

TECHNICAL COOPERATION DOCUMENT

I. BASIC INFORMATION FOR TC

Country:	Paraguay, Honduras and Argentina
TC Name:	Broadband 2.0: Diagnosis and Recommendations for Sustainable Broadband Development in Paraguay, Honduras and Argentina
TC Number:	RG-T2785
Team Leader/Members:	Antonio García Zaballos (Team Leader, IFD/CMF); Suk Nam; Enrique Iglesias Rodríguez; Inkyung Jeun; and Cecilia Bernedo (IFD/CMF); and Rodolfo Graham (LEG/SGO)
TC Taxonomy:	Client Support (CS)
Date of TC Abstract Authorization:	October 7, 2016
Donors providing funding:	Knowledge Partnership Korea Fund for Technology and Innovation (KPK)
Beneficiary:	Paraguay, Honduras and Argentina
Executing agency:	Inter-American Development Bank, Capital Markets and Financial Institutions Division (IFD/CMF)
IDB Funding Requested:	US\$1,500,000
Local counterpart funding:	N/A
Disbursement period:	48 months (execution period: 36 months)
Required start date:	February 15, 2017
Types of consultants:	Firm and individual consultants
Prepared by Unit:	Division of Capital Markets and Finance (IFD/CMF)
Unit of disbursement responsibility:	Institutions for Development (IFD/IFD)
TC included in country strategy:	No
TC included in CPD:	No
Alignment to the update of the Institutional Strategy 2010-2020:	(i) social inclusion and equality; and (ii) productivity and innovation

II. OBJECTIVE AND JUSTIFICATION OF THE TC

- 2.1 There is evidence that the acceleration of broadband access and effective use brings clear social and economic benefits. In particular, it is estimated that increases of 10% in broadband penetration in Latin American and Caribbean (LAC) countries, on average, have associated increases of 3.19% in GDP, 2.61% in productivity and a net generation of more than 67,000 jobs.¹ The infrastructure itself (access or penetration) does not guarantee its effective use automatically. Without well-designed only the infrastructure might be of no use. In doing so, the packaged infrastructure and applications, functioning as stimulus both in “supply” and “demand” side, would trigger the virtuous circle of sustainable digital economy.
- 2.2 In spite of their strong will and continuous policy measures,² Paraguay, Honduras and Argentina have been struggling with similar delays in the broadband development, due to the existence of chronic barriers. In addition, appropriate Internet services and applications should be accompanied, so as to make assure the effective usage of the broadband, beyond just having access to it.

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

² Paraguay's National Telecommunications Plan 2011~2015, Honduras' Digital Agenda 2014~2018 and Argentina's National Telecommunications Plan; *Argentina Conectada* 2010~2015.

- 2.3 Specifically, as it has been analyzed in the TC [ATN/OC-14108-PR](#) Paraguay is lacking infrastructure to provide broadband services across different users (citizens, Small and Medium Enterprises (SMEs) and public institutions) which is affecting the quality of the services and the prices that eventually are paid³ This, combined with the limited competition, leads to under-consumption and further under-production of broadband services.
- 2.4 Similarly as it was identified in the [ATN/KK-12721-HO](#) and [ATN/KK-12908-HO](#), the main hurdle found in Honduras, on the other hand, is scarce initial demand, lagging far behind the average in the Region (the internet penetration in the country is around 10%). In addition to the problem of access there is also a limited public awareness of the benefits that broadband could provide—especially, regarding their potential for innovation and competitiveness in sectors like health, education, banking, commerce, SMEs and so on (which implies a problem in terms of adoption and usage), causes inadequate investment in the deployment of infrastructure with reluctant participation by private sector.⁴ Nonetheless, it is important to highlight the efforts that the Government has done to bring internet to communities and schools and the specific modification of the regulatory framework that took place and which bring more certainty to the sector.
- 2.5 In the case of Argentina, although the nation excels the remaining LAC countries as a whole, suffers from serious under-development in rural broadband, worsening digital-divide problem and obstructing the introduction of profitable new services (i.e. VoIP (Internet telephony) and Pay-TV) at a nation level.⁵
- 2.6 Based in the previous work and findings done and aiming rapid broadband rollouts for socioeconomic development, the Governments of Paraguay (GoPR), Government of Honduras (GoHO), and Government of Argentina (GoAR)⁶ recognize the importance of addressing the aforementioned bottlenecks—respectively: rural connectivity; initial investment; and rural broadband development—with specific killer services suitable for their own countries and have requested technical and financial support from the Inter-American Development Bank (IDB) to tackle the issues through this technical cooperation.
- 2.7 In addition, it is relevant to mentioning the TC [ATN/OC-14966-RG](#), as its products and finding will be used as input for the current TC. The main goal 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. The products of the mentioned TC include: (i) an index, assessing the readiness of each country to develop the applications ecosystem; (ii) a list of sectors in which applications can be leveraged to enhance productivity along with the importance in each country and success stories; and (iii) a set of policy recommendations and regulatory measures to develop the applications ecosystem.

