**TERMS OF REFERENCE**

**IFD/CMF**

**RG-T2505:** Guidelines for the development of new services and applications leveraging broadband

1. **BACKGROUND**
   1. Justification: 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 observed that countries where broadband penetration has grown by 10%, they have experienced a 3.19% increase in the GDP; 2.61% increase in productivity and a net generation of more than 67,000 jobs[[1]](#footnote-2) (the study talks about correlation, not causality.) According to McKinsey & Company[[2]](#footnote-3), 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. 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 interaction[[3]](#footnote-4), 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.
   3. However, to harness the power of broadband and the aforementioned benefits, broadband has to be conceived as an ecosystem[[4]](#footnote-5) 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.
   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 not such a strong focus on developing the applications (and services) layer of the ecosystem (both at a national and a regional level, also called the applications economy[[5]](#footnote-6)) 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. On the other hand, there is less dependency on foreign countries.
   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. **CONSULTANCY OBJECTIVES**
   1. 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.
3. **CHARACTERISTICS OF THIS CONSULTANCY**
   1. **Type of consultancy:** Firm
   2. **Starting date and duration:** maximum of 12 months (starting as soon as possible)
   3. **Working place / travels:** Although the tasks may be carried out in the country of origin, the firm will be required to travel at least three times. The first two to do a prospection mission to collect data. The last one to present the results in the country where the Bank decides to have the closing event. That being said, the Bank expects the firm to travel as much as necessary to the country to guarantee the best quality of the work.
   4. **Qualifications**: The firm will have extensive experience in the telecommunications sector, with senior team members involved in projects in LAC and other developing regions. Specific domain of applications and services of the telecommunication sector is required. The firm must have specific experience developing recommendations for the development of the applications economy not only at a technical level but also at a policy level.
4. **ACTIVITIES AND PRODUCTS**
   1. It is important to note that the following work must be done in conversation and coordination with the Bank and the relevant counterpart institutions from the 26 IDB countries.
   2. The consultancy will have to be structured around the following components and activities.
   3. **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.
   4. **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.
   5. To undertake this analysis the work will take into account two knowledge products developed by the broadband team[[6]](#footnote-7): (i) the broadband development index (IDBA); and (ii) the infrastructure maps.
   6. **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.
   7. ***Products.*** The product from this component will be a document containing the following chapters: (i) assessment of the broadband ecosystem with the elements described in Activity 1.1; and (ii) assessment of applications economy with the elements described in Activity 1.2.
   8. **Component 2: Country grouping and development of technical recommendations on how to develop the applications economy.** Based on the diagnosis conducted in 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.
   9. **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.
   10. 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.
   11. 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).
   12. **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.
   13. **Activity 2.3. Development 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.
   14. ***Products.*** The product from this component will be a document containing the following chapters: (i) a country clusterization as described in Activity 2.1; (2) a definition of what the cluster should like ([TO-BE] scenario) in 5 years as described in Activity 2.2; and (ii) a set of technical recommendations to bridge the gap between the current situation and the [TO˗BE] scenario as described in Activity 2.3.
   15. **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.
   16. ***Products.*** The product from this component will be a document containing a set of public policies and strategic regulation for each cluster to support the implementation of the recommendations proposed in Component 2, as described in paragraph 6.15.
   17. **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.
   18. ***Products.*** The product from this component will be a document containing the following chapters: (i) a roadmap for the implementation; (ii) a financial estimation along with a cost-benefit analysis; and (iii) a governance model. The product will contain all the elements described in paragraph 6.17.
5. **METHOD OF PAYMENT**
   1. Payment will be made as per the following schedule, upon approval by the Team Leader responsible for this TC (see item VI below):
   2. **Schedule of payments:**
6. 20% upon contract signature;
7. 30% upon approval of draft report of deliverables corresponding to Component 1 and 2;
8. 20% upon approval of draft report of deliverables corresponding to Component 3 (assuming deliverables for Component 1 and 2 were approved); and
9. 30% upon approval of final report
10. **COORDINATION** 
    1. The supervision and coordination of this consultancy will be the responsibility of Antonio Garcia Zaballos (IFD/CMF), Team Leader of this operation ([antoniogar@iadb.org](mailto:antoniogar@iadb.org)) and Felix Gonzalez Herranz (IFD/CMF), Alternate Team Leader ([felixg@iadb.org](mailto:felixg@iadb.org)) of this operation.

1. García-Zaballos, A. / López-Rivas, R.: Governmental control on socio-economic impact of broadband in LAC countries. IDB, 2012. [↑](#footnote-ref-2)
2. “Internet Matters: The Net’s Sweeping Impact on Growth, Jobs and Prosperity.” Briefing Note, McKinsey Global Institute, McKinsey & Company, May 2011. [↑](#footnote-ref-3)
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. [↑](#footnote-ref-4)
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. [↑](#footnote-ref-5)
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. [↑](#footnote-ref-6)
6. The tools are available at digiLAC ([www.iadb.org/digiLAC](http://www.iadb.org/digiLAC)) [↑](#footnote-ref-7)