

SOFTWARE SECTOR COMPETITIVENESS SUPPORT PROGRAM

(TC-98-11-23-4)

EXECUTIVE SUMMARY

EXECUTING AGENCY: Promotora del Comercio Exterior de Costa Rica (PROCOMER)

CO-SPONSORING AGENCIES: PROCOMER, Cámara de Aplicaciones Informáticas (CAPROSOFT), Foundation for the National Center for High Technology (FUNCENAT).

BENEFICIARIES: Small, medium-scale and large producers of software, consultants, service providers and human resource training centers that, by competition or invitation, participate in the various programs to be carried out under the project.

OBJECTIVES: The general objective of the program is to help to improve the competitiveness of Costa Rica's software industry. The specific objectives of the program are: (i) to strengthen human resource training in information technology (IT), and thereby to enhance the quantity, quality and diversity of professional and technical personnel to meet the demands of firms in the software industry; (ii) to improve management in software companies so that they can become more competitive through the introduction of international quality control systems; and (iii) to strengthen the institutional capacity of CAPROSOFT to provide services to the various players in the software industry.

DESCRIPTION: The project consists of three components, relating to each of the specific objectives. The education component will strengthen the labor supply to the industry by redefining curricula, providing appropriate training for education personnel and designing and adapting modern training techniques. The quality component will introduce quality management systems and will strengthen the domestic market for training, technical assistance and auditing of quality control systems. The third component will provide CAPROSOFT with the tools needed to make it a leadership institution in support of its members' growth.

Executive Summary

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FINANCING:	Method: non-reimbursable - Facility II
	MIF: US\$1,500,000
	Local counterpart funding: <u>US\$1,000,000</u>
	Total: US\$2,500,000

EXECUTION	Execution:	39 months
SCHEDULE:	Disbursement:	42 months

EXCEPTION TO BANK
POLICIES AND
PROCEDURES: None

SPECIAL
CONTRACTUAL
CONDITIONS: The Executive Council must have been established and begun its activities prior to the first disbursement (see paragraph 9.1).

ENVIRONMENTAL
AND SOCIAL IMPACT: The profile of this operation was considered by the Committee on Environment and Social Impact, which made no recommendations.

I. COUNTRY AND PROGRAM ELIGIBILITY

- 1.1 Costa Rica was declared eligible for all forms of financing from the Multilateral Investment Fund (MIF) on December 3, 1993. The proposed project meets the eligibility criteria for a grant through the Human Resources Facility. This facility supports domestic private-sector initiatives, with a particular focus on leveraging financial resources, expanding existing training programs, supporting strategic economic sectors and promoting partnership between the public and private sectors in the development and delivery of training programs. Under it, special attention is accorded to programs that involve on-the-job learning and that will lead to the adoption of international standards of quality and competitiveness. This project will help to increase profitability in the software industry as part of a national effort to develop the information technology (IT) sector by setting quality and competitiveness standards for the industry and by upgrading employee training programs, and is thus fully compatible with the rules governing the MIF's second window.

II. BACKGROUND

A. Macroeconomic framework

- 2.1 Costa Rica has a **substantially open economy**. Imports and exports of goods and services amount together to 94% of output, while the average for Latin America is less than 34%. This indicates the importance that the country attaches to foreign trade, as evident in its export promotion policy. In recent years, this policy has been accompanied by attempts to diversify the exportable product base. For this reason, the relative weight of traditional exports has been declining, and nontraditional exports accounted for 80% of total exports in 1998. ^{1/}
- 2.2 In addition to expanding and diversifying exports, recent governments have shown a keen interest in promoting those nontraditional productive sectors in which Costa Rica has, or could develop, a comparative advantage. Since the country has historically invested more heavily than most Latin American countries in education and health, as well as in telecommunications and other service infrastructure, it is natural that it should be **attractive to high-technology companies**. These conditions, taken together with Costa Rica's social and political stability, are helping the country to strengthen its image as a location for foreign investors, and for large high-technology companies in

^{1/} According to the February 1999 report by *Consejeros Económicos y Financieros S.A. (CEFSA)*.

particular. In recent years, foreign direct investment has exceeded 5% of GDP, reflecting foreign investors' confidence in the country. Some companies, such as Motorola, have been producing in Costa Rica for several years, and Intel recently established a presence in the country.

