

TECHNICAL COOPERATION DOCUMENT

REGIONAL

I. BASIC INFORMATION

Country/Region:	Regional
TC Name:	Guidelines for the development of new services and applications leveraging broadband
TC Number:	RG-T2505
Team Leader/Members:	Antonio Garcia Zaballos Gonzalez (IFD/CMF, Team Leader); Félix Gonzalez (IFD/CMF, Alternate Team Leader); Lorena Cano (IFD/CMF); Enrique Iglesias (IFD/CMF); María Elisa Arango (LEG/SGO); Cecilia Bernedo (IFD/CMF).
Date of TC Abstract authorization:	April, 2015
TC Taxonomy	Research and Dissemination (RD)
Donors providing funds:	Special Program for Broadband Services
Beneficiary	Public and private sector from Latin America and the Caribbean
Executing Agency and contact name:	Inter-American Development Bank, Capital Markets and Financial Institutions Division (IFD/CMF), Antonio Garcia Zaballos (antonioagar@iadb.org)
IDB Funding Requested:	US\$ 400,000
Local counterpart funding	None
Disbursement period:	30 months (24 months execution period)
Required start date:	May, 2015
Types of consultants:	Firm and individual consultants
Prepared by Unit:	IFD/CMF
Unit of Disbursement Responsibility:	IFD/CMF
TC Included in Country Strategy	No
TC included in CPD	No
GCI-9 Sector Priority:	The current Sector Strategy: "Institutions for Growth and Social Welfare" identifies improving innovation and productivity as a major area where the Bank can help the Region overcome the challenges that hinder growth and social welfare. To this end, the IDB will work towards strengthening institutions, and has specifically recognized the need to improve policies and governmental action in the ICT sector (par.5.21 of the referred Sector Strategy). It is also worth remarking that the Sector Strategy: "Support Competitive Global and Regional Integration", identifies bridging the digital divide as one of the Bank's priorities to promote integration, placing specific emphasis on promoting broadband infrastructure. Consistent with these Strategies, the Bank has been working in the design and implementation of a Broadband Platform to accelerate the penetration rate and usage of broadband services in the Region.

II. OBJECTIVE AND JUSTIFICATION

- 2.1 Broadband is well known as a lever for countries in the pursuit of economic and social development, since it drives economic growth by contributing to the enhancement of national competitiveness, to the increase of productivity and efficiency, as well as job creation. In recent years, the economic impacts of broadband, through its access, adoption and use have brought clear social and economic benefits, which have been substantiated with concrete statistics. It has been observed that countries where broadband penetration has grown by 10%, they have experienced a 3.19% increase in the Gross Domestic Product (GDP); 2.61% increase in productivity and a net generation of more than 67,000 jobs¹ (the study talks about correlation, not causality.) According to McKinsey & Company², small and medium-sized enterprises (SMEs) that engage in intensive use of the Internet improve their productivity by 10% in terms of sales and cost savings, and SMEs that used the Internet intensively in their business relationships grew twice as fast as those that did not.
- 2.2 This macro impact relies on the various potential benefits that broadband brings to the economy in terms of improvement in the delivery of education and accessibility to training, promotion of equality and inclusion of rural or vulnerable communities, support to civil disaster relief, remote medical assistance (known as “telemedicine”), increasing competition, competitiveness and productivity; and social cohesion and interaction³, among others. These advantages lead the governments to implement significant broadband development programs in order to take advantage of the new and different technologies that are available.
- 2.3 However, to harness the power of broadband and the aforementioned benefits, broadband has to be conceived as an ecosystem⁴ (see link: [IDBdocs# 39412583](#)), where it is important to focus efforts not only on deploying infrastructure (supply) but also on allowing the development of applications (demand), all of them accompanied by the right policies, strategic regulation and the appropriate capacity building elements.

¹ García-Zaballos, A. / López-Rivas, R.: Governmental control on socio-economic impact of broadband in LAC countries. IDB, 2012.

² “Internet Matters: The Net’s Sweeping Impact on Growth, Jobs and Prosperity.” Briefing Note, McKinsey Global Institute, McKinsey & Company, May 2011.

