

PROGRAM FOR TRANSFER AND DISSEMINATION OF TECHNOLOGY

(TC-95-04-22-7)

EXECUTIVE SUMMARY

**EXECUTING AGENCY:** Sociedad Nacional de Industrias (SNI)

**BENEFICIARIES:** Small businesses (SBs) throughout the country.

**FINANCING:**

Local counterpart funding:	US\$ 649,200
MIF:	US\$1,315,800
Total:	US\$1,965,000
(Project income:)	US\$ 421,700

**FINANCIAL  
TERMS AND  
CONDITIONS:**

Execution period:	36 months
Disbursement period:	40 months

**ENVIRONMENTAL  
CLASSIFICATION:** The Environment Committee, at its meeting of October 4, 1995, classified this as a Category II operation.

**OBJECTIVES:** The overall objective of the project is to improve production practices and competitiveness among small businesses (SBs) by helping them to incorporate new technology. The specific objectives are to organize a roster of technology service providers and specialized consultancies for upgrading the production processes and management capacity of SBs, particularly those with between 5 and 49 workers; strengthen their technology transfer and information programs; and stimulate demand and promote cooperation between enterprises.

**DESCRIPTION:** The project will provide institutional strengthening for the Technology Transfer and Information Center (CDTT), created under the Sociedad Nacional de Industrias (SNI) on October 20, 1995, with a mandate to: (i) operate a specialized database for the compilation of information on technical standards, machinery and equipment, materials, and processing, together with data on consultants and experts in these same areas. At the start this database will be restricted to a limited number of high-priority sectors - garment making, leather goods, woodworking and metal fabricating - representative of current demand for SNI services; eventually the number of sectors covered can be increased according to demand and the experience gained through operation of the CDTT; (ii) promote the use of technical assistance services with consultants, consulting firms,

universities and technical institutes providing specialized expertise for SBs; (iii) offer advisory and technology project coordination services (to be provided by CDTT personnel and/or outside consultants) as a means of facilitating the assimilation of data by the owners of SBs; and (iv) mount media campaigns to raise awareness and draw the attention of SB entrepreneurs to examples of businesses that have successfully introduced technological innovations.

**BENEFITS:**

The program will: (i) create the conditions necessary for developing technology services at accessible prices; (ii) make it possible to provide training for the nation's work force; and (iii) strengthen relations between universities and technical institutes on the one hand, and SBs on the other, as well as among companies of all different sizes through a mentorship program consolidating the SNI's present subcontracting system.

**SUSTAINABILITY OF  
THE PROGRAM:**

The financial self-sufficiency of the program depends upon the success achieved in creating and strengthening the market for technology services. The CDTT will generate revenues from two sources: (i) fees billed to companies that use the Center's consulting services on technology, as well as commissions for the organization and coordination of working groups for technology transfer projects; and (ii) sale of advertising space in a specialized journal published by the CDTT. The SNI submitted a letter to the Bank dated August 15, 1996, in which it undertakes to finance any operating losses incurred by the Center once the project has been completed, thus guaranteeing the financial self-sufficiency of the CDTT (paragraph 4.10). The service fees charged by the Center will include a subsidy component to be financed with resources provided by the MIF from the Technology Services Fund. The amount of this subsidy will gradually diminish so that by the end of the program the fees charged will be equal to the market price for such services.

**RISKS:**

There are two categories of risk that could affect program execution: those that are inherent in the program itself, and those that relate to the institutional framework and macroeconomic policies. The most important potential risk in the first category is the current lack of experience with this type of service, and the possibility that demand will turn out to be less than anticipated under the program budget. To reduce this risk, a publicity campaign has been included and a subsidy added to

fees charged for these services. Another problem is that the technical expertise currently available to SBs is weak. For this reason, training activities for consultants have been included to ensure that Peru has a substantial number of technology service providers upon completion of the program. The government's current and future macroeconomic plans and sector policies call for continued steadfast support for private sector development.

**THE BANK'S  
COUNTRY STRATEGY:**

This project is consistent with the priorities laid down in the Bank's strategy for Peru in that it: seeks to increase efficiency and productivity in the private sector; meets the eligibility criteria for the MIF's Small Enterprise Development Facility (Window III), as set out in Chapter V of the Document; and enhances the effectiveness of other operations being carried out or planned by the Bank as a means of developing SBs in Peru.

**SPECIAL  
CONTRACTUAL  
CONDITIONS:**

Prior to the first disbursement and within two months after signing the Technical Cooperation Agreement, the SNI must submit for the Bank's approval evidence that: (i) the CDTT has been established and has begun operations (paragraph 4.2); and (ii) the disbursement schedule for utilization of the local contribution has been duly approved (paragraph 4.9).

There are two other special conditions: (1) within three months after signing the TC Agreement, evidence must be submitted showing that: (a) the executive council (paragraph 4.4), technology project selection committee (paragraph 4.15) and advisory board (paragraph 4.5) have been duly constituted; (b) the operating regulations for the program (paragraph 4.8) have been approved; (c) the FST or Technology Services Fund (paragraph 4.13) has been set up; and (d) agreements have been signed: (i) with other institutions concerning their participation in the program (paragraph 4.6); (ii) with MITINCI, INDECOPI and CONCYTEC, as well as with other national and international institutions, in order to obtain access to their databases - paragraph 3.09(a)(i); and (iii) for the creation of a roster of technology service providers - paragraph 3.9(a)(ii); (2) within six months after signing the TC Agreement, the CDTT must draw up and submit for the Bank's approval an outline of the progress reports (paragraph 7.2).

**STANDARD  
CONDITIONS:**

The Technical Cooperation Agreement will also include the Bank's standard clauses governing audits, progress reports, project evaluation, procurement and so forth.

## I. COUNTRY ELIGIBILITY

- 1.1 The Donors Committee declared Peru eligible for all types of funding under the Multilateral Investment Fund (MIF) on December 14, 1993.

## II. BACKGROUND

### A. Frame of reference

- 2.1 In 1990, the Government of Peru began carrying out a financial stabilization program, and at the same time introduced structural reforms designed to open up the economy, reduce the size of the public sector and promote private investment. Real progress has been made: the central government's budget deficit, which had risen to 3.7% of gross domestic product (GDP) in 1990, was converted to a surplus by 1995; the annual rate of inflation was driven down from nearly 7,000% to just 10% for the last year; and economic growth has resumed and maintained an average of 6% per year during this period.
- 2.2 Over the past five years, the government has made substantial cuts in a number of areas, particularly in scientific research and development of technology including its transfer and dissemination, preferring to leave these activities to the private sector. As a result, various institutes have either been disbanded or seen their activities reduced to a minimum. The Technical Standards and Industrial Technology Research Institute of Peru (ITINTEC) - which had been created in 1970 - was wound up in 1994, with certain key responsibilities (e.g. patent and trademark registration) passing to the National Institute for the Protection of Competition and Intellectual Property (INDECOPI). As well, the duties of the National Commission on Foreign Technology and Investments (CONITE) were reduced to the ex post recording of contracts for technology transfer signed between Peruvian companies and foreign donors.
- 2.3 Meanwhile, the adoption of an open trade policy exposed Peru's business community to foreign competition and gave rise to the need for expansion and diversification of exports. Under these circumstances, making more efficient use of resources became all the more important as a means of ensuring the ability of the private sector to compete successfully with foreign manufacturers whose operations are supported by publicly funded technology research systems and incentives. The country's private sector has responded to these changes by seeking greater productive efficiency. Thus, there began to develop within Peru's professional associations and employers' groups - and within the Sociedad Nacional de Industrias (SNI), in particular - an awareness that expertise in specific

areas, above all in technology, must now be the primary focus of the restructuring needed for success in the global economy.

