**TERMS OF REFERENCE**

**Regional**

**Investment strategies for rural broadband connectivity**

**(RG-T2993)**

**Terms of Reference**

1. **Background and Justification**
   1. Recent experience in developing countries shows increasing use of public-private partnerships (PPPs), and other innovative financing mechanisms and business models for broadband network build-out and commercialization. These include middle mile and last mile innovations for extending Internet access in areas that remain underserved or unserved. In addition, increasing global demand for wireless Broadband has forced policy-making to become more innovative and opened up new regulatory challenges such as spectrum allocation. Emerging trends suggest that, growing traffic on licensed spectrum frequencies are causing interference and slows down quality of connectivity, and spectrum managers globally face pressure to adjust current licensing regimes and free up access to more spectrum for broadband wireless network access. Exploring new ways for developing countries to allocate licensed and unlicensed spectrum could enable the government’s fiber-optic network project to reach more end-users, at greater quality and resilience, and at lower cost.
   2. Rising demand not withstanding in practice different business models for largescale ICT infrastructure have been implemented with varying degrees of success. Yet where more than 4 billion people live without Internet access and 90 percent of whom are in developing countries, it is clear that significant investment and creative business and operating models need to be put into practice quickly to bridge today’s digital divide. In addition, there is a need to establish innovative business models to close the access gaps in rural and remote areas in which technology and supply side solutions are not enough. In many developing countries, especially small countries, landlocked countries, fragile states, and rural areas, high financial and operating risks often preclude private sector investment, while governments often lacks capacity to deploy infrastructure on its own. Most often, these areas also suffer from unreliable electricity supply with very high electricity generation costs providing an additional barrier. In these frontier markets, the private sector will support the connectivity agenda only if governments establish a fair and conducive investment and regulatory climate that are based on competitive principles. Opportunities for risk sharing, joint investments and support for other innovative business models will also be crucial.
2. **Objectives**

* 1. This technical cooperation seeks a qualified firm to help prepare a knowledge product to support client governments in the achievement of their Internet for all objectives by offering technical guidance on innovative business models for deploying fiber-optic networks and for closing access gaps in remote locations.

1. **Scope of Services**
   1. Evaluate successes, failures, and lessons learned from recent history of the diverse business models that have been implemented in the buildout and operation of international and national fiber optic networks in diverse country contexts;
   2. Identify and evaluate innovative business models (e.g. rural ISP, micro-telco, community GSM) and alternative technologies (e.g. mobile networks, satellite, microwave, balloons, drones) that are helping to extend middle mile and last mile access in previously un- or under-served communities in diverse country contexts;
   3. Carry out a landscape review of relevant developments on spectrum policy and management;
   4. Based on the above, prepare a useful guideline or menu of options that would help guide developing countries on alternative business models for rolling out fiber-optic network deployment and extending rural access. Options shall be proposed based on an appropriate categorization of countries (e.g. fragility, market conditions, enabling environment). Intersections with energy access shall be considered, where applicable, given overlapping customers, demands and market challenges for addressing the access gaps.
2. **Key Activities**
   1. Activity I: Preparation of Report. The report, with special focus on the application of PPP mechanism in the LAC region, shall consist of the following:
3. ***Cross-border and national fiber-optic network business models.***
   1. Prepare a select portfolio of innovative cross-border and national fiber-optic network business models and innovative models looking at the interplay between infrastructure and digital service and application development.
   2. Compare and evaluate the models and development outcomes of the investments, based on specific country contexts, market conditions (competitive or monopolistic), and institutional, legal and regulatory environment. The exercise should highlight case studies of both successful and failed business models and outline the cause of the failures as well as key lessons learned. The approaches that are viewed as most forward looking and relevant to a developing and emerging market context, should be emphasized.