- 2.3 The companies mentioned above provide promising opportunities for boosting employment, for creating industrial linkages, and for increasing exports, but their production does not have a high component of value added. Given the characteristics of the country as noted, it would be appropriate to **develop activities that will help to intensify value added**. For this reason, there is growing interest in promoting the production of software in the context of the country's economic development.

B. The software industry

- 2.4 It should be noted that growth in the software industry would have a significant impact in stimulating other productive activities, since IT has a strong influence on productivity in other sectors. In sponsoring such growth, Costa Rica can draw upon certain **advantages**, such as its free-trade agreements, its geographic and time-zone proximity to major markets such as NAFTA, the worldwide scarcity of human resources in IT, the existence of a significant market for Spanish-language products for which there is at present no dominant supplier, and the relatively lesser degree of development in other countries of the region.
- 2.5 Producers, for their part, can take advantage of certain **assets** such as a labor force that is highly educated in relation to its cost, a population that is familiar with the use of computers, as shown in the high number of Internet hookups per capita (second highest in Latin America), a communications network with broad coverage and up-to-date technology, and government support for development of the industry. It should be noted that 50% of primary schools and all secondary schools in Costa Rica have computer laboratories.
- 2.6 There is already a growing IT industry in Costa Rica. Although there is a lack of systematic information and records on software production, there are isolated studies and partial information available on the industry's services, productive capacity, human resources, exporting capacity, etc. The country is estimated to have approximately **70 software producing companies, for the most part small and medium-sized firms**. There are assumed to be a good many others, particularly micro or "one-man" operations, that are not recorded. CAPROSOFT has 27 member firms, on which there are general data available as to their location, legal status and major activities, their products and the countries in which in they have a presence (see Annex II of the technical files). In general, these firms started out as individual or family enterprises and

while some have grown, most of them are still in the category of small or, occasionally, medium-size businesses.

- 2.7 The output of these firms is **highly dynamic** and their export growth has been impressive. Several companies are providing services to other countries in Central and South America and even to the United States and some European countries such as Poland. A few firms, such as those specializing in pension insurance services, have achieved a dominant position in the Latin American context.

C. Challenges

- 2.8 As noted above, the sector is growing in importance. Nevertheless, its growth could be accelerated if it were able to overcome some of the challenges now facing it. Those **main challenges** are described below. For the sake of clarity, they have been classified into three categories, although some may correspond to more than one category: **human resources, quality standards, and institutional capacity** (see chapter 5 of Annex III in the technical files).
- 2.9 While Costa Rica is endowed with a labor force that has a high degree of training in comparison with its cost and with that of other countries in the region, a significant effort must still be made to meet the labor demands of what is expected to be a rapidly growing industry. There is in fact a **worldwide shortage of qualified IT manpower**, which is becoming all the more significant as globalization progresses. In addition, the rapid growth of the **IT industry demands a highly dynamic education system** that can keep pace with its expansion.
- 2.10 As a result, there is now a **gap between domestic programs and those in developed countries**, for the training of both professional and technical personnel. The latter could potentially form of the backbone of the IT labor force, and there is a shortage of educational capacity for training the number of technicians that will be demanded as the industry grows. This deficit is reflected in the fact that IT companies are now hiring professionals to make up for the **scarcity of technicians**, thereby increasing their costs. **The country has no integrated technical education system, nor are there any programs for ensuring continuity at the university level.** Undertaking educational improvements will imply major expenditures in a system that already absorbs 6% of GDP, a proportion that will be difficult to increase. There are at present **insufficient linkages between the education system and the productive economy** to ensure sustainability of the educational process.
- 2.11 Looking more narrowly at human resource training in terms of **educating software engineers**, it may be said that there is a **shortage of professional teaching staff**, there is inadequate attention to **quality** and there is **too much stress on the software construction stage**, to the detriment of the initial and final steps

in the process of production. Finally, **women are clearly underrepresented** in the software sector, both within the education system and in the labor market.