B. The importance of SBs in the manufacturing sector

- 2.4 Peru's business sector is for the most part highly polarized in terms of the size of its enterprises, as well as concentrated in the Lima-Callao area. Of the country's 3 million formal sector production units, over 96% are microenterprises with less than 5 employees. And nearly 3% (103,000) fall within the SB category, with at least 5 but no more than 99 employees (15-18 on average). Within the SB category there are some 20,000 firms that employ between 5 and 49 workers. The remaining 1% of the country's businesses are large firms with over 100 employees. The manufacturing sector consists of approximately 50,000 companies, a third of which (16,000) have more than 5 employees. The majority of these firms are in the SB category. These enterprises account for 13-15% of the value added by manufacturing, along with one quarter of its total work force. This compares with roughly 2,500 medium- and large-scale enterprises with 100 or more employees, which generate 75% of the sector's value added and employ one-half of its total work force. The sector's geographic concentration can be seen in the fact that 14,000 of Peru's manufacturers employing more than 5 workers (87% of the country's total) are located in the Lima-Callao area.

C. Lack of research and development in Peru

- 2.5 The development of Peru's science and technology research capacity began in the 1950s. In the late 1960s, the government established a number of institutions under the National Science and Technology Council (CONCYTEC) whose task it was to promote, coordinate and guide scientific research in Peru, and to set basic standards governing its activities. The results were disappointing, however, owing to: (a) absence of clear objectives and well-defined goals; (b) failure to coordinate efforts based on the needs of the manufacturing sector; (c) lack of coordination with other public and private institutions; and (d) failure to assign administrative responsibilities and establish control mechanisms for following through on proposed objectives. As a result, little information on new technologies has been developed, much less disseminated to the small business sector in Peru.
- 2.6 Under the new economic model, the government is leaving the development of technology to the market, while ensuring the business community a stable macroeconomic environment with clear rules governing the nation's economic policies. The only public institutions that continue to provide certain engineering services and technical consulting are the Industrial Research Projects Council (COMPITI), the National Science and Technology Council (CONCYTEC), and universities and vocational training institutions. Other institutions active in this area include the Industrial

Training Service of Peru (SENATI), the Peruvian Institute for Business Administration (IPAE) and the Association for the Promotion of Institutes of Technology (TECSUP), along with international agencies such as the United Nations Industrial Development Organization (UNIDO). Private consulting services are largely unknown in Peru, and specialized publications or courses are equally rare. As well, there is no coordination between the activities carried out by the institutions that generate technical expertise (universities and vocational training institutes) and the productive enterprises that require this knowledge - although there have been developments in this direction recently, thanks in part to the Bolivar Program for Regional Integration of Technology, Innovation and Competitiveness.

D. Low level of demand for technical consultancy

- 2.7 The Peruvian business establishment has only recently become convinced of the importance of new technology and training programs as a way of boosting productivity. So far this awareness is limited to a few innovative businessmen and trade associations, and has not yet sparked a major rise in demand for technical assistance. Weak demand for technology services is attributable *inter alia* to lack of training, information and qualified personnel in most firms; decades of isolationism and protectionist policy toward industrial development which created little incentive for seeking productivity gains; and the above-mentioned lack of coordination between the productive sector on the one hand, and the universities and vocational training institutes on the other. To this must be added the dearth of knowledge among Peruvian businessmen concerning those technology services that are available, and their lack of experience with the hiring of such services under reasonable technical and financial conditions.

E. Rationale for the project

- 2.8 Peru's small businesses offer broad potential for development of a modern and efficient business sector, one which might well become a major source of employment and export opportunities. Yet these firms are widely lacking in information services and credit facilities at favorable rates; use rudimentary and obsolete technology; suffer from weak management; and have few forward and backward linkages in the sector to which they belong.
- 2.9 Small businesses have to hire on the open market those services which, because of their size, they cannot provide for themselves as do the larger companies. The lack of coordination and development of Peru's market for business services (especially nonfinancial services), together with their other inefficiencies, represent important costs for SBs and make it more difficult for them to develop the productivity and efficiency required to compete with foreign imports within their own country, or on international markets where they must vie with producers whose governments

provide these services. Most firms are still in the early stages of modernization and are primarily in need of soft technologies only.

- 2.10 Small businesses are not used to innovation and lack sufficient information for initiating the transfer of technology. At the same time, the information, dissemination and technical assistance services needed for transferring expertise to SBs are in short supply in Peru, and experience in the industrialized countries teaches that they do not automatically arise as a result of liberalizing markets and adopting an open trade policy. Given these factors and the high cost of such services, it is necessary to make use of intermediary organizations such as trade associations which transcend the individual firm.
- 2.11 The traditional justification for having an outside source promote the use of new technology lies in its definition as a common good. Under this view, technology-efficient markets use this approach to provide firms - SBs in particular - with information on technical standards and designs, facilities for control and testing of results from basic research, etc. The problem is that companies which introduce innovations often derive less benefit than other firms which are able to obtain the new technology without incurring the same acquisition and development costs. Experience from other countries indicates the wisdom of using intermediary agencies (state-run, private or semi-private institutions) to disseminate information and help SBs acquire and adapt new technologies. 1/
- 2.12 The present program adopts the above-mentioned approach and is intended as a pilot project and practical demonstration in which the private sector itself will help to create a mechanism for the transfer and adoption of new technologies for the use and benefit of small businesses.

F. Consistency with the Bank's country policy for Peru

- 2.13 The Bank is supporting structural adjustment in Peru through actions aimed at increasing productivity in the private sector. In December 1994, the IDB approved an operation to develop a system for settling disputes among private parties (ATN/MT-4740-PE); in October 1995, it approved a global credit program for microenterprises (958/SF-PE); in November 1995, the Bank approved the creation of three business service centers in Arequipa, Huancayo and Cuzco, under an agreement with the CONFECAMARAS or Peruvian Federation of Boards of Trade (ATN/ME-5052-PE); and finally, in May 1996 it approved a program for modernization of international trade

---

1/ Annex VI describes the experience with the dissemination and transfer of technology to SBs in the United States, several European nations, Israel and Chile.

(ATN/MT-5236-PE) to be carried out by the Peruvian Exporters' Association (ADEX).

- 2.14 These operations share a common goal: to increase the productivity and competitiveness of Peru's SBs. Yet each project focuses on a different obstacle impeding the development of these businesses, and each one has its own specific objectives. Following normal procedures in cases where more than one of the Bank's activities target the same population, due precaution has been taken to avoid duplication of effort.
- 2.15 The specific objective of the CONFECAMARAS project to create business service centers is to stimulate demand for nonfinancial services aimed at improving the administration, oversight and management capacity of SBs, along with the marketing of their products. The objective of the present program for transfer and dissemination of technology is to organize the technical assistance services available for upgrading of the production processes used by SBs. By contrast, the aim of the ADEX program for modernization of international trade is to increase exports to take advantage of tariff exemptions granted for Peruvian products entering the United States and European Union markets.
- 2.16 Improving the competitiveness of SBs' products vis-a-vis foreign imports on the domestic market, as well as increasing their ability to export to world markets under the ADEX project, will require a substantial rise in productivity. The latter, in turn, is a direct function of the capacity of SBs to incorporate new technologies and expertise into their production processes, which the present project is designed to enhance. The introduction of new technology also requires continuous improvement in the organization, administration, management and marketing capacity of the SBs involved, and support in this area will be forthcoming under the CONFECAMARAS project.

### III. THE PROJECT

#### A. Objectives

- 3.1 The overall objective of the project is to improve production practices and competitiveness among small businesses by helping them in the use of new technology. The specific objectives are: arrange technical assistance services and specialized consultancies to upgrade production processes and the management capacity of SBs; strengthen their technology transfer and information programs by stimulating demand for such services and promoting cooperation between enterprises in their utilization.



