5980572-(2)
PD-AAC-465-B1

UNCLASSIFIED

107p.

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

PROJECT PAPER

LA REGIONAL

SCIENCE AND TECHNOLOGY INFORMATION TRANSFER

Project Number: 598-0572

LA/DR:77-9

UNCLASSIFIED

SEP 23 1977

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR (LA) (ACTING)

FROM: LA/DR, Charles B. Weinberg

Problem: Authorization of LA Regional Science and Technology Information Transfer Project.

Discussion: The purposes of this three year $750,000 project are: (a) to improve Latin American access to scientific and technical information and patents resulting from U.S. Government investment in research and development; and (b) to improve Latin American access to appropriate technology information resulting from world-wide research and development.

The project will be implemented by the National Technical Information Service (NTIS) of the U.S. Department of Commerce and will strengthen or establish a local cooperating agency in each of fifteen countries/organizations to serve as a focal point to provide and promote access to all types of U.S. technical information. As the local agencies become more firmly established, they are expected to become self-sustaining, covering their cost of operations from the profit on sales of technical information. Until that time, project funds essentially provide an operating subsidy to the local agency. The project is a follow on to a $590,000 TAB project which terminated in FY 1976. Under the TAB grant, which stemmed from a Latin American request for improved access to U.S. scientific and technical information, NTIS established distribution centers in 12 Latin American countries to stimulate greater awareness of U.S. technical information in order to increase public and private utilization of research and development findings and application of technologies to meet LDC development needs.

The proposed project will increase the volume of operations for some of the original centers and expand to additional centers in Latin America and the Caribbean. No project-funded activities will take place in any country which we presently consider to be among those with serious human rights problems.

AID funding to NTIS will provide for technical assistance from NTIS management, training, commodities, other costs which include user education as well as the processing and handling of the scientific and technical information. NTIS will contribute manpower as well as subsidize sales of information to cooperating agencies. Each local cooperating agency will provide a $2,000 cash deposit as a credit toward purchases of NTIS materials, and the office space and staff time to promote NTIS products and services and process orders for information.

A special focus of the project will be to provide and actively promote information on appropriate or "needy people" technology. This broadened scope will not mean that NTIS will no longer provide information at all levels of technology as requested by host country users; rather, NTIS will attempt to skew the information provided toward the needs of poor people. NTIS will accomplish this shift in focus by more actively promoting needy people technology information through their monthly newsletter AMTID, and by causing their local agents to make special arrangements to work with groups, agencies and other intermediaries concerned with assisting poor people.

The DAEC reviewed and approved this project on August 31, 1977. The Initial Environmental Examination recommending a negative determination was previously approved. The project is included in the FY 77 Congressional Presentation (p. 349).

Recommendation: That you approve the LA Regional Science and Technology Information Transfer Project by signing the attached Project Authorization and request for Allotment of Funds.

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PAF

2. DOCUMENT CODE: 5

3. COUNTRY/ENTITY: L. A. Regional

4. DOCUMENT REVISION NUMBER:

5. PROJECT NUMBER (7 digits): 598-572

6. BUREAU/OFFICE: A. SYMBOL: LA; B. CODE: 05

7. PROJECT TITLE (Maximum 40 characters): Science & Technology Information Transfer

8. PROJECT APPROVAL DECISION — ACTION TAKEN: A (A = APPROVED, D = DISAPPROVED, DE = DEAUTHORIZED)

9. EST. PERIOD OF IMPLEMENTATION: YRS 03 OTRS. 0

10. APPROVED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 77 F. GRANT	E. 1ST FY 77 G. LOAN	H. 2ND FY 78 I. GRANT	H. 2ND FY 78 J. LOAN	K. 3RD FY 79 L. GRANT	K. 3RD FY 79 M. LOAN
(1) Sect 106				250		250		250	
(2)									
(3)									
(4)									
TOTALS				250		250		250	

A. APPROPRIATION	N. 4TH FY ___ O. GRANT	N. 4TH FY ___ P. LOAN	Q. 5TH FY ___ R. GRANT	Q. 5TH FY ___ S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1) Sect 106					750	
(2)						
(3)						
(4)						
TOTALS					750	

11. PROJECT FUNDING AUTHORIZED — A. GRANT: 2; B. LOAN:

ENTER APPROPRIATE CODES: 1 = LIFE OF PROJECT; 2 = INCREMENTAL LIFE OF PROJECT

C. PROJECT FUNDING AUTHORIZED THRU FY 79

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED ($000)

B. ALLOTMENT REQUEST NO. 0

A. APPROPRIATION	C. GRANT	D. LOAN
(1) Sec. 106	250	
(2)		
(3)		
(4)		
TOTALS	250	

13. FUNDS ~~RESERVED FOR ALLOTMENT~~ allotted

TYPED NAME & TITLE, SIGNATURE & DATE: PDO

14. SOURCE ORIGIN OF GOODS AND SERVICES: [X] 000 [ ] 941 [ ] LOCAL [ ] OTHER ____

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR PPC/PIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE (MM DD YY)	18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE (MM DD YY)

AID 1330-6 (7-76)

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

ASSISTANT
ADMINISTRATOR

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

Latin America Regional: National Technical Information Service

Project No. 598-0572

Pursuant to Part I, Chapter 1, Section 106 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to fund a Participating Agency Service Agreement ("PASA") between A.I.D. and the United States Department of Commerce, acting through its National Technical Information Service ("NTIS"), of not to exceed Two Hundred Fifty Thousand United States Dollars ($250,000) ("Authorized Amount") to help in financing certain foreign exchange costs of goods and services required for the project as described in the following paragraph.

The project consists of the provision by NTIS of technical assistance, training and a limited quantity of commodities in order to establish or upgrade the capability of 15 national centers and three regional centers in Latin America and the Caribbean dedicated to obtaining access to scientific and technical information and patents resulting from the United States Government investment in research and development and to improving Latin American and Caribbean access to appropriate technology information resulting from worldwide research and development ("Project"). The entire amount of the A.I.D. financing herein authorized ($250,000) for the Project will be obligated when the PASA is executed.

I approve the total level of A.I.D. appropriated funding planned for the Project of not to exceed Seven Hundred Fifty Thousand United States Dollars ($750,000) of Grant funding, including the funding authorized above, during the period FY 1977 through FY 1979. I approve further increments during that period of Grant funding up to $500,000 subject to the availability of funds in accordance with A.I.D. allotment procedures.

I hereby authorize the initiation of negotiation and execution of the PASA by the officer to whom such authority has been delegated in accordance with A.I.D. regulations and Delegations of Authority subject to the following essential conditions together with such other terms and conditions as A.I.D. may deem appropriate:

1. Source and Origin of Goods and Services

Goods and services financed by A.I.D. under the PASA shall have their source and origin in the United States, except as A.I.D. may otherwise agree in writing.

2. Covenants

NTIS shall covenant that except as A.I.D. may otherwise agree in writing:

(i) A.I.D. shall have the right to approve before execution all subcontracts entered into by NTIS in carrying out the Project; and

(ii) Within 75 days from the date of the execution of the PASA, NTIS shall furnish A.I.D. in form and substance satisfactory to A.I.D. a plan for evaluating the degree to which NTIS information provided under the Project is reaching and benefitting the poor in recipient countries and the general impact of the transfer of such information.

Edward W. Coe
Assistant Administrator
Bureau for Latin America

Sept 23 1977
Date

Clearance:

GC/LA, JLKessler JLKessler Date 9-22
LA/DR, CBWeinberg Date 9-23
LA/DR, KMartin Date 9-22

PROJECT PAPER

NATIONAL TECHNICAL INFORMATION SERVICE

LATIN AMERICA REGIONAL PROJECT

JULY 1977

TABLE OF CONTENTS

		Page
Part I	Project Summary and Conclusions	1
A	Face Sheet	
B	Recommendations	
C	Description of the Project	
D	Summary Findings	
E	Project Issues	
Part II	Project Background and Detailed Description	6
A	Background	
B	Detailed Description	
Part III	Project Analysis	18
A	Technical Analysis	
B	Financial Plan	
C	Social Analysis	
D	Economic Analysis	
E	A.I.D. and Other Relevant Experience	
F	Other Donor Coordination	
G	Women in Development	
H	Environmental Evaluation	
Part IV	Implementation Arrangements	44
A	Administrative Arrangements	
B	Participating Agencies	
C	Implementation Plan	
D	Evaluation Plan	

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE (IX) APPROPRIATE BOX)
[ ] ORIGINAL [ ] CHANGE
[X] ADD [ ] DELETE

PP

DOCUMENT CODE 3

2. COUNTRY/REGIONAL ENTITY/GRANTEE
L.A. Regional

3. DOCUMENT REVISION NUMBER

4. PROJECT NUMBER
598-0572

5. BUREAU
A. SYMBOL: LA
B. CODE: 5

6. ESTIMATED FY OF PROJECT COMPLETION
FY 79

7. PROJECT TITLE - SHORT (STAY WITHIN BRACKETS)
Science & Technology Information Transfer

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION
A. INITIAL MO. YR. 7 7 B. FINAL FY 79

9. SECONDARY TECHNICAL CODES (MAXIMUM SIX CODES OF THREE POSITIONS EACH)

10. ESTIMATED TOTAL COST ($000 OR EQUIVALENT, $1 = ____)

A. PROGRAM FINANCING	FIRST YEAR B. FX	C. L/C	D. TOTAL	ALL YEARS E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	(250)	( )	(250)	(750)	( )	(750)
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST GOVERNMENT					1125	1125
OTHER DONOR(S)				925		925
TOTALS	250		250	1675	1125	2800

11. ESTIMATED COSTS/AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION FUND CODE	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE	FY 77 D. GRANT	E. LOAN	FY 78 F. GRANT	G. LOAN	FY 79 H. GRANT	I. LOAN	ALL YEARS J. GRANT	K. LOAN
ST	750	870	250		250		250		750	
PROJECT TOTALS										
ESTIMATED EXPENDITURES										

12. PROJECT PURPOSE(S) (STAY WITHIN BRACKETS) [ ] CHECK IF DIFFERENT FROM PID/PRP

The project purpose is to: 1) improve Latin American access to scientific and technical information and patents resulting from U.S. government investment in research and development; and 2) improve Latin American access to appropriate technology information resulting from worldwide research and development.

13. WERE CHANGES MADE IN THE PID/PRP FACESHEET DATA NOT INCLUDED ABOVE? IF YES, ATTACH CHANGED PID AND/OR PRP FACESHEET.

[ ] YES [X] NO

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE
Howard D. Lusk

TITLE
Chief, Division of Education, Science and Technology

DATE SIGNED
MO. DAY YR. 0 8 2 5 7 7

16. DATE RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
MO. DAY YR. 0 8 2 5 7 7

AID 1330-5 (5-75)

Part I. Project Summary and Recommendations

A. Face Sheet

B. Recommendations

On the basis of the findings set forth in this Project, approval for the following is recommended:

Grant (PASA)	$750,000

C. Description of the Project

Responding to an expressed interest for improved access to United States technological information, the United States Government (USG) in 1974 prepared a proposal for a system in Latin America (LA) to facilitate the transfer of USG-owned information and patents. This project proposal is a specific response to the general thrust of that dialogue and builds upon three years of direct relevant project experience which transferred USG scientific and technological information to the Less Developed Countries (LDCs) of LA through a cooperative joint effort between the Office of Science and Technology of the Technical Assistance Bureau (TAB/OST) and the National Technical Information Service (NTIS), an agency of the United States Department of Commerce.

Under the previous TAB grant NTIS established distribution centers for the dissemination of U.S. scientific and technical information in twelve Latin American Countries. The grant afforded NTIS the opportunity to provide the host country agencies or centers with training in information transfer, access to U.S. government-sponsored research, and a service through which to secure non-government sponsored research results. The present grant will allow NTIS to expand the volume and scope of selected existing centers and to add new centers to its system.

As presently planned, the existing centers to be continued would include Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Peru, and Venezuela. Currently proposed new centers are the Dominican Republic, Guyana Barbados, Surinam, Panama, Jamaica, Trinidad, and ICAITI (Central American Institute for Technical Information). NTIS will be looking toward the possibility of developing other new centers and will remain flexible with respect to changes in the status of existing centers.

Within this expansion of services, an appropriate technology component will be developed and incorporated into each of the centers. The term "appropriate technology" as employed herein refers specifically to the tools and processes which enable developing countries to provide goods and services for their people in a manner which is compatible with their economic and social conditions. LDC institutions are showing an increasing

interest in this technology and its applications so that this project will be serving a manifest "felt need." The appropriate technology component will be designed to develop the capacity of LDC institutions to serve as effective distributors of all technical information with particular emphasis on that which has been identified as "appropriate". NTIS will provide the necessary backstopping services to facilitate the above expansion.

Project inputs are designed to develop the capacity of LDC institutions to serve as effective distributors of all technical information. This will be accomplished by providing services, training and subsidized inputs. Training will be provided to personnel of the participating LA institutions in management and administration of information transfer systems, resource utilization, and appropriate technology. The LDC institutions are identified and recruited by NTIS on the basis of their potential to serve as effective distribution nuclei for users of technical information. This project also makes it possible for NTIS to provide information to LDC consumers at a more affordable price.

At the end of the project period a total of at least 15 distribution agencies will be providing technical, scientific and appropriate technology information to LDC consumers in Latin America and the Caribbean. These agencies will be linked to NTIS organizational components in the United States.

D. Summary Findings

NTIS efforts in Latin America have proven successful over the past two years. Through the twelve national centers it has been possible to service information needs utilizing this transfer system in a volume and content structure to be discussed below. The results of an AID-funded evaluation of the previous grant were discussed and taken into consideration in the formulation of this project.

The evaluation conducted in March of 1976 indicated that the monitoring, management and control of the TAB project (FY 72-75) could be improved by instituting a system of reporting, collecting statistical information, preparing specific case studies, improving orientation of agents, and development of better linkages between project components. In an attempt to address these concerns, this project proposes to design a questionnaire that will be mailed bi-monthly to Washington by agent representatives. The questionnaire will provide NTIS and AID/W with statistical information on promotional pieces mailed, number and types of contacts with agents, categories of information documents disseminated, and the impact of technological information provided on target groups. The questionnaire will be modified periodically to include additional categories relevant to the successful operation and monitoring of the project. NTIS will also collect case studies that demonstrate the utilization, adaptation and impact which the information transferred had on the specific target groups.

In addition, as pointed out in the 1976 evaluation, NTIS did not monitor its field components adequately due to a limited budget. In this project, additional field visits are programmed to increase the contact with agent representatives in order to provide assistance in problem solving skills, managerial expertise, marketing, and other related areas.

Another serious criticism of the previous project was the complexity and format of the announcement documents for technical information (entitled "AMTID"). This project attempts to address the issue by restructuring the AMTID into a viable sales tool and producing it in both Spanish and English.

The project will encourage a heightened level of sales. It will include additional outputs such as a Visual Search Microfilm System (VSMF), audio-visual aids, and print advertising, which will facilitate the in-country utilization, comprehension and awareness of the agent representatives' services.

E. Project Issues

Since the project is based on relatively successful on-going efforts -- focused herein on Latin America and expanded with respect to technical information sources and potential user bases -- there are few major limiting economic, technical or financial issues. There are several issues of secondary importance, however, that deserve mention.

The first relates to the extent to which the cost of appropriate technological information should be subsidized for the end users and to cooperating agencies as an incentive for local user education. The benefits for local agencies can be expected to rise to a point where no subsidization is required beyond the normal NTIS agent discount. The optimum time period at which this point is expected to be reached is three years, although some variation among agencies is anticipated. No reduction is proposed in the cost of products and services to end users, who currently pay U.S. prices in local currency.

A second issue relates to the definition of appropriate technology. For the purpose of this project, appropriate technology will be as defined by the Proposal for a Program in Appropriate Technology Transmittal to Congress, June 30, 1976 by AID Pursuant to Section 107 of the Foreign Assistance Act of 1961. It states:

> Appropriate technology is technology which enables developing countries to provide goods and services for their people in a manner which is compatible with their economic and social conditions. Appropriate technologies relate both to economic and non-economic goals. They are applicable to employment, output, and equity objectives, as well as goals in population, health, nutrition and education.

In addition, it is expected that appropriate technologies will have the following characteristics: 1) They will be intensive in the use of the abundant factor, unskilled labor, and economical in the use of scarce factors, capital and highly trained personnel. In the provision of services, appropriate technology relies to the extent possible on less highly-skilled labor, thereby economizing on human capital. Appropriate technologies do not demand sophisticated skills of their users. 2) Appropriate technologies are primarily based on locally and domestically-produced inputs, or on the use of national (not expatriate) personnel. 3) Appropriate technologies in physical production are economically efficient in small and medium-scale enterprises, replicable by local entrepreneurs, and often produced primarily for a local or regional market.

Appropriate service technologies are those designed to produce manpower and medical care relevant to the requirements of the poor. They, similarly, will be low-cost, accessible, and compatible with local cultural patterns.

What, therefore, is appropriate in each country's development situation will be different in every case. NTIS will focus on these differences in an attempt to incorporate appropriate technological information into its system.

