

TECHNICAL COOPERATION PROFILE

APRIL 24, 2009

I. BASIC PROJECT DATA

- **Country/Region:** Regional
- **Program Name/Number:** Support for Collaborative ICT Research in Key Sectors /RG-T1716
- **Team Leader/Members:** Carlos Guaipatin (SCL/SCT) Team Leader; Francisco Vieira (SCL/SCT), Kevin McTigue (LEG), Paloma López (SCL/SCT).
- **Date of Request:** February, 2009
- **Beneficiary:** Regional
- **Executing Agency:** Pontificia Universidad Católica de Chile.
- **Financing plan:**

IDB (KEF)	US\$	400,000
Microsoft Research:	US\$	250,000
Local:	US\$	120,000
Total:	US\$	770,000
- **Tentative dates:**

QRR	May, 2009
Approval by Division	
CHF	June, 2009

II. BACKGROUND AND PROBLEM STATEMENT

- 2.1 The IDB takes great interest in encouraging research in key social and economic development topics such as healthcare, education, environment, energy, and information and communications infrastructure in underserved areas. One of the mechanisms that the Bank has established to further this agenda is a Memorandum of Understanding (MoU) with Microsoft Corporation, signed in June 2006. This collaboration allows the Bank to take advantage of Microsoft's expertise, while contributing to the creation of valuable research networks in the region.
- 2.2 One of the concrete results from the MoU was the establishment of the LACCIR Virtual Institute (Latin American and Caribbean Collaborative ICT Research

Federation) (<http://www.laccir.org>), in May 2007 with an initial 3-year seed grant from Microsoft Research in the order of US\$1 million. LACCIR Virtual Institute is a federation of universities from Latin America and the Caribbean that seeks to provide a virtual collaborative environment for the promotion and support of cross-country research and education solutions based on Information and Communications Technologies (ICT). ICT applications have become indispensable for progress in nearly all disciplines. Research in this area can expand the capabilities of computing technology to serve priority social and economic challenges and lead to novel approaches in a wide range of areas, from education to healthcare, to energy and the environment. LACCIR helps fill the research void that exists in the region.

- 2.3 LACCIR is organized around a “hub and spokes” organization: the “hub” is the administrative center run jointly by the University of Chile and the Pontificia Universidad Catolica de Chile; the “spokes” are the participating universities, which have been selected for their long and sustained trajectory of research in ICT applications for social and economic development. These spokes are: Universidad de Buenos Aires, Pontificia Universidad Catolica do Rio, Universidad de la República de Uruguay, ITESM Monterrey, Instituto Politécnico Nacional de Mexico, and Universidad de Costa Rica. In addition, the federated universities maintain a close relationship with government science and technology (S&T) councils as well as ministries of education, planning and S&T from their respective countries.
- 2.4 This Technical Cooperation (TC) requests financing from the Knowledge Economy Fund to support a series of “requests for proposals” to encourage collaborative research between university teams from different countries in LAC on ICT applications in four key sectors: health, sustainable energy, climate change, and education. In addition, the resources will facilitate LACCIR’s expansion to other sub regions, such as the Caribbean, Central America, and the Andean countries. In fact, discussions are already underway to incorporate into the federation universities from Colombia and the Caribbean.
- 2.5 The IDB, through its Science and Technology Division, is a natural interlocutor for initiatives that foster integration and research collaboration across borders. The Bank has traditionally been a strong supporter of increased human resource development in science and technology and continues in this role today. The Division is the driving force behind the annual Regional Policy Dialogues on Science and Technology, where policy makers from the region come together to discuss the way forward and how best to collaborate.
- 2.6 There has been little international collaboration among Latin American and Caribbean (LAC) universities for the advancement of scientific and technological research, or collaboration between universities and firms. However, universities make up an important percentage of the research and development that is taking place in the region (as opposed to OECD countries, where the business sector is responsible for the majority of the R&D investments), making them a vital player

and one that should be fortified. As an example, in the OECD on average, close to 70% of R&D investment comes from the private sector, and around 20% from institutions of higher education, while in Chile, less than 30% of the investment takes place in the private sector, and around 40% in the universities.¹

