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Final Report

Latin America and the Caribbean: Application of Information Technology for Trade

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AA	AgriNet America
BBS	Bulletin Board Service
EDI	Electronic Data Interchange
GEIS	General Electric Information Services
GII	Global Information Infrastructure
IBCC	International Bureau of Chambers of Commerce
IBCC-NET	Announced electronic trade facilitation system of IBCC
IBEX	International Business Exchange
ITU	International Telecommunications Union
LAC	Latin American and Caribbean
NTDR	National Trade Data Bank
OAS	Organization of American States
OECD	Organization for Economic Cooperation and Development
SICE	Sistema de Información al Comercio Exterior (Foreign Trade Information System of the OAS)
SMTP	Simple Mail Transfer Protocol, a standard for electronic mail envelopes used over the Internet
TP	Trade Point
TPUSA	Trade Point USA, the U.S. trade point development site, a virtual trade point
TIPS	Technological Information Promotion System
UNCTAD	United Nations Conference on Trade and Development
UNGTPN	United Nations Global Trade Points Network
UNTPDC	United Nations Trade Point Development Center
WTCA	World Trade Center Association
WTCN	World Trade Center Network
WWW	World Wide Web, an Internet capability for end users
X.400/435	ITU's standards for electronic message envelopes, 435 being designed to carry EDI messages

Executive Summary

The U.S. Agency for International Development (A.I.D.) has as its primary goal the generation of sustainable and equitable economic growth for the world's least developed societies. In the Latin America and Caribbean (LAC) region, A.I.D. has used the expansion of international trade as a leading approach to this goal.

Today, the combination of growing privatization of telecommunications in LAC and the rapid advances in information technology in LAC and around the world offer significant potential to support A.I.D.'s goals. Indeed, this promise of new uses of technology is also seen as a threat if not realized. The dramatically increasing use of information technology and telecommunications for trade in the developed world threatens to widen the gap between developed and nondeveloped countries if the latter are unable to grasp the opportunity to fully participate in the emerging electronic marketplace.

A few trade facilitation systems under development or in operation incorporate telecommunications and information technology to provide trade-related information within LAC. Plans for more systems are being announced. At the same time, there are a few older systems or services providing trade-related data in electronic or paper form that have sought to increase and facilitate trade in LAC and beyond. The purpose of the study summarized in this report was to analyze the effectiveness of the technology to impart trade information widely and economically in LAC and to assess the potential effectiveness of these emerging electronic trade facilitation systems and the relevance and usefulness of the older trade databases.

Objectives and Approach

The study had four objectives:

- To analyze the effective use of a few trade-related databases now in use;
- To assess the effectiveness of three new systems: the UN Global Trade Point Network, IBEX, and AgriNet America;
- To conduct a field survey to assess acceptability of these systems to prospective users in LAC and identify constraints to their use, if any; and
- To prepare a final report of the study findings and recommendations.

The field work was conducted in Chile, Colombia, Guatemala, and the Dominican Republic by telecommunications and trade specialists. The field work was conducted in May–June 1995. The study analysis was completed in August. Hence, this report reflects the status of the systems reviewed as of August 1995.

Findings on Status of Telecommunications in Countries Surveyed

The state of a country's telecommunications infrastructure directly affects its potential to use any electronic trade databases or trade facilitation systems and affects the choices among systems. The Internet, a network of telecommunications networks, is often seen as the lowest common denominator for telecommunications services, even in lesser developed countries.

Although telecommunications services and the Internet are almost universally available somewhere in all countries, broad access to high-quality, reliable services is far rarer in many lesser developed countries. Reliable, accessible local telephone service is a prerequisite for using most telecommunications services. The number of telephone lines per capita in LAC countries lags dramatically behind those in North America and Europe. Internet access points are growing steadily, but most firms in LAC countries will not have ready access to global telecommunications services in the near term. This fact has two major causes:

1. These countries lack the economic strength to pay for the up front and ongoing costs of a robust telecommunications infrastructure and the know-how to support it; and
2. Regulatory and legal constraints limit some countries' options to use low-cost commercial alternatives to government-run telecommunications monopolies.

These telecommunications infrastructure constraints significantly affect three of the four survey countries, the exception being Chile.

