

A Systemic Vision for Financing the Information Society as a Global Public Good

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Global public goods (GPG) have acquired renewed relevance in response to a critical question: how can financial resources be increased in a context of declining flows of international cooperation for development? The WSIS has prompted negotiations geared to obtain an international commitment which would allow the benefits of the information society to be extended worldwide by 2015. This document proposes financing strategies for information and communication technologies within the GPG conceptual framework. Several financial mechanisms are evaluated which could facilitate the growth of international cooperation flows for developing the information society in Southern countries.

This document is based on the research paper “Mechanisms for financing the Information Society from a Global Public Goods perspective”, by the author, available online at wsispapers.choike.org/

اكتسبت المنافع العامة العالمية أهمية إضافية رداً على سؤال حيوي: كيف يمكن الزيادة في الموارد المالية في إطار من تراجع التدفقات المخصصة للتعاون الدولي من أجل التنمية؟ بالتوازي، تبرز الجهود لضمان الموارد المالية من أجل تنمية مجتمع المعلومات. دفعت القمة العالمية لمجتمع المعلومات مفاوضات تستهدف الحصول على التزام دولي يسمح لمنافع مجتمع المعلومات بالانتشار عالمياً بحلول عام 2015. تركزت المناقشات حول آليات التمويل لمقابلة هذه التحديات، من خلال الإقرار بدور المعلومات وتكنولوجيات الاتصالات في التنمية الاجتماعية والاقتصادية. تقترح هذه الوثيقة إستراتيجيات تمويل للمعلومات وتكنولوجيات الإتصال في إطار مفهوم المنافع العامة العالمية. يتم تقييم عدة آليات تمويل مشتركة تُيسر من نمو تدفقات التعاون الدولي من أجل تنمية مجتمع المعلومات في دول الجنوب.

El concepto de bienes públicos globales (BPG) ha cobrado relevancia en respuesta a una pregunta crucial: ¿Cómo aumentar los recursos financieros en un contexto de tendencias declinantes en lo referente a la cooperación internacional para el desarrollo? La CMSI ha expresado la necesidad de obtener acuerdos internacionales tendientes a asegurar que los beneficios de la sociedad de la información alcancen a todas las regiones del mundo para 2015. Este documento propone estrategias de financiamiento para las tecnologías de información y comunicación utilizando el marco conceptual de los BPG. Asimismo, se evalúan diversos mecanismos financieros que podrían fomentar un aumento en los flujos de cooperación internacional orientados al desarrollo de la sociedad de la información en los países del Sur.

Le sujet des biens publics mondiaux (BPM) a repris de l'importance en réponse à une question fondamentale: comment augmenter les ressources financières dans un contexte de diminution des budgets de la coopération internationale pour le développement? Le SMSI a entamé des négociations afin d'obtenir des engagements internationaux permettant d'étendre les bénéfices de la société de l'information à toutes les régions du monde, d'ici l'an 2015. Ce texte propose des stratégies de financement pour les technologies de l'information et de la communication dérivées du cadre conceptuel des BPM. L'article évalue également différents mécanismes financiers qui pourraient contribuer à l'augmentation de la part de la coopération internationale visant le développement de la société de l'information dans les pays du Sud.

Introduction

The first phase of the World Summit on the Information Society (WSIS) has prompted talks geared to obtaining an international commitment and a Plan of Action to allow the benefits of the information society (IS) to be extended worldwide. The discussion has partly focused on the financial mechanisms needed to meet these challenges, as well as other important aspects of the IS, such as Internet governance, the relation between information technologies and development and the setting of concrete goals to be met by 2015.

The “global public good” (GPG) perspective originally emerged from concerns of the international community when faced with specific global problems (*global public bads*). However, when putting this concept into practice, a complex group of negotiations and agreements at the global, regional and local levels are necessary to make up a “GPG delivery system”.¹ The political process that leads to setting this up has far-reaching implications when it comes to the financing mechanisms that are most suitable for providing this type of goods.

This document is aimed at presenting a summary of the analysis included in our study “Mechanisms for financing the Information Society from a Global Public Goods perspective”, where we propose financing strategies for the IS by using the GPG conceptual framework and we evaluate the combination of different financial mechanisms which could promote increased flows of international cooperation aimed at developing the IS in Southern countries.