- 2.12 One of the most important tools for gaining access to markets in the software engineering business is to be able to market on the basis of **quality standards**. Development of the industry will eventually lead to implementation of such standards. Nevertheless, there has been little insistence on quality standards in Costa Rica in the natural market in which most companies have been competing, and they have thus been under little pressure to improve their levels of competitiveness. Experience in other countries suggests that to make progress in establishing standards of this type it is useful to start with a comprehensive quality improvement process. An assessment made by Bank consultants found that firms in the industry **lack managerial and business skills** in several areas, primarily in financial management and in competitive strategic planning. Moreover, these firms are behind their regional competitors in such countries as El Salvador and Mexico where **SPIN 2/ quality associations** have been established.
- 2.13 Finally, there are the challenges related to institutional capacity. There is currently a lack of integration and linkages between institutions and businesses, and between the latter and academic and government bodies. There is a risk in allowing firms to remain in operational isolation, while competitor countries, including those of Central America, are taking joint action to improve their competitive capacity. Such isolation tends to focus attention on domestic competition, rather than on establishing coalitions of the kind needed to compete successfully in a demanding international market.
- 2.14 Apart from a handful of successful exporters, few firms have the capacity to seek out foreign business. Those that have succeeded rely on family capital or the support of domestic or foreign investors, but most firms have **no access to normal bank financing** for their working capital, because they are not in a position to offer guarantees and there is little experience with risk capital.

III. PROGRAM OBJECTIVES AND BASIC COMPONENTS

- 3.1 The general objective of the program is to meet these challenges by helping to increase in the competitiveness of Costa Rica's software industry. The specific objectives of the program are: (i) to

2/ SPIN (Software Process Improvement Network) is an association that promotes know-how and cooperation among software interests such as producers, academics, government, customers, etc.

strengthen human resource training in information technology (IT), and thereby to enhance the quantity, quality and diversity of professionals and technicians in line with the needs of firms in the software industry; (ii) to improve management in software companies through the introduction of international quality control systems; and (iii) to strengthen the institutional capacity of CAPROSOFT to provide services to the various players in the software industry. To achieve these objectives, three working components will be undertaken: **an education component, a quality component, and an institutional strengthening and promotion component.**

A. Education component (MIF US\$552,000, local US\$294,000)

- 3.2 To achieve the objectives of this component, the project would finance five main activities: (i) a **study of** the industry's changing human resource **needs** and the existing and potential supply of professional and technical education; (ii) a **curriculum review** to overcome shortcomings detected during the first activity, and to modernize programs by drawing upon examples of best practice; (iii) development and implementation of a program for **training trainers**, with a particular emphasis on enhancing the capacity for technical training; (iv) design and supply of **systems for implementing new teaching methods**; and (v) increasing the supply of human resources to the sector by stressing **gender equity** and encouraging women to participate.
- 3.3 The study proposed under the first activity will identify the current and future needs of producers and the kind of changes that are required to ensure that the supply of human resources is consistent with those demands, both in terms of their quality and their skills profile. A consulting firm will be selected for this purpose by the executing agency, in accordance with Bank/MIF procedures (see Annex II).
- 3.4 The second activity involves designing software engineering study programs at various levels (technical schools, para-university, graduate and post-graduate) and in various forms (continuous teaching and distance learning), and encouraging greater integration between the teaching process and practical work in industry. The study programs will need to incorporate procedures for evaluating the quality of teaching methods. Linkages will be encouraged at all levels of study, and practical experience, including work terms in industry, will be taken into account for granting course credits. These linkages are an important factor for equipping technical school and para-university students with the skills needed by industry, and can at the same time serve as a step towards obtaining a university degree. A consulting firm will be selected for this purpose by the executing agency, in accordance with Bank/MIF procedures (see Annex II).