A hierarchy of telecommunications network capabilities is useful to analyze options for trade facilitation systems targeted for use by lesser developed LAC countries. Electronic mail is the most basic such service, with the least dependence on reliability and quality connections. File transfer and queries, especially if they are done via electronic mail, demand higher quality network capabilities than electronic mail, but less than full on-line access to databases at remote sites. The World Wide Web (WWW), a new combination of Internet capabilities, requires high-quality, reliable, and high-speed access to global networks.

Given the current weaknesses of telecommunications infrastructure in at least several LAC countries of interest to A.I.D., users in these countries will most likely be able to take advantage of electronic trade facilitation systems relying on the low-end of this hierarchy—ones relying on electronic mail or minimizing on-line requirements.

Findings on Trade-Related Databases

The existing trade-related information databases and systems reviewed were SICE (Foreign Trade Information System) from the Organization of American States, World Trade Center Network (WTCN), TIPS (Technological Information Promotion System), and various databases from the U.S. Departments of Commerce and Agriculture. Some of the study findings were as follows:

- The existing systems offer a good range of pre-transaction trade-related data from government and private sources.
- Although the systems offer transactional data (trade leads), the leads vary widely in quality and timeliness and are the weakest type of data offered by these systems. They each offer trade leads of some sort—all in different formats. The quality, specificity, and "freshness" of the trade leads varies considerably. TIPS does not provide trade leads to or from U.S. companies yet.
- Some field interviewees used (or in the case of TIPS, planned to) all four systems, but especially trade statistics from the U.S. government databases.
- With the exception of Chile, interviewees use almost no on-line services, opting for use of paper, fax, or CD-ROM.

- At least three of the systems (except perhaps SICE) are changing to take advantage of new telecommunications options or considering cooperation or mergers with the newer trade facilitation systems.

Findings on Electronic Trade Facilitation Systems

The new trade systems reviewed were the UN's Global Trade Point Network (UNGTPN), the U.S. Chamber of Commerce's IBEX, and AgriNet America, sponsored by Caribbean/Latin American Action and the Inter-American Institute on Cooperation in Agriculture. During the course of the study, two other similar systems were identified and briefly reviewed (Trade Compass and the International Chamber of Commerce's IBCC-Net). The study findings were as follows:

- Of the three systems reviewed, only the UN Global Trade Point Network (UNGTPN) is operational. IBEX and AgriNet America have encountered delays in start up.
- The study team visited trade points (TP) in Santiago, Chile, and in Cartagena and Bogota, Colombia. The TPs in Santiago and Cartagena were fully operational.
- The TPs visited were not focused on exchanging trade leads with the UNGTPN and had trouble using the leads they received. They were focusing on regional trade.
- The Chilean TP had full Internet access (WWW); TPs in Colombia had basic email only. Despite their telecommunications capabilities, all three trade points visited focused primarily on use of fax services.
- Interviewees in the field knew little or nothing about AgriNet America and IBEX plans.
- All three systems are designed to build on existing trade promotion organizations and tap existing trade databases and services (in addition to offering some new databases).
- Each of the systems plans to significantly expand the pool of quality trade leads, but only UNGTPN has concrete plans to move to EDIFACT message standards.
- IBEX plans to support the negotiation process between users in innovative ways, tapping credit services and enabling different levels of confidentiality.
- UNGTPN already enables TPs to use services based on email access only; it appears that IBEX's approach also uses AT&T email to support queries and exchanges.

After the study field work was completed, the TP in the United States (TPUSA) reported that the TP in Colombia (and Brazil as well) had expressed interest in using TPUSA's World Wide Web services.

Conclusions

- Electronic trade facilitation systems are means, not ends. The importance of current and new electronic trade databases and systems must be kept in perspective. They are simply tools to be used by those interested in increasing trade. They are useful to the extent that they make it easier to reach and search existing trade-related databases, provide new sources of data needed to facilitate trade, and make it easier for more business and trade organizations to use these databases and services.
- The new trade systems still have not shown their potential, and indeed are not yet fully operational. It is far too soon to declare them useful or not useful to LAC countries.