1 Sagasti, F. and K. Bezanson (2001), *Financing and Providing Global Public Goods: Expectations and Prospects*, Institute of Development Studies, Sussex, United Kingdom-Ministry for Foreign Affairs of Sweden, Stockholm.

The GPG framework

GPGs have gained relevance in response to a crucial question - How can financial resources be increased in a context of declining trends in international cooperation for development? Although the concept of GPGs has been widely used by economists,² it sprang from a study published by Kaul, Grunberg and Stern in 1999.³ Since this publication, a series of academic and policy documents have been produced and seek to call attention to the potential gains of collective action aimed at tackling different common problems whose externalities go beyond the action of individual states.

In spite of the enthusiasm generated by this new perspective and efforts by the international community and academy to make this concept operative, no clear specification has been made as to how this concept can contribute to solve the problem of additionality of international cooperation resources and the under-provision of GPGs. Another of the problems that arise when dealing with GPGs is that, since the concept is still not clear, it has been incorrectly used to proclaim that almost any activity could be considered as a public good and thus should be financed by the international community.

Traditionally, the concept of public goods has been associated with three interrelated characteristics. First, public goods produce significant *externalities*;⁴ second, there is *non-rivalry* in their consumption and

2 Samuelson defined public goods in 1954 based on the principles of non-rivalry in consumption and non-exclusion from benefits. However David Hume had previously coined the idea of “common good” (in 1793), and Adam Smith, David Ricardo and David Malthus had stressed that concerted action could serve to provide goods that would benefit the community as a whole.

3 Kaul, I., I. Grunberg and M.A. Stern (Eds) (1999), *Global Public Goods: International Cooperation in the 21st Century*, New York: Oxford University Press.

4 “Externalities” are the unintended positive or negative effects arising from any action, which are not borne directly by the person(s), organization or country responsible for the action. Public bads in particular are very often the result of such negative externalities, and likewise, the motivation for providing public goods stems from the desire to generate or enhance positive externalities and correct negative ones.

non-exclusion from benefits to a significant degree;⁵ and third, they generate opportunities to improve individual and social well-being through collective action. However this concept should not be defined only in an abstract way⁶ since social and cultural preferences - which are expressed through public opinion and political will - determine which public goods will be provided and the trade-offs that societies are willing to make. When it comes to GPGs - and international public goods, to include regional public goods - these trade-offs are determined within a domain that goes beyond nation States, but which does not necessarily conflict with them.⁷

Complex negotiations have to take place from the time international public opinion becomes aware of a specific problem until a global public good is defined and even a longer period before such good is provided. This process requires a great effort in terms of collective action and the results are strongly influenced by public opinion and policy decisions at international level, involving national governments, private corporations and civil society organizations.

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- 5 If a good can be consumed by many people (or countries) without becoming depleted, it is said to be “non-rival” in consumption. Likewise, if no one (or country) can be naturally prevented from benefiting from the good, it is “non-excludable”. It is these characteristics that differentiate these public goods from private goods, whose use by one consumer effectively prevents another from accessing them.
 - 6 Ver Eecke, W. (1999), “Public goods: An ideal concept”, *Journal of Socio-Economics*, Vol. 28: 139-56. Ver Eecke has found problems in the conceptual definition of public goods and has identified around 13 possible definitions in the academic literature on this subject.
 - 7 Sagasti, F. and G. Alcalde (1999), *Development Cooperation in a Fractured Global Order: An Arduous Transition*, Ottawa: International Development Research Centre (IDRC). In a fractured global order there are fissures between states and also fissures within states themselves, but there are also forces which put the actors involved in contact with each other, such as international civil society, transnational enterprises, regional associations, etc. In this context GPG not only fall within the sphere of states, but are also a spot where pressures from diverse agents meet and converge.

The IS as a GPG

We briefly analyze here the different aspects considered in the definition of GPGs and their relation to the IS.