³ *Diagnóstico y desarrollo de planes de banda ancha en Paraguay*. Deloitte, 2015.

⁴ ICT master plan for Honduras. Korea EXIM Bank. 2012.

⁵ Argentina – Fixed Broadband, Digital Economy and Digital Media – Statistics and Analyses. Budde Comm, 2016.

⁶ The Bank has registered a specific operation in Argentina (DF-AR-L1250) and this TC will contribute to the preparation.

- 2.8 The objectives of this TC are: (i) analyzing the infrastructure requirements in rural areas in Paraguay and develop a national Information and Communication Technologies (ICT) plan with an emphasis in the development of the software industry in the country and the creative economy; (ii) conducting a feasibility study on the infrastructure requirements in Honduras and the steps in the design and implementation of a data center for public services; and (iii) conducting a feasibility study on the infrastructure needs to increase accessibility of broadband in Argentina, in the way of improving digital inclusion and promoting new services.
- 2.9 Additionally, this TC aims to use broadband services and applications as means to stimulate demand and thus enhance public awareness in each country. For this purpose, this TC expects to recommend appropriate implementation of broadband-enabled service model and pilot projects across the involved countries.
- 2.10 This TC is consistent with the Update to the Institutional Strategy 2010-2020 (AB-3008) and is aligned with the development challenges of: (i) social inclusion and equality by promoting the deployment of inclusive infrastructure and infrastructure services; and (ii) productivity and innovation by establishing smart institutional frameworks and providing adequate knowledge and innovation systems. Also, the TC is aligned with the Sector Strategy "Institutions for Growth and Social Welfare," which 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 (paragraph 5.21 of the referred to Sector Strategy). 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.
- 2.11 This operation is also aligned with the Knowledge Partnership Korea Fund for Technology and Innovation (KPK), in that this TC supports the "assessment, sector analyses and activities that strengthen science and technology and related innovation capacity", through this it complies with the fund's main objective to "strengthen the science and technology potential of LAC countries... and to enhance the competence of the in the implementation of more innovation-based development strategies".
- 2.12 In the specific case of Honduras, the TC is aligned with the priorities of the country included in the Digital Agenda 2014-2018. Moreover, the TC is aligned with the work the Bank is doing in the countries of the Northern Triangle.

III. DESCRIPTION OF ACTIVITIES/COMPONENTS AND BUDGET

- 3.1 The activities proposed in this project are the following:
- 3.2 **Component 1: Market studies.** This component will finance:
- a. **Feasibility study for the deployment of infrastructure in rural areas to connect public institutions in Paraguay.** This activity will analyze: (i) the available infrastructure in rural areas of Paraguay; (ii) the estimated demand in

the rural areas identified where the private sector may not be financially interested in deploying infrastructure; and (iii) the CAPEX/OPEX, social return and sensitivity analysis associated to the deployment of infrastructure in rural areas.

- b. **Diagnosis and analysis of backbone and cloud-computing infrastructure for the establishment of a data center in Honduras.** The objective of this activity is to conduct a market assessment of demand and supply of government broadband supported services to all the population, public and private sectors in Honduras.
- c. **Market diagnosis and analysis of backbone and last-mile infrastructure in Argentina.** The objective of this activity is to prepare a market study, including an analysis of the socio-demographic and economic conditions and how these impact broadband availability.

3.3 **Component 2: Technical studies.** This component will finance:

- a. **Definition of schemes for Public-Private-Partnerships in Paraguay.** This activity will identify the most convenient PPP scheme to facilitate the deployment of infrastructure in the rural areas selected and the roadmap for implementation, including terms of reference and governance model.
- b. **Design and modeling of recommended cloud-computing and additional Infrastructure investments related to the backbone network in Honduras.** The objective of this activity is to evaluate technical and physical feasibility of the migration of existing independent datacenters into a consolidated cloud network.
- c. **Technical study of proposed infrastructure deployment in Argentina.** The objective of this activity is to identify and evaluate the technical considerations for deploying infrastructure, including the structure of the network and the different technological alternatives.

