outside support. In other words, demand and supply conditions are such that customers in Market Gap locations can be served profitably; however, there could be non-economic barriers to development in such markets: regulatory, legal, taxation, competitive, or other such constraints. Removal of these barriers should lead to market expansion without further economic support.
- The “**Economic Gap**” (or “true” Access Gap) represents locations and market segments where fundamental economic conditions prevent commercially viable delivery of access or services. This Gap is driven by high costs (such as large infrastructure investments, excessive risks, and hostile terrain, among other factors) and/or low demand and revenue potential, due to low population density, low incomes, and other constraints. Separately, or often in combination, especially in the most remote, rural regions, these conditions prevent private companies from delivering ICT services to these portions of the market without some form of financial support or incentives, such as a USAF is designed to provide.

>> Note that it is these true Economic Gaps which should be the fundamental focus of a USAF’s financing and subsidy activities.

## METHODS OF MEASURING GAPS

Approaches to measuring the size, scope, and economic status of ICT gaps can vary considerably, depending upon the amount of data available, and the time and resources that the Fund's economic staff can devote to the study. In general, this process requires collecting and analyzing data on network and service deployment (supply side) and levels of usage or subscription (demand side), together with underlying factors that determine the viability of a given market segment. While the analysis can ultimately become a quite complex model, the basic steps involved should typically include the following:

1. **Network and service access:** Identify the extent of network coverage and service availability, in terms of geographic centers and population.
2. **Service demand, utilization:** Within areas with access, determine the levels of current penetration, by households, individuals, or other classes of users.
3. **Total size of gaps, by geography, population:** Calculate the size of current gaps in each geographic region, in terms of numbers of towns or other units, as well as population without access or service.
4. **Infrastructure and capital costs to close gaps:** Estimate the capital expenditure (CapEx) that network operators would have to invest in new infrastructure to provide access to all unserved locations.
5. **Operating expenses to serve new customers:** Estimate annual recurring operating expenses (OpEx) that service providers would have to spend to deliver service to currently unserved users.
6. **Projected revenues from new customers:** Develop an estimated forecast of revenues that will be earned from the delivery of services to new customers, once the gaps are closed.
7. **Net Market versus Economic Gaps:** Evaluate the differing cost and demand/revenue conditions in various locations based on the available data, and determine which locations qualify as true Economic Gaps, and which should be classified as Market Gaps, outside of the Fund's mandate.

## ALTERNATIVES TO FULL-FLEDGED GAP ANALYSIS

As mentioned, a Gap Analysis can be a highly complex and time-consuming undertaking, especially if the USAF, or other public agencies, do not have ready access to detailed market, economic, and demographic data. It may not be essential, however, to generate a study of minute detail on the full scope of the ICT sector as a prerequisite to preparing the USAF Strategic Plan.

The complexity – and accuracy – of the Gap Analysis will be primarily dependent upon the degree of detail, such as the size of geographic areas and population centers, to be measured. If the status of every town and village is analyzed, this will require very large amounts of detailed data, but will produce very useful micro-results. However, similar data can be collected

at a more aggregate level, with general summaries or estimates of network coverage, service penetration, infrastructure and operating costs, etc., spread over broad regional boundaries.

As a planning tool, such an analysis can often produce reasonable, high level estimates of the size and locations of gaps, sufficient to use as inputs to macro USAF program and project planning. Of course, as individual projects are specified within Program plans, it will be important to conduct location-specific studies that will clarify the status of the market, and of underlying economic conditions in those regions, before the precise scope of such projects can be determined.

## FINANCIAL FORECASTS

The final essential element of the Market Assessment should be a set of forecasts for the financial performance various ICT market segments. Such forecasts should be taken into account during the process of overall market and gap analysis, but they should also be reviewed separately for purposes of projecting the Fund's own income, and the relative magnitude of needs and options for Fund use. Specifically, for a 3- to 5-year Strategic Plan, the analysis should produce, for example:

- Projected change in demand/users for each category of ICT service (fixed and mobile voice, basic and broadband Internet, international traffic, etc.);
- Projected changes in Average Revenue per User (ARPU) for each category of service and user group;
- Projected total revenues earned by ICT providers for each class of service;
- Forecasts of demand and penetration rates, and related revenues, for new services introduced into the market, and for service expansion into previously unserved areas;
- Projected combined total revenues for the entire ICT service sector, and specifically the subset of revenues subject to a USAF levy, net of exempt payments (taxes, interconnection, etc.);
- Forecast levels of contribution to the Fund, based on the above and required levy amounts.