Public awareness and political decision

Concerns about deep fissures in the IS (knowledge and digital gaps) in some countries and within them have varied over time, incorporating new issues. Different actors have different perspectives about the IS, its benefits and main characteristics. These perspectives range from “holistic” visions - such as the WSIS Declaration of Principles that links the IS to the quest of sustainable development and human welfare - to more specific visions that focus on new technologies, information flows and the creation of knowledge for the promotion of social and production changes.

The changing policy challenges show how public awareness evolves and how new elements and findings contribute to create and re-create the concept of IS. This process takes place before any political decisions are made or mechanisms are designed for the provision of the IS as a GPG.

The IS produces a significant degree of externalities

The dissemination of information and communication technologies (ICTs) means that knowledge can be transmitted at low cost, generating benefits for the whole population (including poverty reduction, territorial integration, better quality of life and lower production costs). Moreover, exclusion from the IS causes negative externalities, which thus increase existing inequalities. Indicators show that technology access and knowledge gaps are deeper than economic inequalities.⁸ This is a matter of concern given the fact that new technologies and the capacities to use them represent essential means within the emerging production methods.

8 For details on economic, technology access and knowledge gaps indicators, please refer to the original document.

The IS shows a high degree of non-rivalry in consumption and non-exclusion from benefits

Both public good conditions are met to a large extent by the IS at the global, regional or national level. The Internet, for example, has non-rival and non-exclusion properties to a significant extent at the global level.⁹

Let us suppose that the whole world population has full access to the IS. In this ideal world an individual's consumption would not alter other people's consumption and all the members would be able to share the same benefits. Technological progress has created new technologies with greater capacity (e.g. more powerful processors and faster communications), as well as new means to provide access to the IS that could cover the whole world - at least in theory.¹⁰

The IS generates opportunities to improve the well-being of agents through collective action

The potential advantages offered by the IS have been widely recognized and different countries and regional organizations have launched programs that are designed to include the largest possible number of people in the IS through solidarity schemes and direct economic support.¹¹ These approaches suggest that the IS could be better developed through the collective efforts of different actors. Furthermore, countries can

9 Accuosto, P. and N. Johnson (2004), "Financing the Information Society in the South: A Global Public Goods Perspective", prepared for the Association for Progressive Communications (APC) by the Third World Institute (ITeM), Montevideo, Uruguay.

10 Part of the explanation can be found in the economies of scale that apply to this kind of infrastructure. It is capital intensive and is installed in many layers and dense networks known as backbones which allow the capacities of transmission from a centre to peripheral points to be diffused. In the centre the cost tends to be much lower and there can be a problem of over-capacity which is not easily transmitted to distant locations.

11 For example, European Union policies have paved the way for the development of the e-Europe initiative. www.europa.eu.int/information_society/index_es.htm Likewise, Latin America and the European Union joined efforts in the @LIS Programme (Alliance for the Information Society) and cooperated to develop the first Latin American network for research and education (CLARA) and to establish direct interconnection between it and the European network GÉANT.

take advantage of catching up with new technologies and benefit from their development.¹² The great paradox is that the means and technologies to make this possible are already known or being developed, but for a variety of reasons this is not being put into practice intensively enough to bring about the integration of some regions into the IS.¹³

An idealized delivery system

A GPG cannot be defined only by taking into account its degree of non-exclusion and non-rivalry and the existence of externalities. The definition must also include those elements that make up the delivery system to better analyze the financial strategies that can be put into practice. Sagasti and Bezanson¹⁴ proposed an *idealized delivery system*¹⁵ for GPGs. They propose a way of integrating the concept of GPG, the decision-making processes of different agents involved in their provision, and the financial implications.¹⁶

The system considered allows to answer the question of how the different elements for providing the GPG interact. These elements form a continuum from the *global domain* through to the *national/local domain*. In this delivery system, the *global domain* (related to the whole of humanity and to public awareness) interacts with the *network domain* (related to institutional agreements at international level) and with

12 Fink, C. and C. J. Kenny (2003), “W(h)ither the digital divide?”, in *Info: The journal of policy, regulation and strategy for telecommunications*, Vol. 5, No. 6. The authors analyzed the dynamic of technological innovations (TV, telephones, Internet) and showed how developing countries have adopted Internet faster than other innovations.

