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Mexico

Establishment of the Instituto Nacional de Tecnología Educativa (INTE)

TC-98-04-23-9

Plan of Operations

May 1998

MEXICO

Memorandum-Plan of Operations (TC-98-04-23-9)

I. GENERAL INFORMATION

- Name of the T.C.: Establishment of the Instituto Nacional de Tecnología Educativa (INTE)
- Name of the Fund: Canadian Technical Assistance Program (CANTAP)
- Beneficiary Country: Mexico
- Beneficiary Agency: Instituto Latinoamericano de la Comunicación Educativa (ILCE)
- Total Amount: US\$100,000 (Cnd. \$142,000)
- - Trust Fund: US\$100,000 (Cnd. \$142,000)
- Execution and Disbursement Deadline: 12 months

II. OBJECTIVES

- 2.1 The pre-feasibility study will include recommendations on the technical and organizational design for the establishment of the Instituto Nacional de Tecnología Educativa (INTE), as well as recommendations on the professional profile of its staff and human resources. It will also identify Mexican and Canadian private sector companies and public organizations to accelerate the development of Mexican distance education programs and will stimulate commercial alliances between Mexican and Canadian companies.

III. DESCRIPTION

- 3.1 Description: The consultants will carry out the following tasks: (i) define the global organization and associated services of INTE; (ii) suggest a technological and organizational framework for the establishment and operation of INTE, as well as the professional profile of its staff; (iii) identify the most appropriate technological and organizational framework supporting the decentralization process of the Mexican Government's activities in education; (iv) preparation and organization of the pilot projects with selected educational technology-based companies; (v) identify potential partners and providers with the necessary technical know-how for the implementation of INTE; (vi) refine the needs analysis from Mexico and set-up associated working groups; (vii) prepare and organize bilateral working sessions in Canada and in Mexico; (viii) draft the objectives of the cooperation agreement, define contribution, role and responsibilities of all parties; and (ix) propose a specific structure and prepare the terms of a memorandum of understanding between partners.
- 3.2 Consulting services required: The consultants will be educational experts specialized in distance education who will support ILCE in: (i) validating technological and operational architectures; (ii) suggesting relevant technologies and educational services; and (iii) proposing innovative economic models. Annex A is attached to provide more

information on the scope of work, required qualifications for consultants, products to be prepared, and a preliminary schedule for delivery of the products.

- 3.3 Duration: It is expected that the entire consultancy and disbursement period will be around 12 months.

IV. JUSTIFICATION

- 4.1 This is an important initiative because it fully supports both the strategy and activities carried out by the Bank in Mexico, which are oriented to improve the equity and efficiency of the education sector. The establishment of INTE will serve as an important link between the traditional teaching system and the labor market needs, using the most cost-efficient means available. Lastly, this initiative fully complements the activities of the Distance Education Program (Loan 1065/OC-ME), approved by the Board of Directors in December of 1997.

V. BUDGET

- 5.1 The cost of the project is Cnd.\$142,000, or US\$100,000 equivalent. For practical purposes the detailed budget is presented in Canadian dollars.

MEXICO TC-98-04-23-9 (Amounts in Canadian Dollars from the CANTAP Fund)	
Activities	Cnd.\$
1. <u>Fees</u>	132,500
1.1 Director (50 days @ Cnd\$750.00)	37,500
1.2 Senior Consultant (37,5 days @ Cnd\$600.00)	22,500
1.3 Engineer (75 days @ Cnd\$500.00)	37,500
1.4 Research Techn. (100 days @ Cnd\$350.00)	35,000
2. <u>Expenses</u> (See Note)	7,500
2.1 Travel (6 trips @ Cnd\$1500.00)	4,500
2.2 Per-diem (40 days @ Cnd\$150.00)	3,000
3. <u>Contingencies</u>	2,000
T O T A L	142,000

NOTE: Although the expenses total Cnd\$15,000, the "Small Business IDEA Programa" of Canada normally reimburses Canadian consultants up to 50% of this category. Therefore, only Cnd\$7,500 are reflected in the Budget.