- 3.5 The changes flowing from the two activities described above will require the supply of teachers with a specific profile. To facilitate this, the third area of activity relates to providing training for teachers. This will involve assessing existing training programs around the world and determining domestic requirements, with particular attention to integrating the various training programs in this area. Consultants (mainly from abroad) will be selected for this purpose by the executing agency, in accordance with Bank/MIF procedures (see Annex II).
- 3.6 The fourth activity involves the design and supply of the basic elements needed to implement and execute new teaching methods, which will include distance learning and software production training programs. Up to US\$120,000 of MIF resources combined with a local contribution of US\$270,000 will be used to purchase new systems and classroom equipment, using Bank/MIF procedures (see Annex II).
- 3.7 The last activity under this component is to design and help to introduce gender equity promotion programs for female students in the information technology area, in cooperation with participating institutions at various levels (technical and para-university, graduate and post-graduate). A consulting firm will be contracted for this purpose by the executing agency, in accordance Bank/MIF procedures (see Annex II).

B. Quality component (MIF US\$408,750, local US\$300,800)

- 3.8 This component consists of three activities: (i) a **support program for providers of advisory and quality control training services to the software industry**; (ii) a program for the **transfer of technology for introducing quality standards in software firms**; and (iii) **fostering a "quality culture"** by creating a SPIN association to promote the importance of quality in software production.
- 3.9 The first activity will involve a program for training consultants so as to support and encourage the development of training and advisory products for implementing quality systems and audit procedures. Working jointly with the companies concerned, the project will mount a development program to identify and quantify the products that are most urgently needed.
- 3.10 For this first activity, the project will finance the hiring of international consultants on a competitive basis (see Annex II) to develop programs for training trainers. The direct beneficiaries of these consulting services will be local institutions engaged in training, with priority to private Costa Rican consultants including the Costa Rica Institute of Technical Standards (INTECO) and the *Centro de Formación de Formadores* [Center for Training Trainers], CEFOF. The project will pay for 50% of the cost of such training, with the condition that these direct beneficiaries

must provide advisory and training services to software producing firms. To ensure that this training actually reaches its final targets (the producing companies), the direct beneficiary institutions must give a commitment to provide training to software producers in an amount equal to 70% of the total value of the product acquired. This transfer must take place within 12 months after the trainers are trained. Moreover, to avoid excessive training costs for software producers, which are the ultimate target of this component, a standard rate of US\$60 per consulting hour will be applied. As part of the design of this operation, a preliminary budget has been prepared for training courses and required products (see page 9 of chapter VII in Annex II of the technical files).

- 3.11 The second project activity will provide direct support to producers by financing 50% of the advisory services to be provided by the trainers trained in the previous activity (see Annex II) for introducing quality procedures and control systems to small and medium-sized firms in the industry. The process for selecting participating producing firms, as well as for recovering costs, will be worked out by the executing agency. This activity and the previous one will help to create within the local market a capacity to offer specialized technical and auditing services to meet the needs of domestic producers in adjusting their activities to international quality standards not currently being met. Maintaining the continuity of this capacity will depend on the demand of users. Studies conducted during the preparatory phase of the project indicate that there is a strong demand for this type of services, and that continuity of this market should therefore be assured. Quality control systems are expected to be adopted by at least 75% of producing firms during the project execution period.
- 3.12 Finally, the creation of a Costa Rican SPIN for the third activity will finance the establishment of a permanent quality discussion group associated with the worldwide SPIN network. This will require the hiring of a consultant (see Annex II); design of an operating model; promoting linkages between consulting firms and universities; contacting and joining the worldwide SPIN network; identifying areas of cooperation with Latin American and international SPINs; and holding monthly meetings and events with international counterparts.

C. Institutional strengthening and promotion component (MIF US\$189,250, local US\$142,200)

- 3.13 This component is intended to achieve better linkages between entities and activities in the sector, to disseminate and promote quality in the Costa Rican software industry, and to ensure sustainability for the project, so as to foster the software industry's transformation into a strategic factor for economic development. To achieve this objective, the component includes

five activities: (i) **development of alliances** among the major players in the sector; (ii) formulating a **strategic plan**; (iii) **management training** for individual firms; (iv) a **technology dissemination** program; and (v) **promoting** the production of **quality** software.