Another issue relates to criteria for selection of cooperating agencies (see chart attachment Xg). All agencies currently cooperating in the project through bilateral agreements with NTIS have been selected with the advice and consent of the USAID/EMBASSY. Yet, clearly there are differences in performance among them. This may necessitate in the future either a change from one cooperating agency in a country to another or, alternatively, agreements with more than one agency in a given country. In one country, for example, the previous project evaluation indicated that more than one agency might be desirable, with suitable coordination among them. The evaluation further stated that COLCIENCIAS in Colombia, currently the poorest performer among cooperative agencies in Latin America, should be reconsidered within one year as to continuation or transfer of the agreement to another Colombian agency. In addition, the development of an appropriate technology component in each of the fifteen countries/organizations will require that each agency be reassessed on an individual basis to determine if it or some other organization might be the optimal vehicle for the scientific and technological information transfer. However, at this time no change is recommended in the guidelines which have assisted in the selection of cooperating agencies. Each selection of an agency for a bilateral agreement will be carefully considered from the viewpoint of future performance and effective local service to scientific, technical and, of particular importance, appropriate technology information users.

Perhaps the major issue is whether this project sufficiently addresses A.I.D.'s mandate to benefit the poor majority. In the first instance, that is, looking at the highest proportion of users of the information to be disseminated in the project, it is clear that the information may not deal directly with problems of the urban and rural poor. The direct immediate beneficiaries will be public and private firms, organizations, institutions, or individuals for whom access to U.S.-held technology may result in more effective selection, transfer or adaptation of technologies to promote economic growth or development and improvement of social conditions. Section 106 of the F.A.A. (Technical Assistance, Energy, Research, Reconstruction, and Selected Development Problems) provides the conceptualization and justification for the technology transfer network reinforcement. Secondly, the development of the appropriate technology component within each country can create greater optimization and efficiency in human resource use. It can be expected to contribute to employment, output and equity objectives. It will encourage the use of locally or domestically produced inputs which affect the domestic employment and output of the country.

Part II. Project Background and Detailed Description

A. Background

In recent years, the less developed countries have been seeking better access to modern technologies, in part through their "technology transfer" demands at multinational forums. AID, in turn, has been calling for a strengthening of the absorptive capacities of the LDCs. The project described herein represents a specific and realistic response to current widespread interest in facilitating a flow of technologies to the LDCs of Latin America.

The project seeks to:

1) improve access of information users in Latin America to scientific and technical information collections held by government and private organizations in the United States and worldwide; and

2) develop an appropriate technology component in each of the fifteen countries/organizations which focuses on low-cost goods and services compatible with local cultural factors.

The nucleus around which the project is formed is the large and varied collection of the National Technical Information Service (NTIS) of the Department of Commerce. This collection is based largely on information generated as a result of U.S. Government-sponsored research and development activities. It also provides access to large bodies of private sector knowledge from the U.S. and abroad.

In answer to expressed desires by host countries, NTIS will accumulate appropriate technology collections on a worldwide basis in order to develop this essential resource for LA. Over the last several years, a large number of smaller agencies have been set up with various limited objectives in servicing LDC interest in development information. The volume of business done by these organizations has grown steadily and many find the burden of prompt response to an expanding number of requests taxes excessively their structure and resources. Volunteers in Technical Assistance (VITA) is mentioned as an example. Its institutional strength lies in the ability to mobilize U.S. volunteers to analyze and recommend solutions to LDC problems. However, VITA headquarters finds much of the staff time involved in the large number of requests for appropriate technology information on the shelf. By relieving VITA and other agencies of the mechanical chores of information flow, it is likely that these agencies can apply their special abilities more effectively and generate an ever-growing body of appropriate technologies. At the same time, the centralization of appropriate technology information will facilitate the use of low-cost retrieval and dissemination techniques as well as be a real service to the inquirer now uncertain as to which agency to address his request for a particular technology.

The following list suggests some sources of appropriate technology worldwide:

Intermediate Technology Development - London
Brace Research Institute - Canada
Appropriate Technology Cell - New Delhi
Technology Consultancy Centre - Kumasi
Research Institute - Manila
Earth Resources Development Research Institute - Washington, D.C.
Division of Microprojects - Netherlands
Appropriate Technology Development Unit - Varanasi, India

Technical information is a development tool which involves a variety of resource materials and services, based both on the printed word and on audio-visual materials. Technical information services have a fundamental role to play in both regional and country development programs. These media constitute a channel of major significance for a continuing flow of U.S. technical, managerial and developmental know-how. Services based on printed and electronic media serve, in themselves, as a positive tool for knowledge. Concepts transferred for economic development can solve or facilitate solutions to specific technical and conceptual problems. Technical information backstopping and reference materials constitute an essential tool for U.S. and LDC experts engaged in specific technical assistance projects overseas. With the resource materials which can be provided, substantial time can be saved in preparatory and analytical work. The actual work of the expert is made more effective. Also, with a well-structured and appropriate supply of technical resource materials, a trained person can provide specific training and advice even for subject areas in which he is not himself an expert, thus reducing program costs and greatly extending his usefulness.

A competent LDC implementing institution is essential for effective use in-country of technical information flowing in from other lands. Without such a bridge between the knowledge-donor and the host country user, the knowledge transfer process simply does not work. The purpose of this project is to improve Latin American government information transfer services, as well as those of the private sector. The U.S. federal investment in research and development -- currently about $20 billion -- is roughly one-half the total U.S. R&D investment. Over $8 billion is directed toward civil applications. The NTIS bibliographic data file includes not only USG R&D results but also provides access to a large amount of private sector knowledge, both national and international in scope. This improvement in access throughout Latin America to R&D results relevant to development, will be achieved by broadening and strengthening the services of local agencies in twelve countries currently cooperating through bilateral agreements with the U.S. National Technical Information Service (NTIS) and by expanding this existing network for scientific and technical information service to include cooperating agencies providing similar services in seven additional countries.

In responding to expressed interest in improved access to U.S. technological information, the USG in 1974 prepared a proposal for a system in Latin America to facilitate the transfer of U.S. government-owned information and patents. Although it was not officially considered by Latin American governments at that time, this project builds upon the 1974 proposal. It also builds on over three years of directly relevant project experience with transfer of U.S. scientific and technical information to LDCs through a cooperative joint effort between TAB/OST and NTIS, an agency of the U.S. Department of Commerce. The final evaluation, entitled, "Evaluation of National Technical Information Service (NTIS) Contract for a Technical Information Network," carefully examined this experimental effort and determined it a success. An expanding network of cooperating LDC institutions, broadening awareness and understanding of the availability of U.S. scientific and technical information and means to acquire it, and the development of an appropriate technology component to aid development efforts aimed at the rural and urban poor, will further assure its success.

Improved understanding has generated an accelerated LDC demand for U.S.-owned technological information products and services. There have been steadily rising information requests to NTIS from LDCs--from essentially none when the project began in 1972 to a demand for some 18,000 specific reports in FY 76. Of this worldwide demand, Latin America accounted for 50% of the total.

B. Detailed Description

The goal of this project is to broaden and maximize the use of all science and technology information in solving development problems in Latin America. The project purpose is two-fold: 1) to improve Latin American access to scientific and technical information and patents resulting from U.S. Government investment in research and development; and 2) to improve Latin American access to appropriate technological information resulting from worldwide investment in research and development.

The project can be described in terms of two components. The first is designed to strengthen technical information service and staff capabilities of seven cooperating Latin American institutions currently linked through bilateral agreements with NTIS, to expand the technical information network to include an appropriate technology component, and to expand the network of cooperating institutions by providing services to eight additional Latin American countries. The second is designed to stimulate greater awareness of U.S. and worldwide technical information, in order to increase public and private contacts on research, development and application of appropriate technologies to meet LDC development needs.

The end of project conditions projected from these components are:

1) Local cooperating agencies in fifteen countries/organizations capable of serving as a national focal point to provide and promote access to U.S. technical information and worldwide appropriate technological information adaptable to each specific country.

2) A technology information network established through bilateral agreements, operating as three regional components (Central America, the Andean Pact Countries, and the Caribbean) with NTIS as the "switching node" in the Western Hemisphere. Each national cooperating agency will act as the switching node locally.

3) Easy and quick access to technical and scientific information. Each local cooperating agency will have one or more information scientists who have been trained in the United States and who are knowledgeable about world information sources, private and public.

4) Cooperating LDC agencies actively involved and committed to the education of potential users of U.S. technical and worldwide appropriate technological information.

5) Useful local research and development knowledge collected by local organizations in Latin America.

6) Wide application of research and development results to problem solving in Latin America.

7) New and more effective channels for exchange between Latin American R&D institutions and U.S. counterparts.

8) Increased responsiveness by Latin American countries to acquiring research and development that contributes to urban and rural development.

9) A question/response network that obtains development-specific information on a country and regional basis.

The following project outputs are anticipated:

1) Establishment of a bilateral computerized technical information retrieval network in each of three regions (Central America, the Andean Group, and the Caribbean). In each network: (a) use will be made of an existing computer facility which will be linked by existing communication lines to remote terminals located throughout the network; and (b) the computer facility will be furnished with the NTIS Data Base which can then be searched on any terminal in the network.

A search will yield summaries of all items in the NTIS collection containing information on any topic of interest. The full text of the items may be requested through the local cooperating agency, if desired. The remote terminals will be located at the offices of the cooperating agencies and at any other organization within the network countries. The cost of the data base, necessary programming and staff training by NTIS will be provided with project funds. All other costs (computer time, communication line use, etc.) will be borne by the cooperating agency or the end user except in the case of the utilization of the appropriate technology component. When an organization utilizes this component, a determination of ability to pay will be made by the Agent Representative. In the event that it is concluded the organization is unable to pay, then credit can be extended from a deposit account specifically created for this end. Other data bases--both commercial and government--will be deposited at the central computer facility, so that the information that they contain can be searched throughout the network. The possibility of interfacing, and perhaps integrating, this network with the OAS information center program will also be explored.

(2) Publication and dissemination of the catalogue entitled, "Application of Modern Technology to International Development" (AMTID). This monthly catalogue will be produced in Spanish and will highlight newly available appropriate technological information. In addition the catalogue will provide current available information of interest overseas, reannounce useful but older technical reports, advertise cooperating agency services, and alert readers to new information sources and international activities pertaining to technical information. Approximately 8,500 copies of each issue will be circulated through the present L.A. outlets. Of these, 5000 will be directed to specific

addresses.

3) Quarterly newsletters for the cooperating agencies to provide a forum for exchange of ideas and experiences, especially "success stories" about users' implementation of new appropriate technology information.

4) Approximately 25 individuals from the centers will receive training in the methods and techniques of information transfer.

5) Seminars for participating member agencies on appropriate technology information and dissemination.

6) Training for agent representatives at NTIS on methods and techniques of information transfer.

7) A translation section within NTIS capable of translating documents determined to be of greatest demand by the LDCs of Latin America. For example, documents such as "Earth for Homes," "Progress through Modern Processes and Tools," "Handbook for Building Homes of Earth," have generated enormous demand in the LDCs. These and other documents which can be identified as impacting directly on the development of the urban and rural peoples of Latin America will be translated in their entirety for distribution. Determination on which documents will be translated will be based upon criteria established by NTIS, USAID and Agent Representatives.

8) A $6,000 deposit account for each participating agency, excluding those in graduate countries, to be utilized for transfer of information in the area of appropriate technology. This deposit account will be maintained at NTIS and will be utilized when an organization is unable to financially afford the technical information requested.

9) A questionnaire in Spanish developed to enable NTIS to obtain specific information concerning the impact, utilization and suggested utilization of relevant appropriate technology information.

10) An evaluation plan to record and test, where appropriate, outputs listed above. The plan will place special emphasis on tracing success of the project in reaching the poor of countries served, with particular focus on the provision and utilization of appropriate technology information.

Inputs

This project will provide $750,000 over a three-year period to allow NTIS to provide the technical services, training, backstopping and physical inputs necessary to achieve the stated outputs and purpose.

The following project inputs will be required:

Technical assistance ($306,800). This includes:

-- Expertise of NTIS management in all phases of information science, including direct participation by the agency director, three senior staff members, and support by the entire organization.

-- U.S. technical advisory and translation services and studies related to completing and implementing bilateral agreements between NTIS and cooperating agencies. This will include frequent field visits to cooperating agencies and their "market" to assure maximum success of the program and user feedback to measure the success of the program.

-- NTIS will provide services to develop an inventory of current (in-file) documents containing appropriate technology information and list them in a series of annotated bibliographies.

-- NTIS will continue to collect all documents from ACTION/PEACE CORPS as well as documents issued by AID's Office of Science and Technology and its contractors.

NTIS will take the following steps to accomplish these tasks:

1) NTIS has contacts with all USG agencies which generate technical report literature and most of these agencies input documents to the NTIS system. However, not all agencies input all of their documents. With respect to the current program, there are two main reasons for this: (a) because it is self-supporting, NTIS charges source agencies an input fee; and (b) because there has been traditionally little or no market through NTIS for appropriate technology, many agencies have been reluctant to pay the above fee. Now, however, NTIS will waive the input fee on documents relevant to this program. Also, the program itself will create a market for appropriate technology materials. With these barriers removed, the NTIS Chief of Acquisitions will seek out appropriate technology materials which have not been made hitherto available through NTIS. This process has already started. For example, at one time virtually all U.S. AID unrestricted publications were made available from NTIS. AID subsequently ceased to input these publications because of the fee. Now that NTIS has agreed to waive the input fee, AID will once again make its documents available through NTIS. Another example that might be cited is the case of the U.S. Department of Agriculture. In the past, USDA has made few, if any, of its reports available from NTIS. Now, USDA's Economic Research

has agreed to make available through NTIS publications relevant to the LDCs.

2) Another source of information appropriate to the special needs of the LDCs is the LDCs themselves. NTIS will require that cooperating agencies identify and collect appropriate technology materials originating in their own countries. These materials will then be made available through NTIS.

3) A potential source of appropriate technology materials is, of course, international organizations and nongovernment U.S. organizations. At present, NTIS has no systematic means of identifying and evaluating these publications. There is a proposed AID/NTIS program now under evaluation which would involve, as one of its components, an ongoing inventory of U.S. public domain documents of potential interest in the LDCs. Until such time as this program is operational, country desk officers, AID missions, and other contacts in the development community will be asked to suggest relevant documents which come to their attention. It is to be expected that a number of information sources will have their own distribution systems and will not wish to have their efforts duplicated by NTIS. In these cases, NTIS will publicize the availability of the materials through AMTID and the cooperating agencies.

Consideration must now be given to a mechanism for delivering this appropriate technology into the hands of its potential ultimate beneficiaries--the economically disadvantaged. A basic assumption here is that technology represented by a document is of little direct use to the poor. It must pass through the hands of some intermediary capable of translating information printed on a piece of paper into some sort of useful activity. These intermediaries--the assistance groups, the volunteer organizations, the field agents--are the immediate targets of the program.

There is probably no country in which a single organization concerns itself with the entire range of problems of the poor. On the other hand, experience has shown that there are definite advantages to working with only one cooperating agency in each country. For this reason, NTIS will use an existing broad-base information dissemination organization as the central node for the distribution of appropriate technology to the target groups.

The NTIS cooperating agencies are broad base information dissemination organizations. That was a primary criterion used in their selection. And this will continue to be a major consideration in the selection of future cooperating agencies. It follows, then, that the cooperating agencies will serve as the central nodes of the program in their respective countries.

It will be the responsibility of the cooperating agencies to seek out, contact and work with the target groups. In cases in which the basic mission of the cooperating agencies does not permit or is not conducive to this kind of activity, one or more "subagents" will be established. These subagents will be an organization which normally works with the target grups, and which has the capability of carrying the project to those groups. An example of such a subagent would be an information center within a ministry of housing, public health, or agriculture.

The subagents will promote appropriate technology materials to the target groups, accept orders (which would be charged against the NTIS deposit account number of the cooperating agency), participate in and help to organize seminars and exhibits aimed at the target groups. They would be eligible to send staff members to the NTIS Workshop/Training Program Sessions, and accrue certain other benefits provided by the Program.

Several special techniques will be used in an effort to "zero in" on the target groups and, ultimately, their clientele. Perhaps the most important will be a series of in-country seminars designed to introduce the target groups to the importance of technical information to their activities, and to available sources of this information. Secondly, special bibliographies covering selected Appropriate Technology subjects will be published in Spanish. Third, selected high interest documents will be translated into Spanish. The cooperating agencies, subagents, and U.S. AID missions will assist in selecting materials for translation. Finally, since the target groups are the kinds of organizations which are usually badly underfunded, a certain amount of financial assistance will be provided them for the purchase of appropriate technology materials.

One final strategy will be mentioned. That is, NTIS will seek greater involvement of the U.S. AID missions in these programs that will be done through mailings describing the program and its activities, as well as through personal contacts. The missions will be asked, where possible, to assist the program in several ways. These include: Identifying, contacting, and evaluating potential cooperating agencies, subagents, and target groups; selecting documents for translation into Spanish; alerting NTIS to appropriate technology materials or sources which might not otherwise come to its attention.

Training ($53,000). This includes:

-- Seminars (12) in Latin American countries to foster closer ties between cooperating agencies and local industry, government and universities desiring improved access to U.S. scientific and technical information and patents, and all organizations desiring

access to appropriate technology and information focused on the poor. The seminars will provide a showcase for the LDC agency/organization to display its expertise and relationship with AID/NTIS constituency. The seminars should result in increased confidence of the LDC agency staff in itself and should increase the confidence of the clients in the agency. Increased demand for U.S. technical information utilizing appropriate technology will also be a product of these seminars.