- The biggest potential for trade-related data from the new systems is in the area of trade leads. Trade leads have been available for many years and for as many years there have been complaints about their quality, timeliness, and specificity.
- Even more electronic trade systems will be available in the future. Given the dramatic growth and changes occurring in telecommunications services and options, especially the World Wide Web, old systems and databases are taking on appealing and easy-to-use looks; and new systems are being announced at an impressive pace.
- Competition will serve to sort the winners from losers. The winners will respond to demand and adapt their services.
- All the systems reviewed—and more systems that may be created in the near future—could be of use to some organizations in LAC countries. Each of the reviewed systems has potential appeal to at least some organizations in LAC countries.
- Not all the systems need to be usable by LAC countries. They overlap in capabilities and they—or new ones—may soon be specialized such that they are of no interest to LAC countries.
- Hence, it is neither appropriate nor necessary for A.I.D. to choose trade facilitation systems to endorse or encourage. There are ways A.I.D. may choose to encourage systems to develop and guidance A.I.D. may choose to provide to LAC countries regarding trade facilitation systems.
- Organizations in LAC countries with weak telecommunications capabilities will have limited options for using electronic trade facilitation systems. Depending on how the systems are designed, the organizations may be unable to use any of them.

Given the fast changes in electronic trade systems, it is difficult for potential users in LAC countries and elsewhere to determine which systems meet their needs and to identify their technical constraints.

Recommendations

Trade Facilitation Systems

In order to increase the usefulness of the reviewed trade facilitation systems to LAC countries and to maximize the number of systems accessible by LAC countries with weak telecommunications, A.I.D. should encourage the reviewed systems to adopt these recommendations. One set of recommendations is specifically for UNGTPN because, of all the systems reviewed, A.I.D. may have the most influence over its design because it is sponsored by the United Nations. Of course, A.I.D. can offer these same recommendations to all other trade facilitation systems, including IBEX, IBCC-Net, and AgriNet America.

1. Use open standards in system design to reduce the learning threshold for users and minimize requirements for special equipment and software. These include EDIFACT standards for business transactions and electronic mail envelope standards.
2. Use common format for trade leads, ideally EDIFACT, and stress quality and timeliness. This will expand the emerging electronic marketplace, providing even broader access for businesses in LAC countries and elsewhere.
3. Offer alternative access paths for locations with weak telecommunications, including one or more of the following:

- Electronic mail for exchange of trade leads and queries of remote databases and any trade-related services offered by the systems;
- Distribution of relevant subsets of databases to local sites via file transfer; this will require greater software capabilities at the local site to receive and process updates to databases and enable users to query the databases;
- Distribution of relevant subsets of databases via CD-ROM or even regular air mail; and
- Options to use the systems via a shared access point, such as a chamber of commerce or industry association office.

4. Seek out and create new, high-quality trade-related data particularly of interest to LAC trade promotion organizations.

Chapter 8 of the report (Section 8.1.6) also provides specific recommendations for UNGTPN.

Use of Trade Facilitation Systems in LAC Countries

1. Information and training on options. It is recommended that A.I.D. help trade promotion organizations in LAC countries understand the features, costs, strengths, and weaknesses of the growing number of trade facilitation systems so that they can make informed choices about which, if any, to use and when to get started. They may opt to use none or more than one. This recommendation could be accomplished in a variety of ways:
   - Adapt portions of this report as a training document, updating frequently;
   - Include as part of the document a framework for assisting the potential users to evaluate which system(s), if any, to use to meet their specific requirements; and
   - Conduct training sessions on the trade facilitation systems for LAC trade promotion organizations.
2. Assistance on technical prerequisites: equipment, software, know-how. Once a trade promotion organization in LAC has chosen a system(s) to use, A.I.D. should consider proposals from them to cover the initial costs of getting started with a system or adapting local capabilities to use the system effectively. This might mean covering the costs of a personal computer, a modem, telecommunications software, or installation of a separate telephone line and technical training on the use of Internet electronic mail or how to actually connect to the system.

General Education and Training

To support its goal of generating sustainable and equitable economic growth for the world's least developed countries, including those in the Latin America and Caribbean (LAC) region, A.I.D. should take steps to increase the general understanding of the potential uses of the new electronic trade facilitation systems. Those that could benefit from more education and training include the following:

- A.I.D. and other U.S. agency staff focusing on increasing economic growth in LAC countries;

- Government leaders in LAC countries working on economic, business, trade, and telecommunications policy and procedures;
- Trade promotion organization and industry association representatives in LAC and those in other ccuntries interested particularly increasing trade with LAC;
- Businesses in LAC interested in increasing international trade.

Education and training could cover the following:

- A framework for comparing the current, new (and future) electronic trade facilitation systems to evaluate their appropriateness
- Information on the new trade facilitation systems themselves through comparisons of systems using consistent measures and through hands-on demonstrations.