13 UN Information and Communication Technologies Task Force (ICT TF) (2004), Second Annual Report, presented at the Economic and Social Council (E/2004/62).

14 Sagasti and Bezanson (2001), *op cit*.

15 When considering an ideal system, subjects such as asymmetric knowledge, power relations and the capacity to acquire benefits, among others, are not taken into account. They will be considered at a later stage of the analysis.

16 For details of the proposed conceptual system, please refer to the original document.

the *local domain* (related to national governments, private enterprises and civil society).

The aim of this delivery system is to recognize the different elements needed to provide a GPG in a coherent way, so that they form a continuum, extending from the global domain to the local/national domain. A critical decision has to be made to distinguish those elements that constitute the *core component* of the system from those which represent *complementary activities*. This decision determines what kinds of organizations and programs should be involved in the production of the core component and, even more important, how the provision of the GPG should be financed. In the next section we will try to answer this question for the particular case of the IS.

Components of the IS delivery system

The WSIS Declaration of Principles shows a wide range of components that make up the GPG known as “information society” and the domains where they operate. Although a series of institutions, regimes, norms and standards are emerging and/or being consolidated, it is still unclear how the delivery system will be eventually structured.

The global domain: Knowledge, public awareness and political decisions

As mentioned above, public awareness with regards to the benefits of the IS and the so-called “digital revolution” and the consequences of access and knowledge gaps is progressively being considered by public authorities, civil society, private sector and international organizations. Therefore, the WSIS represents an opportunity to make political decisions about which aspects of the IS should be given priority and gain the attention of the international community, what institutions will be in charge of providing this public good, what concrete agreements will be made to finance the various activities needed to produce the good, and what will be the role of developed and developing countries and all the stakeholders.

The main challenges are related to the political decisions discussed within the context of fora such as the WSIS. This means solving some crucial problems in terms of the design and orientation of the agreements that will serve as framework for the IS. The discussion revolves around what criteria, values and principles should prevail when it comes to designing the governance of the IS and, in a wider sense, of the knowledge society.

IS regimes (international arrangements)

As the IS has expanded, regimes¹⁷ have been developed. Again, the WSIS provides a window of opportunity to establish international agreements and institutions to pave the way to setting up a global framework of norms and regulation activities. It should be noted that efforts made by stakeholders are directly related to their spheres of influence. The main challenge is to make regimes the result of debate and consensus, so as to reflect the many interests and visions and to ensure that they do not cater exclusively to the interests of corporations and governments in industrialized countries. The regimes emerging from these interactions shape future types of institutions, as well as the strategies that will be used to finance them.¹⁸

The networks domain: International organizations, financial mechanisms, policies and procedures

International organizations, financial mechanisms and operational policies and procedures reflect the agreements that have been reached. The connection, regulation and utilization standards and norms, for instance,

17 In the case of GPGs, “regimes” are international agreements (standards, etc.) that regulate the relations between agents for the provision of public goods. These rules are not necessarily treaties or international law documents, but also informal/implicit rules of interaction.

18 Regimes for the information society are still under construction and depend on the interaction of the stakeholders’ interests. An example is the case of Internet resources management: ICANN faces pressures not to represent corporative interests based on the unilateral vision of the US government on how the industry should develop.

contribute to create and develop institutions and modes of production, as well as procedures aimed at ensuring and enforcing such agreements.

In the area of ICTs it is clear that international agreements contribute to reinforcing current trends in the adoption and use of technologies in the IS. In spite of this, concerted action by the international community could contribute to generate financial mechanisms and institutions that would promote solidarity among nations, aimed at achieving global objectives in connectivity, for example. In this context, mechanisms to mobilize financial resources for the development of technologies at reasonable cost or programs to build local capacities among the less-advantaged population groups should be considered as a priority.

Contracts and agreements

(from global agreements to local policies)

When it comes to contracts and agreements¹⁹ that link the networks (international policies) domain to the local/national domain, the main challenge is how to ensure the effective implementation of commitments. The many and varied commitments undertaken by governments do not often include suitable financial mechanisms, nor they pose specific changes in terms of national priorities or influence the structure of the public budget.²⁰ In the area of new technologies, the main trend has been to allow competition in order to stimulate private investment.²¹

19 Negotiations between international bodies and national/local organizations.

20 Sagasti, F., F. Prada and A. Espinoza (2004), *Public Finance in a globalizing world: Peruvian case study*, UNDP-Office of Development Studies.