-- Workshops at NTIS to introduce cooperating agencies to model information systems and services and to transfer know-how concerning acquisition, input processing, storage and retrieval, announcement, marketing, reproduction in both paper and microform, and request processing. Participants in the workshops will be introduced to many other major elements of the U.S. information industry -- private as well as government. Elements of the workshop will be produced on video tape for use by cooperating agencies in training their support staff and other national information entities (Attachment Xc) with which they work. NTIS will offer follow-up courses for former workshop participants, specializing in subjects of most need, such as user education.

Commodities ($20,700). These include:

-- Special commercially available equipment and materials which are particularly compatible with the mission and objectives of each cooperating agency (e.g., the VSMF system of manufacturers catalogues and specifications on microfilm, U.S. patents on microfilm.)

-- Materials and commodities for cooperating agencies, such as microfiche reader-printers, NTIS microform documents, and the annual Government Reports Announcements & Index.

Other Costs ($369,500). These include:

-- Custom and priority handling of LDC information requests to assure fast and easy access to U.S. scientific and technical information requests, referred to by other sources.

-- User education and marketing support by NTIS for cooperating LDC agencies, to supplement local efforts to achieve outreach to potential users of U.S. technical information. This effort will include space advertising in international periodicals; placement of "success stories" regarding users of technical information in host-country press; direct mail advertising for AMTID; participation in the U.S. Department of Commerce's export promotion program in such events as exhibitions at U.S. trade fairs abroad, catolog exhibtion trade missions; participation in programs organized by international organizations such as the OAS, FID/CLA, and inclusion of the project in NTIS's overall marketing program which, while aimed at the U.S. and industrialized markets, also reaches the LDC's.

-- A Deposit Account maintained at NTIS for specific participating agencies involved in the transfer of appropriate technological information.

-- Airmail postal subsidy for items requested from NTIS through cooperating agencies. This subsidy will be utilized exclusively for transfer of information dealing with appropriate technology focusing on the poor. It will not be made available, however, to the graduate countries of Mexico Argentina, Venezuela and Brazil.

NTIS Contribution

In addition to the inputs mentioned above, NTIS will continue to contribute "in kind" as follows:

1. Provision of competent and innovative managerial leadership, beyond the positions allocated in the AID input. These include the Agency's director, the entire Promotion Division staff of 14 (10 professional and four clerical) and 14 technical information specialists responsible for analyzing information pertinent to LDC's, and administrative support procurements, travel, legal, budget, accounting and personnel). These manpower costs, if directly charged to the AID project costs would total a minimum of $10,000 for work to be performed in FY 1977.

2. Subsidization of sales to LDC's, in two ways:

a. In order to recover special handling and higher costs for foreign orders, NTIS in the past has charged $2.50 above the price of a document per item shipped. Beginning in January, 1977, NTIS is instituting a new pricing system for foreign orders. The new foreign price

will be double the domestic price for those countries not supported by this project. U.S. prices for information are considered a great impediment to access in most LDCs. The lower the level of development the greater this sentiment. NTIS will not apply this pricing system to project countries. The NTIS contribution to the project in foregoing this charge during FY 1977-79 will be approximately $422,500, considering the estimated orders from project countries.

b. Cooperating agencies receive a 25% discount on transactions. This is a commission credited to their accounts, and a loss of income to NTIS. FY-1976 commissions totalled $13,353 for twelve active agencies. This amount will increase as more agencies join the project and as each agency becomes increasingly active. Commissions to agencies are projected to $118,125 (FY-1977-79).

3. NTIS will continue to provide its mailing lists of clients to the cooperating agency. Average value per customer is $50.00 annually.

Host Country Contribution

Generally speaking, the LDC cooperating agencies are government organizations. Therefore, their governments' contribution is that of: (1) establishing the agency as a development tool and enacting the necessary legislation that will enable it to function as an arm of the NTIS network; (2) providing an annual operating budget; and (3) stimulating a receptive environment in the country for R & D information transfer.

Each cooperating agency contributes:

1. A $2,000 cash deposit in its NTIS account to act as a credit toward future purchases.

2. Management and clerical time to promote NTIS products and services; processing orders resulting from this effort; floor space and office overhead costs to house this new function; travel throughout the country to educate potential users and promote the products and service; participation in the NTIS Information Systems workshop in Washington, D.C.; postage costs to distribute AMTID to the established user list and to the organization's own mail list.

As promotion increases, so demand and customer service will increase. Actual costs will differ from country to country but the cost of such an effort (assuming an average of two full-time employees for most agencies) will be approimately $25,000 for the first year, increasing as the sales pace increases.

Assumptions

Key assumptions for goal, purpose and output relationships are that:

-- Countries will acquire and utilize technological information rationally if a system exists to facilitate its transfer and use.

-- Countries will continue to strengthen their science and technology infrastructure and their efforts to expand and broaden the outreach of their scientific and technical information services in response to growing national needs.

-- A significant and increasing share of U.S. and worldwide research and development generates publicly-available information of value to problem-solving in developing countries.

A detailed Logical Framework appears in Annex 1.

Part III. Project Analysis

A. Technical Analysis

The project described herein has proven relatively successful during a TAB/OST-NTIS experimental project from FY 72 through FY 75. An extensive evaluation was conducted in March of 1976 and, consequently, an elaborate and lengthy technical analysis is not necessary at this point.

Given the success of NTIS efforts thus far in improving access to U.S. science and technology information (as reported in the TAB/OST evaluation document), i.e. illustrated by the more than 9,000 requested research abstracts and reports distributed to Latin American countries in 1976, it would appear that this method of information dissemination is appropriate. While other methods of information transfer will be explored during this project period, such inputs as the training of staff in host country agencies, pro-

vision of available information through NTIS catalogues, the response of NTIS to specific requests for information user education, the development of an appropriate technology component within NTIS, follow-up, and evaluation will all continue to assure that the project purpose is accomplished.

A recent sampling of user demand illustrates the pragmatic, problem solving nature of the type of information currently requested by LDC professionals.

Field of Interest	% of Demand
Engineering materials	46
Environmental Pollution & Control, Water Resources	16
Energy Sources	11
Agriculture, Aquaculture and Food Technology	11
Information Sciences, Computers, Communication	11
Management, Administration	5

There are no special impediments known at this time which might be important in limiting the project's success. A survey conducted in the previous project indicated that although most material made available through the NTIS program was in English, it did not prove to be a substantial barrier to its use. However, as the appropriate technology section is developed, the materials will focus more directly on the urban and rural development problems of each country. In response to this focus and to the March, 1976 Evaluation, which indicated that some of the current organizational users and many of the projected users do not read English, many of the materials disseminated under the appropriate technology component will be translated into Spanish.

B. Financial Analysis and Plan

1. Return on Investment

The immediate intended beneficiaries of this project are public and private organizations and individuals in Latin America for whom access to U.S. technology and

world-wide appropriate technology may result in more effective selection, transfer and/or adaptation of technology. This can be considered the initial target group. However, as noted in the section on project issues, the ultimate target group represents a very much larger faction of the population (those who receive the benefits of appropriate technology transfer in the urban and rural areas of Latin America) which will benefit from the redeployment of savings and new income generated from improved choices in industrial and rural research and development and in public investment.

A profile of some 4,000 regular users of technical information in LDC's shows the following distribution:

Business /Industry/Professional	79%
Government	7%
Individuals	5%
Libraries	4%
Universities	4%
Other Categories	1%

This distribution is based upon the previous NTIS project which mainly focused on the transmittal of scientific and technical information to professional groups. The current project, while not disregarding the professional groups, will also focus its efforts on the development of an appropriate technology component for the dissemination of information to organizations and individuals that deal specifically with the urban and rural poor development problems in each of the nineteen countries of Latin America.

2. Financial Plan

The cost estimate and financial plans presented on the following two pages were prepared jointly by OST, NTIS, and AID. They are based on cost experience in the recently terminated project. The project will operate with a major cost attached to the components for preparation and transfer of information products and services and user education.

SUMMARY COST ESTIMATE AND FINANCIAL PLAN
(US $ 000)

USE	Latin America AID (FX) LA/DR
1. Preparation and Transfer of Information, Products and Services	306.8
2. Latin American Country Seminars	27.0
3. NTIS Information System Workshops	26.0
4. User Education	297.5
5. Commodities	20.7
6. Deposit Account	72.0
TOTAL	750.0

dd

INCREMENTALLY FUNDED PROJECTS

PROJECT SUMMARY -- AID APPROPRIATED FUNDS

(in $ 000 or equivalent)

Country LA Regional PP New X Rev. #

Project # [illegible] Title S&T Information Transfer

Cost Components*	Budget Year FY77	FY78	FY79
1.) Preparation and Transfer of Information Products and Services			
Salary & Benefits U.S. Technicians	49.2	86.	95.4
Project Mgr. Special Asst. Senior. Spec. Acting. Spec. Program Asst. Secy Writer-Editor Clerk-typist			
NTIS Overhead (2%) of Personnel Cost	1.4	1.5	1.8
Office space, communication utilities	7.	7.	7.
Mail Processing Postage	20	20	10
2.) LA Seminars		12.	15
3.) Student Subsidy for NTIS Information Systems Workshop	8.	10.	8.
4.) User Education			
AMTID (graphics, print, mailing)	50	60	70
Print Advertising	5	5	5.
Audio-visuals	20	10	10
Exhibits	6	6	6

*Project funds will be transferred to the National Technical Information Service, U.S. Department of Commerce, under a Participating Agency Service Agreement (PASA) for project implementation.

BEST AVAILABLE COPY

5.)	U.S. Advisors/ Translation/ Evaluation				
	Travel				
	Air fare	3	9.5	10	
	per diem	3	9.0	10	
6.)	Commodities: Info. resources, Microfiche equip. VSAF	5.4	6.9	8.4	
7.)	Deposit Accounts	72	—	—	
	Total	250.0	243.4	256.6	= 750.0

SUMMARY COST ESTIMATE AND FINANCIAL PLAN (3 yr.)
(US $ 000)

PROJECT PLAN

Source	AID FX	HOST Countries (Co-op averages)	NTIS	OAS	TOTAL
-use-					
Preparation & Transfer of Information Products & Services	306.8	690.0	$545.7	----	$1,580.5
Seminars	27.0	30.0	-----	30.0	96.0
NTIS Information Systems Workshops	26.0	45.0	6.0	45.0	122.0
User Education	297.5	210.0	165.0	-----	704.6
Commodities	20.7	90.0	0.3	100.0	245.5
Deposit Account	72.0	----	-----	----	90.0
TOTAL	$750	$1,125.0	$750.0	$175.0	$2800.0

IN-COUNTRY SEMINARS COST ESTIMATE

AID FX ($27,000)

NTIS Participants

Travel	$ 9,900
Per Diem	$ 3,600
Shipping of Exhibits and Printed Materials	$ 2,700
Preparation of Printed Materials in Spanish	$10,800

HOST ($30,000)

Rental of Space and Fixtures	$10,410
Publicity	$ 8,740
Refreshments	$ 1,750
Interpreter	$ 4,400
Transportation (within Host city)	$ 700
Management Costs (Salaries, costs, etc.)	$ 3,000

OAS ($30,000)

Speakers from outside Host Organization and from other countries (Fees, Tavel, Per Diem)	$ 6,000
Participants from other countries	$24,000

INFORMATION SYSTEMS WORKSHOPS
COST ESTIMATE

AID FX ($26,000)

Salaries of Personnel not normally assigned to this project	$ 7,000
Field Agent Training at Ga. Tech (3 sessions)	$ 9,000
Materials (including study and reference texts)	$ 2,100
Travel and Per Diem for selected individuals	$ 7,400

HOST ($45,000)

Travel and Per Diem	$45,000

NTIS ($6,000)

Transportation (in town)	$ 5,000
Computer Time (on-line search training)	$ 700
Overhead	$ 300

OAS ($45,000)

Travel and Per Diem Assistance	$35,200
Tuition to LDC Information Specialists not employed by a Cooperating Agency	$ 9,800

	HOST COUNTRY CONTRIBUTION (U.S. 000)
1) Preparation and transfer of information products and services	
a) Personnel salary and benefits	0.5
b) Floor space, utilities, communications	172.5
c) Request processing and other non-promotional postage and delivery costs	103.5
2) Latin America country seminars includes floor space, fixtures, purchased services, etc.	3.5
3) NTIS Information Systems Workshop (travel costs)	5.0
4) Marketing and promotion	
a) Preparation and printing of brochures and other direct-mail advertising materials	113.4
b) Print advertising	10.5
c) Exhibits	18.9
d) Mailing and AMTID and other promotional materials	67.2
5) Commodities	90.0
6) Inflation factor	60.0
TOTAL	1125.0

NTIS Staffing

Title	Period (man/months)	Amount FY 77	Period*** (man/months)	Amount FY 78**	Amount FY 79**
Project Manager	3	$ 8,729	4	$12,000	$14,000
Special Assistant	6	14,989	6	$15,000	17,000
Information Spec Specialist	6	12,291	8	20,000	22,000
Consumer Services Specialist	1	1,178	6	8,000	8,500
Secretary	1	931	4	4,500	5,000
Secretary	3	2,326	12	9,500	10,500
Writer/Editor	1	1,120	2	3,000	3,500
Document Services Clerk	1	877	4	3,800	4,200
Direct Mail Specialist	1	883	4	4,400	4,800
Total		$43,324		$80,200	$89,500

* For FY 77 only.
** Estimated.
*** For FY 78 and FY 79.

SOCIAL ANALYSIS

The proposed NTIS project is aimed at a combined audience of professionals as well as those identified as comprising the economically disadvantaged.

There are several reasons for this dichotomy.

1) The technical sophistication of current available information is largely, though not exclusively, unsuitable for direct application by the economically disadvantaged. This is because in some cases the implementation of sophisticated technological or scientific techniques requires resources, entrepreneurial skills and coordination not available at the lower socioeconomic levels. However, the information will have direct application to the poor of Latin America through usage by scientific and technological personnel.

2) Those individuals or groups who have been identified as comprising the economically disadvantaged have more specific information requirements. These requirements, while lacking the sophistication of high level technology and centering primarily on the intermediate level or the "appropriate technology level," can provide and contribute significantly to the amelioration of under-utilization of economic resources.

Theoretically any program that acts to improve the general state of economic development (apart from economic growth) of a community can also be expected to impact beneficially upon the economically disadvantaged. Although this is a long-term process that is difficult to quantify, in the short run the thrust of this project, with its new emphasis on poor majority utilization of appropriate technologies, will create a more favorable climate for low-level infrastructural development and will impact directly upon the rural and/or urban poor.

The NTIS program is likely to have this effect. Experience with the broad spectrum of information requests has shown that programs with an appropriate technology information base have produced decisions or innovative developments that contribute directly to economic improvement in the welfare of the poor majority. A typical example of this is that in Ecuador a decision was made to establish a particle board factory on the basis of information obtained from NTIS.

The fact that more extensive examples of success of NTIS services are not documented is due to the reluctance of many industries in the LDCs to supply quantitative data to support examples such as the above. The proposed project has a component ("case studies") which will seek to document the effects of technical information on employment and other economic indicators.

There is another broad area in which information transferred through the proposed program can be expected to impact on the lower socio-economic levels. This is the "quality of life" area, especially as affected by the physical living environment. It can be argued that an adverse living environment, particularly an adverse urban environment, affects the poor to a proportionately greater extent than it does with respect to other socio-economic levels. Therefore the poor will benefit to a proportionately greater extent from improvements in the environment that would affect all socio-economic levels.

In view of this, it is interesting that among the categories of NTIS information most in demand in the LDCs are "urban planning" and "pollution control." And there is evidence that this information is being put to good use. An example follows"

> The city of San Salvador suffers from particularly noxious, irritating air pollution. Major contributors to this problem are the numerous smoke-belching buses. When the city decided to attack this problem, it consulted with CENAP, which acts as the NTIS representative in El Salvador. As a result, the city purchased a number of relevant technical reports from NTIS. On the basis of information contained in these reports and others, the city is to install a more efficient urban transportation system based on the use of electric trolley buses. Among the benefits will be cleaner air, cheaper urban transportation, and a better system of routes and schedules. The poor are among the chief beneficiaries.

In addition, the NTIS collection now contains a certain amount of information dealing with low-and intermediate-level technology subjects which actually may be of immediate use to the poor. For example, one of the best selling documents in the LDCs has been Handbook for Building Homes of Earth. Furthermore, NTIS is in the process of acquiring many additional titles of a basic how-to-do-it type from the Peace Corps. During the proposed project, an effort will be made to collect and make available additional documents of this type, from both U.S. and LDC sources.

However, it must be recognized that written technical information, even at the low technology level, is not generally very useful to the poor. It must somehow be translated into action, and this translation must be done by some intermediary organization working with the poor. NTIS currently supplies information to many such organizations.

Also there are numerous examples of transmitted information about crop rotation, irrigation techniques, and alternative sources of tillage power that are ecologically and environmentally sound yet contribute directly toward increasing agricultural production.

To summarize:

1. The proposed program impacts on the poor by providing information which will help to:

a) create new job opportunities,
b) improve the quality of life in rural and urban areas, and
c) increase agricultural production.