- 2.7 The LAC region is generally characterized by a low level of research and development compared to North American, European, and Asian countries. In 2004, only one LAC country, Brazil, invested more than 1% of GDP in research and development. The majority of the countries invest 0.5% or less. In addition, the region sees relatively little collaboration and exchange between universities, something that is very common in Europe, for instance. The ERASMUS program is the most known of the intra-European programs and allows students from one European university to spend a semester or an academic year at another university. Currently, 2,200 institutions of higher learning in 31 countries are part of the program, and more than 1.6 million students have participated. The program guarantees that the home university accepts the course of study of the host university, which means that students do not lose any time by taking part. This is a prime example of how educational integration is promoting knowledge exchange and “knowledge economies” on a large scale.
- 2.8 The main objectives of the LACCIR Virtual Institute are to:
- a. Advance the ICT research agenda in the LAC region and increase research opportunities for faculty and graduate students by means of Requests of Proposals (RFPs) open to the LAC research community, based on funding provided by donor partners and sponsors. The Virtual Institute will support creative economic, scientific, environmental, and sociological technology solutions through research, research-to-application, entrepreneurship, and education.
 - b. Increase the skills and visibility of the LAC research community, both within the LAC region and worldwide.
 - c. Develop and provide research resources and collaboration opportunities throughout the LAC region.
 - d. Publish periodic reports about the advancement of ICT research in the LAC region, including statistics such as: yearly published papers in international journals and conferences, graduate programs of studies being offered, quantity of researchers and doctoral students in each country.

¹ Many governments in the region are currently reviewing the mission, structure, and funding of their higher-educational systems and innovation strategies. Their focus is on developing human capital and advancing technology in order to develop “knowledge economies”, where they use their human capital to participate in the rapid development of knowledge and service sectors. This path has been extremely successful for other countries in the world, such as Finland and Singapore, that have been able to leverage their human capital resources with investments in the technology sector and in education, especially in science and technology, to establish themselves as leading exporters of high-tech services.

- e. Sustain work over the long term and achieve concrete results such as impact in social and economic development.
- 2.9 **Bank's Strategy for Country and Sector.** This operation is consistent with the Bank's institutional strategy, and in particular, it is aligned with the Strategy for Information and Communication Technology for Development (GN-2024-2) that presents "information and development" as one of the five crucial areas to foster and to facilitate development of the region. The use of advanced networks allows for both the education and the business sectors to improve their capacity to create and exchange knowledge.
- 2.10 The operation is equally aligned with the thematic focus of the new Knowledge Economy Fund on "building as well as preserving scientists, engineers and highly qualified technicians", including "the improvement of university-business interaction regarding innovative activities". Furthermore, by using technology resources associated with collaborative work at a distance, the project will strengthen regional networks of specialists for the development of knowledge and technology.

III. PROGRAM OBJECTIVE AND DESCRIPTION

A. Objective

- 3.1 The general objective of this TC is to promote the generation of knowledge in key sectors that can lead to novel approaches for tackling some of the challenges in these sectors. The specific objectives are: (i) to encourage and facilitate collaborate research and the exchange of knowledge and resources among universities in the LAC region in the areas of ICT applications for health, education, sustainable energy and climate change; and (ii) to disseminate the research results and lessons learned among policymakers and the private sector in LAC to advance programs in these sectors.

B. Description

1. Component 1: Call for Research Projects

- 3.2 This component will finance collaborative, high level research projects focused on ICT applications in the four target sectors: health, energy, climate change, and education. Through competitive "Calls for Proposals", specific research projects (of approximately US\$ 50,000 each.) will be financed.
- 3.3 Proposals will be evaluated according to the following criteria: (i) novelty of the proposed research project; (ii) qualifications of principal investigator; (iii) degree of partnerships between university research teams among different countries in LAC; (iv) institutional ability to complete the project; and (v) scalability and replicability. Particular focus will be placed on new participants from the Caribbean, Central America and the Andean region. LACCIR VI is keenly

interested in encouraging partnerships between university research teams among different countries in LAC. As such, joint proposals of more than two universities and countries are strongly encouraged and will receive prime consideration.

2. Component 2: Dissemination of Research Results and Lessons Learned

- 3.4 This component will finance the dissemination of research results and lessons learned among universities and research institutes, key policymakers and the private sector in LAC countries, as well as the IDB and other international development institutions.
- 3.5 This component will finance: (i) a variety of communication vehicles including streaming-video, online lectures, and other collaborative opportunities using MS Conference XP²; (ii) periodic reports about the advancement of ICT research in the LAC region, including statistics such as: yearly published papers in international journals and conferences, graduate programs of studies being offered, quantity of researchers and doctoral students in each country; and (iii) a study on how to take the next step from collaborate research among universities to joint R&D activities with the private sector..