- 3.14 The first activity involves fostering a greater degree of integration and ensuring that the interests of all firms - large, medium and small - are represented in an equitable manner, by providing effective leadership in defining strategies for the sector, in dealing with IT issues of national interest, and in providing support services on aspects relating to anti-competitive restrictions, and monitoring the results of the project and its impact on the industry as a whole. Consultants for this purpose will be selected by the executing agency, in accordance with Bank/MIF procedures (see Annex II).
- 3.15 The second activity consists of developing a strategic plan for strengthening CAPROSOFT institutionally so that in future it can maintain continuity of the program and coordinate the establishment and functioning of an Information Center offering relevant publications, a database on consultants, industry statistics, etc., to meet the sector's needs. A domestic consultant will be selected for this purpose by the executing agency, in accordance with Bank/MIF procedures (see Annex II).
- 3.16 The third activity includes setting up training courses to improve companies' managerial capacity, in connection with the needs study referred to in paragraph 3.3. This activity is aimed at the institutional strengthening of firms in the industry, so that they can become eligible for credit and attract risk capital. Consultants will be selected by the executing agency, in accordance with Bank/MIF procedures (see Annex II). In turn, it is expected that these courses will be provided at close to market prices, with the purpose in mind that a portion of the charges will be used to ensure the project's sustainability.
- 3.17 The fourth activity involves preparing and implementing a publicity strategy. An "image consultant" will be hired, and articles will be published in the mass media and specialized periodicals (see Annex II). In addition, conferences will be held on such pertinent issues as SEPG, ISCN and SPICE, and the funds raised through such activities will be devoted to ensuring the project's sustainability.
- 3.18 The final activity calls for publication of a document to promote software quality in Costa Rica, and to raise the corporate profile of the project. It is intended to design, prepare and implement a project that will create quality incentives for the industry, using process and product certification. These activities will be undertaken by the executing agency (see Annex II).

IV. EXECUTING AGENCY AND BENEFICIARIES

- 4.1 The proposed program is expected to be executed in three years (39 months of execution and 42 months of disbursement). Cooperative funding under the project will be the responsibility of PROCOMER, a private non-profit body the mission of which is to facilitate and enhance the international competitiveness of Costa Rican industry. To guide its efforts on behalf of companies' export activity, PROCOMER is governed by a Board of Directors of nine members, the majority of whom are from the private sector. PROCOMER will be responsible for financial administration of the funds, using its institutional infrastructure, with accountability and a system of separate accounts. Its institutional capacity makes it an ideal administrator of project funds. It is expected, as well, that the institutional strengthening of CAPROSOFT will enable it to maintain activities once the initial project has been completed.
- 4.2 Execution of the project will involve working at two organizational levels, a senior or decision-making level (Executive Council) and an operational level (the executing agency) at which programs will be articulated and coordinated.
- 4.3 The **Executive Council** will be the senior body, and will be composed of legal representatives or agents of the three co-sponsoring bodies, PROCOMER, CAPROSOFT and FUNCENAT. PROCOMER has signed agreements with these bodies whereby they will have the power, as members of the Council, to take part in defining policies, work plans, strategies and operating regulations for the project, approve budget disbursements, negotiate cooperation agreements and alliances, appoint key personnel of the executing agency, supervise compliance with the objectives of the project and of the various areas of activity and those that are established by the respective agreements.
- 4.4 The **executing agency** will be responsible for coordinating and managing project activities, appointing the members of operating groups and committees, supervising management, and handling the budget in accordance with established procedures. It will be expected to provide administrative and technical accounts and reports to the IDB and to the Executive Council. This office will be composed of an Executive Director, an accounting assistant, and two coordination experts in the areas of quality and education. The Executive Director will be responsible for preparing quarterly reports for submission to the Executive Council and the Bank. The terms of reference for members of the executing agency are set out in Annex II in the technical files.