2. Some low-and intermediate technology is now available from NTIS and more will be sought out and added.

3. Much information will be supplied to organizations through NTIS mailing lists which work with the poor and which can translate the written word into useful action.

NTIS will also establish linkages with AID missions to backstop the information needs of current and proposed projects. This closer involvement and interaction with mission staffs directly responsible for the conceptualization, design and implementation of projects focusing on the urban and rural poor should contribute to a greater optimization and impact of agency proposed programs.

D. Economic Analysis

As stated, the purpose of this project is two-fold: 1) to improve Latin American access to scientific and technical information and patents resulting from U.S. Government investment in research and development; and 2) to improve Latin American access to appropriate technological information resulting from worldwide investment in research and development. This information will be disseminated to those institutions, businesses, industries, private and public organizations, and individuals which can make maximum use of what technological information is provided.

It has not been possible to analyze this project on the basis of a quantified judgment of its effect on the economies of the project countries so that the economic benefits obtained from transfer of technical information can be traced only with difficulty. In fact, the National Science Foundation (NSF) has proposed a project on the economics of information transfer which will attempt to determine quantitatively the real value of scientific and technical information under various conditions of use. Information values obtained by NSF might eventually be used by AID to estimate use/benefits and cost effectiveness of technical information transfer to LDCs. For the present, it is possible to reach only broad conclusions, based on the high level of document sales obtained in the previous project, as to the probable economic impact of this proposed NTIS follow-on project. The array of unquantified economic benefits, as against the modest costs of obtaining the information and transferring it, qualify the project as cost effective and economically justified for AID purposes.

The LDC countries themselves have a very clear appreciation of the economic benefits to be obtained from the transfer of technology and technological information. They recognize the savings to be obtained from not having to duplicate the R&D involved. They clamor for greater opportunity to select, acquire and utilize technological information. The NTIS project directly responds to this strongly expressed need.

This follow-on project builds on an intensive three-year effort to define and develop the LDC technological information market in Latin America. The robust and growing project-country markets demonstrate the success of that effort. The overall economic effect of the follow-on project will be an accumulation of economic benefits obtained by the whole group of end users who make up the growing market.

Other questions which merit attention include:

1) Does the utilization of scientific and technical information aid in economic development?

2) Does the agent/representative possess the necessary manpower to act as an effective intermediary and catalyst between the developing country and NTIS?

3) Will the appropriate technologies be adopted by LDCs' institutions on terms that are both economically and socially sound?

4) Will assimilation and implementation of new technologies by LDC institutions increase employment investments, savings, and consumption, or will this create considerable frictional or structural unemployment?

As stated, these issues and questions can only be answered definitely over the long run. However, steps should be taken in the short run to assure that the transfer of technology does effectively and efficiently enhance the economic development of LDCs and lead to amelioration of the economic and social conditions of its poorer citizens. From this point of view pertinent issues are addressed.

Governments use technical information for economic planning purposes, while other types of institutions may employ it in libraries, scientific and technological research, and training. For instance, information on energy conservation goes to governments which will be able to use it in long-run national energy resource-saving programs. Information on this and other U.S. Government research findings is most valuable to the emerging LDC scientific community and has long rang capability to contribute to economic development. Those in the category of government and institutional end users, however, are already almost totally subscribers to the NTIS service. So it is to the second category, the direct users, that the project must look for new market growth and more immediate direct generation of economic benefit.

The LDC buyers who use imported technical information for problem solving in their operations include R&D managers, engineers, consultants, and similar professionals. Unfortunately, NTIS has only a small collection of case histories wherein it can be demonstrated that a specific piece of technical information was applied to obtain a given production increase. (Evaluation of the previous project called for the accumulation of more case histories to guide future development efforts.) Yet the rapid growth in private sector end users continuously supports the assumption that availability of a wide choice of technical information will result in wide use by LDC consumers who value the productive potential of the information well above its cost. Furthermore, where production increases have occurred, increases in all factor incomes result.

2) Will assimilation and implementation of new technologies by LDC institutions increase employment, investment and consumption, or will this create considerable frictional or structural unemployment?

Analyzing the contribution of the successful adaptation of new technologies to economic growth or development is difficult. The question of whether assimilation of new technologies by LDCs has increased employment, investment, savings and investment remains to be answered.

Qualitative or quantitative changes in the factors of production should enable the public or private sector to obtain more productivity within the constraints of resource availability. In the private sector this would be translated into more profits, which should create more investment and more employment. Under certain circumstances this situation has tended to create unemployment, and this problem will have to be addressed on a continuous basis through the life of the project. With increased incomes and employment, consumption and saving will increase, thereby creating more demand which would be translated into more investment and more employment.

In the public sector, profit may not be the primary inducement for investment. However, efficiencies of labor and other factors should reduce the opportunity cost of resource utilization and permit a reallocation of these "saved" resources to other areas. This also, because of resource allocation efficiencies, could result in increased investment, employment, incomes consumption, and saving.

3) Are appropriate technologies likely to be adopted by LDC institutions on terms that are both economically and socially sound?

This question perhaps can best be answered in light of the U.S. Government's role in LDCs. One U.S. role is to make freely available the conceptual tools and information needed to encourage growing technological independence. Our approach to this is to make accessible

to Latin countries and institutions the ideas, people, institutions, and reservoir of hard science and technological information that are the bases of much of our own complex technological society. The nature of technology transfer and economic development is such that the selective and productive application of these tools is the responsibility of the developing country. So are national planning, assessment of priorities, resource allocations, understanding of the technology market, selection of appropriate technologies, local adaptation, negotiation of necessary legislation, governmental follow-up and linking up of productive sectors of the economy. It should be noted that the Science and Technology project has had designed into it an evaluation of technologies that have been successfully adopted by LDC institutions. This evaluation will take the form of a quaterly bulletin that will be based upon the utilization of technologies by LDCs. In addition, by working with technology information specialists, host country officials and the users of the "appropriate technology," additional evaluatory studies can be made to determine the negative or positive efforts of the technology transfer.

Technical information is also delivered to the LDCs at a very modest price relative to the U.S. cost of producing and transferring the information. Information from U.S. Government R & D represents a sunk cost to the U.S. Government, but Congress has directed that the information be used for public benefit by being made publicly available after serving its original purpose. NTIS charges depositing agencies for its services in retaining the information in producible form. The price charged for the subsequent sale of the information in the U.S. and abroad represents actual storage and processing costs to an agency which operates on a profitless, cost-recovery basis. Project subsidies to help establish local marketing agencies bring the information cost to project countries down even further. The value of a piece of appropriate technological information considered against its actual cost to the LDC (and the original cost of the U.S. R & D that produced it) provides an indication of the potentially favorable cost/benefit ratio to the LDCs of this form of technology transfer.

4) Does the agent representative possess the necessary manpower and capability to act as an effective intermediary and catalyst between NTIS and the developing country?

A network of locally based "technology agent" organizations has been created in twelve developing countries as outlets for NTIS services and products. The agents either are private entrepreneurs or act as part of a government ministry for technology or economic development. The local agent is selected by his own government and intensively trained by NTIS in providing information service and products. The agent performs marketing, local promotion, order handling and customer service, in return for a 25% discount from listed prices. The local agent has been determined by NTIS to be an effective vehicle to provide a developing country easy and inexpensive access to the ever-growing store-house of U.S. government-sponsored science and technology. The agent also can form partnerships with institutions in the country to help them strengthen their awareness of available resources and thus create user capabilities as a longer term benefit for future development. Local agents, indigenous to their respective countries and cognizant of the respective needs of various institutions, can expand and modify their services according to customer and national needs. Furthermore, because of the somewhat related logistics involved, horizontal linkages can be developed that will facilitate a more effective triangular relationship between NTIS, agent representatives and technological users.

A.I.D. and Other Relevant Experience

The exploitation of science and technology to aid national economic, humanistic and industrial development has been an especially active program of the U.S. government in the past two decades. Not only have science and technology been focused on the problems of U.S. national development, but also new strength has been given to the long-standing policy of sharing government-sponsored science and technology with other nations.

How to facilitate the application of modern technologies in development utilizing scientific and technical information is a problem of serious concern to both developing national governments and development assistance agencies.

In addressing the problem, AID has found that when a capability for applied research builds up within a nation, the need for information resources (identifying, locating, acquiring) is recognized by the national government and the academic community. However, the vast quantities and qualities of information available has complicated efforts to find practical technological information that can actually be utilized.

Therefore effective management of scientific and technological information is the critical first step in employing technology for development. The costs of information management within the United States involves investments amounting to billions of dollars. Sophisticated expensive techniques are available to store retrievable information to assure that it can reach the final user in a readable form when he needs it. This type of system, however, cannot be duplicated in a developing country. It is economically prohibitive. A.I.D., through its Technical Assistance Bureau, has been exploring ways to transfer appropriate scientific and technical information to developing countries in an efficient effective manner for several years.

The Agency currently funds a project being implemented by the National Technical Information Service (NTIS) of the Department of Commerce. Working with NTIS, A.I.D. developed an alternative to standard technology transfer approaches. NTIS has established working relationships with twelve agencies in as many Latin American countries. These agencies form a resource for business, industry investment and education institutions to secure science and technical information. NTIS works closely with the agencies to train staff, to provide monthly catalogues of available information and to respond to requests for abstracts which may solve science and technological research and development problems. Included in Attachment Xk is a report from the AID TA/OST Project (International Technical Information Network). This project was in a holding pattern during this period (TQ). No AID funds were provided during the first quarter of FY 77 and no effort was made to expand the program. Nevertheless, sales from the transfer of information did increase substantially.

Other Donor Coordination

Three Latin American organizations have been approached in the design of this project.

The OAS Office of Science and Technology works with member institutions to strengthen information resources and capabilities. NTIS and the OAS have explored points of cooperation and have identified three potential areas for future coordination. They are: (1) NTIS Information Systems Workshops. Persons involved with information are in agreement that basic orientation to all existing resources is an urgent need. Specifically, the OAS has expressed interest in funding either: (a) travel and per diem for attendees at the three week NTIS training course; or (b) a fourth week, custom-designed to provide additional specialization of an attendee at a specialized information center in the field of interest most pertinent to his organization's programs. (2) Latin American Country Seminars. User education is considered another major need in Latin America. For the cooperating agencies in the NTIS Information Network this means educating a variety of actual and potential users. They range from small, medium, large and transnational businesses (including professionals such as engineers and doctors), to university professors and librarians, to government planners and officials. Very few individuals in Latin America are accustomed to using technical reports on consulting resources available in-country, nor are they aware of the vast array of information available for problem solving. The technical information seminar program is designed to address these three handicaps to technology transfer in Latin America. (3) Commodities. Information resources and systems designed to build a center's ability to respond rapidly and competently to requests are the types of commodities which OAS would like to coordinate for this project. Specifically, the Visual Search Microfilm System (VSMF) is a commodity which is of value in answering manufacturing and engineering technology needs. Partial funding of such systems is of interest to the OAS.

An example of NTIS-OAS cooperation is an ongoing project to complete a census of all scientific and technical research facilities in Latin America. This project joins OAS's survey and compilation effort to NTIS publishing expertise and will result in an inventory of Latin American institutions and their capabilities.

NTIS interest in two regional organizations is to consolidate regional networks as a way to accelerate information networking. An agreement was recently concluded with Instituto Centro-americano de Investigacion y Technologia Industrial (ICAITI) which names six member national organizations as cooperating agencies under ICAITI. Manpower resources have been allocated by all six national institutions. This investment is expected to rise as activity accelerates.

The ongoing NTIS/OST project has also been endorsed by the Consejo de Cartagena in Lima. The Andean Development Corporation (CAF) in Caracas has expressed great interest in buying NTIS expertise in establishing a new business and technical information center to serve its members in establishing new export enterprises and local market ventures. Both CAF and ICAITI have expressed interest in supporting the Latin American Country Seminar program.

Women in Development

Section 113 of the Foreign Assistance Act reads: "Integrating Women into National Economies. Section 103 through 107 of this Act shall be administered so as to give particular attention to those programs, projects and activities which tend to integrate women into the national economies of foreign countries."

This project will obtain assurances and monitor activities of the agent representatives, who act as the liaison between NTIS and the various institutions in LDCs, to assure that women are integrated to the maximum extent possible within the structural organizations of the various participating agent representatives. This project also presents a specific opportunity to enhance the role of women through technological information transfer. Historically, relatively larger number of women are associated with library and information sciences. The majority of representatives of co-operating agencies trained at NTIS has been women and the trend toward involvement of a larger number of women in the project is expected to continue. This trend will be encouraged in the process of negotiating all future co-operating agency agreements.

EXAMINATION OF NATURE, SCOPE AND MAGNITUDE OF ENVIRONMENTAL IMPACTS

Description of the Project

The National Technical Information Service (NTIS) under the previous grant from the Technical Assistance Bureau, established distribution centers for the dissemination of U.S. scientific and technical information in twelve Latin American countries. The grant afforded NTIS the opportunity to provide the twelve host country agencies or centers training in information transfer, access to U.S. government-sponsored research results, and a service center from which to receive non-government sponsored research results. This grant will allow NTIS to expand the volume and scope of seven existing centers and to add eight new centers to the system. Within this expansion of services, an appropriate technology component will be developed and incorporated into each of the existing centers. This appropriate technology component will be designed to develop the capacity of LDC institutions to serve as effective distributors of all technical information especially that which is identified as "appropriate technology" focussed on the urban and rural poor of each country in Latin America. NTIS will provide the necessary technical backstopping services to facilitate the above expansion.

The project will be executed by the National Technical Information Service of the U.S. Department of Commerce under a RASA.

Project inputs are designed to develop the capacity of LDC institutions to serve as effective distributors of all technical information, including that which is identified as "appropriate" for their service area. This will be accomplished by providing [illegible] training, [illegible] and [illegible] assistance. [illegible] will [illegible] in [illegible] of [illegible] assistance in [illegible] of information [illegible] by [illegible] and appropriate technology. The LDC institutions are identified and [illegible] on the basis of their potential to serve as effective distribution points, to [illegible] technical information. This project also makes it possible for NTIS to provide the LDC consumers information at a more affordable price.

At the end of the project period a total of 15 distribution agencies will [illegible] technical and scientific information to LDC consumers in Latin America. These agencies will be linked to the NTIS organizational components in the United States.

BEST AVAILABLE COPY

INITIAL ENVIRONMENTAL EXAMINATIC

Project Location: L. A. Regional

Project Title: Science and Technology Information Transfer

Funding:

FY 77	$250.0	Grant
FY 78	250.0	Grant
FY 79	250.0	Grant

IEE Prepared by: Raymond J. Dunbar I.D.I.

Reviewed by: James F. Smith, Acting Chief, LA/DR/EST
Hasan Hasan LA/DR

Environmental Action Recommended: The /LA/DR project committee for the Science and Technology Information Transfer Network has undertaken a complete Initial Environmental Examination (IEE) of the impact aspects of the project and has arrived at a recommendation for a Negative Determination as indication on page 6. Threshold Decision Section of the I.E.E.

Concurrence: Date:

I have reviewed the Initial Environmental Examination prepared by the project

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-areas 1/	Impact Identification and Evaluation 2/
A. LAND USE	
1. Changing the character of the land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	N
d. Changing soil character	N
2. Altering natural defenses	N
3. Foreclosing important uses	N
4. Jeopardizing man or his works	N
5. Other factors	
WATER QUALITY	
1. Physical state of water	N
2. Chemical and biological states	N
3. Ecological balance	N
4. Other factors	

1/ See Explanatory Notes for this form.

2/ Use the following symbols:
N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM 2

C. ATMOSPHERIC

1. Air additives ---------- N
2. Air pollution ---------- N
3. Noise pollution ---------- N
4. Other factors

D. NATURAL RESOURCES

1. Diversion, altered use of water ---------- N
2. Irreversible, inefficient commitments ---------- N
3. Other factors

E. CULTURAL

1. Altering physical symbols ---------- N
2. Dilution of cultural traditions ---------- N
3. Other factors

F. SOCIOECONOMIC

1. Changes in economic/employment patterns ---------- L/M
2. Changes in population ---------- N
3. Changes in cultural patterns ---------- N

IMPACT IDENTIFICATION AND EVALUATION FORM 3

G. HEALTH

1. Changing a natural environment — N
2. Eliminating an ecosystem element — N
3. Other factors

H. GENERAL

1. International impacts — N
2. Controversial impacts — N
3. Larger program impacts — L (Favorable
4. Other factors

I. OTHER POSSIBLE IMPACTS (not listed above)

-- Attached Discussion of Impacts.

Part IV IMPLEMENTATION ARRANGEMENTS

A. Administrative Arrangements

The U.S. has no national science and technical information system. Rather, it has a plurality of products and services offered by government and private sources. Of these, NTIS offers the broadest range of products and services within the spectrum of science and technology.

The entire output of federal government-funded research and development is made publicly available by NTIS. This amounts to over half of U.S. research and development programs. In addition, through other federal agencies, NTIS has become the primary U.S. source for R&D results and technological developments in other countries. For example, NTIS has been designated the U.S. (and potentially the North American) depository and supply source for the International Nuclear Information System. NTIS also is the authorized Agency for, and handles directly, the licensing of commercially-exploitable U.S. government inventions outside the U.S. All general-use computer programs developed by U.S. government agencies now are available to the public through NTIS, as a result of an agreement between the General Services Administration and NTIS.