VI. RESPONSIBILITY IN THE BANK

- 6.1 Mr. Carlos A. Miranda from the Social Programs Division 2 will have the technical responsibility for the execution of this project. He can be reached at (202) 623-1590; (202) 623-1429 (Fax); and CARLOSMI@IADB.ORG (E-Mail).

VII. RECOMMENDATION

- 7.1 The Chief of the Social Programs Division 2 recommends the approval of this operation and the use of resources from the Canadian Technical Assistance Program Fund (CANTAP) totaling up to Cdn.\$142,000 in order to finance the corresponding project.

VIII. CERTIFICATION


- 8.1 I certify that resources from the Canadian Technical Assistance Program Fund (CANTAP) for the establishment of the Instituto Nacional de Tecnología Educativa (INTE) are available for up to Cdn.\$142,000 in order to finance the activities described and budgeted in this Memorandum-Plan of Operations. The commitment and disbursement of these resources shall be made only by the Bank in Canadian Dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except that local consultants working in their own borrowing member country shall have their remuneration defined and paid in the currency of that 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 Plan of Operations. 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, for which the Fund is not at risk.



Arnoldo M. da Fonseca, CHF/RE1/TEC

05/13/98
Date

IX. APPROVAL

Approved


Négbey W. Martinez, MGR/RE2


Lionel Y. Nibbeli, CHF/SO2

5/15/98
Date

5/15/98
Date

TERMS OF REFERENCES
SUPPORT TO INTE
(TC-98-04-23-9)

BACKGROUND

Investing in education is a requirement for sustainable development for any country sensitive to the real needs of its population and eager to build a modern economy. However, in today's new economy, this challenge takes on specific relevance as education becomes more than ever a fundamental building block of a nation's wealth. It now represents the bridge between the Industrial and the Knowledge Age. Education is becoming so critical in light of the current quantity, complexity and speed of change, that it will define a new way of being.

The Knowledge Age is therefore witnessing the coming of the Learning Society:

- Learning is a continuous, lifelong activity,
- Learners are responsible for their continual progress,
- Assessment confirms progress rather than indicates failure,
- Aptitudes, personal and shared values and teamwork are equally as important as specific competencies,
- Learning is a cooperative endeavor between students, parents, educators, employers and the community, who all work together to improve performance.

Education, in this perspective, is redefined. It becomes an integrated system where each level fits within a continuum and therefore influences the rest of the sequence. Today, the needs and costs of education are increasing dramatically in every country. New challenges require innovative solutions. The introduction of Information and Communications Technologies (ICT) brings new opportunities and alternatives to application sectors such as Distance Education.

Distance Education allows the provision of services to remote communities and supports communication between rural and urban populations. It permits flexibility in time and space for working people. It reduces the differences between schools by delivering high quality materials and consistent evaluation methods. Ultimately, it stimulates and facilitates self-learning.

Thanks to ICT's, the acquisition of knowledge is facilitated through easy access, both for individuals and groups, whether locally or from remote locations. ICT s include various communication media from broadcast TV to interactive services via Internet. Maximizing local assets and organizing the different elements in an innovative way are key to the success of a modern distance education system.

Over the past years, Mexico, a leader in Latin America, distinguished itself as a proactive player in distance education by using television broadcasting as a means of delivery. Moreover, it embraces major education and information technology trends and wishes to develop a new vision for its education system.

In 1997, the Mexican authorities implemented a "Programa de Educación a Distancia", with the following basic goals:

- Improve the quality and the coverage of primary and secondary education.
- Extend adult education.
- Improve sustainable development of human resources.
- Promote lifelong learning.

This program will focus on various categories of learners, both within existing and outside of schools, to develop domestic and international leadership and to optimize human resources, as well as technological expertise, in order to develop a more autonomous position. It will be implemented via two categories of projects. The first category will support design, development and operationalization of educational services, while the second will foster the expansion of infrastructures using various communication technologies (digital satellite/broadcast TV and networked computers using Internet).

