REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Selection # as assigned by e-Tool: RG-T3810-P005
Selection Method: Full competitive
Country: Argentina, Panamá, Rep. Dominicana and El Salvador
Sector: IFD/CMF
Funding – TC #: ATN/FG-18628-RG
Project #: RG-T3810
TC name: Social and productive digital infrastructure in time of pandemic: Lessons from the case of Spain
Description of Services: Identification of strategic sectors for access, adoption, and use of 5G technology

Link to TC document: https://www.iadb.org/en/project/RG-T3810

The Inter-American Development Bank (IDB) is executing the above mentioned operation. For this operation, the IDB intends to contract consulting services described in this Request for Expressions of Interest. Expressions of interest must be delivered using the IDB Portal for Bank Executed Operations (http://beo-procurement.iadb.org/home) by: *October, 3rd 2022*, 5:00 P.M. (Washington D.C. Time).

The consulting services ("the Services") include the support to develop a roadmap that includes the steps for the construction of a government data center as a key element to favor the digital transformation process. Specifically, the study will start from the definition and uses of the Data Center, listing the essential elements and phases associated with construction. Given that currently in three of the 4 beneficiary countries there are financing operations that include the financing of some element associated with a data center, the results of this study will allow: (i) Improve the dialogue around an issue that is critical in the transformation process and greater efficiency in the provision of public services; (ii) Identify the phases associated with construction and maintenance that can later be transferred to the bidding documents of the different financing operations; (iii) Determine the costs associated with the construction and operation of a data center, as well as the institutional governance model that guarantees its sustainability; (iv) Specify the public policy recommendations that favor the establishment and use of the data center..

Eligible consulting firms will be selected in accordance with the procedures set out in the Inter-American Development Bank: *Policy for the Selection and Contracting of Consulting firms for Bank-executed Operational Work* - GN-2765-4. All eligible consulting firms, as defined in the Policy may express an interest. If the Consulting Firm is presented in a Consortium, it will designate one of them as a representative, and the latter will be responsible for the communications, the registration in the portal and for submitting the corresponding documents.

The IDB now invites eligible consulting firms to indicate their interest in providing the services described above in the draft summary of the intended Terms of Reference for the assignment. Interested consulting firms must provide information establishing that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Eligible consulting firms may associate in a form of a Joint Venture or a sub-consultancy agreement to enhance their qualifications. Such association or Joint Venture shall appoint one of the firms as the representative.

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TERMS OF REFERENCE

PRE-FEASIBILITY STUDIES RELATED TO THE DEPLOYMENT: MARKET STUDY
[*Regional*]
RG-T3810
https://www.iadb.org/en/projects-search?country=&sector=&status=&query=RG-T3810
Infraestructura Digital Social y Productiva en Tiempos de Pandemia: Lecciones del Caso de España

1. **Background and Justification**

   1.1. The use of Information and Communication Technologies (ICTs) services and applications available over the Internet can reinforce sectors such as education, health, business, and government, with broad implications for economic development, competitiveness, and innovation. Yet, harnessing the benefits of this new digital economy increasingly relies on the availability of broadband Internet in a country as evolving services and applications require broadband speed and bandwidth.

   1.2. Broadband infrastructure is an enabler of development. According to several studies, a 10% growth of broadband penetration is associated with a 1.21% increase in the Gross Domestic Product (GDP) of high-income countries and a 1.38% increase in the GDP of low-income countries (World Bank, 2009). It is estimated that in the case of the LAC region, for a 10% growth in the penetration rate of broadband services, the GDP can be increased by 3.19%; the productivity by 2.61% and more than 67,000 jobs can be created.

   1.3. As virtual remote work grows, especially because of the COVID19 pandemic, the demand for Datacenters that allow daily tasks to be virtualized has increased.

   1.4. The digital sector represents 1.4% of global emissions according to the World Economic Forum and according to the International Energy Agency (IEA), at the end of 2019 these infrastructures consumed about 1% of global energy consumption. By 2030, ICTs are expected to account for more than 20% of global electricity demand, with a third coming from data centers.