The hundred or more federally-sponsored Information Analysis Centers in the U.S. are considered national resources of technical knowledge. NTIS is the national marketing coordinator for various special technology groups (as well as the Information Analysis Centers) sponsored and partially financed by the Department of Defense, the Energy Research and Development Administration and the Department of Commerce. Through these centers, NTIS offers the very latest in the state-of-the-art of various technologies.

Private sector technology is increasingly available through NTIS. This originates in private firms, nonprofit institutes, state and local governments, and trade associations (see Attachment Xd). NTIS also has contractual arrangements with Engineering Index, Inc. (which accesses the world's engineering literature), Lockheed Information Systems (which supplies the NTIS bibliographic search file and 20 others through a 1,200-subscriber computer network), and the National Library of Medicine (for which NTIS administers its world-wide computer search system). NTIS also has begun exchanging information on technologies available for licensing with several non-U.S. national research and development organizations, thus broadening access for NTIS customers.

As one of the world's leading processors of technical information, NTIS ships about 19,000 information products daily. It supplies the public with approximately four million documents and microforms annually, at prices set to recover full costs. NTIS's information collection exceeds one million titles. Summaries of interest from among 600,000 research reports completed from 1964 to date can be

located quickly using the agency's on-line computer search service. The NTIS bibliographic data file on magnetic tape, which includes all published and nonpublished abstracts, is also available for lease.

Current summaries of new research reports and other specialized technical information in various categories of interest are published in weekly newsletter (weekly Government Abstracts), which are indexed. An all-inclusive bi-weekly journal (Government Reports Announcement & Index) is published for librarians, technical information specialists, and others requiring all the summaries categories in a single volume and accompanying index.

A standing order microfiche service automatically provides subscribers with the full text of research reports in microfiche selected to satisfy individual or organizational requirements.

The joint NTIS/OST project has made steady progress through several phases since its inception. Initially, AMTID, containing abstracts of selected NTIS documents, was distributed quarterly directly by mail to some 700 addresses representing government organizations and universities in 40 countries AMTID contained instructions for ordering and purchasing reports from NTIS at an average paper copy price of $3 and microfiche price of $1. In the first 11 months 1,098 reports were purchased from 21 LDCs. It soon became evident, however, through questionnaire surveys and site visits, that while a substantial market potential for U.S. scientific and technical information exists in developing countries, individual foreign exchange transactions for the purchase of reports were a serious constraint on growth. Local involvement, and particularly outreach promotion by local cooperating agencies, were seen as the key to success. It also became apparent that by addressing the program primarily to government agencies and academic institutions, the potential active end-users of technical information were seldom being reached. The end users are the R&D managers, engineers, consultants and similar professionals in public and private production enterprises; not, in general, the librarians and public policy decision makers that comprised such a large portion of the origianl target group.

Subsequently a number of actions were taken to increase local involvement and enhance its effectiveness. Bilateral agreements were concluded with cooperating agencies in 14 countries (see Attachment Xf). Address lists for countries without cooperating agencies were refined and expanded. AMTID was modified in format and its circulation changed to monthly. Training of representatives of cooperating agencies was begun at NTIS.

It should be kept in mind that most of these agencies are fairly new institutions, have small budgets, and lack training in information science. They are generally completely inexperienced in marketing and customer service skills.

The basic relationship between NTIS and a cooperating agency immediately adds to the agency's problem-solving capability, by making the entire NTIS organization and the bibliographic data file available to the agency's clientele.

It provides access to some 50 U.S. information analysis centers and special technology groups and to the information collections and

expertise of 370 service clients representing most U.S. government agencies, plus such private organizations as Engineering Index, the Urban Institute, various universities and research organizations and private business such as the Ford Motor Company.

It provides these agencies with a U.S. contact for referral to other U.S. or international services within and out of this project.

In addition, as an on-going policy, NTIS alerts its local cooperating agencies to other information resources and services, plus other volunteer and international development assistance programs.

It also provides bibliographic tools to the local agency to add to its (usually sparse) collection of information reference sources. It provides microfiche reading equipment to add to the agencies reference capabilities.

NTIS helps give the local agency international exposure, through advertising, promotion and representation at regional, national and international meetings. This exposure builds prestige for and interest in the organization, and eventually results in contact with potential users, increasing transactions with current users.

The NTIS Information Systems Workshops provide training in knowledge of how to operate an information analysis, production, dissemination and order processing operation; how to efficiently use NTIS products and services; how to develop markets and sales promotion tools; what other U.S. information sources are available; and how to network with other cooperating agencies. The participant's experience benefits the cooperating agency and its users as well as the individual.

NTIS staff visits to cooperating agencies provide on-the-spot problem solving opportunities and improved market development programs. Both result in more effective operations.

The fact that in FY 1975 foreign demand ($1,809,800) accounted for 14% of total NTIS sales suggests the importance attached by other developed countries to keeping abreast of U.S. technological developments. It is encouraging to note that while all foreign demand rose about 6% over those of FY 1974, demand in the 40 project countries rose by 26%.

The level of scientific and technical information transfer to developing countries through this program can be illustrated by their purchase of NTIS products and services during FY 1975 (all figures approximate): India, $24,000; Brazil, $10,000; Korea, $4,000; Philippines, $3,000; and Ecuador, $1,270; for 31 countries, $76,000. This can be compared roughly with the flow of NTIS information to developed countries: Canada, $240,000; Sweden, $109,000 Japan, $91,000; and West Germany, $90,000.

Throughout the project, emphasis has been on progressive sales growth rathe than "book giveaways," the latter being rejected as a project element at the start. The willingness of individuals and institutions to review available information, select specific reports, and then commit their own funds to purchas

USG technical information products and services is considered to be one of the best indicators of potential utilization.

The results have been increased awareness of, and accelerated demand for, U.S. technical information. This is illustrated by the rise in demand, valued at $53,886 in 1974, $76,000 in FY 1975, and $120,000 in FY 1976. Largest increases were achieved in countries with new cooperating agencies.

NTIS has developed 46 detailed contacts with 28 organizations in Latin American countries in order to conclude agreements. Seventeen exploratory meetings have resulted in: 11 agreements being tendered; 10 being tentatively accepted; 9 being signed; 2 being withdrawn, and 1 cancelled by NTIS. Requests have been rejected from two countries. One agreement covers the five Central American Common Market Countries. World-wide, NTIS has met with organizations in ten other countries; has proposed agreements to seven of them; has concluded agreements with four; and has withdrawn one outstanding proposal. (Attachment Xh shows the criteria for selecting an agency for participation in the program and details these contacts by country.)

Concurrent with activation of the NTIS/AID project, the regional program for scientific and technological development of the OAS developed a pilot proje for Latin America. This program related to technology transfer, particularly i food technology, the chemical industry, and the basic metal industries. While this project has dealt with a broader range of technology transfer issues than information transfer, there are points of similarity, such as emphasis on user requirements achieved through national focal points. Professional collaborati has begun between NTIS and the OAS, particularly in regard to building on the pilot project experience and potential for cooperation related to institutional development of cooperating agencies, including training.

The OAS regional program for scientific and technological development for a number of years has supported improvement of the infrastructure for informati systems throughout Latin America. A number of countries are benefitting from t support which is currently at an annual level of roughly $1 ½ million. This project will be coordinated with this effort, as indicated in Section VI.

A.I.D.'s LA/DR Office of Development Administration will be responsible for project monitoring. A full time employee is currently being recruited to provide science and technology expertise to that office. This employee will become familiar with all incoming traffic on Science and Technology and work with all involved parties to assure prompt response consistent with overall Bureau policy in the assessment of adaptable Science and Technology to development. Also the employee will represent LA/DR at interagency meetings and intra-department meetings on Science and Technology and maintain close liaison with other organizations that are interested in and supportive of Scienc and Technology transfer.

This employee will also assist in refining evaluation guidelines and criteri as suggested jointly by LA/DR and NTIS. Being knowledgeable on what scientific a technological material is of greatest value and exploitable to aid national

economic, humanistic, agricultural and industrial development in LDC's, will enhance LA/DR's ability to monitor the Science and Technology transfer in the most efficient and effective manner.

Participating Agencies

Implementation of the project will follow the successful pattern evolved for the on-going NTIS/OST information transfer project. NTIS will be responsible for (a) implementation under a participating agency service agreement, renewed annually, and (b) coordination with other related programs, such as those of the OAS and Andean Pact. AID/W will monitor the activity and be responsible for annual performance appraisals. Funding will be provided by the Latin America Bureau. As explained previously, the success of the success of the project depends substantially on accelerating local involvement and responsibilities for information transfer and utilization. A key aspect of NTIS performance will be the extent to which existing technological information networks can be expanded and services strengthened through professional collaboration supported by formal agreements with cooperating agencies. Training also will play a key role in speeding the flow of USG technological information and patents to Latin America.

This project will cover thirteen countries/organizations in the Western Hemisphere. Each country presents a different stage of sophistication vis-a-vis technical information. Therefore the activity planned for each country will be different. The countries also have had varying degrees of relationships with NTIS in the TA/OST-funded pilot project.

For purposes of this project, the host countries will be divided into three groups. The groupings reflect relatively similar degrees of involvement in the pilot projects.

Group I includes the Dominican Republic, Guyana, Barbados, Surinam, Trinidad, Jamaica, and Panama. In FY 77, in these countries, NTIS will search for and identify appropriate cooperating agencies. Agreements will be negotiated and concluded in this first year, once potentially successful candidates are identified. It is assumed that two to four agreements could be signed in FY 77. In FY 78 the remaining countries will be searched for potential cooperating agencies and agreements negotiated with them. Not all these countries may meet basic criteria for developing support to a cooperating agency.

Group II includes Peru, Bolivia, Ecuador, Venezuela and Colombia, Cooperating agencies in these countries have only recently concluded bilateral agreements.

Group III is Central America. There NTIS is operating under one agreement with ICAITI (Central American Institute for Research and Industrial Technology). This agreement expires in FY 78. In FY 78 new agreements will be negotiated individually with those agencies considered appropriate, (as of late FY 77 in Guatemala, Honduras, and Costa Rica), while the ICAITI agreement will continue to cover those which are not able to participate by themselves.

Implementation Plan

The activity plan outlined below does not include items which are dependent on negotiations of new agreements, other donor action or field visits. Such activities themselves should include:

- Organization of shows at U.S. trade centers and commercial offices, displays and participation in scheduled U.S. trade fairs and catalogue shows.
- Commodities and resource materials delivered to new cooperating agencies.
- Installation of VSMF in countries where appropriate and as well as other donor funds are used.
- Identification, acquisition, bibliographic processing, announcement, and dissemination of approximately ten reports from LDCs.

TENTATIVE CALENDAR FY 1977

1) Field visits to provide user education and other management consultation to Bolivia, Peru, and Ecuador; contact USAID to develop information support linkages.

2) Field visits to identify potential cooperating agencies in In addition, contacting USAID to develop information support linkages.

3) AMTID published and distributed to approximately 5,000 in 15 countries in each month throughout the year.

4) Priority fulfillment of approximately 1,045 requests from 15 countries (Postal subsidization for orders from selected countries) in each month throughout the year.

5) Referral of requests for information not available from NTIS to other U.S. sources in each month throughout the year.

6) Three in-country seminars. (One country in each region to be selected.)

7) Concurrent exhibit on pollution control to be featured at U.S. Commercial Offices in Bogota, Cali, Medellin, and Baranquilla.

8) Quarterly Network Newsletter produced and distributed monthly for cooperating agencies in fifteen countries.

9) Promotional mailing to new prospects in Latin America.

10) Field visit to provide user education and other management consultation in Colombia and Central America. In addition contacting USAID to develop information support linkages.

11) Questionnaire developed and mailed to all purchasers of NTIS materials in LDC's. Questionnaire to accompany all abstracts of microfishe sold. Questionnaire to be in Spanish except for French Speaking countries, then to be in French.

12) Advertising series begins in Vision (Visao).

13) Video-taping selected segments of NTIS training workshops and translation into Spanish.

14) Participation in U.S. Information Industry Trade Mission to Venezuela, and Peru. Contacting USAID to strengthen information support linkages.

15) NTIS information systems at Georgia Tech in technology transfer implementation. OAS is expected to subsidize student attendance.

16) Field visit to identify potential cooperating agencies in Panama, and the Dominican Republic. Contacting country specific USAID missions to develop information support linkages.

17) Inauguration of first regional on-line retrieval capability using NTIS data base and other data files.

18) Field visit to provide user education and other management consultation in Peru. Contacting USAID to develop information support linkages.

19) NTIS Performance Evaluation by AID/Washington.

FY 1978

20) Twelve issues of AMTID published and distributed to end-users in twenty-one countries.

21) Priority fulfillment of approximately 25,000 orders from 15 countries. (Postal subsidization for orders from ten countries.)

22) Referral of requests for information not available from NTIS to other U.S. -- public or private -- sources.

23) Four issues of the Network Newsletter produced and distributed to thirteen cooperating agencies in twelve countries.

24) NTIS training courses: one 1-week session for agents who have already participated in the training program; one 3-week session for agents who have been active in the program but have not received training; and one 3-week session for new agents.

25) Four in country seminars (one seminar in each region).

26) Four to seven potential cooperating agencies identified and bilateral agreements negotiated and concluded with 2-4.

27) Organization of in-between shows at U.S. trade centers and commercial offices, displays and participation in scheduled U.S. trade fairs and catalogue shows.

28) Organization of one U.S. Information Trade Mission to 3-4 countries.

29) Field visits by NTIS staff to provide user education guidance and other information consultation. Contacting USAID for information support linkage.

30) Commodities and resources materials delivered to new cooperating agencies.

31) Installation of NTIS Data Base and other data files in one region.

32) Installation of VSMF in countries where appropriate and where other donor funds are used.

33) Identification, acquisition by NTIS, bibiliographic processing, announcement and dissemination of approximately ten reports from LDCs.

34) NTIS performance evaluation by AID/W.

FY 1979

35) Twenty-four issues of AMTID published and distributed to professionals in fifteen countries.

36) Priority fulfillment of approximately 41,250 orders from 15 countries. (Postal subsidization for orders from 7 countries).

37) Referral of request for information not available from NTIS to other U.S.-- public or private -- sources.

38) Eight issues of the Network Newsletter produced and distributed to cooperating agencies in fifteen countries.

39) NTIS training courses: one 1-week session for agents who have already participated in the training program; one 3-week session for agents who have been active in the program but have not received training; and one 3-week session for new agents.

40) Up-date of video-tape of selected segments of the training workshop, translation into Spanish and distribution through USIS.

41) Four in-country seminars (One seminar in each region).

42) Review of all bilateral agreements.

43) Organization of in-between shows at U.S. trade centers and commercial offices, displays and participation in scheduled U.S. trade fairs and catalogue shows.

44) Organization of one U.S. Information Industry trade Mission to 3-4 countries. Contact USAID to develop information support linkages.

45) Field visits by NTIS staff to provide user-education guidance and other information consulation, contacting USAID for development of information support linkages.

46) Commodities and resources materials delivered to new cooperating agencies.

47) Installation of NTIS Data Base and other data files in third region if justified and technically feasible.

48) Identification, acquision by NTIS, bibliographic processing, announcement and dissemination of approximately ten reports from LDCs.

49) Installation of NTIS data base and other data files in three regions.

50) Final performance evaluation by AID/W.

The approximate timing for these activities is shown in a Project Performance Tracking Chart.

Evaluation Plan

Evaluation of progress in meeting the outputs specified in the Logical Framework and the implementation plan will take place on a regular basis. NTIS will also submit quarterly progress reports as well as amount and final reports. Special emphasis will be placed on evaluating the degree to which the project is reaching the poor, particularly through the use of appropriate technology information. The Evaluation Plan will be drawn up jointly by NTIS, TA/OST and LA/DR, and will be submitted no later than 75 days from signing of the AID/NTIS contract.

At the end of the three-year project period an outside evaluation of project performance and end achievement will be conducted. TA/OST will be asked to participate in this evaluation which will conducted by an outside contractor. Funds will be programmed for this evaluation in FY 1979. The evaluation will assess long-term impact of the Science and Technology Transfer upon the economics of LDCs. It will provide case study information to determine extent of program effectivemess. A preliminary methodology to be used in the evaluation is contained in Attachment Xo.

(1) Evaluation arrangements
See Attachment Xn.

(2) Preliminary Evalvation Methodology
See Attachment Xo.