B. Design and description of the project

- 3.2 These objectives will be met by the Sociedad Nacional de Industrias (SNI), acting through its Technology Transfer and Information Center (CDTT). The basic task of the CDTT will be to arrange technical assistance services for SBs, to be provided by local and international consultants. Specific consulting services marketed through the CDTT will be divided into two types: (a) provision of information, both on technology itself and on the availability and qualifications of the experts who provide technical assistance programs; and (b) actual provision of technical assistance for SBs. Under the latter type, service may be in the form of consultation on a specific technology problem provided by the staff of the CDTT, or the organization, coordination and follow-up on technology projects carried out by outside consultants or consulting firms.
- 3.3 Initially, the technological services and other activities of the CDTT will be limited to a small number of high-priority sectors: garment making, leather goods, woodworking and metal fabricating. Eventually the number of sectors covered can be expanded as demand rises in the course of the program.
- 3.4 In cases where the technology sought is relatively straightforward, and creation of an interdisciplinary group of specialized consultants is not warranted given the cost this would entail for the SBs and the time needed to carry out the consultation, the CDTT can provide the necessary services using its own personnel. Other consulting projects of greater complexity (high-tech projects) will require the use of outside consulting services, which the CDTT can contract for either within Peru or on the international market. The CDTT will select the technology projects, and organize the consulting services for acquisition and introduction of technological innovations.
- 3.5 The small businesses will be charged a fee for the services that the CDTT provides. As an incentive for using these services, this fee can include a subsidy component which is to be limited in amount to begin with and gradually decreased over time, and which will be awarded through a competitive bidding process with selection criteria that include rewarding firms willing to pay a greater share of the cost of the services.
- 3.6 The program will make it possible as well to strengthen the transfer of technology between firms, encouraging business executives and directors of large companies and/or leaders in the various sectors to take an active role in helping smaller firms. The project includes a proposed experiment in which the private sector entities - individual consultants, consulting firms, universities and vocational training institutes - would be able to develop marketing techniques and management capacity in order to work on a profit-making basis with small businesses.

1. Component I: Establishment of the CDTT 2/

- 3.7 This component will include the following activities: (i) establishment and start-up of the CDTT; (ii) initial training for personnel; (iii) selection of working methods; and (iv) negotiation and signing of agreements with chambers of commerce in other areas of the country, as well as with universities and vocational training institutes in Peru and abroad.

2. Component II: Publicizing the activities of the CDTT

- 3.8 The Center will conduct a media campaign to publicize its activities and make business aware of the importance of innovations and the acquisition of new technology. The main activities under this heading will include: (i) promotional campaign in the most appropriate media; (ii) preparation of promotional material; (iii) a promotional campaign including events such as seminars and workshops designed to publicize successful examples of technology transfer within Peru and elsewhere; and (iv) publication of a specialized journal on technology issues in order to increase awareness among businessmen of the importance of innovative technology.

3. Component III: Provision of services for the transfer and adaptation of technology

- 3.9 The CDTT will arrange for specialized consulting services for Peru's small business community. Fees will be charged for these services at market rates, and may include a subsidy component to promote the utilization of technical assistance services and encourage innovation on the part of SBs. The program envisages three main categories of service:

- a. Provision of information. The CDTT will assist SBs in two ways: by supplying information on specific technology problems, and by referring them to particular consultants who can provide technical assistance services. To this end, the CDTT will: (i) construct, improve and update a specialized technology database containing information on technical standards, processes, machinery, equipment, materials, design, etc. The Center will compile, classify and process the required information, which it will obtain either under agreements with Peruvian and international institutions, or by direct purchase. These agreements will be signed with national institutions such as the Ministry of Tourism, Industry, Trade and Economic Integration (MITINCI), INDECOPI, CONCYTEC, etc., as well as with international agencies. Within three months

---

2/ Annexes I and IV contain a more detailed description of the activities to be carried out and the results expected under the three components of the program.

after signing the respective Agreement with the Bank, evidence must be submitted showing that agreements have been signed with MITINCI, INDECOPI, CONCYTEC and at least three international institutions; and (ii) create a roster of technology service providers. To be listed in this roster, consultants will undergo an evaluation of their previous experience; whether they maintain their listing in the roster will depend on the monitoring of performance to ensure the quality of their services.

The following activities will be carried out for the purpose of organizing and preparing a consolidated list of specialized consultants and technical assistance experts: (i) training programs will be offered to show consultants how to plan both ordinary and intensive courses, seminars, discussion groups, publications, workshops, escorted tours of leading businesses; (ii) activities will be developed in partnership with universities, technical schools, vocational training institutes and other centers of instruction; and (iii) training will be provided in the marketing of technology services. Foreign experts will be invited to help in these activities under agreements with the Bolivar Program and other bilateral and multilateral technical cooperation organizations.

- b. Provision of technical advisory services for SBs. The CDTT may provide technical advisory services using its own professional personnel in the case of relatively straightforward requests for which creation of an interdisciplinary group of consultants or consulting firms is not warranted given the cost this would entail for the SBs and the time needed to carry out the consultation.
- c. Coordination and support for technology transfer projects. The CDTT will coordinate the preparation and execution of technology transfer projects to be carried out by outside consultants. This service is aimed primarily, but not exclusively, at shared projects for organized groups of companies requesting this type of assistance. To promote the use of these services, the fee charged will include a subsidy component which will be gradually decreased in the course of the project, disappearing entirely at the end of the third year. This subsidy will be financed with resources from the FST (see paragraph 4.13). Activities under this heading will include: (i) selection of projects based on proposals submitted by the SBs (paragraph 4.16 describes the selection criteria to be employed); (ii) establishment of a working group for each project made up of consultants and/or consulting firms; and (iii) organization of advisory services to be provided by directors/managers of large companies and local or international consultants, as a means of imparting expertise and experience gained in successful operations. This activity will strengthen the SNI's current subcontracting systems.

C. Estimation of demand for the project

- 3.10 The program is aimed at small businesses throughout Peru, defined broadly as any firm that employs at least 5 but not more than 99 workers and has annual declared sales of US\$750,000 or less. <sup>3/</sup> Larger firms are likewise free to use the services of the CDTT, but will not be eligible for the subsidy. The potential market numbers 53,000 SBs, of which 16,000 are classified as manufacturers (14,000 of these are located in the Lima-Callao area), the remainder consisting of agricultural, agroindustrial, forestry and fisheries operations. Based on requests for technological services received by the SNI in the last 2-3 years, however, it is estimated that the majority of requests for such services will come from companies with between 5 and 49 employees. These are some 20,000 firms in this category throughout Peru, and 80% of these (i.e. 16,000) are located in the Lima-Callao area.
- 3.11 Effective demand for these services is defined in terms of the number of actual interventions by the Center as shown in the revenues table on page 2 of Annex III, and not on the basis of the number of firms requesting the Center's services. This approach is used because of the different types of service involved, and because a firm may request various interventions by the Center in the course of a single program. These interventions correspond to the types of service offered, namely requests for information of a technological nature and referrals to experts and consulting firms, specific instances of technical assistance, and applications for technology projects.

D. Costs and financing of the program

- 3.12 The total cost of the program will be US\$1,965,000, of which the MIF will contribute US\$1,315,800 (67% of the total), while the local counterpart contribution will be the equivalent of US\$649,200 (33% of the total). In addition, the project will generate revenues of US\$421,700 during the execution period, of which 77% will be deposited in a reserve fund that is expected to total US\$322,700 by the end of the third year. The remaining 23% (US\$99,000) will be used to pay the honorariums of engineers that make up the professional staff of the CDTT. Using the latter resources, the SNI will finance part of the local counterpart contribution. Annex II describes the methods used to estimate the revenues generated and expenditures incurred in the course of the program.

---

<sup>3/</sup> This is the definition of small business used by the Corporación Financiera de Desarrollo (COFIDE).