Ideally, this education and training would be provided at least sometimes as part of larger economic developing conferences, so that the trade facilitation systems would be kept in context as yet one more set of potentially useful tools for increasing international trade.

1. Introduction

The U.S. Agency for International Development (A.I.D.) has as its primary goal the generation of sustainable and equitable economic growth for the world's least developed societies. In the case of the Latin America and Caribbean (LAC) region, A.I.D. has used as a leading approach to this goal the expansion of international trade and the application of the increased foreign exchange earnings to sustainable development.

Today, the combination of growing privatization of telecomrnunications in LAC and the rapid advances in information technology in LAC and around the world offer significant potential to support A.I.D.'s goal by helping to increase trade, improve trade efficiency, and improve net benefits from trade. The promise of telecommunications and information technology as tools to address this goal has been recognized by many. Two examples follow.

- An October 1994 World Summit on Trade Efficiency held in Columbus, Ohio, for economics and commerce ministers from 80 countries concluded that low-cost personal computer technology linked by global networks such as the Internet offered an effective means for more rapidly incorporating developing countries into the global economy.
- One result of the Summit of the Americas in December 1994 in Miami, Florida, was a call for a hemisphere-wide free trade area by the year 2005 supported by a telecommunications initiative that recognized the important role of telecommunications technology and called for expansion and harmonization of these technologies within the region.

Indeed, the promise is perceived as a threat if it is not realized. The dramatically increasing use of information technology and telecommunications for trade in the developed world threatens to widen the gap between developed and nondeveloped countries if the latter are unable to grasp the opportunity to use these new capabilities to fully participate in the emerging electronic marketplace.

Currently, there are a few trade facilitation systems under development or in operation that incorporate telecommunications and information technology to provide trade-related information within LAC: the UN's Global Trade Point Network, the U.S. Chamber of Commerce's IBEX System, and the AgriNet America Network. Plans for more systems are being announced. At the same time, there are a few older systems or services providing trade-related data in electronic or paper form that have sought to increase and facilitate trade in LAC and beyond. The purpose of the study summarized in this report was to analyze the effectiveness of the technology to impart trade information widely and economically in LAC and to assess the potential effectiveness of these emerging electronic trade facilitation systems and the relevance and usefulness of the older trade databases.

This report describes the study objectives and approach (Chapter 2); presents background information on the growth of telecommunications networks in developed and undeveloped countries (Chapter 3); and summarizes findings on telecommunications in the countries surveyed (Chapter 4), trade-related information databases (Chapter 5), and electronic trade facilitation systems (Chapter 6). Chapters 7 and 8 present the study conclusions and recommendations. Information on organizations contacted is presented in the Appendix.

2. Objectives and Approach

2.1 Objectives

The objectives of the work were (taken from Technical Service Order #021):

- To analyze the effective use of a few identified trade-related databases now in use;
- To assess the effectiveness of two new systems, the UN Trade Point Network and the AgriNet America Network [the systems included in the study were re-defined as the study progressed];
- To conduct a field survey to assess the acceptability of these systems to prospective users in LAC and identify constraints to their use, if any; and
- To prepare a final report of the findings together with comment on constraints or limitations encountered and recommendations, if warranted, for appropriate A.I.D. approaches to further agency goals through support of this technology.

2.2 Scope and Approach

The scope of work and tasks were as follows:

1. Review existing trade-related databases offered by the Organization of American States (OAS), the World Trade Center Association, the International Trade Center/UNCTAD, the U.S. Department of Commerce, the U.S. Department of Agriculture, and the U.S. Chamber of Commerce (IBEX). (The study team analyzed IBEX as a system, not a database, covering it under Task 2. It was incorrectly categorized as a database in the Scope of Work. Similarly, the ITC and UNCTAD databases were examined as part of the UNCTAD's Trade Point Network initiative under Task 2. TIPS was added to Task 1.)
2. Review and describe the identified trade facilitation systems. During the course of the study, the systems addressed were defined as the UN Trade Point Network, the Chamber of Commerce IBEX System, and AgriNet America Network. (Brief reviews of Trade Compass and IBCC-Net were added during the study period.)
3. Conduct field surveys in four selected LAC countries to evaluate the acceptability and usefulness of the identified trade databases and systems with particular attention to issues such as content; accessibility of the information; constraints posed by costs, lack of information or application knowledge; existence of adequate telecommunications infrastructure; and legal and regulatory barriers. The four countries subsequently agreed on were Chile, Colombia, Guatemala. and the Dominican Republic.
4. Prepare a final report including background information on the state of the art of telecommunications and its impact to date on developing countries; findings of the review of existing trade-related databases; findings regarding the trade facilitation systems; findings of the field survey; and recommendations to A.I.D. for future activities, if appropriate.