APPENDIX

1. Log Frame
2. Xa - Definition of "Appropriate Technology, VITA"
3. Xb - NTIS Information System Training and Orientation
4. Xc - Project Countries Rank by Value of Document Demand
5. Xd - The NTIS Information Collection
6. Xe - Best Selling Documents to LDC's FY 76
7. Xf - Letter of Agreement
8. Xg - Guidelines for Selecting NTIS Sales Agents in LDCs
9. Xh - Customer Sample
10. Xi - Benefits for NTIS Cooperating Agencies
11. Xj - Participating Latin American Agencies
12. Xk - A.I.D. and Relevant Experience (Accomplished Project and Promotion)
13. Xl - Evaluation Arrangements
14. Xm - Preliminary Evaluation Methodology
15. Xn - A.I.D. Policy Determination on Science Technology Transfer

AID 1020-20 (1-73)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: From FY 77 to FY 79
Total U.S. Funding: $87
Date Prepared: 15 August 77

Project Title & Number: Latin American Regional Science and Technology Information Transfer (538-15-995-572)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: To broaden and maximize the use of scientific and technical information in solving development problems in Latin America with special emphasis upon appropriate technology.	Measures of Goal Achievement: Increased utilization of science and technology in solving development problems relating to country specific activities in (1) agriculture, (2) industry, and (3) human resources development.	1. Reports by institutions and governments of use of scientific and technical information to increase output. 2. Latin American governments' statements on the extent to which progress is being achieved in the selection and transfer of technology attributable to "freest and fullest possible access" to technologies not in private hands.	Assumptions for achieving goal targets: (1) Distribution, dissemination and implementation of of scienciific and technical information - with particular emphasis on appropriate technology - is an effective way to increase productivity, efficiency and the level of life in developing countries. 2. L.A. governments will continue to support the transference of science & technology information from NTIS.
Project Purpose: to (1) improve L.A. access to scientific and technical information and patents resulting from U.S. government investments in research and development; and (2) improve L.A. access to appropriate technological information resulting from worldwide research and development.	Conditions that will indicate purpose has been achieved: End of Project status. (1) Local cooperating agencies in 15 countries capable of serving as a national focal point to provide and promote access to U.S. technical and technology information. (2) An information network established through bilateral agreements operating as four regional components -- Central America; the Andean Pactcountries; and Caribbean, with NTIS as the switching node in the Western Hemisphere. (3) Easy and quick access to U.S. technical and appropriate technology information. Each local cooperating agency will have 1 or more information scientists who have been trained in the U.S. and are knowledgeable of U.S. and worldwide information sources both private and public. (4) Useful local R&D knowledge collection by local organizations in Latin America. (5) Cooperating LDC agencies commitment to education of potential users of U.S. technical information. (6) Wider applications of U.S. Research and Development results to problem solving in L.A. countries especially appropriate technology. (7) New and more effective exchange between L.A. R&D institutions and U.S. counterparts. (8) Increased responsiveness by L.A. countries to acquiring U.S. sponsored research and development.	1. Examination of plans submitted by 19 cooperating agencies. 2. NTIS records. Examination of plans submitted by3 regional components. 3. NTIS records. 4. NTIS records. Ag. Rep. Records. 5. Ag. Rep. Records. 6. NTIS records as to use of science & technology transfer. 7. NTIS records. Ag. Rep. Records. 8. NTIS records, Ministry Records, Ag. Rep. Records.	Assumptions for achieving purpose: 1. Significant and increasing research and development activities in the U.S. and worldwide generate publicly available information of value to problem solving in developing countries. 2. Countries will acquire and utilize technological information nationally if a system exists to foster its transfer and use. 3. NTIS information can be disseminated to countries where demand for information exists.
Outputs 1. Establishment of bilateral computerized technical information retrieval networks. 2. Publication and greater dissemination of AMTID 3. NTIS quarterly newsletter 4. Participants trained in methods and techniques of information transfer 5. Participants trained in appropriate technology information and dissemination. 6. trained agents in methods and techniques of information transfer 7. Translation and dissemination of NTIS documents to rural and urban poor 8. Establishment of 50,000 deposit accounts for participating agencies (exc. graduate countries) for transfer of information on appropriate technology. 9. Questionnaires in Spanish to measure impact, utilization and suggested utilization of appropriate technology information	Magnitude of Outputs: 1. Three networks providing improved accessibility to science & technology resulting in greater use at less cost. 2. Circulation of approximately 10,000 AMTID monthly. 3. NTIS letter published quarterly. 4. Training of approximately 25 individuals. 5. 7 seminars conducted by 1979 6. Training of 100 by 1979. 7. Approximately 150,000 documents. 8. Establishment of 12 deposit accounts. 9. Approximately 5,000 questionnaires distributed.	1. NTIS records. 2. NTIS records. 3. NTIS records. 4. NTIS records. 5. NTIS records. 6. NTIS records. 7. NTIS records. 8. NTIS records. 9. NTIS records.	Assumptions for achieving outputs: No important impediments will arise in broadening the NTIS information transfer network through bilateral agreements with co-operating agencies in additional Latin American countries.

Inputs	Implementation Target (Type and Quantity)					Means of Verification	Assumptions for providing inputs
	[illegible]	[illegible]	[illegible]	[illegible]	Total		
1. U.S. Technical and Translation Services	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NTIS records.	
2. Marketing and promotion service by co-operating agencies	[illegible]	115.6	114.2	[illegible]	306.8	Ag. Rep. Records.	
3. Equipment and materials procurement.	[illegible]	6.9	[illegible]	[illegible]	[illegible]		
4. Preparation and transfer of U.S. original information products and services.	[illegible]	121.1	[illegible]	[illegible]	350.5		
5. Short-term funded training: a) seminars and (b) workshops.	[illegible]	--	--	--	[illegible]		
Total	250.0	243.4	256.6	[illegible]	750.0		

BEST AVAILABLE COPY

ATTACHMENTS Xa

VOLUNTEERS IN TECHNICAL ASSISTANCE (VITA) - APPROPRIATE TECHNOLOGY AND VITA.
February 1977

APPROPRIATE TECHNOLOGY AND VITA

This paper is presented in an attempt to provide VITA with an operational definition of the term Appropriate Technology (A.T.). The general concept has become increasingly vogue, particularly since the publication of Small is Beautiful and the recent Congressional authorization through A.I.D. of $20 million for A.T. At the same time the meaning of the term has become clouded by the various emphases placed on the concept by its many different proponents. As an organization closely identified with the development of A.T., VITA has an obligation to make its interpretation known. The following paragraphs will then discuss different perspectives on what A.T. is and offer a realistic view of what VITA's role in A.T. should be.

It should first be noted that A.T. is sometimes seen as synonymous with such terms as: intermediate technology, light-capital or labor-intensive technology, self-help technology, village technology, and user-oriented technology. Each of these terms implies something unto itself but all share, to a greater or lesser degree, common assumptions. Without arguing the relative merits or utility of one term over another, suffice it to say that "appropriate technology" has become the standard bearer for these assumptions.

As a practical matter, it is useful to distinguish among three different perspectives of A.T. The first and most diffuse is a philosophy of development

which evaluates technologies from an utopian vision of the future. This vision has its roots in the "Buddist economics" of Schumacher and coincides, in part, with the "Whole Earth" and "alternative life-style" movements in the U.S., U.K. and other parts of the developed world. In general, such an interpretation sees society organized in small, decentralized, self-sufficient units, not unlike the ideal of Jeffersonian democracy but with an added dimension of collectivism.

A second view of appropriate technology might be called a pragmatic approach to development. Without prejudging the ultimate goals of development, this approach sees the need to attack the problems of poverty at its roots -- most immediately in the villages and shanty towns of the Third World. This approach is prompted by the failure of capital-intensive development policies and in response to the needs of the growing population of people living at a subsistence level. Robert McNamara, among others, has insisted that "trickle-down" models of economic growth are not applicable to many developing countries because they do not reach the poor. At the same time there is a growing body of evidence which suggests that the mobilization of local resources can have direct impact in bettering people's lives.

Finally there are a set of devices and techniques which are commonly viewed as appropriate technologies. These include: manual and animal powered devices (varicultural implements, food processing equipment, water pumps, etc.), alternative energy sources (solar-energy applications, windmills, small water-power plants, and various methods of bioconversion), and low-cost methods of

construction (rammed earth and the CINVA-Ram, use of indigenous materials, ferro-cement, etc.). In addition many traditional crafts and cottage industries are considered to be the appropriate means of production in different areas (spinning and weaving, for example). So too are processes which have become obsolete in many parts of the world (e.g. the VITA designed lime kiln in Honduras).

Common to all perspectives of A.T. is the belief that modern (typically large-scale) technologies are often inappropriate as the result of incompatibility with the environment (especially in light of the finite limits of natural resources) and/or because capital-labor ratios preclude full employment. This latter point is compounded in poorer countries where many workers who have been displaced -- or who might become displaced -- due to mechanized agriculture, have no usual skills. What A.T. then proposes is that available resources, both human and material, be applied productively at a level of technology which can be sustained in a given locale. It follows that this productive activity should be oriented toward the satisfaction of locally determined needs. And, considering the conditions of poverty throughout the world, an appropriate technology is likely to have the following characteristics:

-- It can be made, operated and maintained locally;

-- It is labor-intensive;

-- It is low-energy intensive; requiring little energy or using primarily renewable sources of energy;

-- It makes maximum use of locally available resources and skills; and

It is compatible with local values and customs.

In addition to the above criteria (which should be seen as initial points of reference and not as a comprehensive checklist), it is useful to distinguish "dimensions of appropriateness." The World Bank has suggested four such dimensions:

"(1) Appropriateness to Goal. Does the technology support the goals of development policy?

(2) Appropriateness of Product. Is the final product or service delivered useful, acceptable and affordable to the intended users?

(3) Appropriateness of Process. Does the production process make economic use of inputs?

(4) Cultural and Environmental Appropriateness. Are the production processes, the products delivered, and the institutional arrangements compatible with the local environment and cultural setting?"

Consideration of these dimensions suggests that the appropriate choice of technology is often determined by desired ends and not means. That is, the question is not "What technology is appropriate?" but "What product or service is appropriate?" The choice of technology might be limited by the product or service specified.

Appropriate technology is therefore relative, varying according to ones perspective, values and goals. It would be presumptuous of VITA or any other technical assistance organization to prescribe an appropriate technology without close collaboration with those who will both operate the technology and use its products. VITA's position is thus "pragmatic." It presumes that technical assistance given either directly or indirectly (e.g. through extension agents) to local groups can significantly improve their productivity and livelihood.

Although the term "appropriate technology" is relatively new to its program statement, VITA is ideally structured to practise and promote A.T. With its resources of technical experts, written materials, and knowledge of other programs and projects, VITA provides to a requestor, ideally a competent local organization, ideas and choices by which to adapt or develop a technology appropriate to that requestor's specific needs and capabilities. Through its Inquiry Service and its Publications program VITA can then disseminate the technology to other requestors and organizations. Finally, through newsletters, conferences and personal visits, VITA has an obligation to inform its many constituencies of the principles of appropriate technology, as part of a broader mandate of "public education."

ATTACHMENT Xb

NTIS Information System Training and Evaluation

An illustrative outline for a three week "Information and System Training and Orientation" seminar based on past experience would be as follows:

1) General Overview Briefing of NTIS Operations, Products and Services

2) Visitors present briefing on current and planned situation in their country and discuss any recognized or particular problem areas.

3) Discuss standard report format, standard bibliographic data sheet.

4) Demonstrate usefulness of report format and other standards and extrapolate usefulness of such standards in the information systems in attendee's country.

5) Discuss unique report numbers and accession numbers to include differences of and need for each and how and why such numbers are assigned and used. Demonstrate ease of cross-reference and other uses.

6) Discuss various details of review of incoming documents, e.g., page numbers, missing pages, reproducibility, half-tones, page-size, foldouts, graphics and charts, computer printout and camera reduction parameters.

7) Discuss descriptive cataloging standards and applications using documents currently being processed. Demonstrate entry of standard cataloging information on NTIS document processing worksheets and document traveller form. Use AD-641 092, Standard for Descriptive Cataloging and PB-198 275, Corporate Author Headings as study and reference materials. Discuss philosophy and logic of cataloging standards.

8) Discussion on basic philosophies of subject analysis and various indexing systems. Demonstrate using documents currently being processed, the various thesauri and subject category lists. Illustrate subject indexing, key work indexing and SRIM.

9) Demonstrate NTISearch (Published and Custom) and illustrate interface of subject indexing with NTISearch retrieval procedures and strategies.

10) Demonstrate key to tape functions of recording bibliographic information onto tape and illustrate by flow charts the steps involved in preparation of the copy for production.

11) Discuss and demonstrate methods and procedures for selection and production of specialized announcement bulletins. Discussion with attendees concerning feasibility of various announcement or awareness bulletins in home country.

12) On-line Information Retrieval demonstration.

13) Assign search problems to attendees and monitor progress.

14) Discussion on manual information retrieval using GRA&I.

15) Assign search problems to attendees and monitor progress.

16) Marketing and Promotion

1) Discuss and illustrate direct mail advertising procedures and strategies.

2) Illustrate and discuss exhibit construction and use.

3) Discuss market potential and possible marketing methods or strategies available in visitor's country.

4) Discuss how to design, develop and implement a marketing and promotion plan. How to test and evaluate various marketing programs.

17) An overview presentation of the NTIS Order Processing System.

18) Walk through demonstration of order control and preprocessing functions. Discuss customer caused problem areas and demonstrate good ordering procedures.

19) Discuss and demonstrate identification and cross-reference functions.

20) Tour warehouse and discuss and demonstrate procedures and operations in storing and retrieving documents in paper and microfiche.

21) Information Analysis Centers and Special Technology Groups - Discuss the various capabilities of each center and how to apply for non-document and special services.

22) Presentations by NTIS Product Managers.

23) Demonstrate how to use NTIS Bibliographic tapes and other machine readable products available from NTIS.

24) Presentation and briefing by NTIS Office of Agreements in regard to current and

future agreements with agencies and countries represented by workshop attendees.

25) Discuss and demonstrate NTIS deposit account procedures both as a simplifed manual system and an EDP system.

26) Special briefing by NTIS/AID Program Liaison Officer, Mr. David Shonyo.

27) Special individual attention in any functional area or any particular problem area.

28) Review of previous technical information sessions and discussions.

29) Review of marketing and promotion session.

30) Presentation of attendees' marketing plans followed by critique and discussion.

31) Visits and tours to various information centers and sources in the Washington, D.C. area.

Previous Project Countries Rank by Value of Document Demand

International Technical Information Network

Country[1/]	YTD77	FY76	FY1975	FY1974
Argentina	949	---	-----	-----
Mexico	16,219	21,799	15,115	7,092
Brazil	24,925	14,596	10,438	6,686
Venezuela	7,957	5,870	2,223	1,422
Guyana	7	---	---	----
Chile	4,617	3,379	2,011	689
Colombia	2,529	2,444	811	314
Peru	5,414	2,182	945	850
Ecuador	3,334	1,817	1,272	81
Costa Rica	812	1,565	638	105
Bolivia	243	1,216	620	0
Guatemala	2,105	983	401	102
Panama	802	870	84	15
Nicaragua	362	715	364	331
Honduras	808	688	174	83
Uruguay	182	318	18	20
Haiti	153	268	0	0
Dom. Republic	198	247	407	9
Paraguay	385	129	32	0
El Salvador	356	0	184	30

1/ Demand from countries not participating in the project accrues from AMTID.

Attachment Xd

THE NTIS INFORMATION COLLECTION

NTIS historically has been identified as mainly a source of information from the U.S. Government and even more narrowly, from the Department of Defense. However, in the past five years, NTIS has dramatically moved away from this identification and is valued by its users for 1) its comprehensive collection of information generated by some 400 U.S. Government operating units and their contractors. This coverage includes the Environmental Protection Agency; Energy Research and Development Administration as well as the Federal Energy Agency; the National Science Foundation; Commerce' Business and Economic Administration; NASA; and the National Institute of Health. 2) \The increasing comprehensiveness of the collection as it has begun to actively seek information from private sector sources.

One of the largest private sector collections available from NTIS is from Engineering Index, Inc. The EI computerized data base contains more than 85,000 items making it one of the world's largest bodies of practical engineering information.

NTIS also maintains cooperative contacts with many private industry sources such as Dvorkowitz and Associates, Inc., and Control Data Cooperation's Technonet--two organizations specializing in patent data.

It is NTIS' Congressional mandate to seek out technical information of national interest from whatever source.

This list is a sample of non-USG organizations that register information with NTIS on a regular basis.

BUSINESS

Control Data Corporation
Mitsubishi Research Institute
Ford Motor Company

NON-PROFIT ORGANIZATIONS

American Institute of Physics
American Public Transit Association
Asphalt Institute
Electric Power Research Institute
Federation of American Societies for Experimental Biology
Foreign Broadcast Information Service
International City Management Association
International Council for Building Research & Documentation
Motor Vehicles Manufacturers Association
Northern Great Plains Resources Program
Non-Destructive Testing Information Center
Transit Development Corporation
Urban Institute
Water Resources Council

UNIVERSITIES

Dartmouth College, Systems Dynamics Group
Harvard University, Program on Information Technologies and Public Policy
Lehigh University, Fritz Engineering Laboratory
Michigan State University, Institute of Water Research
Penn State University, Transportation Institute
University of California, Lawrence Berkeley Laboratory BART Program
University of Colorado, Department of Computer Science
University of Kentucky, Institute for Mining and Minerals Research
University of Michigan, Highway Safety Research Institute
Virginia Polytechnic Institute and State University, College of Engineering

STATE AND LOCAL GOVERNMENTS

Air Resources Board (State of California)
Appalachian Regional Commission
Center for Independent Living (New York Infirmary)
City of Los Angeles, Department of City Planning

Illinois Institute for Environmental Quality
Massachusetts General Hospital
Metropolitan Washington Council of Governments
Minnesota Energy Agency
Washington Metropolitan Area Transit Authority

NON-US SOURCES

British Standards Institute
Engineering Sciences Data Unit (Great Britain)
Forestry Products Laboratories, Canada
Swedish Building Research Institute

Attachment Xe

Best Selling Documents to LDCs FY76

Management of Water Resources for Urban Environmental Enhancement

An Overview of Alternative Energy Sources for LDCs

A Method for Formulating and Implementing Science Policy for a Small Developing Country

Cost, Benefit and Risk--Keys to Evaluating Policy Alternatives

Computer Technology in Developing Countries

Solar Energy

Waste Lubricating Oil Research (inovative Approaches to Reclaiming Used Crankcase Oil)

A Survey of Possible Use of Windpower in Thailand and The Philippines

Progress Through Modern Processes and Tools

Windpower Machines

Earth for Homes

Handbook for Building Homes of Earth

Attachment Xf

LETTER OF AGREEMENT

Between

National Technical Information Service
U. S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161
U. S. A.

and

Your Organization

for the
Transfer of U. S. Technical Information
through the
Promotion, Demonstration and Sale of
NTIS Products and Services

By Authority Granted Under
the Terms of NTIS Enabling Legislation,
15 U. S. Code 1151-1157 and 1525-1527.