	(US\$)		
	MIF	Local Contribution	TOTAL
2. Individual consultants			
A. CDTT personnel			
2.1.1 Honorariums	231,000	277,000	508,000
2.5 Recruitment and training	30,000		30,000
B. Management training for consultants			
2.1.1 Honorariums	90,000		90,000
6. General Support			
6.1 Offices		105,700	105,700
6.2 Furnishings		6,000	6,000
6.3 Equipment	29,800		29,800
6.4.1 Software	130,000		130,000
6.4.2 Teaching materials and other	50,000	90,000	140,000
6.7 Audits		15,000	15,000
7. Publications		135,500	135,500
97. Special Programs			
97.1 Technology Services Fund	600,000		600,000
97.2 Promotional campaign	60,000		60,000
97.3 Ex post Evaluation	30,000		30,000
98. Contingencies	65,000	20,000	85,000
TOTAL	1,315,800	649,200	1,965,000

3.13 The funding provided by the MIF will cover the entire cost of the following: (a) training for CDTT personnel; (b) purchase of computer equipment and software for the Center; (c) training for consultants; (d) the initial campaign to promote demand and publicize the availability of the service; (e) the Technology Services Fund; and (f) ex post evaluation of the program. As well, it will cover a portion of the following costs: (a) the salaries of professional personnel employed by the CDTT; (b) the acquisition of technological data and information on the consultants; and (c) program contingencies.

3.14 The local counterpart funding will cover the entire cost of the following: (a) office infrastructure for the CDTT (rental fees, furnishings and communications); (b) annual audits of financial statements for the program; (c) CDTT support personnel; and (d) the

cost of publishing the specialized journal. In addition, counterpart resources will cover a portion of the following: (a) the salaries of professional personnel (beginning in the second year of program execution, project-generated income will finance an increasing portion of the honorariums of the CDTT engineering staff; (b) information services; and (c) program contingencies.

#### IV. PROGRAM ORGANIZATION AND EXECUTION

##### A. Executing agency

- 4.1 The executing agency for the program will be the SNI, acting through its Technology Transfer and Information Center (CDTT). The SNI was founded 100 years ago on June 12, 1896, and operates an ongoing program to promote the industrialization of Peru. The Association has 1,630 member firms, 92% of which are small businesses and the remaining 8% are larger industries. The SNI carries on its work through 79 sectoral committees, including one that covers SBs. These committees are self-governing.

##### B. Project execution

- 4.2 In order to provide an executing agency for the program, SNI headquarters in Lima created the CDTT on October 20, 1995, to serve as a private nonprofit entity, subsequently presenting evidence to the Bank that it had been duly constituted. The position of the CDTT within the SNI's organizational structure is shown in Annex VIII. The CDTT will administer the MIF contribution along with its own revenues and will have the capacity to generate, collect and administer the funds necessary for permanent operation on a financially self-sustaining basis. Before it receives the first disbursement under this technical cooperation, the SNI must submit evidence to the Bank that the CDTT has been established and has begun operations, including the appointment of a Director and other program personnel specified in the next paragraph hereafter.
- 4.3 The SNI will hire individuals to fill permanent positions at the CDTT, 4/ and will assign support staff from its own personnel to operate the program. The professional personnel of the CDTT will include a Program Director, two engineers (one for 32 months and the other for 18 months), an assistant with training in industrial statistics, and an executive secretary - all of whom will be permanent, full-time employees. Where required by the level of activities at the CDTT, additional permanent staff may be hired with the professional qualifications most in demand. Furthermore,

---

4/ Annex VIII contains the terms of reference for the hiring of professional personnel to work at the CDTT.

the SNI will provide the part-time services of a senior consultant on industrial finance, as well as support staff including a business manager or economist with experience in small business, and one accountant. The Program Director must be hired before any of the other CDTT personnel.

- 4.4 The CDTT will be headed by a Program Director, who will have the support of an Executive Council made up of the President of the SNI, its Managing Director or a representative designated by him, and the Executive Director of the SNI's Institute for Social and Economic Studies (IEES) or a person designated to represent him. The Executive Council will establish a set of strategic guidelines for the activities of the CDTT. The duties of the Program Director will include administering program resources and carrying out planned activities designed to achieve its objectives. The Director and the Executive Council will cooperate in the hiring of CDTT personnel, and will be jointly responsible for ensuring that the program meets its objectives within the periods allotted. Within three months after signing the Technical Cooperation Agreement, the SNI must submit evidence that the Executive Council has been duly constituted.
- 4.5 The work of the CDTT and its Executive Council will be assisted by an Advisory Board made up of representatives of the private sector, banks, universities and the science and technology community. The duties of the Advisory Board will be to consult with the Executive Council and provide liaison between the CDTT and the sectors represented by board members. Within three months after signing the TC Agreement, the SNI must likewise show proof that the Advisory Board has been duly constituted.
- 4.6 In order to carry out its activities throughout Peru, the CDTT will enter into association, representation or service delivery agreements with other institutions around the country. Important examples include the country's chambers of commerce, universities and vocational training institutes, the Industrial Training Service of Peru (SENATI) and member firms of the SNI. In Arequipa, Huancayo and Cuzco, project activities will be carried out by the Business Service Centers (CSEs) of the CONFECAMARAS which were created with Bank resources provided under Technical Cooperation ATN/ME-5052-PE, and which will have access to the databank and other services provided by the CDTT. The Bolivar Program will serve as liaison between companies and the universities and vocational training institutes in Peru and abroad, for which the necessary coordination will be provided. Within three months after signing the TC Agreement, evidence must be submitted showing that not less than 10 chambers of commerce and industry have been established outside the Lima-Callao area.
- 4.7 The program's activities will be duly coordinated with the corresponding actions carried out under other projects financed with MIF resources and designed to assist SBs in Peru. This

coordination will be provided by a Coordinating Committee made up of director of the present program, the director of the program for modernization of international trade (ATN/MT-5236-PE), approved in May 1996 and being carried out by the Peruvian Exporters' Association (ADEX) and the director of CONFECAMARAS' Business Service Centers (CSEs) program (ATN/ME-5052-PE) approved in November 1995.

- 4.8 In order to guide execution of the program, within three months following signature of the Technical Cooperation Agreement the CDTT must submit to the Bank the duly approved operating regulations for the program. The guidelines for these operating regulations are set out in Annex IX.

C. Schedule of activities

- 4.9 The program will be carried out in 36 months beginning on the date that the Technical Cooperation Agreement is signed, according to its schedule of activities. As a condition precedent to the first disbursement, the SNI must provide the Bank with the timetable for utilization of the local counterpart contribution.

D. Self-sufficiency of the program

- 4.10 The program's design is based on the assumption that the revenues generated by the CDTT - through fees for service, commissions charged to arrange for and coordinate external consultants, and the sale of advertising space in its specialized journal - will enable the program to become self-financing by the beginning of its fourth year of operations. In the event that revenues generated by the program do not equal operating expenses by the end of its third year of funding under the MIF, the SNI will cover the difference in order to ensure that the CDTT is financially self-sustaining. The SNI submitted a letter to the Bank on August 15, 1996, setting out this commitment.
- 4.11 The revenues derived from services provided to SBs must be recorded in the program's operating account as they are received. These revenues will be used for two specific purposes: (i) one part will serve to fund a portion of the honorariums paid to CDTT personnel during execution of the program (Annex II, paragraph 2.1, item 3); and (ii) the rest will be deposited in a reserve fund. The amounts allocated to the latter fund must be deposited in a separate account until the fourth year of the program, when they will be applied for the financing of CDTT activities.
- 4.12 The service fees will include a subsidy component to stimulate interest and promote utilization of CDTT services by companies, support the creation and development of consulting firms and individual experts specializing in technology, and spur universities and vocational training institutes to participate in the preparation and execution of technology development projects. The



CDTT will also promote mentorship programs, defined as the transfer of expertise from business executives and specialists in successful companies, to firms needing technical help or undergoing consolidation.