21 The International Telecommunication Union (ITU) 2004 annual report indicates that, while 40% of basic services (fixed telephone lines, and data transmission lines) are produced by monopolies and 60% by private competition, when it comes to new technologies (local wireless networks, mobile telephony, cable television, internet providers) private competition accounts for 85% of the market. In some regions we can notice differences in this trend and these differences influence the provision of public goods at the global level.

Just as regimes have an impact on actors at the international level, so agreements and contracts have an impact on the local/national level. For instance, following the adoption of free software by the public sector, consumers and business at the national/local level would tend to adopt free software, as well.

The local/national domain: Activities of national and local bodies within the IS

To a large extent, activities aimed at the provision of GPG take place within the local/national domain.²² This is particularly true when it comes to the IS. There are three main subjects involved at this level:

- Strategies to provide infrastructure for communications and information flows, which may be provided publicly, privately or through a mixed system, and may be subsidised or covered by users, under a monopoly or in competition,
- the role of education in building capacities so that people can take advantage of information and knowledge, as in the case of national universal access programs,²³ affirmative action programs for sectors with limited access, the incorporation of local content and the development of research programs to establish a critical mass of experts, among others; and

22 In general, the activities described in the local/national domain probably do not have the properties of non-exclusion and non-rivalry, and their externalities are manifested only in this domain. This situation disqualifies them from being considered as global public goods. This is what often causes confusion about whether a good can be classed as a global public good. Sagasti and Bezanson (2007) argue that a GPG exists when the international community, through knowledge, policy decision and public awareness, considers it so.

23 Universal access policies are aimed at increasing access to communication and information technologies, either at households or through public facilities providing that prices are affordable for users in the community. These conditions are defined by the regulator in each country, in order to determine which communities would be covered by the market and which communities would need a subsidy, and which cannot be provided with any available technology and thus need alternative mechanisms to be included. See ITU report, *Trends in telecommunication reform 2003/2004: Promoting universal access to ICT*.

- strategies for adapting national activities to international standards, such as the decisions on free or proprietary software and the regulation of intellectual property rights, among others.

Each of these subjects is included in the WSIS lines of action.

GPG information society:

Core component and complementary activities

Activities for delivering a GPG form a continuum from the global domain to the local/national domain.

As stated above, different elements must be considered when defining a GPG, especially regarding the activities that would make up its core component, and its complementary activities. Core components activities can be defined in two ways. The decision about where the GPG core component is located will have an impact on the design of the mechanisms that are more suitable to finance its provision.

- *Option 1: The GPG core component is defined in the global level.* In this case the core component is exclusively defined according to the public good characteristics: existence of externalities, non-rivalry, non-exclusion, and the welfare gains from collective action. The subjects under consideration, for example, are the flow of information that is generated and transmitted through the Internet, the proposals and agreements for standardizing information technologies, the regimes of Internet governance, the design of enforcement mechanisms and the design of mechanisms to improve security in information technologies, among others. Likewise, we could consider - if it keeps developing - the infrastructure which scope is strictly global, and the rules that govern it (the use of electromagnetic space, the incorporation of new technologies to extend coverage of information technologies to a global level, such as stratellites).
- *Option 2: The GPG core component includes the local domain.* Concerns about inclusion into the IS and the access and knowledge gaps have prompted a wider definition of the GPG core component.

That is to say, one that agrees more with those activities taking place in the local/national domain and which, for other kinds of GPGs, could be considered as “complementary” to the GPG delivery system. In this case, the subjects considered as part of the core component, apart from those indicated in the first option, are the provision of connectivity infrastructure for countries, or people within countries, with more difficulties in terms of access to the IS, as well as support for the adoption of standards, at the local level, which would allow greater connectivity and access. This would be compatible with the aim to set “universal access” schemes for new technologies in developing countries, as has already been done in the European Union and the United States.