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The study field work was conducted in May–June 1995. The study analysis was completed in August 1995. This report reflects the status of the systems reviewed during this study period.

2.3 Framework for Trade-Related Information

The key ingredient to the databases and trade facilitation systems assessed in this study is information—information to increase trade and to facilitate trade. Prospective investors, buyers, and sellers, domestic and foreign, need rapid access to full and accurate information related to their needs. For purposes of analysis in this report, trade-related information has been classified into three categories: pre-transactional, transactional, and post-transactional. The line between these categories is not always firm, but the distinction between categories still proves useful. The categories are defined briefly in the following paragraphs.

Pre-transactional information is used in activities leading up to actually conducting a trade. It includes information needed to conduct market research; decide whether to enter international trade and the basics of how to do so; sort out target countries; and searches through directories of companies interested in international trade.

Transactional information encompasses actual offers and demands for trade and information used to move from identifying a customer or supplier to actually closing a deal. This includes information on product pricing (e.g., in agriculture); export rules and regulations and paperwork requirements; tariff and customs information; legal hurdles; and information on credit and finance that must be understood in order to do business.

Post-transactional information is used between a supplier and customer once a business deal is struck. This includes actual customs and broker information; information submitted to transportation carriers and used to track shipments and confirm their arrival; submitting invoices and making payments to banks and suppliers. (Customs data can also be used as pre-transactional information to evaluate export/import patterns.)

3. Trends in Telecommunications

3.1 Proliferation of Computers

In the 1980s, the use and proliferation of computers increased dramatically. Consequently, computerized trade-related databases were developed by U.S. government agencies with an interest in trade promotion to store trade-related information. These databases consisted primarily of publicly available information in the aggregate (e.g., trade statistics) as well as information voluntarily provided by potential private traders (e.g., some trade leads and company profiles of firms interested in foreign trade). The key databases themselves are profiled in Chapter 4. These databases were generally accessible via direct dial phone connections or in various hard copy reports and facsimiles.

Access to computer technology—and the know-how to use it well in business—was (and continues to be) more difficult for lesser developed countries. These countries entered the decade with low levels of physical and human resources, and subsequent economic growth was not sufficient in most cases to provide a base for widespread use of computer technology. A.I.D. (and organizations with like objectives) provided some help with computer equipment and training for trade and investment promotion organizations in target countries.

3.2 Growth of Telecommunications Networks

As the decade of the 1990s unfolds, computer technology continues its rapid advance, but the truly dramatic growth is occurring in telecommunications. In developed countries, the availability and use of telecommunications networks to access data and exchange transactions between computers has increased almost exponentially. The underlying infrastructure has grown, as have its uses and its users. At least a handful of private commercial telecommunications networks have truly become global (e.g., GEIS, AT&T, SPRINT, and the IBM Global Network), and at the same time, the Internet has extended its reach and its acceptance to almost all countries.

Uses of telecommunications have multiplied as the infrastructure has become more available and reliable. Businesses today routinely use telecommunications for electronic mail, to share up-to-the-minute business data between remote units of the same companies, and to conduct business transactions with customers and suppliers.

Open standards support the broad use of telecommunications by businesses for electronic commerce and trade facilitation.

All three of the categories of uses mentioned previously are supported by fairly stable international standards, making "network centric applications" (business applications with telecommunications as a basic component) easier to implement and extend across more organizations.

Electronic mail is supported by ITU X.400 (and X.435) for message envelopes, and data exchange between diverse computer systems is supported by various data transfer protocols following an open system model (the OSI model). The exchange of business transactions,

referred to as electronic data interchange (EDI), is well supported by international (and U.S.) transaction format standards (UN/EDIFACT and the U.S.'s ANSI ASC X12).