- 4.13 To provide resources for subsidizing service fees, a Technical Services Fund (FST) will be created under the program. Within three months after signing the Technical Cooperation Agreement, proof must be submitted that this fund has been duly constituted with a minimum balance of US\$50,000 so that it may begin operation. In the course of the program, the Bank will be asked to provide additional contributions to the FST up to a maximum of US\$600,000. The latter figure is based on awarding subsidies averaging some US\$20,000 each, to the 30 projects scheduled to be carried out in the last two years of the program. Calculation of fees for service is based on the following factors: (a) willingness and ability to pay on the part of SBs; (b) fees charged for similar services on current markets; (c) the cost of mounting services not currently available; and (d) the factors listed in paragraph 1.1 of Annex II.
- 4.14 The way that this subsidy will work is as follows. Consulting firms and companies can request the services of the CDTT under one of two financing facilities. The first of these (facility 1) will be used for short-term consulting services and technology information projects costing no more than US\$50,000; the second (facility 2), for more complex projects with costs exceeding this amount. The subsidy available on qualified projects under facility 1 will be limited to 70% of their cost, up to a maximum of US\$20,000; subsidies under facility 2 will be limited to 50% of their cost or a maximum of US\$30,000. These limits apply to each company separately and refer to the entire execution period under both facilities. Firms wishing to obtain financing under facility 2 must show proof of sales in an amount equivalent to at least 10 times the total cost of the project. Under both facilities, firms can combine their subsidies when submitting a group proposal.
- 4.15 Applications for subsidies will be evaluated and approved by the Technology Projects Selection Committee, which will operate independently and enjoy a high degree of expertise. This committee will have five members: the Program Director, the two CDTT engineers, a representative of the relevant industry appointed by the SNI's sectoral committee for same, and a member representing academia and appointed by the University association. Members must agree to treat information concerning the projects reviewed and the committee's deliberations as strictly confidential. Within three months after signing the Technical Cooperation Agreement, the SNI must submit evidence to the Bank that this Selection Committee has been duly constituted.
- 4.16 The committee will base its evaluation on the following four criteria: (i) technical aspects and economic feasibility of the project; (ii) share of fees that applicant firm proposes to pay;

(iii) likelihood that the project can be extended to other companies; and (iv) impact in terms of the number of firms benefiting from the project. In particular cases, the committee may require additional information and hire a consultant to conduct an in-depth analysis of the proposal. Related costs incurred by the committee will be charged to the applicant, and may not exceed 5% of the value of the subsidy sought.

E. Hoped-for results

- 4.17 The ground breaking nature of the program and absence of past performance for comparison with other commercial technology information services in the country introduce a degree of uncertainty as to what it is reasonable to expect from the program. This is particularly true when it comes to estimating the revenues that will be generated from fees for service since these are directly dependent on the interest and motivation of individual SBs, their perception of current macroeconomic and microeconomic policies, and their medium- and long-term prospects.

F. Disbursements

- 4.18 The resources provided under this technical cooperation program will be utilized in accordance with the Bank's procedures. At the request of the executing agency, a revolving fund may be created in an amount equivalent to 10% of the MIF contribution.

G. Hiring of consultants and procurement of goods and services

- 4.19 The selection and hiring of consultants, and the procurement of goods and services, will be conducted in accordance with the Bank's procedures. All foreign consultants and suppliers of goods and services imported for the project must be from member countries that sit on the Donors Committee of the MIF, or from developing member countries of the Bank.

H. Environmental status of the program

- 4.20 Special attention must be given to environmental considerations in all interventions by CDTT professional staff, as well as in projects executed by outside consultants with partial funding provided under the program, and this factor is one of the criteria for evaluation. In addition, technology development activities will be classified in one of the following categories based on environmental impact: (a) beneficial; (b) no effect; (c) moderately harmful; and (d) serious harmful effects. In the case of category (d), measures aimed at neutralizing the negative impact of the activities will be required as a condition for access to the services offered by the CDTT.

## V. COMPLIANCE WITH ELIGIBILITY CRITERIA

- 5.1 The provision of financial resources for this program is consistent with the general objective of increasing private investment and promoting the activities of the private sector as a means of accelerating a country's economic growth and social development, as set forth in the Statutes of the MIF.
- 5.2 This proposal is also consistent with the criteria for supporting efforts by nongovernmental organizations to establish or expand their services for small business, as specified in Article III, Section 4(c) of the Agreement Establishing the MIF. Moreover, the use of nonreimbursable resources for this purpose is justified by the following: (i) the Donors Committee declared Peru eligible for all types of financing on December 14, 1993; and (ii) the proposed project will serve as a catalyst for investment as required under Article III, Section 5(a)(i) of the Agreement Establishing the MIF.

## VI. FEASIBILITY, BENEFITS AND RISKS

### A. Feasibility

- 6.1 The feasibility of the project is based on: (a) the MIF resources will be used to finance creation and consolidation of information and technology services, and to stimulate demand for same on the part of Peru's SBs; and (b) the reputation of the SNI as the most representative association of the country's industrial sector.

### B. Benefits

- 6.2 Carrying out the program will create the conditions needed for systematic development of technology services available to SBs at accessible prices. It will also make it possible to provide continuous training for that part of the work force involved with the new technologies. Both benefits will fill gaps in the current economic model and help achieve competitiveness on national and international markets alike. Indirect benefits of this program include the strengthening of relations between the educational system, university research and vocational training institutes on the one hand, and the business community on the other; as well as improving the present system for subcontracting of the production of goods and services among companies.

### C. Risks

- 6.3 There are two types of risk that could affect program execution. Those that are inherent in the program itself, and those that relate to the institutional framework and macroeconomic policies.

The most important potential risk in the first category is the current lack of experience with this type of service, and the possibility that demand will turn out to be less than anticipated under the program budget, thereby compromising its ability to achieve financial self-sufficiency by the beginning of its fourth year of operations. (Paragraphs 1.1 and following in Annex II set out the assumptions used in calculating fees for service.) To reduce this risk, a publicity campaign has been included and a subsidy added to cover a portion of the fees charged for these services. In addition, the lack of a market for technology services means that the technical expertise currently available to SBs is weak. For this reason, training activities for consultants have been included to ensure that Peru has a substantial number of technology service providers upon completion of the program.

- 6.4 An external risk faced by technology transfer and dissemination projects of this sort is that they may fail to take proper account of changes in the country's general political context with regard to increased economic competitiveness. While little can be done to reduce this risk, present circumstances indicate continuing government's support for private sector development first instituted during the period 1990-1995, as the members of Peru's recently re-elected government have stated their intention to stay the course.

## VII. MONITORING, SUPERVISION AND EX POST EVALUATION

### A. Monitoring and supervision during project execution

- 7.1 The innovative nature of the program and the need to adapt its execution in keeping with changes in the SB sector suggest that it will be necessary to provide close monitoring and supervision of activities during project execution. The primary mechanisms for monitoring of the project will be: (a) progress reports prepared by the CDTT; (b) an interim evaluation at 24 months from the date on which activities begin; and (c) the monitoring and follow-up measures to be taken by the Bank's Country Office in Lima as part of its project administration duties.
- 7.2 The CDTT, through its Director, will prepare and submit to the Bank three progress reports during execution of the project: the first to be submitted 12 months after the signing of the TC Agreement; the second at the end of 24 months; and the third at the end of 39 months (i.e. one month prior to the last disbursement). Within six months after signing the Agreement, the CDTT must draw up and submit for the Bank's approval an outline of these progress reports. The reports must be designed to assess completion of the project's activities based on the indicators listed in the Logical Framework (Annex I), and will include the following criteria:

(a) growth in the number of individual consultants and consulting firms; (b) businesses served and their economic features, considering the goals of the project; (c) correspondence between services offered and the requirements established by way of demand (based on the results of planned effectiveness surveys; (d) number of repeat customers purchasing additional services; (e) increase in the number of new members joining the SNI; (f) progress towards financial self-sufficiency of the CDTT; and (g) environmental impact of activities carried out by firms receiving assistance from the CDTT.