1. ***Business models and technologies for extending Internet access in middle mile and last mile locations*** 
   1. Prepare a select portfolio of innovative business models and alternative technologies that are extending Internet access in rural and last mile locations globally.
   2. Compare and evaluate the business models and technologies based on the results/development outcomes, specific market conditions, enabling environment, and other criteria that help to push the market frontier. Synergistic effects of creating demand for energy access and Internet connectivity in the “unconnected” locations shall also be examined.
2. ***Landscape overview of relevant and emerging global trends on spectrum policy and planning.*** The chapter shall provide an overview of relevant developments in spectrum licensing regimes; technical standards and rules; spectrum allocation and assignment; spectrum licensing and unlicensed spectrum; spectrum refarming; digital dividend; spectrum sharing, among others. 3-4 innovative country case studies should be included.
3. ***Recommendations and Guideline/Menu of options.*** Based on the findings of a) and b), the recommendations and the guidelines/menu of options will serve as a tool for clients to have a better understanding of options for extending broadband networks and for extending rural access. The guidelines should consider success and risk factors, as well as the following:
4. Options should be proposed based on an appropriate categorization of countries (e.g. fragility, income level, market conditions, enabling environment)
5. Highlight the business models and circumstances that require a more active private sector role, and include cost-benefit analysis, on a case-by-case and needs basis, for when the different business models should be applied. Include but not be exclusive to the PPP context, and should be based on alternative contributions from the private and public sector (e.g. ranging from OBA to equity to concessions, among other approaches).
6. Incorporate implications of future bandwidth requirements, on a case-by-case and needs basis, taking into consideration emerging technologies and trends that will boost bandwidth requirements in the coming decade (e.g. 5G, IoT).

And finally, at least 2 LAC country programs should be included, as sort of in-depth case studies for applying the above recommendations or technical options to the actual situation.

* 1. Activity 2: Carry out a Consultation/Validation Workshop and study-tour. The Consultant shall carry out a consultation and validation workshop to present the draft report to obtain feedback for incorporation into the final product. The Consultant may invite subject matter experts and practitioners that may contribute to the discussions. Upon completion of the Workshop, the Consultant shall prepare a 3-5 page report summarizing the findings of the workshop. And the consultant will organize a study-tour (including visit to Korea), aiming to provide related stakeholders in selected LAC countries with the opportunity to gain best international knowledge and experience.

1. **Expected Outcome and Deliverables**
   1. The list of deliverables throughout the execution will be:

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| * Inception Report and Detailed work plan |
| * Draft Report |
| * Validation/Consultation Workshop & Submission of Workshop Report |
| * Final Report |

1. **Project Schedule and Milestones**
   1. The schedule of deliverables will be as follows:

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| **Description** | **Expected Delivery** |
| Inception Report and Detailed work plan | Month 1 |
| Draft Report | Month 7 |
| Validation/Consultation Workshop & Submission of Workshop Report | Month 10 |
| Final Report | Month 12 |

1. **Reporting Requirements**
   1. The final report, in case it is written in Spanish, should be presented along with the English translated version.
2. **Acceptance Criteria**
   1. Deliverables should be in compliance with technical requirement detailed above to be considered satisfactory.
3. **Other Requirement**
   1. It is the Consultant’s obligation to provide premises, vehicles and other technical and office equipment for execution of the Services.
   2. Review of drafts as they become available.
4. **Supervision and Reporting**
   1. The client is the division of IFD/CMF. Consultants will report to Antonio Garcia-Zaballos ([antoniogar@iadb.org](mailto:antoniogar@iadb.org)) and Enrique Iglesias Rodriguez ([enriqueig@iadb.org](mailto:enriqueig@iadb.org)). The team will be available remotely or in person throughout for feedback, and will commit to timely.
5. **Schedule of Payments**
   1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
   2. The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

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| **Description** | **Payment Schedule[[1]](#footnote-1)** |
| Inception Report and Detailed work plan | 15% |
| Draft Report | 25% |
| Validation/Consultation Workshop & Submission of Workshop Report | 25% |
| Final Report | 35% |

1. As a percentage of total contract amount. [↑](#footnote-ref-1)