In both options the implications for financial strategies are important. In the first option, the financial strategy could involve mechanisms to reduce externalities by making ICT users pay for the services they receive. However this vision of the IS only ensures the rights of those users who already benefit from it. In short, this arrangement seeks to protect rights and provide better service to those who are already in the IS.

The international community has stressed the importance of adopting the widest possible definition of IS in order to progressively include the whole world’s population in its benefits and potentials. This wide vision also appears in the governments’ Declaration of Principles and in the Civil Society Declaration of the WSIS first phase.

Based on this general aspiration it is possible to design a financing strategy which would allow to channel and distribute resources from those who are part of the IS to those not yet included in it. Moreover, it is possible to go beyond a user-service vision such as that described in the first option and include innovative financial mechanisms, in harmony with the market, to channel resources towards communication and information infrastructure. International and domestic resources can be mobilized to build capacities in countries that are currently left behind, thus enabling them to take advantage of the IS.

Exploring financing strategies for the IS

The academic literature proposes some schemes to link financial resources to the intrinsic characteristics of a GPG as an option to efficiently allocate resources and reach multilateral agreements. But how can wide-ranging agreements and automatic results be achieved when the public good includes components with different degrees of non-rivalry, non-exclusion and externalities, decision-making asymmetries and differences in patterns of consumption and provision? The IS includes elements that encompass different degrees of such properties:

- A first global public component is located in the global domain and regimes (information freely flowing through the Internet, connectivity standards and governance regimes, among others).
- A second component is located in the networks domain that shows the higher degrees of rivalry in consumption, and influences the national/local domain by means of agreements and contracts (the so-called information technologies market, which includes connectivity infrastructure and related services and the design and use of technologies for transmitting information and increasing productivity, among others).
- The third component is more localized in the local/national domain and shows a higher degree of exclusion from benefits (skills to access information flows, knowledge building capacities, people's educational level to take advantage of benefits of the IS, the capacity to adapt knowledge to generate increases in productivity).

The complexity of a GPG does not always allow to discern the most efficient way to provide a public good or allocate financing responsibilities in an automatic way.

Although it is possible to apply general criteria for allocating resources to provide specific goods (such as "*who pollutes pays*" when proposing the creation of a market for emissions in the fight against climatic change), it is not always possible to clearly assign responsibilities

without negotiations where politics have more weight than technical criteria (as in the case of “*the richest countries should finance the provision of global security against the threat of terrorism*”).

The United Nations Development Programme (UNDP) has taken a step forward in conceptualizing three dimensions of what is “public” in a GPG: the consumption of goods, the policy decisions related to their provision and the appropriation of benefits.²⁴ Accordingly, the ideal provision of public goods is achieved when these three dimensions are in balance.

A GPG perspective provides criteria for identifying which options are most suitable for financing the IS though not in an automatic way. Negotiations at the political level must seek to make operative the aims and values of societies in the provision of a GPG, especially when it comes to financial resources and regimes. Only if proposals can be implemented will the vision of the IS be feasible.

Financing mechanisms for the IS

From a public goods perspective, the first option for financing is to ask if it is possible to *internalize externalities*. In other words, what is the limit of market dynamics in terms of creating conditions to benefit a larger part of the population in the IS and taking advantage of economies of scale and the network effect? This mechanism has its limitations when it comes to the IS.

First, the incorporation of new users through more investment (private, public or mixed) financed through user payments is limited, due to poverty and low incomes. There is also a geographical barrier and the academic literature distinguishes between “universal service” (ICT coverage of each household) and “universal access” (population can access ICTs on a geographic basis). Secondly, it is not possible to predict the

24 Kaul, I., P. Conceicao, K. Le Goulven and R.U. Mendoza (2003), “How to Improve the Provision of Global Public Goods”, in *Providing Global Public Goods: Managing Globalization*, UNDP, pp. 26-94.

impact of innovations in reducing access costs and increasing coverage. For example, what would be the effect of the accelerated development of low cost computers for the access of poorer populations or the use of community radios together with Internet? A third limitation is that while externalities are internalized, the results are not technologically neutral, and this could lead to higher costs when adopting a new technological standard in the future (the mobile phone sector provides examples for this).