The method to conduct such forecasts is not precise science, and depends upon a number of basic assumptions. These can be based upon the Fund's management and economic specialists' best estimates, and can be further validated or refined through ICT industry consultations. The simplest approach is to assume that recent trends – in service demand, revenues, population, economic conditions, etc. – will continue along the same trajectory over the next several years. Where substantial new investments are expected, or conversely, where past expansion won't be repeated, certain adjustments can be added. The results, in any case, should be presented within a reasonable range, on the conservative side of potential income and overall growth.

A simple example of the output of such forecasts, in which future total service revenues are based upon the previous three years' cumulative annual growth rate (CAGR) for each service, might look as follows:

**Figure 3.1: Illustrative ICT Sector Revenue Forecast Method**

<b>Service</b>	<b>Revenue base year</b>	<b>Revenue 3-yr CAGR</b>	<b>Year 1 Revenue</b>	<b>Year 2 Revenue</b>	<b>Year 3 Revenue</b>
Mobile telephone	25.30m	15.0%	29.1m	33.5m	38.5m
Fixed telephone	6.4m	-1.5%	6.3m	6.2m	6.1m
Internet/Broadband	9.75m	6.5%	10.4m	11.1m	11.8m
Other services	5.3m	8.0%	5.7m	6.2m	6.7m

Further complexity and detail in the forecasts can be achieved, for example, by considering the revenue performance of each individual supplier separately, or by looking not only at total revenues but at both the numbers of users for each service and the average revenue per user (ARPU), or by any number of in-depth correlation and regression studies, linking revenue growth to economic factors such as GDP and employment. As with all aspects of the Market Assessment, it is up to the Fund administration to determine what level of precision and certainty it requires for such analyses, in exchange for what degree of time and effort to produce the results.



## COMPONENT IV: SETTING OBJECTIVES AND TARGETS

This component constitutes one of the central purposes of the USAF Strategic Planning process. The purpose is to define the specific Objectives and Targets of the Fund during the time period covered by the plan. As explained in the definitions of these concepts (see above), the two terms are related but not identical:

- **Objectives** represent relatively high-level goals that are derived from the Fund's basic mandate, such as may be set forth in its enabling legislation or other legal instrument. In the context of the Strategic Plan, the Objectives may be defined more precisely, especially the specific objectives to be highlighted during the course of the Plan's time horizon.
- **Targets** identify specific quantitative results that the Fund aims to achieve, both long-term and on a year-to-year basis. It is reasonable to see Strategic Objectives as Long-Term targets, and the priority activities within each given operating year as Short-Term targets.

This section describes the process of defining the Fund's Objectives and Targets, how these are linked to the findings of the Market Assessment, and the trade-offs and priority choices required in making these decisions.

### ESTABLISHING STRATEGIC OBJECTIVES (= LONG-TERM TARGETS)

The Objectives to be addressed under the Strategic Plan should be defined in terms of both the basic mandate of the Fund, as well as the anticipated programs and projects to be undertaken (see Section 5). If there are a broad range of general objectives for the Fund to accomplish, it will be important to align these with the Fund's practical capacity and priorities, rather than to imply that the Fund will equally pursue all possible objectives simultaneously.

The phrasing and terminology of USAF Objectives should also strike a balance between high-level, idealized goals and specific, detailed outcomes (which will be elaborated as long-term Targets). In general, the purpose of this section of the Strategic Plan is essentially to allow the Fund to respond succinctly to the question: "What will the USAF seek to accomplish during the next few years?"

The following represent some typical examples of general USAF Objectives and related long-term targets that can be incorporated within a Strategic Plan:

- **Voice Telephone:** Extend mobile telephone network coverage throughout all unserved and underserved areas of the country, toward the goal of Universal Service in voice telephony.
  - Long-term target = 100% of the country's population covered by reliable mobile telephone signals.

- **Public Internet Access:** Expand access to public Broadband Internet facilities such as Community Information Centers, toward the goal of Universal Access to Internet services.
  - Long-term target = Broadband network access nodes available in all districts, with at least one broadband public ICT access facility in every town of 5,000 population or more.
- **Institutional Broadband:** Ensure that all public institutions (schools, medical clinics, government offices, public safety, etc.) have access to broadband Internet connections and other needed ICT resources.
  - Long-term target = 100% of all qualified government and institutional offices nationwide will be connected to broadband access networks.
- **Private Broadband Services:** Increase access to and penetration of private broadband services (wired and wireless) among individuals and households in all areas of the country, especially remote and rural regions.
  - Long-term target = National penetration of broadband Internet subscribers and users (mobile and/or fixed) will increase to at least 25% of total population by 2017.
- **Demand Stimulation:** Support demand stimulation measures for underserved populations, including development of relevant ICT content and applications, and access to affordable end-user devices.
  - Long-term target = [Same as Private Broadband Services, above, as this target is facilitated by both supply and demand side programs.]
- **Capacity Building:** Support capacity building and public awareness initiatives to help increase utilization and benefits of ICT services for disadvantaged users and communities.
  - Long-term target = ICT Training classes and support services available in all communities through schools, public access facilities, and other resources. All public school students provided ICT education classes.