In fact, "email enabled electronic commerce" combines the two standards groups for EDI and electronic mail to improve the management and flow of electronic transactions. A special version of the international envelope standard has been designed specifically to carry EDI transactions (X.435). Major commercial telecommunications networks support X.435 today, and it can be used over the Internet as well. MIME, a comparable Internet standard to X.435, is also growing in use and an implementation of it consistent with X.435 has been developed.

The advantages of the use of X.435 or MIME for exchanging business transactions also include enabling the exchange of related binary and even voice or video "documents" in the same envelope.

Many businesses will continue to exchange electronic transactions using the basic envelopes built into X12 and EDIFACT, but as their needs increase in complexity, they can use the combination of email and EDI standards the telecommunications industry has designed for them.

3.3 Use of Global Information Infrastructure

The U.S. government has committed to using electronic commerce (and EDI) to reduce its costs and speed its business processes. In 1993 the government committed to an aggressive implementation process for electronic commerce, and although the schedule has slipped significantly, the government-wide approach is well founded on the use of open standards. When fully implemented, more than 500,000 businesses in the United States may exchange transactions electronically with the government. These same businesses will then be ready for the takeoff of business-to-business electronic commerce domestically and internationally.

The U.S. government has also promoted the development of international telecommunications networks, dubbed the Global Information Infrastructure (GII), based on five basic principles: private investment, competition, open access, a flexible regulatory environment, and universal service. The United States and other countries are encouraging the use of the GII to disseminate, share, and reuse information; improve productivity and economic growth for businesses, which face an increasingly global and competitive economy; develop work force skills; and more.

In the current government blueprint for developing the GII,[1] the use of telecommunications to increase trade and to enable the use of trade facilitation systems is specifically cited.

3.4 Role of the Internet

The Internet, a global network of networks, is playing an important role in the proliferation of network-based applications, especially its World Wide Web.

The Internet has expanded beyond its university and government beginnings to serve businesses and individuals worldwide. In early 1995 it connected 159 countries, 3.8 million computers, and some 20 to 30 million users, and it was growing at a rate of 10 to 15 percent

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[1] Gore, Al. *Global Information Infrastructure: Agenda for Cooperation.* U.S. Government Printing Office, Washington, D.C., February 1995, pp. 26–28.

per month.[2] It is now interconnected at least partially to most commercial telecommunications networks.

Long-time Internet capabilities have been combined and augmented to create a World Wide Web (WWW) of computers, all easily accessible by lay users with "point and click" commands, full color and graphics, and even sound.[3] Even better, public–private research and development collaborations are moving quickly toward providing viable security tools to enable it to be safely used for commerce.

Not surprisingly, electronic commerce systems of myriad sorts are mushrooming on the WWW today. Private businesses, trade organizations, U.S. states, and countries have their own Web pages promoting products, tourism, and more. Chile has a major presence on the Web; the U.S. government now uses it as the default way to distribute information within many of its programs for businesses; and the UN and other standards organizations are using Web pages to reach constituents and offer data for searching and downloading.

Not surprisingly, trade facilitation systems are also proliferating on the Web today. Because of the Web's ease of access and use by millions, governments, entrepreneurs, and trade promotion organizations of all sorts are developing trade facilitation systems on the Web. Their number appears to increase daily—or at least the number of systems planned or labeled as "under construction." This study examines a few, but the trade facilitation system marketplace is volatile and changes almost daily.

As with other business applications on the Web, trade facilitation systems cover costs either through government or organizational subsidies (charging users nothing); subscription fees; or pay-as-you-go arrangements that are just now starting to be used.

3.5 Use of Public Standards on Telecommunications Networks

Use of public standards on telecommunications networks helps keep networks accessible by all users; commercial networks can and do restrict access to services.

Commercial telecommunication network services charge subscribers for use of their closely managed network services, access to databases, and the exchange of electronic mail and other value added services.

Using X.400 (and eventually X.435), electronic mail, and even EDI (X12 or EDIFACT without an electronic mail envelope), business transactions can flow between commercial networks; as a result, a subscriber to one network need not subscribe to a business partner's network. This interconnectivity and "openness" does not extend today (and may never) to on-line access to database services on commercial telecommunications networks (unless these databases are placed on a WWW-accessible server). For example, if a trade facilitation system uses a commercial network to manage its databases, anyone wanting to query those databases on-line will have to subscribe to that commercial network.

Queries by mail (using X.400 or SMTP) could be used for accessing databases on commercial networks.

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[2] Ibid., p. 5.