Letter of Agreement Number *XXXXXXXXXX*

This document constitutes an agreement between *your organization* (hereinafter referred to as *you*), and the National Technical Information Service (hereinafter referred to as NTIS) for the transfer of U. S. technical information to *you* through the promotion, demonstration, and sale of NTIS products and services.

1. NTIS Responsibilities

a. NTIS will furnish *you* with a list and price schedule of products and services to be offered for sale under this agreement.

b. NTIS will provide sets of the CRA Annual Indexes to *you* to serve as a reference base for reports in the NTIS inventory. In addition, five combination SSTF/NTISearches will be offered *you* on a free basis to familiarize users with the service.

c. NTIS will provide m[illegible]ing assistance to *you*. The assistance will take three forms:

(1) Orientation c[illegible]erning the products and services to be offered wi[illegible] be provided. This will in[illegible] training in the various marketing techniques employed in the United States information ind[illegible]ry. This training and orientation will take p[illegible] in the United States. Travel and subsistence expenses associated with this training prog[illegible] will be the responsibility of *y*[illegible]. NTIS may, in sp[illegible] situations, subsidize attendance of an representative.

(2) NT[illegible] will provide follow-up [illegible]aining and review of *your* [illegible] market[illegible]g programs in *(country)* as needed.

(3) NTIS will offer assistance and guidance [illegible]ch respect to seminars, exhibits, congresses, and simil[illegible] ev[illegible] designed to promote awar[illegible]ness and use of NTIS products and services.

d. NTIS will provide copies of sales promotion literature to *you* on a monthly basis listing NTIS documents selected as having special sales potential.

2. Your Responsibilities

a. Develop [illegible] implement a marketing plan, including initial and periodic review by NTIS marketing staff.

b. Provide NTIS with current and projected interests of the market served by you

c. Charge customers according to the NTIS price schedule and act as a representative of NTIS for forwarding and receiving customer orders.

d. You agree to restrict its marketing and sales activity to you.

Order Transmittal

Orders for documents and services may be transmitted to NTIS via airmail, surface carriers, or by cable. Orders submitted by airmail and surface carrier will be on a form designed by NTIS, a supply of which will be provided upon execution of this agreement. Cable orders will contain all information designated in the regular order form, to include your complete mailing address and deposit account number. The NTIS Telex number is 89-9405. Orders transmitted by mail should be sent to the following address:

National Technical Information Service
U. S. Department of Commerce
ATTN: D. Shonyo
5285 Port Royal Road
Springfield, Virginia 22161
U. S. A.

Shipment of Orders

Normally orders for documents for which there is shelf stock will be shipped to you within ten days of receipt at NTIS. Out-of-print documents may require a longer delivery period, but notification to you of any such delay will be automatic.

Pricing and Discount Arrangements

The NTIS will offer the products and services covered by this agreement to you at a twenty-five percent discount off list price. Documents and services may be purchased at the prices listed on the price schedule provided by the NTIS and in the catalogs supplied.

You will honor the NTIS list price as a minimum selling price for these products and services. However, you may offer these products and services at a higher selling price. Materials will be ordered by you at the full list price. The NTIS will develop, maintain records, and provide monthly accounting to you on sales of NTIS products and services to customers in (country). This accounting will be in the form of a

monthly statement for which the twenty-five percent discount will be computed on orders received during that month. A credit in the amount of the twenty-five percent computed discount will then be made to the *your* account.

c. The NTIS reserves the right to adjust the selling prices for all its products and services. Thirty days' advance notice will normally be provided.

6. Deposit Account Responsibilities

a. Deposit Account number *XXXX* has been established by the NTIS for *your* use in ordering. It will be the responsibility of *your* to assign a minimum of $2,000.00 in United States currency to its deposit account upon execution of this agreement. *You* may submit this deposit in monthly installments. However, *you* will insure that at no time will the value of NTIS products ordered exceed the balance in *your* deposit account. When the entire $2,000.00 has been forwarded and upon receipt and approval of *your* promotion plan, credits of $1,000.00 will also be entered in *your* account by NTIS. These credits are provided to assist *you* in developing in-country marketing programs and must be matched by *you* on a two-to-one basis ($2,000.00 or equivalent on the part of *you* and $1,000.00 on the part of NTIS.) The United States credit of $1,000.00 will be in force during the period of this agreement. (See paragraph 7, below.) The method of payment of the United States credit will be in the form of one-to-one credits for orders placed by *you* until the credit is exhausted.

b. *You* will specify its account number when initiating transactions with the NTIS.

7. Time Period and Termination of Agreement

This agreement will become effective approximately *(month)* 1975, and will continue on an experimental basis until *(month) xx*, 1977. At the end of two years, the effectiveness of the program will be evaluated.

8. Liaison Personnel and Organization Address

The following representatives named will serve in a liaison capacity to facilitate communication and operations between the participating organizations:

Attachment

AID-NTIS
International Technical Information Network

Bolivia

Direccion General de Normas y Tecnologia
Centro de Informacion
La Paz

Colombia

Fondo Colombiano de Investigaciones Cientificas (COLCIENCIAS)
Division de Documentacion
Bogota

Costa Rica

Consejo Nacional de Ciencia y Tecnologia (CONICIT)
San Jose

Ecuador

Centro de Desarrollo Industrial del Ecuador (CENDES)
Servicio de Informacion Tecnica
Guayaquil

Guatemala

Instituto Centroamericano de Investigacion y Tecnologia Industrial (ICAITI), Documentacion and Information Division
Guatemala City

Instituto Tecnico de Capacitacion (INTECAP)

Honduras

Universidad Nacional Autonoma de Honduras
Centro de Informacion Industrial
Tegucigalpa

Peru

Novoa & Stiglich Grupo de Consultores
San Isidro, Lima

Venezuela

Centro Nacional de Informacion Cientifica y
Tecnologica (CONICIT)
Caracas

GUIDELINES FOR SELECTING NTIS

SALES AGENTS IN LESSER DEVELOPED COUNTRIES

1. Is there a market for U.S. technical information? Determined by: current sales resulting with a minimal promotion; the number and type of potential users --- libraries, documentation centers, government agencies, business, industry including multinational, professional technicians, consulting firms, universities.

2. Have local currency exchange and import regulations combined with shipping delays made it difficult and unattractive to order from U.S. sources?

3. Has NTIS not sufficiently covered the market before either by intent or by lack of prospect names?

4. Is the national economy capable of producing future increases in the demand for technical information?

5. Has an organization expressed interest in representing NTIS?

6. Is there a major buyer with an organization which could represent NTIS?

7. Does the National government have an agency which serves as a focus for information policy, for scientific R&D, or for technology transfer:

If so, has it sufficient staff and budget to be an aggressive national force? What is its current pace of activity? What services and functions does it perform? What user community does it serve? Does it have capabilities of reaching provincial customers as well as those in the capital or business center?

What is the character, ability, and potential of the personnel at the working level? What is their educational background? Does the director or his assistant speak and read English?

What is the status and quality of its information collection? What is its acquisition policy?

How has the organization grown and why?

What technological resources exist (computer hardware, microfiche equipment, telex)?

What is its relationship with other U.S. Government agencies (in-country, in U.S.), U.S. businesses, universities, international and regional organizations?

What interest have they shown and do they express in NTIS?

How bureaucratic is the organization?

Does the candidate understand the NTIS cost recovery philosophy and does he accept it?

I. Criteria for the Selection of a Cooperating Agency

A. Recommendations are sought from such sources as the U.S. AID Mission, AID country desk officer, and U.S. Embassy Commercial and Science Attaches.

B. Candidate organization must be devoted to -- or have a major program devoted to -- the dissemination of scientific and technical information.

C. Preference is given to organizations designated as national focal points for technical information or technology transfer, with particular emphasis on "appropriate technology." If no such viable, functioning focal point can be identified, other organizations are sought in approximately this order of preference: Other government agency - consultant firm - trade or professional association - university department - book dealer. Local offices of international organizations or of multinational firms are generally not considered.

D. Candidate must be willing to actively promote the use of U.S. technical information to a broad range of potential users - including, particularly, organizations which impact directly on the poor of the country (such as Ministries of Agriculture, Education and Health, cooperatives, community development groups, etc.). It must be willing to commit existing staff or hire additional staff, especially with expertise in appropriate technology, to accomplish this promotion and to handle resulting orders.

E. Candidate must place $2,000 in a deposit account with NTIS, and must be willing to designate a certain amount of its own funds for purposes of promoting technical information products.

F. Candidate must agree to abide by the conditions of a standard formal agreement with NTIS.

*Candidates will be briefed by NTIS on AID purposes and goals in connection with AID support of the program.

See Attachment Xh

Customer Sample

As was pointed out in the text the affiliations of the beneficiaries of the NTIS/AID program can be roughly categorized as follows: Business/Industry/Professional, 79%; Government, 7%; Individuals, 5%; Libraries, 4%; Universities, 4%; Others, 1%. The accompanying segment of the users list will provide a clearer idea of the exact nature of the existing user base. There are 4,099 names on the list not counting in-country distribution by cooperating agencies; approximately 3/4 of these have addresses in Central and South America. All are considered active users.

General Manager
Bodegas y Vinedos la Cabana
Tarija, Bolivia

Industrial and Investment Dept.
Small Industry Division
Banco do Nordeste do Brazil
Fortaleza, Cerra, Brazil

General Manager
Amalgamet Ltda
Sao Paulo, Brazil

Library of Science and Technology
Petrobras
Rio de Janeiro, Brazil

Assessoria de Des. Rec. Humanos
Companhia Agricola e Florestal Sant
Belo Horizonte, Brazil

Chief Engineer
Fenix Ingenieria Ltda
Santiago, Chile

Section Manager, Industrial Engineering Dept.
Mellafe & Salas, Ltd.
Arica, Chile

Director of Expansion Projects
Cia. de Cobre Chuquicamata, S.C.E.
Chuquicamata, Chile

Chief of Production
Grasas y Aceites, S.A.
Chinandega, Nicaragua

Manager
Azucarera Nacional, S.A.
Panama City

Director
Instituto Nacional de Tecnologia y
Normalizacion
Asuncion, Paraguay

Chief Engineer
Empresa de Construcciones Civiles, S.R.L.
Asuncion, Paraguay

Manager
Productos Ceramicos, S.A.
Lima, Peru

Director General
Motlima Consultores, S.A.
Lima, Peru

President
Consultores Andings Asociados, S.A.
Lima, Peru

Partner
Rodrigo & Cruchaga Assoc. Architects
Lima, Peru

President
Hector Gallegos Ingenieros Asociados
Lima, Peru

Commercial Director
Maquinas y Materiales, S.A.
Montevideo, Uruguay

BENEFITS FOR NTIS COOPERATING AGENCIES

OF THE

AID SUPPORTED INFORMATION NETWORK

Information Operations

Improved access to U.S. technical information and licensing opportunities.

Central point of contact in the U.S. for technical information referrals and backstopping.

On-site visits by NTIS staff for operating and marketing consultation.

Opportunity to exchange experiences with NTIS and other cooperating agencies through regional networking, meetings, seminars, workshops and a quarterly newsletter.

Tuition-free attendance at NTIS' 3-week Information Systems Workshop with possible travel, per diem subsidy.

International recognition for national R&D by adding reports to the NTIS bibliographic data file.

Priority handling of requests on receipt at NTIS.

Information Resources

Addition of NTIS bibliographic data file to national problem-solving ability.

Sets of back-issue Government Reports Annual Index as a reference tool to performing literature searches.

Published (or custom) NTISearch bibliographies selected by agent to serve as specific guides to portions of the total NTIS bibliographic data file. And as product samples.

100 reports - on microfiche - selected by agent to provide nucleus collection of NTIS reports. And as samples of microfiche.

Kodak Extalite microfiche readers to use in agencies reference room to demonstrate microfiche.

Marketing and Promotion Support

Computer print-out of names and addresses of NTIS' local customers.

NTIS promotional support through U.S. - based solicitations.

Bulk quantities of NTIS generated promotional literature for

distribution to agent's customer list, particularly AMTID.

International publicity through AMTID.

Financial Incentives

Availability of products at U.S. prices instead of 100% higher foreign price.

25% commission on all transactions.

Initial AIRMAIL shipment of orders at no extra cost.

A marketing grant of $1,000 credited to the agencies deposit account when certain specific agreement stipulations are fulfilled

Cooperating Agencies who have participated in the International Technical Information Network

Attachment Xj

Bolivia

Direccion General de Normas y Tecnologia
Centro de Informacion
La Paz

Brazil

Barrosl
Nucleo de Informacoes Technologicas
Sao Paulo

Chile

Instituto de Investigaciones Tecnologicas/CORFO
Santiago

Colombia

Fondo Colombiano de Investigaciones Cientificas (COLCIENCIAS
Division de Documentacion
Bogota

Costa Rica

Consejo Nacional de Ciencia y Tecnologia (CONICIT)
San Jose

Ecuador

Centro de Desarrollo Industrial del Ecuador (CENDES)
Servicio de Informacion Tecnica
Guayaquil

El Salvador

Centro Nacional de Productividad (CENAP)
Depto. de Informacion
San Salvador

Guatemala

Instituto Centroamericano de Investigacion y Tecnologia Industrial (ICAITI), Documentacion and Information Division
Guatemala City

Instituto Tecnico de Capacitacion (INTECAP)
Guatemala City

Honduras

Universidad Nacional Autonoma de Honduras
Centro de Informacion Industrial
Tegucigalpa

Nicaragua

Banco Central de Nicaragua
Centro Nicaraguense de Informacion Tenologica (CENIT)
Managua

Peru

Novoa & Stiglich Grupo de Consultores
San Isidro, Lima

Venezuela

Centro Nacional de Informacion Cientifica y
Tecnologica (CONICIT)
Caracas

U.S. Agency for International Development Contract
International Technical Information Network

Document sales* to the 40 countries participating in the AID/NTIS International Technical Information Network reached $118,475 in FY 76. This was a 57% increase over FY 75 sales, 28 times more than the base year (FY 74) when the cooperating agency program was begun.

Among these 40 countries 50% of the sales were accounted for from Latin America; 40% from the Far East; 7% from Africa; and 3% from the Near East. Three countries (India, Mexico, and Brazil) accounted for 56% of all sales.

Of the 40 countries, 17 have cooperating agencies. These agencies were responsible for 48% of the total sales.

Five new countries were included in the project for the first time in FY 76. All five were among the seven countries which registered first-time transactions in FY 76.

Thirteen countries showed an increase of more than 100%; three registered increases over 50%; and six, over 25%. One showed no significant increase

Seven countries showed decreases in sales from FY 75. Two countries showed no sales at all (Afghanistan, Nepal), and will be dropped from the program.

During FY 76 the project team visited 15 countries and negotiated and signed new agreements in Peru and Bolivia.

The project team held two NTIS Information Systems Workshops. Some 14 persons from nine countries attended the two three-week sessions. The project subsidized travel and per diem for six persons; the local AID mission one person; the OAS six persons; and one person was funded by his own organization.

Ten editions of Applications of Modern Technology To International Development (AMTID) (International Monthly Selections), were distributed in the developing countries. About 5,000 copies are distributed each month; and about 30,000 copies of the March edition were distributed, partially to commercial mailing lists.

---

*Total sales including subscription items were not available as of June 30, 1976.

Accomplished Projects (Promotion Division) cont'd...

Two newsletters from the Foreign Programs Liaison Officer were issued for cooperating agencies. The letters are designed to motivate the overseas representatives to accelerate customer acquisition, improve customer service, and therefore increase transactions.

A survey was sent to cooperating agencies to gather success stories from users of technology purchases through NTIS.

The Federal Institute of Industrial Research in Nigeria was awarded a $1,000 grant by NTIS because it met promotional and sales objectives stipulated in the letter of agreement.

Initial steps were taken in a new cooperative effort with the Peace Corps. Under this program, the Peace Corps would send volunteers to help augment the staffs of some of our cooperating agencies. NTIS would, for its part, train the volunteers in the NTIS approach to information dissemination. The selected cooperating agencies would serve as depositories and dissemination points for Peace Corps documents.

Materials concerning the program were furnished by the Division Chief to Dr. Betsy Ancker-Johnson, Assistant Secretary for Science and Technology. Dr. Ancker-Johnson, in turn, included the materials in a presentation to the Commerce Technical Advisory Board (CTAB).