3.4 **Component 3: Financial and Economic Analysis.** This component will finance:

- a. **Review of the regulatory framework on infrastructure sharing and development of a specific policy document which foster the software industry and creative economy in Paraguay.** Based on the analysis conducted in Components 1 and 2 for Paraguay, a review of the framework on infrastructure sharing will be conducted along with a study on how to promote the creative economy and the software industry.
- b. **Financial and economic analysis of cloud-computing infrastructure in Honduras.** A financial, economic, sensitivity and cost benefit analysis will be conducted to estimate CAPEX and OPEX related to Component 2 for Honduras.
- c. **Financial and economic study in Argentina.** The activity will also include a Cost-Benefit Analysis (CBA) which will identify all the economic and social benefits (quantitative and qualitative).

3.5 **Component 4: Adoption and utilization studies for broadband services and applications.** Taking into account the outcomes from the TC [ATN/OC-14966-RG](#), the objective of this component is to analyze, define and disseminate an adoption and usage strategy that guarantees the universal and effective usage of the infrastructure by citizens and government with a special focus on capacity building

programs and broadband services pilot projects. There will be a specific study for each country, depending on the applications ecosystem grade of development (as measured in the Index financed by the mentioned TC).

- 3.6 **Component 5: Design of broadband services pilot projects.** For each country, a tailored application model, out of the lists of sectors (ATN/OC-14966-RG) where the digitalization may have a greater impact, will be developed.⁷ Through this component, dissemination of policy measures to facilitate the pilot projects would be provided as well.
- 3.7 Although the specific actions around infrastructure are different for each country, the applied methodology and the logical framework are the same. In addition, the actions around the three countries converge through the pilot projects so Component 5 will benefit from the regional nature of the project. Finally, the possibility to have a consolidated and comprehensive methodology in form of success stories about the deployment of digital infrastructure and the implementation of pilot projects will be valid for the whole region.
- 3.8 The GoPR will have a better understanding of the infrastructure requirement in rural areas. The GoHO will command the way of deploying cloud infrastructure, accelerating broadband services provision and use in the country. The GoAR will have increased connectivity in the country, increasing competitiveness and national social-economic integration. Additionally, the TC will support the dissemination of a specific set of recommended policies to promote the adoption and usage for each country.
- 3.9 The total estimated cost for this TC is US\$1,500,000 financed by the Knowledge Partnership Korea Fund for Technology and Innovation (KPK) and will have no local counterpart.

Indicative Budget (US\$)

Activities	Description	Paraguay	Honduras	Argentina	Total
Component 1: Market Studies	Understand market dynamics and broadband infrastructure status quo; analysis of current supply and demand of telecommunication services.	70,000	70,000	75,000	215,000
Component 2: Technical Studies	Technical considerations for deploying infrastructure and services (structure of the network and different technological alternatives).	200,000	200,000	255,000	655,000
Component 3: Financial and Economic Analysis	Financial, economic, sensitivity, and cost benefit analysis associated with technological alternatives.	100,000	50,000	75,000	225,000
Component 4: Adoption and Utilization Study	Demand forecasting and proposal for adoption and usage plan, dissemination.	150,000	100,000	65,000	315,000
Component 5: Design of Broadband Services Pilot Projects	Design of pilot projects	30,000	30,000	30,000	90,000
Total		550,000	450,000	500,000	,500,000

⁷ To identify the pilot projects, the team will consider the outcomes from RG-T2505. The sectors that were analyzed include healthcare, education, finance, manufacturing, government, tourism, agriculture and commerce.

IV. EXECUTING AGENCY AND EXECUTION STRUCTURE

- 4.1 At the request of the beneficiary countries, the Inter-American Development Bank (IDB), through the Capital Markets and Financial Institutions Division (IFD/CMF) will be the executing agency. The reasons for this request are: (i) the regional scope of the project, which will present coordination difficulties among several stakeholders; (ii) the knowledge and experience gathered through previous TCs executed by the Bank (such as TC [ATN/OC-14966-RG](#)); and (iii) the technical complexity.
- 4.2 The implementation of this TC in Paraguay will be coordinated with the staff of *Comisión Nacional de Telecomunicaciones* (CONATEL), *Dirección Nacional de Propiedad Intelectual* (DINAPI), and *Compañía Paraguaya de Comunicaciones* (COPACO).
- 4.3 The implementation of this TC in Honduras will be coordinated with the staff of *Secretaría de Estado Coordinador General de Gobierno*, and *Comisión Nacional de Telecomunicaciones* (CONATEL).
- 4.4 The implementation of this TC in Argentina will be coordinated with the staff of the Ministry of Communications and National Authority for Communications (ENACOM).
- 4.5 Each of those institutions will be the main contact points for the execution of the TC and will coordinate the involvement of any additional institution.
- 4.6 In addition, during the execution of the project it is expected to conduct a monitoring and evaluation responsibilities for the project.
- 4.7 The Bank will contract individual consultants, consulting firms and non-consulting services in accordance with current Bank procurement policies and procedures: Policies for the "Procurement of Goods and Works Financed by the IDB" (GN-2349-9), "Policies for the Selection and Contracting of Consultants Financed by the IDB" (GN-2350-9), and "Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work" (GN-2765-1).