- 7.3 The **first report** must focus on the recruitment, hiring and training of CDTT personnel, efficient arrangement of physical infrastructure, meeting local counterpart contribution requirements, and implementation and effectiveness of the publicity campaign. It must also report on all activities carried out in furtherance of the objectives of the program. The **second report** is crucial in that it will contain the first analysis of results achieved under the program's objectives. This report and the **third one** will concentrate on measuring the extent to which the results set out in the Logical Framework have been achieved, in addition to following up on operational features of the CDTT dealt with in the first report.

B. Ex post evaluation

- 7.4 Upon completion of the execution period, the results of this operation will be evaluated by an independent consultant or consulting firm based on the extent to which its objectives have been achieved. The resources required to finance this evaluation will be allocated by the MIF. The consultant/consulting firm will reach agreement with the CDTT on the methods to be used in the ex post evaluation and the indicators necessary for this evaluation, which must be generated by the information system used during program execution. It is recommended that the Bank contract with these independent consultants within four months after the signing of the TC Agreement in order that the CDTT will know which methods and corresponding indicators are to be used in the ex-post evaluation, within six months following the start of the project.
- 7.5 Eighteen months after the start of the project, the independent consultant or consulting firm will carry out a midterm evaluation of progress to date under the program, recommending any changes deemed necessary. After these changes have been discussed with CDTT personnel and approved by the Bank, CDTT will propose and submit for approval by the Bank a plan of action for carrying out the recommendations and making the changes to the program identified as necessary in this report.

## LOGICAL FRAMEWORK

OBJECTIVES	ACTIVITIES	MEANS OF VERIFICATION	No. OF MONTHS AFTER SIGNING/TC AGREEMENT BETWEEN SNI AND ID
Establishment of the CDTT	<u>Creation and start-up of the CDTT</u> <ul style="list-style-type: none"> <li>• Rental of offices</li> <li>• Hiring of personnel</li> <li>• Initial training for personnel</li> <li>• Creation of committees</li> <li>• Working methods</li> <li>• Participation by other institutions in the program</li> </ul>	<ul style="list-style-type: none"> <li>• Proof of rental agreement for offices</li> <li>• Signed personnel contracts</li> <li>• Attendance at courses, visits or in-service training</li> <li>• Creation and appointments to Executive Council, Advisory Board, Technology Projects Selection Committee and Coordinating Committee</li> <li>• Submission of final version of operating regulations</li> <li>• Agreements signed with SENATI, universities, institutes, training centers, Bolívar Program and Chambers of Commerce and Industry</li> </ul>	<p>2 months</p> <p>2 months</p> <p>3 months - 24 months</p> <p>3 months</p> <p>3 months</p> <p>3 months</p>
Promoting activities of the CDTT	<ul style="list-style-type: none"> <li>• Advertising campaign</li> <li>• Promotional materials</li> <li>• Promotional events</li> </ul>	<ul style="list-style-type: none"> <li>• Contracting with specialized agency to design and manage advertising campaign</li> <li>• Publication of notices in mass media, brochures and other publications, videos, etc.</li> <li>• Meetings, lectures, courses, seminars and presentations on successful businesses</li> </ul>	<p>3 - 6 months</p> <p>3 - 6 months</p> <p>6 - 24 months</p>

OBJECTIVES	ACTIVITIES	MEANS OF VERIFICATION	No. OF MONTHS AFTER SIGNING/TC AGREEMENT BETWEEN SNI AND ID
Provision of technology transfer and information services	<u>Provision of information</u>		
	• Technological information	• Network connections	6 - 36 months
		• Access to international databanks under agreements with international agencies	6 - 36 months
		• Access to national databanks under agreements signed with Peruvian institutions	6 - 36 months
		• Establishment of own database	6 - 36 months
	• Information on technology service providers	• Establishment of a roster of consultants and consulting firms	6 - 36 months
	• Training for consultants	• Holding of courses, workshops, seminars, etc.	6 - 36 months
		• Training in academic institutions	6 - 36 months
		• Training in the marketing of services	6 - 36 months
		• Signing of agreement with Bolivar Program	6 - 36 months
	<u>Marketing of technology information services</u>		
	• Short-term consulting services	• Services provided by CDTT personnel	6 - 36 months
	• Coordination and execution of technology projects	• Creation of Technology Services Fund (FST)	3 months
		• Coordination of interdisciplinary groups carrying out technology projects	12 - 36 months
Evaluation of program	• Midterm evaluation	• Hiring of consulting firm	4 months
		• Submission of midterm report	18 months
	• Ex post evaluation	• Submission of ex post evaluation	39 months

## METHODS USED IN PREPARING THE BUDGET ESTIMATE

### I. REVENUES (US\$421,700)

- 1.1 The estimation of income and expenditures under the program's budget is based on information provided by business executives and the directors of the SNI, as well as on the scant amount of data on commercially available consulting firms and consultants in Peru. In some cases (e.g. that of training activities for consultants and experts on industrial technology), the estimates are based on existing experience in the Peruvian market for specialized courses and seminars. In other cases (e.g. sales of information on technology to business), there exist in Peru consulting firms that specialize in the marketing of legal or financial data. And finally, in the case of firms offering technical assistance and advice on technology per se, the estimates are based on indications of market potential as seen in the experience of universities and other research institutions in Peru. In the end and despite these circumstances, there is enough evidence to affirm the economic, financial and institutional viability of the program. In the absence of sufficient financial data on several of the information products to be marketed, estimates of revenue generation under the program contain a high degree of uncertainty - not unlike that which accompanies the launch of high-tech products in developed markets when no comparable products or services exist. In short, the relevant factors used in the calculation of revenues under each component and activity are based in some cases (such as training courses and seminars in areas of technology) on the existence of an incipient and rapidly developing market in Peru. In other cases, such as the sale of information, there are a few Peruvian firms that sell legal or financial data. And in still other cases, such as firms offering technical assistance and advice on technology, indirect signs of market potential can be gleaned (e.g. universities).
- 1.2 The general assumption used in drawing up the budget estimates is that revenues will not begin to be generated with any consistency until the year two of the program, given the need for setting up and installing the CDTT, and getting a handle on the supply of consulting services in the first year. The exception in this sense is the training of CDTT personnel which must begin as soon as the bare necessities are in place, owing to rapid changes in the Peruvian market and the need to start training consultants and conducting seminars and courses designed for businessmen and intended to promote the other products as soon as possible.
- 1.3 The specific assumptions on which the estimation of revenues is based include the following:



A. Technological information (US\$30,950)

1.4 The service offered is that of searching for information and consists in: (a) the offer of a listing of pertinent documents on the requested topic, with appropriate summaries; (b) copying *in extenso* of documents selected in the search and other materials; and (c) analysis of the information by an expert to extract relevant points and explain these to the client. The basic assumptions under this service are as follows:

1. Search for international data: The cost will depend on the time required in each case to search the international databases that are to be consulted. The cost for responding to requests from SBs is expected to range from US\$50 to US\$250, with an average of some US\$100 per search. SBs will be given a 50% discount in the first year of operation, and 25% in the second year – thereafter they will pay full cost. Large companies will be billed full cost plus 10% from the start.
2. Search for national information: The cost will depend on the size of the search. The average request from SBs is expected to range from US\$10 to US\$60, with the average around US\$20.
3. Data collection: This service will be offered at US\$0.15 per page in the original language, and US\$0.50 per page if translation is required. An additional US\$0.05 per page will be levied if the document must be obtained from a database with on-line charges. In the case of material from books and publications that have a cover price, the latter is passed on to the client as well.
4. Analysis of the information: The charge for analysis and presentation of data to clients in an immediately usable form will be US\$15 per hour required to complete the task.