The NTIS Director described and discussed the program at the conference on the role of Technical Information Services in the Transfer of Technology to Latin America, conducted by the Denver Research Institute and sponsored by the National Science Foundation. The Foreign Programs Liaison Officer also participated in the conference.

to increase the sale of U.S. Government reports during calendar years 1974 and 1975 in the countries visited as compared to sales figures in FY 1972 and the first half of 1973."

"Barroslearn feels that the NTIS reports are undervalued and underpriced in comparison with other sources."

"Customer satisfaction with NTIS reports is very high (in Brazil). . . Meetings with users elicited similar comments; no one felt that the information contained in NTIS reports was not of value."

". . . visits (to a significant cross section of Ecuadorian industrial users of NTIS reports) demonstrated that NTIS reports were particularly useful to Ecuadorian industry in helping to identify technical problem areas, stimulating new ideas and concepts, suggesting routes for solution of problems, and suggestions for new industrial activities."

". . . Dr. Martinez (Head of CENDES' Technical Information Service) noted that . . . information is a commodity and its value will not be appreciated in the LDCs (Less Developed Countries) until users and countries begin to pay for it."

"The NTIS information is valuable to the users in Colombia. To date, most of the reports have been used in planning activities rather than in direct industrial application. However, it must be recognized that research reports are important to developing countries and eventually the results could trickle down to the industrial sector. Planning for new industrial activities is also important and NTIS reports do contribute to development of plans and policies."

During FY 76 the team has worked with AID to develop two new projects to begin in FY 77. One, funded by the Latin American Bureau, would be for a three-year program for $750,000 for Latin America only. The other at the same level of funding would be for Africa, the Far and Near East.

Accomplished Projects (Promotion Division) cont'd...

The Foreign Programs Liaison Officer participated in a symposium on AID Strategy For Environment and Natural Resources Development, which was held in Tucson, Arizona. Tucson was also the site of the Annual AID Contractors' Conference, attended by the Director and the Foreign Programs Liaison Officer.

The Division Chief described the NTIS/AID experiment to an AID-sponsored seminar on urban information networking. The seminar moderator, Alfred P. Van Huyck, President, PADCO, Inc., in summarizing the day's presentations cited the NTIS experiment as a successful model.

The Division Chief's Assistant made a presentation to an NBS-sponsored seminar for Directors of Standards Institutions in LDCs.

The Director, Division Chief, and the LDC Foreign Liaison Officer have participated in State Department meetings as consultants to the Office of Environmental and Scientific Affairs (OES). OES is responsible for formulating the USG's U.N. position policy on a worldwide technology transfer agency. As a result of this participation, the project has been specifically referred to by Secretary Kissinger at U.N. and OAS meetings.

A briefing book with a history of the six-year experimental project was done for AID's three-man evaluation team. The team visited Springfield Operations Center, Washington Information Center and Bookstore, and interviewed the Director and four division staff members. The team made site visits to cooperating agencies and customers in Brazil, Ecuador, and Colombia. The purpose was to evaluate the cooperating agencies program. And the team took a very hard look indeed. A draft evaluation report prepared by the team has recently become available. It contains some criticism, some suggestions, and some encouraging comments. Here are a few quotations from that report:

> "In the interviews conducted in Brazil, Ecuador, and Colombia examples were provided which showed clearly that U.S. technical information was helping in the development of ideas for new products. . . ."

> "Individuals and organizations in these countries are aware of the value of U.S. research and development activities to their own development and eager to exploit U.S. R&D results for their own benefit. The (cooperating agency) program has succeeded in helping

Travel to Project Countries

Country	Agreement Negotiations	Site Visit*	Exhibit/ Meeting
Bolivia	X		
Chile	X		
Colombia		X	X
Costa Rica		X	
Ecuador		X	
Egypt	X		
El Salvador		X	
Guatemala		X	
Honduras		X	
Korea		X	X
Nicaragua		X	
Peru	X		
Philippines*		X	
Tunisia			X
Turkey	X		
Venezuela		X	

*Site visit was cancelled by Embassy because of typhoon activity.

International Projects Branch

Most activities of the branch are reported under Foreign Operations, p.

The AID TA/OST Project (International Technical Information Network) was in a holding pattern during this period. Only a low-level maintenance funding was provided during the TQ, and no funds at all were provided by AID during the 1st QTR of FY 77. No effort was made to expand the program; nevertheless, sales did increase substantially.

Total document sales reached $87,953. This is a 66% increase over the corresponding period. (1st plus 2nd QTR of FY 76) of one year ago. The 1st QTR FY 77 sales figure of $48,403 represents an increase of 138% over the 1st QTR FY 74, the 1st year in which the cooperating agencies program was in effect.

The average sales for the 9 project countries in Asia was $5,340. The average for the 18 countries in Latin American and the Caribbean was $1,694. The per country average for the 11 African countries was $11.

Of the original 40 project countries, 17 have cooperating agencies. These accounted for 44% of the sales. The average sale of cooperating agencies in Latin America were $2,213, in Asia $1,99 and in Africa $407. The average of all cooperating agencies was $2,064.

The weak performance of Africa reflects the lack of project emphasis there - plus the addition of 10 new countries to be covered in a new PASA with AID/TA/OST. The previous project was mainly targeted to Latin American in keeping with Secretary Kissinger's initiatives there.

Two agencies (Chile and Peru) joining the network in the 4th QTR of FY 76 have surpassed the FY 76 total sales in the first 6 months of operation as has the Guatamalan agency.

Nigeria has been unable to convert local currency to U.S. dollars causing a big drop in sales there. All other countries are showing a steady sales pace despite various holiday seasons, natural disasters, devaluations, and political crises.

International Projects Branch
Value of Ad Hoc Document Purchases for 28 countries in the International Technical Information Network

Country	TQ	1st QTR	FY 76
Near East			
+India	$12,686	$25,489	$30,133
*Thailand	1,912	635	6,020
*Pakistan	292	68	2,501
++Sri-Lanka	------	-------	------
Far East			
*Korea	1,066	1,289	4,015
*Philippines	1,811	906	3,874
+Indonesia	590	254	1,356
Sub-Saharan Africa			
*Nigeria[1]	------	407	------
+Tanzania	71	0	333
+Kenya	34	24	255
+Zaire	20	-------	125
+Zambia	------	63	97
+Ghana	23	8	73
+Liberia	------	-------	70
++Sudan	------	-------	------
++Chad	------	-------	------
++Mali	------	-------	------
++Upper Volta	------	-------	------
++Cameroon	------	-------	------
++Niger	------	-------	------
++Senegal	------	-------	------
North Africa and the Mediterranean			
+Turkey	635	390	1,767
+Egypt	------	-------	213
Jordan	4	35	108
+Tunisia	0	12	60
Morocco	------	-------	28
++Portugal	------	-------	------
++Syria	------	-------	------
28 countries	$19,144	$29,580	$59,384

* Countries with cooperating agencies
\+ Countries where cooperating agencies will be sought.
++ Countries not previously involved in pilot project.
1/ Reflects inability to replenish deposit account with currency

International Projects Branch

Value of Ad Hoc Document Purchases for 21 countries in the International Technical Information Network

Country	TQ	1st QTR	FY 76
Mexico	$5,341	$ 4,326	$21,799
Central America			
*Costa Rica	145	48	1,565 1/
*El Salvador	497	167	------
*Guatemala	223	1,416	983
*Honduras	113	536	688
*Nicaragua	271	221	715
+Panama	112	166	870
Caribbean			
+Dominican Republic	66	18	247
+Haiti	46	-----	268
+Jamaica	------	-----	------
South America			
++Argentina	------	-----	------
*Bolivia	13	-----	1,216
*Brazil	4,759	6,589	14,596
*Chile	3,543	1,031	3,379
*Colombia	392	479	2,444
*Ecuador	1,117	527	1,817
++Guayana	------	-----	------
+Paraguay	37	233	129
*Peru	1,807	555	2,182
*Venezuela	1,863	2,455	5,870
+Uraguay	61	63	318
21 countries	$20,406	$18,830	$59,086

* Countries with cooperating agencies
\+ Countries where cooperating agencies will be sought
++ Countries not previously involved in pilot project

1/ Sales in FY 76 were inadvertantly included under Guatemala because of an accounting procedure imposed by Icati for which the Salvadorian agency is a

ATTACHMENT X1

II. Previous Criteria for Evaluating Performance of a Cooperating Agency*

A. Amount of sales and amount of information disseminated. Rate of increase of thse amounts.

B. Creation of a broad base of demand for U.S. technical information products. (There is a tendency for some agencies to focus on users in one sector only, e.g. government organizations. An agency will be considered successful only if it attempts to meet the needs of information users in all sectors.)

C. Frequency of contact with NTIS. (Some agencies tend to disappear from view, except for the orders they place, once an agreement has been signed. Frequent communication with NTIS can be taken as a measure of interest in the program and its objectives).

D. Participation in workshop/training sessions. (Some agencies have repeatidly declined invitations to participate. Others are willing to go as far as paying expenses of their participants.)

E. Development of a promotion and marketing effort over and above that provided for in the project. Also, the commitment of own resources to this end.

F. Establishment of lines of cooperation and interaction with technical information organizations in other LDCs.

G. Amount of technical information generated within its own country that it acquires and makes available throughout the world via NTIS.

H. Effectiveness of technology transfer effort will be evaluated by intensi case studies conducted in selected countries.

* Actual quantitative measures of these points will vary from country-to-country Quantitative goals will be set partially in consultation with cooperating agencie They will be required to submit annual progress and self-evaluation reports. An NTIS field agent will visit each agency at least semi-annually for on-site evaluation.

III. What does it take to make an agent self-supporting?

Two major goals of this project are:

(1) to increase the utilization of U.S. scientific and technial information, in AID assisted countries, for development purposes; and

(2) to increase the overall effectiveness of the cooperating agencies as information disseminators.

The only direct subsidies received by the information user are airmail postage costs by AID, and waiver of the foreign handling charges by NTIS. In addition, NTIS allows the cooperating agencies a 25% discount on all items ordered. The program will become self-sustaining when progress toward goals (1) and (2) are approached to the extent that a demand for U.S. technical information is great enough to allow the removal of the susidies.

The principle here is that the technical information is being sold at much less than its actual potential value to the user. Once people get accustommed to using technical information, its actual value becomes more enhaneed and beneficial. Then the absolute level of purchased information materials will increase resulting in wider utilization, more effectiveness and greater revenues for ag. rep to cover overhaul.

Most agreements will contain a plan to phase out all subsidies on a step-by-step basis over a three year period. In some countries, however, potential demand may be too small to allow the program to become self supporting within the current project period.

IV. What type of promotion does an agent do? Who is it directed to?

A. The most effective promotion is done through field or extension work. A cooperating agency staff member visits a project leader, for example, determines his information needs, suggests solutions, and helps obtain the needed material.

B. Direct mailing of the project publication, AMTID, and other promotional materials (some furnished by NTIS, some created by the agency). The agency must develop a good mailing list for this purpose.

C. Advertisements in technical and professional publications.

D. Conducting, in cooperating with NTIS, seminars for potential information users.

E. Participation in trade shows, atalogue exhibits, and similar events. The commercial section of the U.S. Embassies usually welcomes participation of the agencies in events sponsored by them.

F. The promotions are aimed at all potential technical information users. However, emphasis is on practicing scientist and engineers, (especially project leaders), consultants, and middle-sized industrialists. There will be an increased effort to reach those working directly with the economically disadvantaged.

ATTACHMENT Xm

Preliminary Evaluation Methodology

1. Visit NTIS, Washington, D.C. to talk with personnel directly responsible for the operation of the program to obtain information concerning:

(a) The organizations with which agency relationships had been established.

(b) The manner in which NTIS provides services and support to the agents

(c) Problems encountered by NTIS or the agents in connection with the operations of the agency agreements

(d) The procedure established by NTIS for control and management of the activity

(e) Statistical data which would provide information for analyzing the program's effectiveness

2. Visits to the agencies established in Bolivia, ICAITI, Dominican Republic obtain information concerning:

(a) Views on the effectiveness of their relationship with NTIS

(b) Local problems encountered in acting as transfer agents for NTIS reports

(c) Statistics on sales

(d) Importance of NTIS reports in trasferring technical information and the impact of the information on technological and industrial development

(e) Promotional activities of the agents in their countries

(f) Recommendations for more effective operation of the NTIS agent relationship

(g) Recommendations concerning additional activities AID could undertake to provide more effective transfer of technological information to LDCs

3. Visits to actual users of NTIS reports in the three countries, with emphasis on visits to small and medium industrial organizations to obtain information concerning:

(a) The importance of the U.S. government report literature to them

(b) How the reports are used and what information is most valuable.

(c) Actual cases where information contained in a report led to expanded activities in a user's organization such as increased sales or employment

(d) Problems encountered in obtaining and using reports

(e) Recommendations for more effective contributions by AID to the transfer of technological information

GUIDANCE STATEMENT
ON
SELECTED ASPECTS OF SCIENCE AND TECHNOLOGY

Introduction

This statement describes an AID program to assist developing countries with selected aspects of the problem of technological transfer and adaptation. It focuses on: (a) helping LDCs develop national policies and institutions which permit developing countries to make better technological choices, particularly in industry; (b) natural resources assessment and management; and (c) reducing public investment costs.

This program is designed as a supplement to AID's priority programs in Agriculture, Population and Health, Education, etc. The statement does not define AID's science and technology strategy in these priority areas. This will be addressed separately, but by focusing on the general problem of improving LDC abilities to make technological choices, this program is relevant to AID efforts in agriculture, population and other priority fields. Moreover, many of the technologies considered have multiple applications in these fields.

Background

Experience has demonstrated that comparatively little U. S. technology can be transferred to LDCs without significant adaptation. The LDCs are aware of the need for technologies which fit their factor endowments and absorptive capacities. Stress is being placed on innovation to develop more appropriate technologies and on devising policies and institutions which permit developing countries to make better technological choices.

The problem of technological choice is growing in significance as unemployment and urbanization increase in the developing countries. Urban populations will increase by about 50 percent in the 1970s. At the start of the decade, they were 54 percent of the population in Latin America, 38 percent in East Asia, 22 percent in Africa, and 14 percent in South Asia. As these shifts proceed, the need for policies and technologies which increase productive employment in the urban industrial and service sectors as well as in the rural sector will grow.

AID's use of U. S. science and technology has generally followed the main lines of its program. Extensive use has been made of American science and technology in agriculture, health, and family planning. Substantial programs of research and development in these areas have been launched by the Agency. Similarly, AID has drawn on U. S. talent in the social

sciences and on engineering firms concerned with construction of economic infrastructure. However, relatively limited use has been made of U. S. capabilities in other biological and engineering sciences and in the physical sciences.

It is essential for AID to continue to strengthen the application of science and technology in its major programs.

But it is also important for AID to have a small program focused on the general problem of technological choice -- how LDCs can best adapt and utilize foreign technologies and encourage indigenous technological development. AID should also take advantage of selected opportunities for application of U. S. scientific and technological strengths outside its main areas of concentration.

This statement describes an AID program to assist LDCs with selected aspects of technological transfer and adaptation. The selection of activities reflects almost three years of Agency experimentation and analysis, as well as widespread consultations within AID and with many experts and development administrators of the developing countries, U. S. institutions, and other assistance agencies. Experience in these areas is still quite limited, and the focus of efforts will be kept under periodic review and amended as experience suggests.

Concentration Areas

The first emphasis of this science and technology program will be on policy and institutional development -- helping LDCs build their capabilities for using science and technology more effectively in support of development. There will also be smaller programs in natural resource assessment and management, and reducing public investment costs. AID will support LDC initiatives where they are strongly supported locally.

(1) Science and Technology Institutional Development. AID will focus on helping the LDCs in three areas:

-- Developing institutions for formulating national science and technology policies, priorities, and organizational responsibilities and for implementing decisions in this field.

-- Encouraging more effective orientation of LDC university science and engineering programs to development needs.

-- Strengthening the capabilities of LDC industrial service institutions to assist local industries in selecting, adapting, and using technologies suited to their circumstances, with special attention to support of small-scale industry.

This program reflects a need for national institutions that are effective in pursuing two related purposes. One purpose is to stimulate the efficient development of scientific and technological capabilities which meet national development requirements. The other purpose is to stimulate more effective use of existing scientific and technological capabilities in support of economic and social development.

While selection of technologies is largely a matter for private entrepreneurs, LDC technological institutions can play an important role through their influence on macro-economic policies of the Government, advice to entrepreneurs on availability of alternative technologies, and supporting services to industry. Included in these services is the network of industrial research, extension, and standards institutes throughout the LDCs. Generally, AID will sponsor collaboration between U. S. and LDC technological institutes that work with private industry. Particular attention will be paid to stimulating commercially viable small scale industry, which tends to use more labor and less capital per unit of output.

(2) Other Programs: In addition to science and technology infrastructure, AID will also undertake two smaller activities under this program.

(a) Natural Resource Assessment and Management: Improved LDC capabilities for assessing the location and nature of their natural resources and for determining how these resources can best be developed is of great importance for development. This includes extractive resources such as minerals and clays and the renewable resources of water, soil, and forests. Attention will be given to faster, cheaper, and more effective techniques for identifying and appraising natural resources, as well as to improved techniques for managing natural resource development such as integrated land use planning, conservation of renewable resources, and pollution abatement and control. Particular attention will be paid to opportunities to advance knowledge of means for environmental protection.