Some of these objectives may be interconnected, or linked with initiatives of other public agencies, private companies, and NGOs. The Fund should recognize, in designing its objectives, the roles that it can most effectively play, independently and especially in collaboration with other stakeholders.

## IDENTIFYING SHORT-TERM TARGETS

Beyond defining the range of objectives and long-term targets that the USAF will pursue, this component must also define the relative priority of each objective, and ultimately the most immediate, short-term targets that it will seek to achieve. This is a difficult exercise. The Fund

will simply not be able to accomplish all possible goals within a short period of time, and all objectives will be worthy and valuable for society.

Note that this process of defining short-term targets is closely linked with the identification of priority programs and projects, and ultimately Fund budget decisions, discussed in the next sections of this Module. The initial challenge here is for the Fund to set out a list of realistic end results, based upon its defined objectives, which can be quantified and measured. Examples of such short-term targets include:

- **Voice Telephone:** Mobile voice (and sms) coverage in all unserved population centers with at least 500 inhabitants.
- **Public Internet Access:** Broadband network access and at least one fully functioning public access facility every sub-district (or equivalent local government area).
- **Institutional Broadband:** Broadband connections to all public secondary schools and higher education colleges, and to all institutions in towns of at least 5,000 population.
- **Private Broadband Services:** Increased penetration and use of broadband in rural/underserved areas of at least 10%.
- **Demand Stimulation:** Support for domestic/rural content and applications, and for affordable ICT devices, to reach at least 50% of the rural/unserved population.
- **Capacity Building:** Training programs introduced and delivered to at least 50% of the population.

## COMPONENT V: DEFINING PROGRAMS AND PROJECTS

This component addresses the need to translate the decisions made in the previous section concerning USAF Objectives and Targets into concrete USAF Programs and Projects. As previously defined, Programs represent coherent medium- to long-term USAF activities, with clearly defined scope, objectives, and expected outputs. USAF Programs constitute the operational and implementation mechanisms by which the money in the Fund is channeled toward achieving of the identified Fund objectives. Projects represent the vehicles by which Programs are implemented, typically in multiple stages.

### PROGRAMS' SCOPE AND PARAMETERS

In simplest terms, the Programs that a Fund adopts should be designed in direct relation to the Fund's Objectives and Targets. More specifically, Programs should attempt to break down the overall, long-term targets of the Fund into coherent and manageable pieces, which can achieve those targets in the most timely and cost-effective manner.

A well-established Fund might undertake a half dozen or more ongoing Programs at the same time, while a newly established Fund or one with limited financial and human resources should probably focus on no more than two or three Programs at the outset. The number and scope of Programs should also be closely linked to the Fund's organizational capacity, in terms of available and experienced personnel to manage and implement the Programs and their related Projects.

Each USAF Program will have unique objectives, targets, timetable, budget, and approaches to achieving its goals. These elements will be fleshed out by the Fund's management staff on an ongoing basis, as the Programs are developed and implemented.

For the purposes of the Strategic Plan, at the early stages of planning, it is not necessary to decide all relevant details concerning each Program's scope and parameters. Rather, the Strategy should provide reasonably clear outlines of the Programs, sufficient to allow for stakeholder understanding, internal planning and budgeting, and further modifications over time. The following table highlights the key elements of each Program that should be included within the USAF Strategic Plan.

[Note that USAF Capacity Building Module #2, USAF Program Concepts, provides several extended examples of potential USAF Programs]

**Figure 5.1 Template for Program Definitions in USAF Strategic Plan**

<b>Program Element</b>	<b>Contents</b>
Summary Overview	Summarize the scope and objectives of the Program and any key features.
Program Outputs	Define all services, facilities, products, and other results that will be delivered through the Program. Describe features, functions, and capabilities that beneficiaries should receive. Do not specify particular technologies or suppliers.
Geographic, Demographic Scope	Identify the geographic locations or populations to be served. Specify which regions or types of locations will be given priority. Describe characteristics of local populations, communities, or institutions intended to benefit from the Program. Identify thresholds for qualification (income levels, population density, etc.).
Targets	Identify quantitative targets for the Program’s outputs over time. Targets can be expressed in terms of numbers of installations, user populations receiving access, geographic coverage, etc. Specify annual implementation targets for each year.
Budget	Identify the total Fund budget amounts, per year, to be allocated for the Program. Summarize the financial assumptions and calculations that determine the expected net costs to achieve the proposed targets.
Projects	Summarize the number, scope, timing, and approach for the Projects that are anticipated to be supported under the Program. Describe examples of the expected implementation requirements for prospective vendors.
Business Models	Provide an overview of the mechanisms to be utilized in implementing and managing Projects to be financed under the Program. Summarize the anticipated options for business relationships, roles, and market models that may be employed by contractors that will receive Fund support.