The challenge facing Mexico is To do more with less" in order to:

- use a variety of different media and ICT's to complement the country's current distance education program resources.
- develop an innovative operational scheme integrating educational programs and services as well as instructional material production in Spanish
- build a realistic business case of the new strategy by specifying quantitative, qualitative, economic and social benefits,
- Initiate partnerships between public and private sectors, where each plays a fundamental role,
- implement concrete Return on Investment (ROI) parameters by building appropriate measurements into the implementation,
- develop, in parallel, world class private sector resources capable of supporting the long term requirements of the education sector in order to derive self-sufficiency, leadership and, ultimately, competitive value on export markets,
- accelerate the roll-out plan.

INNOVITEC's SERVICES

Innovitech's services will support ILCE's staffwork in:

- a) validating technological and operational architectures.
- b) suggesting relevant technologies and educational services,

- c) proposing innovative economic models.

At the end of the provision of this service, Innovitech will deliver a Study in a pointform presentation accompanied by an executive summary. This Study will address the three following axis: technology, educational materials and finance.

1. Technology

This section will address the technological architecture. It should include various solution components selected from the following:

- Integrated networking capabilities (wireless, broadcast, interactive, etc.)
- Multifunction communications backbone to support educational content delivery (datacasting, satellite-based Internet provision),
- Educational user interface software solutions (collaborative project management, search engines, research paper methodology and framework, etc.).

Eventually, this section will provide strategic advice in:

- Validating the selected choices for technological configuration and presenting favoured options.
- Suggesting advanced technologies, as well as new products and services relevant to ILCE's objectives.

II. Educational materials

This section will address educational materials and services. It should include various components selected from the following:

- Best practices of network-based educational technologies and management tools.
- Content creation and adaptation in Spanish of existing materials.
- Administrative software solutions: registration, skills identification, student evolution, skills accreditation, etc.

Eventually, this section should:

- Outline best practices of network-based educational technologies.
- Describe relevant existing services and projects in Canada, the US and in Europe.
- Suggest success factors for an appropriate chemistry between content and users, content and delivery channels, programs and systems.

III. Finance

This section will address economical models. It should include various solution components selected from the following:

Elements such as a multi-functional educational and community access oriented approach.

The basic assumptions for a public sector, private sector and user partnership, and fundamental ROI imperatives.

Professional and vocational training to promote self-sufficiency and develop private sector resources that can partner with ILCE and the Ministry of Public Education staff in order to accelerate in-house and in country development and lead-times.

Eventually, this section should:

- Identify a cost-benefit analysis framework and document parameters of ROI.
- Qualify innovative financing solutions through public/private sector partnerships.
- Prepare the background material and the terms of reference for a study aiming to benchmark economic parameters and the framework of a relevant evaluation process. Eventually, this proposal should be submitted for funding to appropriate organizations and jointly developed between Mexico and Canada.

INNOVITECH'S WORK PROCESS

1. Coordination Protocol

Services will be performed in close cooperation with ILCE staff. In order to accomplish the above in the most concise fashion and to ensure ILCE's concurrence with the overall process, Innovitech's team will meet locally with ILCE staff and other relevant Mexican resources. In return, to complete this service; ILCE will need to provide a contact person dedicated to this project to support and orient Innovitech when necessary.

Hence, we propose a team approach with Working Groups involving ILCE, Mexican and Innovitech resources. Each group could have its specific focus area: technology, educational materials and finance. ILCE will select the appropriate participants and organize the meetings. During these meetings, Innovitech's experts will provide appropriate information, validation and assessment. These working groups will also serve to identify necessary contacts to gather relevant information from Mexican private companies so as to understand their present and future technological progress.

Consistent with Innovitech's proposal, meetings could be organized in Canada in order to consult people having intimate experience in Distance Education. Innovitech will select appropriate Canadian experts to this end and arrange for ILCE staff to meet them in Canada, as appropriate.

2. Meeting Points.

In order to maximize Innovitech's involvement and to provide continuous assistance to ILCE's staff, Innovitech proposes to develop a close working relationship with ILCE by providing on-site support and to coordinate working groups in Montreal on an adhoc basis according to a mutually agreeable working plan. Innovitech and ILCE staffs will work together either in Mexico or in Canada. According to the subject to be treated, one or two Innovitech experts will meet with ILCE staff in Mexico, unless specifically required by ILCE. During the timeframe of this contract, Innovitech will spend two times a maximum of five business days in Mexico at dates that will be mutually agreed in writing by the parties.