   1.5. Now, in an increasingly connected world, the demand for these centers is growing, for which data centers bear a part of the responsibility. The focus on reducing the impact on climate change derived from data center operations may overlook the environmental effects of other stages of their life cycle, such as the extraction of raw materials, the manufacture of equipment, the construction of data centers, the end of the useful life of the equipment and the buildings where they are located.

   1.6. Hence, data centers must be truly sustainable, and for this a data center must be optimized considering its entire life cycle and all its aspects, from the point of view of design, daily operations and maintenance, for which it is key to consider energy and water consumption, the carbon footprint, and materials and equipment.

   1.7. Buildings must be efficient in their use of electricity and water. The cooling of the computer equipment of the infrastructure must be taken care of, as well as the energy consumption of each server and equipment.

1.8. The creation of the data center and the development of related services, whether housing, hosting, backup or cloud computing, among others, will entail a series of benefits. Statistically it is calculated that their offer has a great impact on the Gross Domestic Product (GDP) of the countries that promote them. The adoption of this type of services can lead to cost savings in the cost of infrastructure in the country. For example, in a country like Mexico, savings are equivalent to 0.31% of the national GDP, of which 0.23% corresponds to savings in the private sector and 0.08% to savings in the public sector (Instituto Mexicano para la Competitiveness (IMCO)). In South Korea, the IT infrastructure cost reduction is estimated at 50% (Cloud Computing Landscape in Key Emerging Markets). In the US, a 30% reduction in IT infrastructure costs is calculated, which is equivalent to 7.2 billion dollars per year (Federal Cloud Computing Strategy).

1.9. The importance of sustainable Datacenters is reflected in the Sustainable Development Goals also known as "SDGs" of the United Nations Organization (UN), specifically in number 9: Industry, innovation and infrastructure.

1.10. Especially noteworthy is the generation of jobs related to technology and the new markets that are developing around cloud services. In Argentina, jobs related to these services amount to 117,000 in 5 years, growing by 9% in 5 more years (Economic Commission for Latin America and the Caribbean (ECLAC)).

1.11. From the technological development that is carried out from the State policies, a series of benefits can be obtained in the different levels of society thanks to services for citizens, for the educational sector, for the health sector and for companies private. The project will analyze the roadmap and the possible benefits that will be generated in each of the beneficiary countries (Argentina, the Dominican Republic, Panama and El Salvador) when implementing the services related to the development of the data center and a series of recommendations to achieve them.

2. Objectives

2.1. The objective of this project is to develop a roadmap that includes the steps for the construction of a government data center as a key element to favor the digital transformation process. Specifically, the study will start from the definition and uses of the Data Center, listing the essential elements and phases associated with construction. Given that currently in three of the 4 beneficiary countries there are financing operations that include the financing of some element associated with a data center, the results of this study will allow: (i) Improve the dialogue around an issue that is critical in the transformation process and greater efficiency in the provision of public services; (ii) Identify the phases associated with construction and maintenance that can later be transferred to the bidding documents of the different financing operations; (iii) Determine the costs associated with the construction and operation of a data center, as well as the institutional governance model that guarantees its sustainability; (iv) Specify the public policy recommendations that favor the establishment and use of the data center.

3. Key Activities

3.1. Activity 1. Aspects to take into account in the construction of a data center: Relevant points for the construction of a Data Center will be defined and detailed, such as:

(i) Choosing the location of the site, and how it can influence the sustainability of the planet;

(ii) Structure (Layout) of the Data Center;

(iii) Determine the type of Data Center to be created;

(iv) Calculate the necessary power and auxiliary units in case of power failure;

(v) Analyze the necessary cooling in the Data Center;

(vi) Choose the equipment to be used (present and future);

(vii) Wiring of the center;

(viii) Distance at which the Backup Center will have to be located;

This activity will present different type of Data Center that exist according to international certification and regulations will also be presented. Depending on the Type that is decided to address, the service, the Service Level Agreements (SLAs), the certifications, the cost will be different. Finally, the Characteristics and Redundancy Levels of a Data Center (TIER nomenclature) will be developed: Tier I, Tier II, Tier III, Tier IV.