- 4.5 Its task will be to administer the project and to facilitate the articulation of initiatives and needs among companies, support bodies and education centers. It will be responsible for: (i) administering project resources in accordance with the procedures of the responsible body and Bank policies; (ii) forming committees and operational groups; (iii) designing work plans; (iv) monitoring objectives and actions; (v) maintaining close liaison, through CAPROSOFT and directly, with firms in the industry, both those that are actual participants and those that are deemed relevant to the project; (vi) developing close links with public and private universities and with training and education centers that are involved in the project from the outset or that need to be brought in during execution; and (vii) straightening relations and coordinating activities with companies and entities engaged in related activities with respect to quality improvement, standardization and national and international certification. Technical Annex II provides descriptions of the functions of the Executive Director and the coordinating experts.
- 4.6 Beneficiaries will be the small, medium and large-scale software producers, consultants, service providers and human resource training centers that become associated, through competition or by invitation, in the various programs under the project.
- 4.7 **Status of preparation:** the design, budget and activities planned under the project have been prepared with input from all stakeholders in the project, with the assistance of the Bank team. To ensure consensus in the design of the project, the team held a number of workshops with interested players, including government, educational institutions and industry. The main features of the program, such as the terms and conditions of cooperation among the players, were agreed during those workshops in the course of active discussion among participants. As part of those agreements, it was decided that, since CAPROSOFT is very new, the project beneficiary should be PROCOMER. Members of CAPROSOFT, however, have demonstrated a keen interest and commitment through their active participation in formulating the project, and in their undertaking to contribute a major portion of the counterpart funding in cash, and it is expected that CAPROSOFT will ensure continuity of activities once the project is completed.
- 4.8 The country office will be responsible for supervising this technical cooperation. The Bank will review and assess reports by the Executive Director.

V. COST, SOURCE OF FINANCING AND COST RECOVERY

Categories	MIF	LOCAL CONTRIBUTION	TOTAL
Education component	552,000	294,000	846,000
Quality component	408,750	300,800	709,550
Institutional strengthening and promotion component	189,250	142,200	331,450
Executing agency	180,000	183,000	363,000
Evaluations	50,000		50,000
Contingencies	120,000	80,000	200,000
TOTAL	1,500,000	1,000,000	2,500,000

The counterpart and MIF resources for the three components and the executing agency will be used to pay for consultants, training materials and equipment, training and logistics support (see information in the project technical files).

- 5.1 The cost of the program is estimated at US\$2,500,000, of which the equivalent of US\$1,500,000 will be provided from the MIF (Human Resources Window) on a non-reimbursable basis, and the equivalent of US\$1,000,000 will be provided as local counterpart funding, in accordance with the preceding detailed table.
- 5.2 PROCOMER has signed agreements with CAPROSOFT and FUNCENAT, as co-sponsoring institutions, according to which the latter have undertaken to provide counterpart resources for the project. PROCOMER has obtained a commitment from the government for a cash contribution of no less than US\$200,000. CAPROSOFT has undertaken to make a cash contribution of no less than US\$300,000. FUNCENAT, together with PROCOMER and CAPROSOFT, has promised to make a contribution in kind equal to US\$500,000.
- 5.3 The sustainability of the program will depend on the institutional strengthening and promotion component. The project calls for two direct sources of funding: the quality training programs and the seminars or courses offered by the project for strengthening participants institutionally. The funds obtained from these sources are expected to be sufficient to allow the executing agency, and eventually CAPROSOFT, to continue with the training activities. Moreover, it is expected that the institutional strengthening of CAPROSOFT will allow the chamber to maintain program activities after the period co-financed by the grant has ended. The chamber will also continue to be supported by its members' contributions, which are based on the size of each firm. The project is expected to help increase the number of members and to foster their economic growth, which means that membership contributions and hence the resources of the chamber should increase over time.

- 5.4 Disbursement of grant funds and the purchase of goods and services will be done in accordance with Bank/MIF procedures. An advance of up to 10% of the grant may be made if the executing agency so requests.

VI. BENEFITS AND RISKS

A. Benefits

- 6.1 The project will encourage collaboration between the public and private sectors, both between the private software producing companies and their users in the public and private sector, and between private and public education institutions. The project will also help to develop an institutional consensus within the software industry.
- 6.2 The project will assist in the development of human capital by improving training, enhancing linkages to the labor market, and providing opportunities for the graduates of technical training courses to move on to the university level.
- 6.3 The program will serve as a catalyst, offering the local private sector new business opportunities in a growing software industry. This is particularly important, since it is expected to lead to exports with higher value added. Improving the quality of the software industry is of particular importance, because it will give the sector an advantage over other domestic industries in terms of its productivity and hence its competitiveness.