IV. COST AND FINANCING

- 4.1 The total cost of this project estimated at US\$770,000. The Bank will contribute US\$400,000 as non-reimbursable financing, and Microsoft Research will contribute US\$250,000 of an already committed total of \$1.6 million as grants and counterpart funding. The local contribution from the HUB universities (Pontificia Universidad Católica de Chile and Universidad de Chile) corresponds to US\$120,000 to be provided in kind, in human resources and physical infrastructure.
- 4.2 The following table shows the consolidated budget needed to execute the proposed project.

DETAILED BUDGET

	IDB	Microsoft	Local Funding	
Type of Expenditure		Research	PUC + UChile	TOTAL
C1. Call for Collaborative Research Projects (at least 10 projects in 2 years)	330,000	220,000	60,000	610,000
C2. Dissemination (at least 4 activities in 2 years)	40,000	30,000	60,000	130,000
Project Mid- and Final Evaluation	10,000			10,000
Financial Audit	10,000			10,000
IDB participation in the JSC.	10,000			10,000
TOTAL	400,000	250,000	120,000	770,000

² It will also host a database containing localized projects, documents, research, and curriculum in Spanish, Portuguese, and English. Resources will also be dedicated to the consolidation of the collaborative network, i.e. travel, meetings, etc

V. EXECUTING AGENCY AND EXECUTION STRUCTURE

A. Executing agency

- 5.1 The project will be executed by the Pontificia Universidad Católica de Chile (PUC-Chile) in collaboration with Universidad the Chile. This consortium was selected under a competitive process and has already demonstrated solid experience in managing another Bank TC (RG-T1724) with Microsoft Research. The hub and the administrative center for the Virtual Institute have been formally established at PUC-Chile. The hub will be responsible for all aspects of project management, including the administration of resources, the contracting of specialized consulting services, the coordination of activities, and reports to the Bank. The main task of the hub is the management of the call for proposals.

B. Execution mechanisms

- 5.2 A Joint Steering Committee (JSC) formed by key stakeholders, including Microsoft and IDB, will oversee project activities and support PUC-Chile with activities related to the planning, coordinating, technical supervision and research project developments within each country. The IDB, through its participation in the Joint Steering Committee (JSC) and the project monitoring mechanisms, will have a voice in the selection of projects to be financed, and will gain knowledge and experience in the field of ICT applied to the selected sectors that may be replicated in future Bank operations.³
- 5.3 The Joint Steering Committee will organize a call for proposals, and will handle the selection, monitoring, and evaluation of the selected projects, with the support of the Hub universities and other experts when necessary. The administrative center in Chile will be responsible for the logistics.
- 5.4 An efficient execution of the projects and the quality of the research done will be enforced and monitored by periodic scientific reports requested to the different principle investigators where results should described and demonstrated.
- 5.5 All proposals received in compliance with the eligibility criteria will be reviewed and evaluated by LACCIR VI Technical Committee (VITC). Reviewers will complete a standardized review form to maintain the consistency and quality of the reviews. Based on evaluations by the VITC, the JSC will select the best proposals.

³ Recommendations put forth during the LACCIR Joint Steering Committee and Advisory Board Coordination Meeting (February, 2009) will be incorporated. This includes focus on specific areas: education, health care, sustainable energy and climate change, and improved organization of the call for proposals (selection criteria, evaluation process).

- 5.6 Bank resources will be used according to procurement policies (GN-2349-7) with respect to goods, and GN-2350-7 with respect to services.

VI. MAJOR ISSUES

- 6.1 In a competitive call for proposals higher capacity institutions or countries tend to have a better chance. To remedy this, the project encourages participation from the Caribbean, Central America, and the Andean countries, and particularly encourages multi-institutional partnerships with a high degree of knowledge transfer.

VII. ACTION PLAN

- 7.1 A Plan of Operations will be ready and available for approval at the end of May 2009.

VIII. ENVIRONMENTAL AND SOCIAL STRATEGY

- 8.1 Because of its nature, this TC will not have any negative direct environmental or social impact. Based on the afore-mentioned, and according to the ESR Safeguard Classification Toolkit the operation has been classified as “C”.

IX. APPROVAL

_____(Original signed)_____
Flora Montealegre Painter
SCT/CHF

Date: __22nd May, 2009____