³ Broadband may lead to development of a new model of education and health, for they could get substantial efficiency improvements in its processes, which would lead to lower costs while enabling disadvantaged areas closer to education and health. McKinsey & Company points out that those SMEs that are intensive Internet users improved their productivity by 10 percent, which is a reflection in sales and cost savings. Moreover, the consultant concluded that small and medium sized companies that made heavy use of the Internet in business relationships grew twice as fast as those who did not. In addition to the impact of ICT in education, health and productivity / competitiveness of enterprises, there are examples of how ICTs can improve traffic, assist in natural disasters, or monitor certain public services (sewer, electricity, air and maritime transport , etc). Moreover, for the ordinary citizen, the use of ICT services in both their personal lives and in their careers (electronic payment of value added tax, electronic transactions, information search,) helps to reduce the number of transactions needed, increasing productivity and quality of life.

⁴ For clarity purposes, three main concepts are relevant for this TC: (i) “broadband service” is the telecommunications operator offer for the connectivity; (ii) “content” is the information that is exchanged; and (iii) “application” is the software that allows the content transmission. Example: a movie is content, Netflix is the application and the ADSL plan is the broadband service.

- 2.4 In that sense, the Latin-American and The Caribbean Region (LAC) is working intensively in the universality of connectivity with improved and wider networks that reach all citizens, companies and governments. Nonetheless, there is less of a focus on developing the applications (and services) layer of the ecosystem (both at a national and a regional level, also called the applications economy⁵) that takes advantage of the infrastructure and that would have three major benefits for the countries of LAC. First of all, it would allow citizens, businesses and public institutions to make use of the connectivity and adopt the technology. Secondly, it would help create economic growth because an applications (and services) economy can be created in each of the countries. Thirdly, in terms of the data traffic, if content is produced and hosted locally, two positive effects are created that may lead to a decrease in prices: on the one hand, more national and regional traffic is created providing greater leverage to negotiate better international connectivity rates; and on the other hand, there is less dependency on foreign countries.
- 2.5 Therefore, the development of new applications and services that use broadband connectivity as a key enabler is crucial to ensure not only that demand will grow at the desired rate (ensuring sustainability) but also that citizens, companies and institutions are able to harness all the expected social and economic benefits of broadband services. Countries need to progressively shift towards this approach (Colombia, for instance, has already started) and transition from an infrastructure focus to an applications-production focus. This will require overcoming barriers such as literacy, training or analyzing the suitability of fiscal incentives.
- 2.6 **Alignment with the Special Program for Broadband Services (SPBS).** The ultimate goal of the SPBS is to foster access, adoption and use of broadband services. This TC is precisely aligned with the latter: fostering the use of broadband services by facilitating the creation, development or strengthening of an ecosystem that promotes the development of the applications economy: all not only from a technical and financial standpoint, but also from a policy and regulatory one. Moreover, this TC is complementary to TCs that have already been financed by the SPBS, such as ATN/OC-13987-ME (ME-T1236) and ATN/OC-14108-PR (PR-T1151), which mainly revolved around developing policies and strategic regulation with a focus on infrastructure, this TC will bring the elements that will facilitate the actual use of the infrastructure by the creation and transmission of content (i.e. applications and services). To the TCs, ATN/OC-14107-RG (RG-T2295) and ATN/OC-14769-RG (RG-T2463) that focus on developing high-level policies that touch upon all the elements ecosystem, this TC will deep dive into the applications and content element of the ecosystem by providing specific (and not general) recommendations on how to create and boost the development of applications and services. For instance, it is very likely that one of the recommendations that will come out of the RG-T2295 and RG-T2463 will be precisely to promote the creation of the applications economy to make use of the infrastructure that many countries already have but his not being used. This TC will provide specific recommendations on what LAC countries can do to promote the creation of applications and services such as: (i) creation of social funds; (ii) creation of public private partnerships with telecom operators to provide connectivity and capacity modules on applications development;

⁵ The applications economy is the ecosystem that revolves around the development of applications, which include light applications such as mobile application for weather to heavy ones such as tele-medicine one.

and (iii) update of the regulatory framework to allow digital transactions such as digital signature or e-commerce.