B. Risks

- 6.4 Experience in other countries indicates that the process of certifying companies under international quality systems will not be an easy task. Nevertheless, as many as seven domestic companies are expected to meet quality certification criteria during the execution period of the project. Moreover, it is expected that all the participating companies will improve the quality of their production processes and strengthen their international competitiveness.
- 6.5 One risk relates to the speed of software development in Costa Rica, in comparison with the speed at which training will be provided: there is the possibility that employment demand may outstrip the supply of qualified personnel and services. The project will help to reduce this risk through the training of trainers, the design and implementation of new distance learning and other education systems, and the development of a more integrated education system with a greater emphasis on technical and para- university levels.

- 6.6 The software industry makes intensive use of telecommunications infrastructure. This infrastructure will require major investments to keep up with innovations and to meet growing local demand. Yet the centralization of investments in this area, where there is only one state-owned service provider, together with existing fiscal constraints, could compromise the future competitiveness of the software industry. For this reason, the current government is seeking alternatives that would allow for greater infrastructure investment in ways that would not affect the fiscal balance.

VII. PERFORMANCE INDICATORS AND EVALUATION

- 7.1 PROCOMER will contract individual consultants, selected with the approval of the Bank, to carry out two evaluations of the project: a mid-term evaluation will be performed 18 months after execution begins, and a final evaluation will be conducted within six months after the project is completed. As a supplement to these external evaluations, the project team, together with the country office, will carry out annual performance evaluations to determine whether the project should be continued, suspended or canceled.
- 7.2 During the life of the project, the executing agency will compile indicators for monitoring and evaluating the project. The logical framework, including the performance indicators, is found in Annex I. Ongoing indicators would cover the following points: (i) information on the type of participating firms, based on the eligibility criteria established by the executing agency, and specific services/training offered or provided to companies; (ii) the institutional mechanism, including the selection and placement process and administration of programs; (iii) the impact of the project, including results of the monitoring study of companies and their participation in the program (total number of participants, number of participants per program; number of placements; number of persons trained and companies certified); (iv) cost-effectiveness of the project; and (v) support from the private sector and the ability to sustain training activities.
- 7.3 Within 12 months following the last disbursement under the project, a final evaluation will be performed. The Bank will contract for consulting services to conduct this evaluation, based on the specific objectives cited above, on the basis of the work program and the logical framework, found in Annex I. The consultants will take into account the program's impact on individual firms and on the industry as a whole. This evaluation would focus on key areas such as: measuring the cost of the service provided, and its relationship to the benefit obtained; the impact on the productivity of participating companies; and the level of personnel turnover among firms in the sector.

- 7.4 The executing agency will provide access to all the information and documentation needed to conduct these evaluations. Finally, the executing agency will present the Bank with twice-yearly reports detailing progress with the project.

VIII. EXCEPTIONS TO POLICIES AND PROCEDURES

- 8.1 The project implies no exceptions to Bank policies and procedures.

IX. SPECIAL CONTRACTUAL CONDITIONS

- 9.1 The Executive Council must be established and operational before the first disbursement.