B. Technology consultation by CDTT personnel (US\$33,210)

1.5 The professional staff of the CDTT will provide technical assistance or advisory services in cases where, for reasons of cost and rapid response to enquiries, creation of an interdisciplinary group of consultants or consulting firms is not warranted. For purposes of the budget estimate, an average of six expert-hours is assumed per enquiry at the stipulated cost of US\$15 per hour of consultation. It is conservatively estimated that only 24 firms will use this service during the first year and until it becomes better known through the promotional campaign. In the second and third years this number is estimated to rise to 125 and 220 companies, respectively.

C. Training for consultants and technology information experts (US\$79,880)

- 1.6 Wherever possible, training will be carried out using the professional staff of the CDTT, SNI officials and experts and engineers provided by the larger companies belonging to the SNI. Emphasis will be placed in short courses, seminars and workshops that combine instruction with escorted tours of leading companies in the technological area that is the subject of the course or seminar. As well, agreements will be signed with universities and other specialized centers of higher learning to secure the services of experts. Under agreements with the Bolivar Program and other bilateral and multilateral technical cooperation agencies, experts will be invited from other countries. The principal services offered under this heading are national and international events ("events" being understood to include courses, workshops, seminars and conferences):

1. National events. These are events in which all speakers are from Peru. The price varies according to the length of the event, the topic dealt with and extra features such as consultation rights, visits to leading industries, etc. The price will average US\$60 (up to a maximum of US\$120) per person in the first year, US\$80 (to a maximum of US\$150) in the second year, and US\$90 (to a maximum of US\$280) in the third year.
2. International events. These events include speakers from other countries and are specially priced for the Peruvian market. The price varies according to the length of the event, the topic dealt with and extra features such as consultation rights, visits to leading industries, etc. The price will average US\$90 (up to a maximum of US\$200) per person in the first year, US\$100 (to a maximum of US\$250) in the second year, and US\$120 (to a maximum of US\$280) in the third year.

D. Expert referral service (US\$47,410)

- 1.7 Offering an expert referral service requires the creation of a database containing information on carefully selected experts, consultants and consulting firms who will be able to resolve technical problems encountered by SBs. In this case, both the specialists registered in the roster of consultants, and the firms making use of the database, will pay a fee for the service. In the first case, individual experts will be charged US\$10 to register with the roster of consultants, plus US\$2 per month to keep their registration current. In addition, they will pay a 0.5% supervision and control fee on all contracts obtained through referrals from the CDTT. Consulting firms will be charged US\$25 for registration, US\$5 per month to remain current, and a 1% contract fee for supervision and control.

- 1.8 One advantage enjoyed by those registered with the CDTT's database is that they will be given priority when applying to the FST, and will thus have their services partly subsidized by the CDTT. Another perk is that registering with the database entitles individuals and firms alike to participate free of charge in the training program for consultants funded by the CDTT.

E. Coordination and direction of technology projects and programs (US\$51,000)

- 1.9 Where SBs require services combining various types of experts and/or consulting firms, the staff of the CDTT will coordinate and direct the team of consultants and/or firms in the preparation and execution of projects or technology packages. The treatment afforded each member of the team is identical to that they receive when working as an individual consultant or consulting firm under the referral system. The percentage fees and access to funding and training services is likewise unchanged. In fact, the only difference is that in this case a fee (US\$20 per hour) is included for the time spent by the CDTT's engineers in coordination and direction of the project. It is estimated that each project of this type will require on average 50 hours of direct intervention by CDTT staff at US\$20 per hour, plus a fee equivalent to 1% of the project cost for supervision and control. It is assumed that no project of this nature will be requested in the first year, given that this period will be spent in organizing the operation and promoting its services. In the second year, it is estimated that at least 17 such projects will arise, followed by 34 more in the third and final year of the program.

F. Supervision and control of technology projects and programs (US\$12,750)

- 1.10 The CDTT will charge a commission equal to 1% of the cost of projects and programs for supervision and control of project implementation. In view of the fact that the product is new to the Peruvian market, the average amount per technology project is estimated (conservatively) at US\$25,000.

G. Specialized journal (US\$166,500)

- 1.11 Based on the SNI's success with its own journal, *Industria Peruana*, and another specialized publication, *Calidad*, containing articles on industrial management, the decision was made to include publication of a specialized journal on technology and management issues under the present program. As with the other SNI publications, this new journal will be issued monthly and distributed free of charge. The revenues generated from the sale of advertisements for companies, equipment suppliers and consultants will pay for the publication and generate additional revenues as well, so that it will not require contributions under

the program. This assertion is based on past experience, the drawing power and major profile of the SNI, and the large number of manufacturing companies, individual consultants and consulting firms that will be involved in the CDTT's activities.

## II. EXPENDITURES (US\$1,965,000)

### A. CDTT personnel (US\$508,000)

- 2.1 This heading includes honorariums for: (a) program directors, (b) assistant staff, and (c) support personnel involved in the project. Personnel costs will be included to the extent that their services are required during the first three months only, and thus are not budgeted for the full 36 months. The breakdown is as follows:

#### 1. Paid out of funding from the MIF (US\$231,000)

- a. Program Director: Includes honorarium for 36 months at US\$5,000 per month (US\$180,000).
- b. One industrial engineer with expertise and experience in business administration. Of the total honorarium for this position (US\$3,000 x 32 months = US\$96,000), the MIF will underwrite US\$42,000 to cover eight months of the first year and 50% of the second year.
- c. One systems engineer to receive an honorarium of US\$3,000 per month for 18 months (US\$54,000), of which US\$9,000 will be funded by the MIF to cover 50% of six months of the second year.

#### 2. Paid out of SNI resources (US\$277,000)

- a. Senior-level consultant in economics of industry, to be employed part-time for which he will receive honorariums of US\$1,500 per month for 36 months (US\$54,000).
- b. One assistant in manufacturing statistics to receive a monthly honorarium of US\$800 for a total of 33.5 months (US\$26,800).
- c. A business administration expert or economist with experience dealing with SBs, to receive an honorarium of US\$1,200 per month for 36 months (US\$43,200).

d. Support personnel (US\$54,000)

- (i) One accountant to work part-time for 36 months at a cost of US\$700 per month (US\$25,200); and
- (ii) One executive secretary full-time for 36 months at US\$800 per month (US\$28,800).

e. The SNI will use project income to finance part of the honorariums for the following professional staff: the engineer mentioned in paragraph 2.1, subparagraph 1(b), in the amount of US\$54,000, to cover 50% of the second year and the third year in its entirety; and the engineer mentioned in paragraph 2.1, subparagraph (c), in the amount of US\$45,000, to cover 50% of the second year and the third year in its entirety.

B. Recruitment and training of CDTT personnel (US\$30,000)

- 2.2 The innovative nature of the project, and the fact that it deals with information, transfer of technology and development of Peru's technological consulting capacity for use by SBs, make it essential that personnel be carefully selected to complement prior experience and expertise. Of the total budgeted under this heading, US\$14,000 covers ten days of in-service training for the Program Director and engineers at centers engaged in activities similar to those of the CDTT including technical assistance, consulting and transfer of technology based on the management of information on technology. The remaining resources (US\$16,000) will be used for the selection of consultants and attendance at short courses, seminars or conferences abroad during the project where these relate to SBs, handling information technology or managing business technology; and for setting up a training program over the three-year execution period, using courses offered by universities and specialized centers of higher education in Peru, or reaching agreements to provide special courses for this purpose.
- 2.3 These programs will include all CDTT personnel and will be designed to meeting their specific training needs. It is estimated that some 30 courses will be required on topics such as management of technology, administration, marketing of services, handling of information systems, computer studies, strategic planning, total quality management, business engineering, business management, trend analysis, finance, production methods, etc.
- 2.4 The training provided will be supplemented with visits by foreign experts brought to Peru under agreements with the Bolivar Program. If necessary, additional courses open to the public can be organized for these visiting experts to cover the cost of their stay in Peru. The SNI has had great success with this arrangement in the past.