3.2. Activity 2. Phases in the creation of a data center: The activity will present and discuss the different phases of creating a Data Center will be defined, such as the activities that each of the phases must carry out. At least the following phases linked to the construction of a Data Center will be detailed:

(i) PLANNING Phase
(ii) PERMITS AND SERVICE CONTRACTING Phase
(iii) DESIGN Phase
(iv) IMPLEMENTATION Phase
(v) COMMISSIONING and START-UP phase
(vi) OPERATION Phase and REGULAR SERVICE

3.3. Activity 3: Uses of the data centers: The activity will present and discuss the different categories of uses will be defined, both public (linked to the country's Administration itself and to citizens), and private (for example, how the use could be shared of the Data Center for Small and Medium Enterprises). Specifically, the public policies of Argentina, El Salvador, the Dominican Republic and Panama will be analyzed to see how they impact this concept.

3.4. Activity 4: Data center operating model: Depending on the USE that can be given to it, the activity will present and discuss what is the most appropriate Data Center model (Cloud Computing vs. Data Center). Concepts such as Hyperscale (Amazon Web Services, Google and Microsoft's Azure) will be introduced within the Cloud world and how to compete or ally with said giants as part of the business model and investment sustainability. Specifically, recommendations on the model will be identified for each of the beneficiary countries.

3.5. Activity 5. Institutional model associated with the data center: The activity will present and discuss the areas of a Data Center will be defined: Security (physical and logical), Communications, Servers, User Service, etc. More specifically, the workflows will be defined in each of the teams (work areas) defined above. How are incidents received? Incident recording tools, Problem escalation, Service monitoring, standard SLAs, etc.

3.6. Activity 6: Identification of the costs associated with the deployment: This activity will estimate the costs related to the construction of the data center, identifying what the market standards

say, on a theoretical assumption and a dimensioning will be defined, including for every country (Argentina, El Salvador, the Dominican Republic and Panama) a capacity, an operation model and an estimated cost per country.

3.7. **Activity 7. Model of sustainability and profitability of the data center:** Sustainability will be independent of the USE and the Data Center Model to which it goes. As part of this activity will be presented and discuss the pros and cons of the different business models for public and private use.

3.8. **Activity 8. Benefits of having a data center**: The benefits that each of the beneficiary countries would have derived from the existence of this infrastructure will be described.

4. Expected Outcome and Deliverables

4.1 All the deliverables must to be approve by the team leader, the firm will be must to prepare two important documents:
- Draft Report
- Final Report

5. Acceptance Criteria

5.1 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 domestic and international broadband infrastructure is required, including both terrestrial and undersea cables. The firm must have a proven capability to deliver detailed and accurate market studies, particularly as the results of Component 1 will serve as critical inputs for the development of the feasibility studies in Components 2 and 3 of the projects. Beside the team leader, the team must include the following roles:

- Telecom market expert with knowledge and understanding on the market dinamics, regulations and implications in the digitization of business plan
- Network design expert with specific understanding on fixed and mobile technologies to accelerate the deployment of digital infrastructure according to variables such as the population density and the distance to different infrastructure.
- Financial modeling expert with a grasp on key variables and sensitivities analysis related to the deployment.

6. Other Requirements

6.1 Type of consultancy: Firm**,** the duration of this consultancy is for 6 months, since the contract firm, travel required. During this period, the firm is expected to participate in a total of two (2) coordination. Meetings with IDB Specialists in Headquarters (Washington DC) and (2) presentation meeting with government of Panamá.

7. Supervision and Reporting

7.1 Supervision and coordination of the consultant's work will be the responsibility of Antonio Garcia Zaballos (IFD/CMF) Team Leader, antoniogar@iadb.org

8. Schedule of Payments

8.1 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.

8.2 The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
Deliverable	**%**
1. Upon Contract Signature and presentation of the working plan	10%
2. Activities included in component 1	40%
3. Activities included in components 2 and 3	50%
TOTAL	**100%**