## PROGRAM PRIORITIES AND FUND ALLOCATION

The core planning challenge for the USAF administration, following definitions of objectives, programs, and targets, involves tying all of these worthy goals to realistic allocations of budgets and other Fund resources. Ultimately, the Strategic Plan should lay out a preliminary budget for the full time frame covered under the plan, indicating the funding amounts to be allocated for each program. This concept is illustrated in Annex 1, together with the anticipated projects to be funded (see below).

As to how Fund officials should determine these allocations, this is more of a political exercise than an analytical one. The results of the market assessment and gap analysis, as well as the budget forecast, will have created the foundation for program planning, while the short-term targets defined for each program will give the basic boundaries for what the Fund aims to accomplish. But taking it to the next level – assigning quantitative funding amounts, year-by-year, to each program – requires a degree of imagination. There are two basic approaches to consider: top-down and bottom-up:

- **Top-down:** Estimate the total Fund budget available for all operational Programs. Determine, as a policy matter, the relative importance of each Program, and rank them accordingly. Formulate a rough proportionate distribution of the available funds across all Programs, in accordance with this ranking, ensuring a minimum level of financing for all Programs.

Example:

Total available annual budget:	\$30-million
Program 1 (top priority):	50% = \$15-million
Program 2 (medium priority):	25% = \$7.5-million
Program 3 (low/med priority):	20% = \$6.0-million
Program 4 (low priority):	5% = \$1.5-million

- **Bottom-up:** Determine size and scope of anticipated individual Projects under each Program, and the per-project cost from the Fund. Determine the relative importance and priority of each Program. Decide a realistic and appropriate total number of such Projects to implement for the first priority Program, then calculate the total budget amount required to implement these. Do the same for each Program in descending order of priority, with smaller budget and/or fewer Projects, until the estimated total available budget is exhausted.

Example:

<u>Program 1: (top priority):</u>		
Cost/Project = \$4-million	# Projects = 4	Budget = \$16-million
<u>Program 2 (medium priority):</u>		
Cost/Project = \$2.5-million	# Projects = 3	Budget = \$7.5-million
<u>Program 3 (low/med priority):</u>		
Cost/Project = \$1.5-million	# Projects = 3	Budget = \$4.5-million
<u>Program 4 (low priority):</u>		
Cost/Project = \$1-million	# Projects = 2	Budget = \$2-million
<u>Total annual budget =</u>		\$30-million

Either method will require multiple iterations, with adjustments to the number and scope of Projects, budget allocations, and balance of priorities, to match the Fund’s forecast resources with the implementation plans. Even the final allocation will only be a starting point for each year’s actual Operating Plan, which must then take into account more in-depth analysis of the current state of the market and of the Fund. This first-pass exercise is important, however, to lay the foundation for Fund activities throughout the course of the Strategic Plan’s time horizon.

## DEFINING PROJECTS

USAF Projects are specific activities that the Fund defines and procures through contracts with companies or organizations that receive Fund financing. The contracting organization implements and manages the Project, while the Fund administration oversees Project execution. As explained above, Fund Projects are the mechanism for achieving the objectives of each Fund Program. Most Projects within a Program are typically of comparable scope and parameters, and focus upon a subset of the total market, to allow for manageable implementation and equitable distribution of Fund resources.

The Fund administration should define the basic framework of Projects that are to be undertaken within each Fund Program, as a starting point for determining the number, size, sequence, and costs of Projects to be executed under the Strategic Plan. This need not be an exhaustive or precise exercise, as final Project definitions will be determined through consultations, and each will likely have its own unique characteristics.