- 2.7 **Objectives.** The main objective of this TC is to facilitate the development and use of new applications and services in LAC by providing a set of recommendations (both at the technical, financial, public policy and regulatory levels) on how to foster the creation of a robust applications and services economy. Moreover, beyond benefiting the countries of the Region, this TC will help the Bank's broadband team define the adoption and use component in broadband loan operations and will also create synergies with other TCs such as RG-T2295 – Broadband Policy Toolkit for Latin America and the Caribbean -, RG-T2463 – Desarrollo de un toolkit integral de políticas públicas -, and ME-T1236 – Mexican National Broadband Plan.

III. DESCRIPTION OF ACTIVITIES / COMPONENTS AND BUDGET

- 3.1 The activities included in this TC will be structured around the following components:
- 3.2 **Component 1: Analysis of the status quo of the broadband ecosystem and that of the applications economy in LAC countries.** This component will finance the assessment of the broadband ecosystem as well as the applications economy in each of the 26 IDB countries.
- 3.3 **Activity 1.1: Assessment of the broadband ecosystem.** This activity will consist of the preparation of a high level study for each LAC country on the degree of development of the different transversal elements of the ecosystem (infrastructure, devices, applications and content) and those that are vertical (public policies, regulation, capacity building) as they are currently ([AS-IS]). Taking this into account and the characteristics of each country (socio-demographic, economic development, sectors of the economy of countries, poverty, sector development, etc.) and the government priorities, the study will prioritize the sectors that may be suitable to have applications and services developed (e.g. health, education, financial services, e-government, agriculture). The information about infrastructure and devices will also be used as a side input to understand the national reality and to define the best technologies that may be used in each country.
- 3.4 To undertake this analysis the work will take into account two knowledge products developed by the broadband team⁶: (i) the Broadband Development Index (IDBA); and (ii) the infrastructure maps.
- 3.5 **Activity 1.2: Assessment of the applications economy.** This activity (a zoom-in on one of the transversal elements of the broadband ecosystem, the applications layer, and the focus of this project), will help define the different elements of the above-mentioned ecosystem and of the innovation value chain (e.g R&D, incubators, market, investors) with specific variables associated to each of them to perform the assessment. This activity will also entail an assessment in the form of a new index or the use of an existing one, for each of the countries. The work will leverage previous studies done by the Bank or other institutions.
- 3.6 **Component 2: Country grouping and development of technical recommendations on how to develop the applications economy.** Based on the diagnosis conducted in

⁶ The tools are available at digiLAC (www.iadb.org/digiLAC).

- Component 1 (both activities 1.1. and 1.2), this component will finance: (i) the grouping of all the countries in clusters based on the status of the broadband and the applications economy; and (ii) the development of technical recommendations to develop the applications economy.
- 3.7 **Activity 2.1. Country grouping.** This activity will consist of placing in clusters (groups) the 26 IDB borrowing countries according to the status quo of the broadband and the applications economy. The goal will be to group the countries to facilitate the development of the recommendations for each of the clusters. The analysis will determine the number of clusters of countries to be created.
- 3.8 The criteria to group the clusters will be, at least, based on the following variables: (i) degree of development of infrastructure; (ii) degree of development of applications economy; (iii) degree of development of public policies to foster the applications economy; (iv) countries' level of economic development; and (v) sectors prioritized by countries.
- 3.9 An illustrative list of clusters is the following: (i) infrastructure-focus cluster (in which the main challenge is developing the broadband infrastructure and creating an applications economy that currently does not exist); (ii) an adoption-focus cluster (in which connectivity exists at least in certain areas but the main challenge is fostering the adoption of broadband services and creating an applications economy that presently does not exist); (iii) application-focus cluster (in which the main challenge is developing and strengthening an emerging applications economy); and (iv) industrialization-focus cluster (in which the main challenge is in taking the application economy to a level where applications and innovation are industrialized).
- 3.10 **Activity 2.2. Definition of the [TO-BE] scenario.** This activity will define the expected and desired situation [TO-BE] in a 5-year time horizon for each of the clusters regarding the broadband ecosystem (infrastructure, devices, applications and content) as well as for the applications economy (according to the innovation value chain). Specific goals will be established for each of the variables used in the assessment (Component 1) so that the gap can be identified. To establish the [TO-BE] scenario, an analysis of reference countries (e.g. United States, United Kingdom, Israel) will be done. Additionally, the work will include an estimation of the traffic increase that may take place as a result of the development of the applications ecosystems.
- 3.11 **Activity 2.1. Elaboration of technical recommendations.** Based on the results of Component 1, this activity will generate a set of recommendations on how to bridge the gap from the [AS-IS] to the [TO-BE] situation across the broadband ecosystem and the applications economy. Recommendations may encompass proposals that range from improving the infrastructure, spreading the use of devices to the creation of ICT skills. Furthermore, it will include a proposal of specific projects to boost the applications economy, including for example the creation of innovation centers, competitions, incubators and so forth (projects should be across all elements of the application economy). These technical recommendations will be customized for each of the sectors identified in Component 1 and will also include proposals on how governments can partner with existing stakeholders in the country (e.g. universities, investors) or elsewhere (e.g. GSMA, device manufacturers) to achieve their goals.
- 3.12 **Component 3: Development of public policy and strategic regulation recommendations for each cluster.** This component will finance a set of public policy