INNOVITECH'S RESOURCES

For these services, Innovitech will assemble internal and external Canadian ICT educational experts specialized in distance education to provide guidance and validation resources at the different phases of the proposed working process.

Internal Innovitech resources participating in this study will be composed of the following:

- Ms. Diane Côté, New Educational and Training Solutions Manager, will supervise the execution of the services.
- Mr. Raymond Descout, International Business Development Manager, will provide technology assessment and supervise the systemic aspects of the services.
- Mr. Gilles Desharnais, Emerging Technologies Manager, will manage the technological aspects of the services.
- Ms. Theresa Holtz, Management Consultant, will manage the economic aspects of the services.
- Ms. Iris Pison, Research Analyst, will contribute staffwork and documentation.

This team will be assisted by other Innovitech resources according to the objectives of each step. External Canadian experts Innovitech could approach might include the following:

1. Council of Ministers of Education, Canada (CMEC): The Council is comprised of the Assistant and-or Deputy Ministers of Education of each Canadian province and therefore represents some of the key decision-makers in the Canadian arena, since the provincial governments are responsible for the curriculum and content definition of each of the ten educational systems across Canada.
2. TV Ontario (TVO): TVO is a key player in the Canadian educational marketplace. It is responsible for the production and broadcast of educational programming throughout the province of Ontario. It works closely with the Open Learning Agency and has an excellent international reputation as an innovator in content and delivery of leading educational material. It is also the second largest foreign trainer of educators in the US.
3. "Centre Coileoial de Formation a Distance" ICCFD: This organization has the exclusive mandate for college level distance education within the province of Quebec (community colleges, technical colleges, pre-university preparation....). It has been experimenting with various new

technology implementations, is involved in every leading project for interactive services in Quebec (whether the project be cable or telco oriented) and is viewed as an aggressive, high quality provider of distance education throughout Canada and abroad.

Of course, Industry Canada will also be providing guidance throughout the project and, as required, Innovitech will be able to call upon the network of the various SchoolNet partners on an ad hoc basis. This will not imply an extra cost for WILCOX.

TABLE OF CONTENTS

The final Study will be composed of the following:

Introduction

1. Distance Education: New Perspectives
 - 1.1 Understanding distance education in the society of the future
 - 1.2 Organization and structures
 - 1.3 Technology to support distance/distributed learning
2. Mexican Situation
 - 2.1 Objectives of the national distance education program
 - 2.2 Requirements and opportunities
3. Technologies
 - 3.1 Today's technological capabilities
 - 3.2 Validation of the selected choices for Mexico and study of options
 - 3.3 Proposal of new products and services relevant to Mexico's objectives
4. Educational Materials
 - 4.1 Outline of best practices of network-based educational technologies
 - 4.2 Description of relevant services and projects in Canada, the US and in Europe
 - 4.3 Success factors for an appropriate chemistry between content and users, content and delivery channels, programs and systems.
5. Economic Models
 - 5.1 Cost-benefit analysis framework and return on investment
 - 5.2 Innovative financing solutions through public/private sector partnerships
 - 5.3 Background material and terms of reference for a proposal aiming to benchmark economic parameters and evaluation process for Mexico.

Final recommendations and conclusions

NOTES:

1. In chapter 1 of the "Table of Contents", while drawing from leading edge implementations, Innovitech will provide perspectives on innovative building blocks to provide a tailored solution for Mexico's environment.
2. In chapter 2 of the "Table of Contents", Innovitech will express views on the document entitled "Programa de Educación a Distancia-Red Educativa Nacional". It will work especially on its global articulation, validate its basic assumptions and provide recommendations.
3. In chapter 3, "Technology", Innovitech will provide a "state-of-the-art" review of technological issues relevant to the Mexican distance education case, and will include information on various options including satellite-based delivery of contents (video and data) using DTH transmission (Direct TV and Sky), Web-TV access as well as Network Computing (NC) capability.
4. In chapter 4, "Educational Materials", Innovitech will concentrate on best practices of teacher training and management, as well as computer and media literacy programs for teachers.