In general, the features that need to be defined when specifying USF Projects include the following:

**Figure 5.2: Elements of USAF Project Definitions**

<b>Project Features</b>	<b>Summary Description</b>
Size, Scope	Total geographic area or population to be included within the Project's coverage range.
Locations	Specific regions, towns, villages, boundaries, etc., to be designated for mandatory inclusion within the Project.
Target beneficiaries	Characteristics and criteria for end-users that will benefit from the Project: persons, households, institutions, threshold income levels, etc.
Facilities, services	Specific ICT facilities, equipment, network infrastructure, end-user services, and other outputs required from the Project.
Minimum technical, performance specs	Specifications of the mandatory performance requirements for all elements of the Project, including technical quality and market uptake, among others.
Business model(s)	Expected options for Project business models, organizational arrangements among contractor(s), service providers, other stakeholders, and end user beneficiaries.
Net costs, subsidy	Estimated costs of all major Project components (CapEx, OpEx), expected revenues, and net subsidy required to make Project viable (should not be shared with potential bidders).

These components of Project definition should be determined through internal analysis of the fundamental technical, service, and economic requirements of each Program's objectives. The size, scope, facilities, and other parameters can be developed and modified to reflect the findings of the market and gap analysis, as well as realistic estimates of budget availability and associated Project costs. The final definitions should be reviewed with stakeholders and ultimately approved by Fund management, then announced publicly in connection with the release of the Strategic Plan.

## PRIORITY PROJECT SELECTION

After all Programs, budgets, and Project definitions have been established, the USAF administration must then confront one of its the most challenging decisions: *Which* projects to finance, in what *sequence*, according to what set of *priorities*? The Fund will only have limited



resources available to deliver Projects within each given operating year, and demand for Fund-supported interventions will inevitably far exceed what can be accomplished realistically. There must therefore be a clear and transparent process for deciding on the priority and sequence of Projects, according to a consistent set of criteria.

**Principles:** In the end, there is no single, infallible method to determine these criteria and select priority Projects in a manner that will be acceptable and reasonable for all stakeholders. This is ultimately a subjective process, which will be influenced by many factors, some of them political, others socio-economic, still others institutional. At a minimum, however, there are certain principles that should be adopted as a foundation for the Project selection process. These include:

- The entire process should be open and transparent, with any interested stakeholders encouraged to offer proposals as to priority selection criteria, and the final choices and rationale fully explained to the public;.
- Where possible, Project selection should seek to achieve a reasonable degree of geographic equity among regions of the country, at least where the most significant economic gaps in access exist;
- Other criteria to determine priorities should be widely recognized as fair and objective, based upon readily understood factors (poverty levels, population density, etc.), which correlate with needs and current disadvantages (see below).

**Process:** Applying these principles, the priority Project selection process should follow roughly these steps:

1. Program budget allocation: This is a pre-requisite step, which should already have been taken: the allocation of overall available Fund budget during each planning year to each Program. These Program budget amounts dictate the total funding available for Projects within each Program.
2. Determine key factors to evaluate: Identify which key factors will be followed in selecting priority locations and beneficiaries (see representative list below).
3. Consultations: Conduct direct consultations with key stakeholders in candidate areas, as well as with operators and others, to obtain input and support on the project selection criteria.
4. Assign values, weights to factors: Using the selected priority criteria, develop a weighting system which determines the relative importance of each factor, and a means of calculating “scores” for candidate Project locations. This will ultimately be a subjective analysis, but it will ensure transparency nonetheless.
5. Conduct evaluation, publish results: Conduct the full evaluation of all candidate Projects and locations, including the scores and rankings that result from the above methodology. Publish the results with full explanations of the final outcome.

**Project Ranking Criteria:** The critical policy decision required to accomplish the above project selection method is to identify what criteria will be measured relative to the key evaluation factors, and how these will be weighted to produce final rankings for candidate Projects. These are choices that the Fund administration must make under its authority and mandate, based on the input and consultations of relevant stakeholders. Again, there is no “best” answer, but any choices must be as transparent and neutral as possible.

Some representative criteria are suggested below:

- Overall population size and density of prospective locations;
- Relative economic status of locations: incomes, unemployment, poverty (with more disadvantaged areas given higher priority);
- Location near and/or integrated with centers of economic activity (especially those which might benefit most immediately from ICT access);
- Readiness of local administrations and other local stakeholder groups to collaborate on project definition and implementation;
- Availability of and proximity to existing infrastructure: ICT networks as well as electricity, roads, etc.;
- Concentrations of historically disadvantaged or minority population groups;
- Population literacy, education, cultural resources, etc.
- Relative cost-effectiveness of projects

## ANNEX 1 – SUMMARY STRATEGIC PLAN TEMPLATE

The table below presents a simplified summary example of how a completed USAF Strategic Plan can be presented in a single chart. This Plan covers four years, during which the Fund will be implementing three programs. For each year, the Plan would provide the budget amount allocated to each Program, and define the Projects that are to be executed. In some cases, Projects continue beyond one year, and must be budgeted for subsequent years' implementation costs as well.