So, what happens when the mechanisms for internalizing externalities do not operate automatically? There exist many financial options and specific instruments to cater to the diverse requirements of developing countries. Some of them have not been widely applied to the IS and others are being developed.

These instruments can be differentiated according to their financial source, the amount of resources mobilized, the institutions involved, the kinds of activities financed, the criteria for eligibility, the administrative capacities required, and their sustainability. The IS can be financed by a combination of the financial instruments summarized below:²⁵

25 This section is based on Sagasti, Bezanson and Prada (2005) and supplemented by the preliminary report of the Task Force on Financial Mechanisms (TFFM) (20 November 2004). For a more detailed explanation of each source please refer to the original document.

1. BILATERAL SOURCES

Financial instruments	Sub-types of financial instruments
Regular and concessional loans	Programs, project and sector loans (direct or through official financial intermediaries, such as in the case of revolving funds)
Grants for public and civil society organizations	Pre-investment of public or private projects and technical cooperation Fiscal support to cover the costs of maintaining infrastructure Grants to ensure access to multilateral or private investment funds
Debt management	Exchanging debt for specific investment (education, infrastructure)
Funds to promote foreign investment (FDI)	Loans, shares and joint ventures guaranteed by bilateral agencies against political, regulatory and exchange rate risks (e.g. OPIC)

2. INTERNATIONAL ORGANIZATIONS (UN system and regional organizations)

Financial instruments	Sub-types of financial instruments
Grants	Technical cooperation; grants for institutional development (regulation)

3. MULTILATERAL DEVELOPMENT BANKS
(WB, regional and sub-regional banks)

Financial instruments	Sub-types of financial instruments
Regular and concessional loans	Program, project and sector loans to the public or private sector Pilot programs to build capacity (learning and innovation loans)
Grants (mainly public institutions)	Technical assistance and capacity building grants Pre-investment grants
Risk mitigation and risk management instruments (primarily for the private sector)	Guarantees against political, contractual, regulatory, credit and exchange rate risks Financing of hedging operations (exchange rate and interest rate swaps) Securitization, syndicated loans, leasing Equity (direct, quasi-equity, preferential shares)
Debt reduction	Debt for investment swaps
Additional instruments	Resources mobilization from other bilateral and multilateral sources (catalytic financing) Local currency bonds to strengthen domestic markets

4. PRIVATE SECTOR

Financial instruments	Sub-types of financial instruments
<i>a. Corporations</i>	
Foreign direct investment	FDI: subsidiaries, equity investment, joint-ventures, privatization Participation in the private provision of public services (concessions)
Donations and social responsibility activities	Corporative donations to public and civil society institutions Social responsibility activities
<i>b. Commercial and investment banks</i>	
Loans	Investment programs and specific projects
Risk management instruments	Derivatives, options, futures, swaps, hedging instruments Guarantees and provision of insurance
Portfolio investment	Purchase of bonds and shares (standard, performance linked bonds, convertible bonds, subordinate, among others) Investment on developing country capital markets and socially responsible investment (SRI)
<i>c. Private foundations, non-profit and non-governmental institutions, individuals</i>	
Donations	Funds for specific projects
Financial remittances	Workers' funds to guarantee investment in rural areas

5. INTERNATIONAL TAXES (single fund for a specific purpose)

Financial instruments	Sub-types of financial instruments
Institutional arrangements for taxes	Global tax on information transmission (Bit Tax) Global tax on computer inputs (e.g. production of chips or Chip tax)

6. PARTNERSHIPS

Financial instruments	Sub-types of financial instruments
Multi-donor funds	Information society fund (e.g. Digital Divide Fund) Ad-hoc version of the International Finance Facility (IFF)

Towards a financial strategy for the IS²⁶

Internalization of externalities. Mobilization of domestic and international resources

The first element of the strategy is to create and consolidate mechanisms to internalize externalities, with special emphasis on the infrastructure sector. Densely populated urban areas in developing countries have experienced an explosion in the use of ICTs, and this trend should continue as far as possible. However there is a wide range of instruments to strengthen regu-