SUMMARY OF LOGICAL FRAMEWORK

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
OBJECTIVE			
Improve the competitiveness of the software industry.	Increased productivity of firms in the sector.	During program execution continuous monitoring will be conducted for firms representing more than 90% of the sector's output, in order to obtain information for evaluating the status of the sector's productivity.	The country has special features that facilitate the swift improvement of competitiveness, such as: highly qualified human resources; highly developed centers with close links to leading firms in the sector; macroeconomic, social and political stability; suitable systems for private investment; and a strong interest in major firms as shown by a significant contribution to the project.
Human resource training in information technology (IT), and thereby to increase the quantity, quality and diversity of technical personnel to meet the needs of firms in the software industry.	Reduction in labor shortages in the sector, through: <ul style="list-style-type: none"> (i) establishing the total number of public and private educational bodies and their potential training capacity; (ii) evaluating the sector's changing labor requirements; (iii) rationalizing technical school and university education programs; (iv) training 150 trainers/professors/teachers from technical institutions; (v) equipping a high-tech classroom so as to offer training in new systems and products that will in turn allow for virtual education and teleconferencing services; (vi) increasing by 20 the number of female graduates with degrees from educational entities in the sector. 	Verification of the diagnosis of companies, their services, their productive capacity, human resources, and the support needs and training capacity of educational institutions. Implementation of new curricula and teaching methods suited to the needs of the sector. Survey of students, trainers, employees and business people in the sector to determine their views on how to attract women to the industry.	Strong interest on the part of study partners shown in: a commitment to 50% of counterpart contribution; active participation in design of the program; close links with major players of the sector, achievement of the program's institutional framework. Strong willingness to participate in the project on the part of firms supplying systems for outfitting (ORACLE, LOTUS, MICROSOFT).
Management in software companies to become more competitive and production of international quality software.	Training personnel from five consulting companies in systems for evaluating quality processes in software companies. Implementing quality systems in at least 30 firms. Reducing the average cost of installing new systems by 20%. Raising the productivity of new projects by 15%	Verification of selection criteria. Continuous monitoring of participating companies by the executing agency. Collection and evaluation by the executing agency of data on companies' operating results, labor costs and value of output.	Business people are increasingly aware that quality is indispensable for meeting market needs, and is hence a condition for success. Creation of technical infrastructure in an area that will provide the essential support and will be credible in light of local and international expectations.

PROCUREMENT TABLE

Education Component

Activity	Cost	Characteristics of consultancy
Industry Needs Assessment	\$ 80,000.00	F, C
Curricula review and definition, formal and technical education	\$ 111,000.00	F, C
Training of trainers:		
Courses with international instructors	\$ 175,000.00	P, I
Courses with national instructors	\$ 30,000.00	P, N
Systems for new training methodology implementation		
Review and standardization of training materials	\$ 120,000.00	F, C
Gender equality program	\$ 36,000.00	F, C

Component for Institutional Training and Promotion

Activity	Cost	Characteristics of consultancy
Program to create institutional partners and cooperation		
Preparation, negotiation and authorization of principle contracts	\$ 25,000.00	P, N
Formulation of Strategic Plan for the Sector	\$ 11,750.00	P, C
Management training for industry firms Program		
Management training program	\$ 31,500.00	F, C
Information and Disemination Program		
Design and production of promotional materials	\$ 17,500.00	F, C
Development of data supply/demand	\$ 7,500.00	F, C
Development of communications mechanisms	\$ 2,500.00	F, C
Media and promotional consultants	\$ 27,000.00	F, C
International Conferences	\$ 56,500.00	P, I
Promotion of Costa Rican Software Sector Quality		
Design and publication of promotional document	\$ 8,000.00	F, C
Informative workshops	\$ 2,000.00	P, C

Quality Component

Activity	Cost	Characteristics of consultancy
Strengthening local training-consulting market program		
Consultancies for training local firms in quality-auditing	\$ 89,250.00	F, C
Codesign of quality courses	\$ 44,500.00	F, C
Training and improved processes development program		
Training courses	\$ 90,000.00	P, I
Transfer of technical know-how in firms	\$ 160,000.00	F, N
Retraining program	\$ 5,000.00	P, C
Development of local SPIN		
Design and creation of local group	\$ 2,000.00	P, N
Design and creation of Website	\$ 18,000.00	F, C

P ==> individual consultant

F ==> consulting Firm

I ==> Internacional consultant

N ==> National consultant

C ==> national-international Consultant

PROPOSED RESOLUTION

COSTA RICA. NONREIMBURSABLE TECHNICAL COOPERATION FOR A PROGRAM
TO SUPPORT THE COMPETITIVENESS OF THE SOFTWARE SECTOR

The Donors Committee of Multilateral Investment Fund

RESOLVES:

1. That the President of the Inter-American Development Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Multilateral Investment Fund, to enter into such agreements as may be necessary with the Promotora del Comercio Exterior de Costa Rica, and to take such additional measures as may be pertinent for the execution of the project described in document MIF/ AT- with respect to a technical cooperation to support the competitiveness of the software sector.
2. That up to the amount of US\$1,500,000, or its equivalent in other convertible currencies, is authorized for the purpose of this resolution, chargeable to the resources of the Human Resources Facility of the Multilateral Investment Fund.
3. That the above-mentioned sum is to be provided on a nonreimbursable basis.