In an actual summary table of a Strategic Plan, the Program and Project titles would be listed, along with the actual budget amounts, as well as the total spending estimate for each year.

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
<b>Program 1</b>	Budget: \$X1 Projects: 1A (new) →→ 1B (new)	Budget: \$X2 Projects: →1A (cont.) 1C (new) →→	Budget: \$X3 Projects: 1D (new) →1C (cont.)→→	Budget: \$X4 Projects: 1E (new) →1C (cont.)
<b>Program 2</b>	Budget: \$Y1 Projects: 2A (new) 2B (new) →→	Budget: \$Y2 Projects: 2C (new) →2B (cont.)	Budget: \$Y3 Projects: 2D (new) →→ 2E (new) →→ 2F (new) →→	Budget: \$Y4 Projects: → 2D (cont.) → 2E (cont.) → 2F (cont.)
<b>Program 3</b>	Budget: \$Z1 Projects: 3A (new) →→ 3B (new) →→	Budget: \$Z2 Projects: →3A (cont.) →3B (cont.) →→	Budget: \$Z3 Projects: →3C (new) →3B (cont.)	Budget: \$Z4 Projects: 3D (new) 3E (new)

## ANNEX 2 – MARKET ASSESSMENT TEMPLATE

### 1. INTRODUCTION

This document presents the ICT Market Assessment to support the forecasts, planning assumptions, program scope, and budget allocations of the Universal Service/Access Fund. The Market Assessment is based upon the most recent and reliable market data for communications network infrastructure, services, economics, and related factors. It provides current status and recent trends in the development of the national ICT market, and specific findings and forecasts concerning Access Gaps in the country, and the subsidy and support policies needed to close these gaps.

The findings and results presented in this document are approximate and tentative in nature, and subject to a range of uncertainties. All underlying assumptions are conservative: i.e., they err on the side of slower growth and higher costs. These findings will be subject to review and revision during each Fund operating year, to adjust the forecasts and results to more accurate and complete data.

#### 1.1.1 BACKGROUND: NATIONAL DEMOGRAPHICS

Provide a general overview of the country's population, territory, and economy, to create a useful context for the ICT market. Ideally, data should be disaggregated by geographic Region. Include such indicators as:

- Geography: Political divisions, regions, terrain (map)
- Population: By Region: Total persons and density; total households; age and gender distribution; numbers of villages per Region by size groupings;
- Economy: National and Regional employment/unemployment, average household incomes.

### 2. STATUS OF INFORMATION AND COMMUNICATION TECHNOLOGIES

This section provides an updated overview of the current status and recent trends in the ICT sector in the Country. In particular, it highlights trends in the deployment of network infrastructure, principally wireless networks, and in the utilization of communications services and applications, particularly telephone and Internet.

## 1.1.2 2.1 INFRASTRUCTURE

Telecommunications network infrastructure consists of many components. The most widely deployed and utilized networks, especially in rural and underserved regions, are wireless (cellular) networks. Access to these networks depends upon signal coverage from cell towers and base stations, as well as connection of those stations to the national backbone network. Construction and operation of these networks also depends upon basic supporting infrastructure such as roads and electricity. This section highlights the state of development of these factors.

**Wireless Networks:** Figure 2.1 shows the estimated geographic coverage of wireless telecommunications signals in the Country, as of 2011 (or the most recent year):

Figure 2.1: National Wireless Network Coverage Map

Wireless coverage can be summarized in two ways, by geographic territory and by population within range of wireless network signals:

**Table 2.1: National Wireless Network Coverage, 2008-2011**

Test	2008	2009	2010	2011
Geographic	XX%	XX%	XX%	XX%
Population	YY%	YY%	YY%	YY%

**National Backbone:** The following indicators describe the coverage and capacity of national telecommunications backbone network infrastructure:

Provide available indicators, such as:

- Km of fiber, microwave nationwide
- Satellite backbone coverage, utilization
- % of territory/villages within 50 km, 100 km of backbone
- Transmission capacity (main network and extensions)
- Other

Map(s) of national backbone network(s)

**Supporting Infrastructure:** Availability and access to other forms of infrastructure can also have a significant impact upon potential access to ICTs. The following indicators highlight some of these factors:

Provide available indicators that may be most relevant, such as:

- % of rural households with access to electricity grid
- % of villages served by adequate roads
- Other?