²⁶ In addition to the financial instruments and sources a financial strategy needs to combine two additional elements to be complete: The type of countries, divided among low-income countries (with low capacity to mobilize domestic and foreign resources), middle income (with middle capacity), and middle-high income (with high capacity); and the components of the information society which have diverse characteristics and require different financial mechanisms. Please refer to the original document for the challenges and financial instruments that are most important and most suitable according to the type of country and GPG component.

latory capacities so as to avoid excessive dependence on particular types of technology, on the one hand, and to reinforce current consumption patterns, on the other. This is probably more operative in situations in which a country has a greater capacity to mobilize domestic resources (middle-high income developing countries). Nevertheless, the international community could direct financial resources and technical cooperation (mainly through UN programs) to strengthen these capacities in countries that have less capacity to mobilize resources.

Existing mechanisms. Debt reduction, debt swaps

The second element is to take advantage of the range of financial mechanisms that are currently offered and use them according to the needs of each country and each component of the IS. We believe that access to the IS ought to take place on the terms agreed by each individual country. Middle and middle-high income countries can press for fixed-time investment programs (10 years) through framework agreements with the International Monetary Fund, proposing connectivity projects with high social return to be financed with private capital resources. In this way the countries would have great freedom to decide what the best strategies for access are, and would depend less on loans from multilateral and bilateral institutions. Low-income countries, in turn, could include more ambitious proposals for connectivity investment programs in their Poverty Reduction Strategic Papers to be able to accede to more debt reduction or debt swaps.

Additional mechanisms. Global taxes, IFF for the IS

A third element is to exert constant and sustained pressure to create financial mechanisms for the IS (such as global taxes²⁷ or a reduced version of the IFF) so as to widen financial options and increase resources allocated to developing countries. Initially there has been opposition from developed countries but there are good arguments, from

27 See the original document for an explanation of the feasibility of a global tax for a Universal Access Fund.

a GPG perspective, that encourage investment in the IS. This will result in benefits for the whole world, allowing not only better connectivity but also better support for social and educational programs and trade opportunities, among others. Therefore, it is worthwhile innovating on financial options for a big push in investment in developing countries.

Division of labour between North and South

A fourth element is that countries could take advantage of the implicit division of labour among financial sources. High-income countries could lay greater emphasis on private sources that seek a certain level of profitability in their operations, while countries with lower income levels could lay emphasis on softer financing sources or grants. Likewise, there is a division of labour among components. At higher income levels, emphasis can be placed on activities in the global domain (participation in setting standards, technical assistance to other countries, more investment in research and development to create low cost technologies for developing countries); while at lower income levels finance is most urgently needed to tackle infrastructure and capacity gaps.

National/local strategies

Lastly, the strategy must close gaps in the local/national domain. It is clear that there are gaps not only between countries but also within them. The idea of closing gaps involves identifying these differences within populations and implementing the strategies that are most suitable within the framework of such country's national priorities. In this way, countries with higher capacity to mobilize resources could initiate pilot programs funded by softer financing sources (bilateral and private foundations) on a small scale, so that these could be replicated on a larger scale with domestic resources. Countries with less capacity to mobilize resources could launch programs financed by multilateral loans (and eventually with resources from capital markets through investment funds) for the more profitable layers of connectivity.

Conclusions and recommendations

The GPG perspective allows to recognize the different elements of the IS (global aspects and regimes, infrastructure and national/local capacities), defined according to a common vision, aims and values. Moreover, this perspective allows to explore a range of possibilities for financing each component, and also to propose financial options for the IS as a whole.

In addition, this approach supports the idea that the international community should collaborate to provide the GPG IS. To declare that something is a GPG is only the first step to deliver it and the negotiations to create a delivery system could be enriched through adopting a systemic vision, such as the one presented in this document.

Each component has its own challenges, and the ongoing negotiation processes focus on each of them, but there are solid arguments to adopt a systemic vision of the IS to avoid partial discussions and solutions. Civil society representatives should put strong pressure on governments and the different actors in the negotiations that are currently under way.

The WSIS and its implementation and follow-up processes provide an opportunity to discuss these points of view and to reach conclusions which, within a reasonable time frame, will enable the greatest possible number of people in the world to belong to the IS and take advantage of the benefits it has to offer. ■