and strategic regulation recommendations for the defined clusters that will ensure the right implementation as well as the maximum impact of all the technical recommendations proposed in Component 2. These recommendations will go across the broadband ecosystem and the applications economy and may include: change in the educational curricula to promote applications development, incentives to favor investment, financial incentives to favor the creation of companies. It could also include some other recommendations more related to broadband such as policies/regulation to favor last-mile development or policies to lower the cost of devices.

- 3.13 **Component 4: Development of a roadmap, financial estimation and governance model for the proposed recommendations.** This component will finance the development of a roadmap, financial estimation (and cost-benefit analysis) and governance model for each of the project proposals and recommendations provided in Component 2 and Component 3. The roadmaps will define timeline, main milestones and follow-up framework (with specific indicators –KPIs-). The governance model will include roles and responsibilities of those stakeholders that will be involved. The high level financial study will quantify the expected investment needed to undertake each of the proposed projects.
- 3.14 **Component 5: Dissemination.** This component will finance the development of: (i) a report with the products of Component 1, Component 2, Component 3 and Component 4; (ii) a promotional video; and (iii) an event to present and discuss the results of the project inviting the main stakeholders (e.g. government, industry, academia, civil society) from each of the countries. The goal of the event will be to discuss roadmaps to implement the agreed upon recommendations with LAC countries.

Table 1: Indicative Results Matrix

Suggested indicator	Measurement Unit ⁷	Base-line	Target at end of TC
Output Indicators:			
Component 1 Analysis of the status quo of the broadband ecosystem and that of the applications economy in LAC countries			
- Report with the assessment of the broadband ecosystem in the 26 IDB borrowing countries	# of documents	0	1
- Report with the assessment of the applications economy in the 26 IDB borrowing countries along with the methodology for the assessment if a new way is developed	# of documents	0	1
Component 2: Country grouping and development of technical recommendations on how to develop the applications economy			
- Report explaining with the country grouping and its methodology	# of documents	0	1
- Report with the technical recommendations for each cluster and sector	# of documents	0	1

⁷ For appropriateness reasons, the different documents will be consolidated into a single one.

Suggested indicator	Measurement Unit ⁷	Base-line	Target at end of TC
Component 3: Development of public policy and strategic regulation recommendations for each cluster - Set of public policy and strategic regulation recommendations for each cluster	# of documents	0	1
Component 4: Development of a roadmap, financial estimation and governance model for the proposed recommendations - Roadmap for the implementation of the recommendations and projects proposals in each cluster	# of documents	0	1
- Governance Model for the implementation of the technical recommendations in each cluster	# of documents	0	1
- Financial Study for the implementation of the technical recommendations in each cluster	# of documents	0	1
Component 5: Dissemination - Report containing the TC's results	# of copies	0	50
- Video to communicate the results and conclusions of the TC	# of videos	0	1
- Dissemination event	# of events	0	1
Outcome Indicators:			
Increased awareness and understanding of tools, strategies and policies to foster the applications economy	Number of citations of the TC products in national government strategic documents	0	2