### 1.1.3 2.2 SERVICES AND APPLICATIONS

A range of providers use the network infrastructure to offer communications services and applications.. While there are many types and layers of these services and applications, the most widespread are telephone service (traditional voice calling, as well as sms texting and other applications that can utilize the basic telephone network), and Internet service (connection to the Internet to access a variety of applications such as e-mail, web browsing, etc.). This section highlights various measures of the telephone and Internet service markets in \*\*Country.

#### Telephone Service:

In the cellular mobile world, measures of telephone service “users” are difficult to quantify exactly. Many users own multiple phones and SIM cards, and these trends are changing constantly. Table 2.2 provides three estimates of “penetration” of telephone service in the Country: total SIMs, estimated individual users (persons with at least one phone), and households (where at least one person in the household has a phone).

**Table 2.2: Estimates of Telephone Users**

Test	2009		2010		2011	
	Total	% of pop	total	% of pop	total	% of pop
Total active SIMs	Xxxxxxxxxx	XX%	Xxxxxxxxxx	XX%	Xxxxxxxxxx	XX%
Individual customers	Xxxxxxxxxx	YY%	Xxxxxxxxxx	YY%	Xxxxxxxxxx	YY%
Households with phones	Xxxxxxxxxx	ZZ%	Xxxxxxxxxx	ZZ%	Xxxxxxxxxx	ZZ%

Additional indicators of telephone service penetration and usage include the following:

➤ Traffic:

<u>Minutes of Use (m)</u>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Domestic	xxxxx	xxxxx	xxxxx
International	xxxxx	xxxxx	xxxxx
<u>SMS messages (m)</u>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Domestic	xxxxx	xxxxx	xxxxx
International	xxxxx	xxxxx	xxxxx

➤ Prices (average):

## Global Broadband and Innovations Program

<u>Voice Calls (per min)</u>	<b>2009</b>	<b>2010</b>	<b>2011</b>
On-Net	xxxxx	xxxxx	xxxxx
Off-Net	xxxxx	xxxxx	xxxxx
International	xxxxx	xxxxx	xxxxx
<u>SMS messages</u>	<b>2009</b>	<b>2010</b>	<b>2011</b>
On-Net	xxxxx	xxxxx	xxxxx
Off-Net	xxxxx	xxxxx	xxxxx
International	xxxxx	xxxxx	xxxxx

### ➤ Revenues:

<u>Telephone Services</u>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Domestic	xxxxx	xxxxx	xxxxx
International	xxxxx	xxxxx	xxxxx
Total	xxxxx	xxxxx	xxxxx

## Internet:

Measurement of Internet usage presents special challenges, as individuals can access Internet connections via multiple devices and services, and their use can range from very occasional to very heavy. Also, Internet users access a wide variety of applications for different purposes, and these variations are even more difficult to track across the population. The following indicators provide some basic estimates of the number of Internet users and of Internet utilization in \*\*Country.

### ➤ Users:

Provide available data on numbers of Internet users, such as:

- Mobile 2G, 3G users
- Fixed Internet (broadband) subscriptions (households, businesses)
- Numbers of students accessing Internet at schools, universities
- Numbers of users at public Internet Cafés, Telecenters

Provide indicators for 2009-2011, if available, as well as any breakdowns for urban vs. rural users

### ➤ Prices and Revenues:

Provide average price indicators (2009-11) for Internet services, such as:

- Charge per MB for mobile Internet use
- Monthly charges for fixed (broadband) Internet subscriptions
- Wholesale Internet capacity prices paid by ISPs (per Gbps or other)

Provide annual industry revenue indicators (2009-11) for Internet services, such as:

- Mobile Internet revenues

- Fixed Internet revenues: households, businesses
- Revenues of ISPs
- Wholesale Internet market revenues

### 3. ACCESS GAPS

This section identifies and described the Access Gaps in the national ICT sector. In particular, it examines in detail existing gaps in access to wireless telecommunications network infrastructure, as well as a range of indicators of the extent of access to Internet services.

#### 1.1.4 3.1 WIRELESS NETWORK ACCESS

Figures 3.1 and 3.2 identify the scope of geographic and population coverage gaps for wireless telecommunications network access in the Country, as of the most recent year:

National Map showing unserved areas (same as in Section 2)

Regional Maps showing greater detail of unserved areas

Table 3.1 provides details on the extent of coverage gaps for each Region, indicating the total territory, number of villages, and population for each region, and the amounts of each that are unserved by wireless network signals:

**Table 3.1: Wireless Network Access Gaps by Region (2011)**

Region	Territory (km <sup>2</sup> )		Villages		Population (000)	
	Total	Unserved	Total	Unserved	Total	Unserved
Region 1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Region 2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Region 3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Region 4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Region 5	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Region 6	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

[NOTE: If even greater detail is available, this can be included in an Annex.]