V. MAJOR ISSUES

- 5.1 This project presents the following risks: (i) lack of sufficient information to carry out a complete diagnosis of infrastructure needs in each country; and (ii) possible delays in the analysis of infrastructure in some of the countries and as a consequence the design of the pilots has to be delayed.
- 5.2 In order to mitigate the first risk, the Bank will work with consulting firms and consultants that have a demonstrated ability to gather the required data and/or have access to private databases that have the required information. Likewise, the Bank will coordinate with the government agencies and local state institutions to obtain the required data. As per the second risk, it will be mitigated through special attention given to the coordination in the execution of the early components so that there are no substantial delays.

VI. EXCEPTIONS TO THE BANK POLICY

6.1 There are no exceptions to the policies of the Bank.

VII. ENVIRONMENTAL AND SOCIAL STRATEGY

7.1 Given the nature of this TC there are no social or environmental risks associated with it. This operation is classified as a Category “C” according to the Environmental and Safeguards Compliance Policy (OP-703) of the Bank (see: [Safeguard Policy Filter Report](#)) and [Safeguard Screening Form](#)).

REQUIRED ANNEXES:

- Annex I: [Request Letters](#)
- Annex II: [Results Matrix](#)
- Annex III: [Terms of Reference](#)
- Annex IV: [Procurement Plan](#)

MEMORANDUM

File Classification: PO-RG-T2785-AnI
IFD/CMF/3/2017

Date: **FEB - 7 2017**

To: Santiago Levy
Vice-President for Sectors and Knowledge, VPS

From: Ana María Rodríguez-Ortiz
Sector Manager, IFD/IFD

Subject: **REGIONAL.** Broadband 2.0: Diagnosis and Recommendations for Sustainable Broadband Development in Paraguay, Honduras and Argentina (RG-T2785). Nonreimbursable financing up to the amount of US\$1,500,000. Knowledge Partnership Korea Fund for Technology and Innovation (KPK). Approval.

We are attaching for your consideration and approval, the document describing the Technical Cooperation "Broadband 2.0: Diagnosis and Recommendations for Sustainable Broadband Development in Paraguay, Honduras and Argentina". This document has been prepared by the Project Team pursuant to the guidelines and procedures established for the preparation and processing of nonreimbursable technical cooperation operations.

Pursuant to Resolutions DE-44/08 and DE-103/14, and in accordance with the delegation of authority granted by the President to the Vice-Presidents pursuant to the provisions set forth in the Bank's Operations Processing Manual (PR-501), the Vice-President for Sectors and Knowledge has the authority to approve nonreimbursable technical cooperation operations up to the amount of US\$1,500,000.

Therefore, taking into consideration that the amount of this operation does not exceed the amount of US\$1,500,000, it is hereby recommended that the above-referenced operation be approved.

Mr. Antonio Garcia Zaballos (antonioagar@iadb.org, ext. 2980), Project Team Leader, will be available to answer any questions.

Approved: _____
Santiago Levy, Vice-President

Date: **FEB - 7 2017**

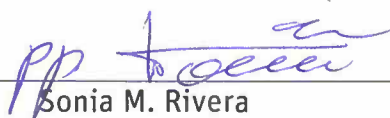
**BROADBAND 2.0: DIAGNOSIS AND RECOMMENDATIONS FOR SUSTAINABLE BROADBAND DEVELOPMENT IN
PARAGUAY, HONDURAS AND ARGENTINA**

RG-T2785

CERTIFICATION

I hereby certify that this operation was approved for financing under the **Knowledge Partnership Korea Fund for Technology and Innovation (KPK)** through a communication dated June 8, 2016 and signed by Chang You (ORP/GCM). Also, I certify that resources from said fund are available for up to **US\$1,500,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. 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 US 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, represent a risk that will not be absorbed by the Fund.

B.H.K
01/03/2017



Sonia M. Rivera

Chief

Grants and Co-Financing Management Unit
ORP/GCM

1/4/17
Date