Table 2: Indicative Budget Split

Item	Total (US\$)
Component 1: Analysis of the status quo of the broadband ecosystem and that of the applications economy in LAC countries	175,000
Component 2: Country grouping and development of technical recommendations on how to develop the applications economy	105,000
Component 3: Development of public policy and strategic regulation recommendations for each cluster	50,000
Component 4: Development of a roadmap, financial estimation and governance model for the proposed recommendations	50,000
Component 5: Dissemination	20,000
Total budget	400,000

IV. EXECUTING AGENCY AND EXECUTION STRUCTURE

- 4.1 **Execution.** Considering that the project falls under the category of Research and Dissemination (RD), the executing agency will be the Inter-American Development Bank, through IFD/CMF. The Bank will play a catalytic role in facilitating the successful interaction among partners, as it has done so in other projects, by extending an official

invitation to participate in the project (e.g. RG-T2295 – Broadband Policy Toolkit for Latin America and the Caribbean).

- 4.2 The Bank will contract individual consultants, consulting firms and non-consulting services in accordance with current Bank policies and procedures.
- 4.3 **Reporting, evaluation and sustainability.** The project team will share with the Technical Secretary of the Special Program for Broadband Services all advancements within the project, especially those that refer to deliverables and main milestones achieved. In that regard, pursuant to Bank policies (GN-2470-2) the Project Team will draft a quarterly report indicating the project's progress and also a final report with the results and the evaluation of the work conducted. As for the sustainability of the project, the following activities are foreseen: (i) dissemination event already described; and (ii) bi-annually follow-up conference-call to inquiry counterpart agencies about the degree of development of the recommendations agreed during the dissemination event.

V. PROJECT RISKS AND ISSUES

- 5.1 The project presents two risks that could affect the impact, quality or effectiveness of the expected results. First, the results of the project are not taken into account (or that it takes very long) to develop the applications and content ecosystem, due to the lack of commitment from the different governments. This risk is mitigated by the fact that the work will be done together with the governments: data collection, results of analyzes, roadmap, financial estimation, governance model, and recommendations will be shared with key officials from each of the countries involved to foster dialogues related to this topic (also note that broadband has become an important subject in the policy agenda of countries in the LAC countries and many of them have prioritized the creation of local content.) Additionally the work includes the sustainability plan with the dissemination event to agree on a roadmap for each country, and a bi-annual follow-up conference-call to assess the degree of development of the recommendations. Secondly, there may be a lack of regulatory framework or institutional capability to carry out the recommendations. This risk will be mitigated by the recommendations foreseen as part of Component 3, which will provide specific public policy and regulatory recommendations for each of the clusters.

VI. EXCEPTIONS TO BANK POLICY

- 6.1 There are no exceptions to Bank policy.

VII. ENVIRONMENTAL AND SOCIAL CLASSIFICATION

- 7.1 Given that the current TC revolves around a study, there are no social or environmental risks associated with it. This operation is classified as a Category "C" according to the classification toolkit of the Bank (see link: [IDBdocs# 38846646](#)).

Annexes:

- Annex I: [Terms of Reference \(ToR\)](#)
- Annex II: [Procurement Plan](#)

**GUIDELINES FOR DEVELOPMENT OF NEW SERVICES AND
APPLICATIONS LEVERAGING BROADBAND**

RG-T2505

CERTIFICATION

I hereby certify that this operation was approved for financing under the Broadband Special Program (BBD) through a communication dated March 18, 2015 and signed by Su Hyun Kim (ORP/GCM). Also, I certify that resources from said fund are available for up to **US\$400,000** in order to finance the activities described and budgeted in this document. This certification, reserves resources for the referenced project for a period of four (4) calendar months counted from the date of signature below. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in U.S. dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount, may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, for which the Fund is not at risk.


SHK 

Sonia M. Rivera
Chief
Grants and Co-Financing Management Unit
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05/19/2015

Date

APPROVAL

APPROVED: 

Juan Antonio Ketterer
Division Chief
Capital Markets and Financial Institutions Division
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05/20/15

Date