## 1.1.5 3.2 PUBLIC INTERNET ACCESS

The following indicators provide an overview of the scope of availability of Internet access to the public in non-urban areas of the Country, via different facilities and services, which could be expanded with assistance from the Fund.

### **Wireless Internet Access Services:**

Describe scope of 2G, 3G, coverage, also any WiMax, VSAT, or other available services: population and territory covered.

### **Schools, Universities:**

Provide indicators of the numbers and % of schools and university classrooms with Internet access.

### **Government Offices:**

Provide indicators of the numbers and % of national, local, and regional government offices that have Internet connections; include indicators of Post Office locations as well.

### **Community Centers, I-Cafés, Telecenters:**

Provide indicators of Internet use at public access facilities such as Community Information Centers, I-Cafés, Telecenters, etc. Estimates should ideally include numbers of such facilities around the country and by Region, and numbers of users (per year) per facility.

## 4. ECONOMIC ANALYSIS AND FORECAST

This section contains the results of Fund's economic analysis of ICT market trends, and estimations of future developments. It provides basic calculations of the expected net costs that communications industry operators would face to expand infrastructure and services into unserved areas – and hence of the likely subsidy amounts that the Fund will have to support. All findings and calculations are based upon the Fund's best information and assumptions, utilizing conservative scenarios.

### 1.1.6 4.1 SECTOR GROWTH FORECAST

Table 4.1 provides a summary forecast for anticipated growth in key indicators for network infrastructure coverage, and telephone and Internet services.

**Table 4.1: Infrastructure and Service Growth Forecast**

	2011	2012	2013	2014	2015	CAGR
Network coverage (pop)	XX%	XX%	XX%	XX%	XX%	YY%
Telephone users	Xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	YY%
Telephone revenues	Xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	YY%
Internet users	Xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	YY%
Internet revenues	Xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	YY%

### 1.1.7 4.2 ACCESS GAPS NET COSTS

This section provides forecasts and calculations of the estimated net costs that would be required to close the access gaps identified in the previous section. These results are based on a variety of assumptions and subject to considerable uncertainty, but provide an adequate basis for estimating the range of USAF subsidies that will be needed to support sustainable infrastructure and service expansion into these unserved areas.

[Note: if possible, all results in this section should be calculated on a Regional basis. If data are not available, then national averages for all gaps may be necessary. All methods, data, and assumptions utilized to produce these estimates should be provided in an Annex.]

#### **Regional Infrastructure:**

Estimate the degree of new infrastructure required to eliminate coverage gaps in each Region:

- Number of sites required (towers, base stations)
- Backbone network extension (km)
- Additional infrastructure and support required (e.g., roads)

#### **Net Cost Calculations:**

Develop estimates of the net costs to provide basic network infrastructure and telephone services in unserved areas, based on the following components, using available data, inputs, and assumptions. Break down by Region or other distinctions (e.g., population density) to the extent possible.

- Average Capital Costs per site:
  - Backbone network extension
  - Tower
  - Base station

## Global Broadband and Innovations Program

- Electric power
- Supporting infrastructure (roads, etc.)
- Other
  
- Average Annual Operating Costs per site:
  - Maintenance
  - Power
  - Security
  - Other
  
- Net Revenue forecast:

Estimate average annual net revenues (per site or per Region), based on population, incomes, usage patterns, etc.

[Note that net revenues should represent net income to operator, after sales, service, and other direct customer-related costs. These estimates will likely be very approximate, and should err on the conservative side.]

- Net Subsidy Requirements:

Calculate estimated subsidy requirements per-site, and/or per Region, to support delivery of network infrastructure and basic telephone services, according to the results of the previous sections.

[Note that this calculation requires determining a service-life period, e.g., 5 years, and a breakeven cash-flow analysis. This method should be simplified to arrive at approximate results.]

### **Network upgrades, Internet services and facilities:**

The following results estimate the net subsidy requirements to support provision of Internet services (incremental to basic infrastructure and telephone services) in underserved locations:

- Internet Service Network Upgrades: Provide estimates and calculations for the costs (capital and operating) and net revenues to deliver network and service upgrades (e.g., 3G service) in underserved areas. Estimate per-site and/or per-Region average subsidy costs required to support such upgrades.
  
- Public Access Internet Facilities: Provide estimates and calculations for the costs (capital and operating) and net revenues associated with providing public Internet access via a Telecenter or equivalent public facility. Indicate costs for equipment, building, human resources, training, etc.
  
- School or Government Internet: Provide average estimated costs (capital and operating) to provide Internet facilities at schools, government offices, and similar public service locations.