C. Furniture (US\$6,000)

- 2.5 The SNI will purchase furniture for the CDTT offices at a total cost of US\$6,000. This will include desks and chairs for the staff, file cabinets, computer stations, waiting room chairs, conference tables and chairs, pictures, etc.

D. Equipment (US\$29,800)

- 2.6 The equipment to be purchased with MIF funding consists of items necessary to provide the CDTT's services with reasonable convenience, including electronic transfer and printing of blueprints as part of the transfer of technology (hence the need for powerful computers and a high-end scanner and plotter). The equipment needed consists primarily of the following:

- Four Pentium multimedia PCs with UPS and modem (US\$3,700 x 4 = US\$14,800)
- One local area network (US\$5,000)
- Two laser printers (US\$2,500 x 2 = US\$5,000)
- One high-capacity commercial photocopier (US\$5,000)

E. Software/supplies (US\$130,000)

- 2.7 A total of US\$30,000 has been included for the purchase of software for the computer system over the 36-month period of the project, including the acquisition of various software programs and any upgrades that may arise. This figure is based on the software costs incurred by companies that make heavy use of computer systems, and includes the sum of US\$100,000 for subscriptions to international databases and purchase of on-line information (this cost is also distributed over the course of the program). These costs will be covered with funds provided by the MIF.

F. Office rental, maintenance and energy costs (US\$62,000)

- 2.8 The SNI will pay the office rental and related services. The amount of the SNI's contribution under this heading over the course of the program is estimated at US\$62,000, which breaks down as follows:

- US\$3,000 for renovating offices (repairs, refurbishing, painting, etc.)
- US\$700 per year during the second and third years for upkeep (painting, repairs, inspection of facilities, etc.)
- US\$600 per month rental over the 36-month period
- US\$350 per month for energy, water and insurance (36 months)
- US\$156 per day rental on meeting and conference rooms equipped with educational equipment, for a total of 150 days of meetings and lectures over the 36-month period. This average cost includes the discount that the SNI gives to its committees. A

higher price is charged for outside parties since the SNI's facilities are in great demand.

G. Communications and sundry expenses (US\$43,700)

- 2.9 The SNI will contribute an estimated total of US\$43,700 for communication expenses, which includes an average monthly charge of US\$645 for telephone service and other administrative charges over 36 months; US\$150 per month on average for postal charges over 36 months; fees of US\$350 for INTERNET registration; a quota of US\$710 to be paid annually to the INTERNET; and a monthly server fee of US\$350 to INTERNET over the 36-month period.

H. Management training for consultants (US\$90,000)

- 2.10 An important factor in the success of the program will be the ability to improve the supply of technology services available to SBs in Peru. One of the keys to accomplishing this task is organizing and enhancing these services by creating a ready clientele and providing the training needed to enhance the skills of those who provide technical assistance and consultation aimed at SBs. Part of this training will be conducted by CDTT personnel, and other courses will be taught by experts and executives from member companies of SNI as part of the percentage of their hours these officials devote to technology "exchange". This effort will be reinforced with specially designed courses and seminars for consultants and consulting firms, given under agreements with universities, specialized centers of higher learning, Peruvian experts and international officials brought to Peru under the Bolivar Program or by UNIDO and other international cooperation programs. A total of US\$90,000 of the MIF contribution to the program will be earmarked for organization and advertising of this training, payment of instructors and related expenses, based on offering 15 courses per year over the three-year period, at an average cost of US\$2,000 per course. These courses will deal with specialized technical topics and issues such as handling data on technology, use of information sources, business and project management, development of information products, strategies for the marketing of consulting services, business development, characteristics of SBs, etc.

I. Purchase of technological information and preparation and updating of the roster of consultants (US\$140,000)

- 2.11 The key to success in an enterprise based on technological information lies in the quality and timeliness of its data sources. Accordingly, special care must be taken to ensure that sufficient data is available for developing adequate information products. In addition to the access to databases and on-line data sources referred to in the foregoing paragraph, the program will also include the following investments in information:

1. Paid out of funding from the MIF (US\$50,000)

- 2.12 A total of US\$40,000 will be earmarked under this heading for the purchase of data from foreign sources in the form of patent collections, investment profiles, equipment designs, subscriptions to specialized journals, databases for consultants and technology support centers in other countries, collections of technical catalogs and abstracts, fashion catalogs (for the garment industry), reference books and manuals, publications on state-of-the-art developments in key technologies, foreign technical standards, etc.
- 2.13 Consolidation of a databank on national experts, individual consultants and consulting firms that will provide an effective source of technology services for the production sector, based on technological data useful to small and medium-sized businesses (US\$10,000).

2. Paid out of SNI resources (US\$90,000)

- 2.14 Provision and continuous updating of the standardized database of firms developed by the SNI and containing information on all companies registered in Peru (US\$10,000).
- 2.15 Acquisition and enhancement of the technological information database operated by the former ITINTEC, and reactivated by same at a cost of US\$70,000.
- 2.16 Development of a database on national technology and Peruvian consultants, consulting firms and experts (US\$10,000).

J. Technology Services Fund (US\$600,000)

- 2.17 Since the aim of this project is to promote availability of expertise and technical consulting services, it is necessary to offer a subsidy on the use of such services over the course of the project that will support the creation, development and growth of consulting firms (the majority of which are themselves SBs) and individual professionals distinguished for their ability to provide information services, advice and technical consultation for SBs. Accordingly, the Technology Services Fund (FST) will receive US\$600,000 under the present program to subsidize the contracting of consultants and technical assistance services required by SBs. This subsidy will be awarded as a fixed percentage of the fees charged for consulting services, and will be reduced over the course of the program as progress warrant. The figure of US\$600,000 is based on awarding subsidies averaging some US\$20,000 each to the 30 projects and programs anticipated during the last two years of the program, which is the period when the Fund will come into play.



K. Specialized journal (US\$135,500)

- 2.18 The amount cited corresponds to the cost of publishing a full-color, 44-page (approximately) specialized journal on technology containing paid advertising for business firms and consultants, during the project period.

L. Media campaign to publicize and promote the activities of the CDTT (US\$60,000)

- 2.19 In order to publicize the objectives of the program and promote use of the CDTT's services, MIF funding will be provided to: (a) hire a specialized agency to design and manage a media campaign (US\$20,000); and (b) pay for the preparation of publicity materials, advertising spots in the mass media, promotional events and video cassettes describing the services of the CDTT (US\$40,000).

M. Audits (US\$15,000)

- 2.20 The SNI will cover the costs for three external audits, one at the close of each year of the project, at a cost of US\$5,000 each.

N. Ex post evaluation (US\$30,000)

- 2.21 To assess its achievements and impact, a consulting firm will be hired by means of an international bidding competition to carry out an evaluation of the program in three stages: one at the start to establish a baseline and the indicators to be monitored; one at the midway point; and a final ex post evaluation upon completion of the program. The total cost of these evaluations will be US\$30,000, to be paid by the MIF.

O. Contingencies (US\$85,000)

- 2.22 The amount of US\$85,000 included for contingencies is to be divided equally, with US\$65,000 to come from MIF funding and US\$20,000 from the local counterpart contribution.

PROPOSED RESOLUTION

PERU. NONREIMBURSABLE TECHNICAL COOPERATION FOR  
THE PROGRAM FOR DISSEMINATION AND TRANSFER OF TECHNOLOGY

The Donors Committee of the Multilateral Investment Fund

RESOLVES:

1. That the President of the 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 and to adopt such other measures as may be pertinent for the execution of the project referred to in Document MIF/AT- with respect to a technical cooperation with the Sociedad Nacional de Industrias (SNI) for the Program for Dissemination and Transfer of Technology.
2. That up to the sum of US\$1,315,800, or its equivalent in other convertible currencies, is authorized for the purposes of this resolution, chargeable to the Small Enterprise Development Facility of the Multilateral Investment Fund.
3. That the above-mentioned sum is to be provided on a nonreimbursable basis.