[3] For thorough background information on the WWW, how to use it, and how others are using it, see December, John and N. Randall, *Worldwide Web Unleashed*, Sams Publishing, Indianapolis, Indiana, 1994.

3.6 Security of Electronic Transactions

Low-cost, practical ways to secure electronic transactions are available when needed for use on the Internet and commercial networks.

To conduct business electronically, businesses must have practical and low-cost ways to ensure that

- What they receive is exactly what has been sent (with no unauthorized changes) (authentication);
- The identified sender and receiver of a transaction is indeed correct (nonrepudiation for both sender and receiver); and
- Any confidential data remains confidential, be it an entire transaction or parts thereof (confidentiality).

Tools for accomplishing these tasks are available today. At least one commercial software package is available to enable their use with electronic business transactions and is in use in a U.S. government agency pilot project. Competitor packages are under development. Some companies are already using some of these tools; others will use them when their perceived level of risk warrants. These security techniques are integrated with the use of electronic envelopes as the method used for exchanging electronic business transactions (i.e., X12 or EDIFACT standard messages in ITU X.435 or MIME envelopes).

CommerceNet, a consortium of public and private parties, is also involved in developing such tools for use on the WWW.

One issue is the prohibition against the use of the U.S. government's chosen encryption algorithm outside the United States. This need not be considered an impediment to electronic commerce because alternative encryption techniques are in use that can be used for international exchanges.

The U.S. government's Global Information Infrastructure initiative is also focusing on ensuring that telecommunications networks can offer the privacy, security, and reliability needed by business users. The government is working with the ITU (International Telecommunication Union) and the OECD (Organization for Economic Cooperation and Development) to address security issues.[4]

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[4] Gore, p. 38.

4. Findings on Status of Telecommunications in Countries Surveyed

4.1 Access to Services

Although telecommunications services and the Internet are almost universally available somewhere in all countries, broad access to quality, reliable services is far rarer in many lesser developed countries.

The focus of this study is not to provide an in-depth assessment of telecommunications infrastructure in lesser developed countries.[5] It will suffice to say that the state of this infrastructure in any country directly affects a country's potential to use any electronic trade databases or trade facilitation systems. These facts will affect which telecommunications tools are most practical in lesser developed countries.

Any map of Internet access by country shows a rosy picture: almost every country in the world has at least one Internet node with at least one of several Internet capabilities (e.g., file transfer, electronic mail).[6] The number of nodes even in lesser developed countries is growing quarterly. Lesser developed countries in Africa lag most dramatically, but so do the poorest countries of LAC. This fact has two major causes:

1. These countries lack the economic strength to pay for the up front and ongoing costs of a robust telecommunications infrastructure and the know-how to support it; and
2. Regulatory and legal constraints limit some countries' options to use low-cost commercial alternatives to government-run telecommunications monopolies.

4.2 Constraints on Countries Surveyed

These telecommunications infrastructure constraints significantly affect three of the four survey countries, the exception being Chile.

A basic measure of the accessibility of telecommunications in a country is telephone main lines per capita. Table 1 presents these data for Latin America and the United States, starkly demonstrating the lack of basic phone in many of these countries.

To use more advanced telecommunications services, phone access is just the prerequisite. Reliability, quality, cost, and the form of the connectivity affect how and which telecommunications services can be used. There are telecommunications standards issues to address as well to ease global telecommunications with LAC. OAS's CITEL (Organization of

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[5] For a current overview of the telecommunications sector in Latin America, see Latin American Telecommunications Sector Overview, prepared by the International Technology Consultants, Bethesda, Maryland, presented at the Hemispheric Trade and Commerce Forum, Denver, Colorado, July 1–2, 1995.

[6] For detailed information, see the most current Internet connectivity table from the Internet Society (ftp://ftp.isoc.org/isoc/charts/connectivity-table-v13.txt) and connectivity map (ftp://ftp.isoc.org/isoc/charts/connectivity-map-v12.gif).

Table 1: Telephone Main Lines Per 100 Inhabitants, 1993

United States	**57.49**	Guyana	5.00
Antigua & Barbuda	32.02	Haiti	0.65
Barbados	31.73	Honduras	2.10
Bolivia	3.31	Jamaica	9.34
Brazil	7.05	Mexico	8.36
Chile	11.01	Nicaragua	1.57
Colombia	11.28	Panama	10.29
Costa Rica	11.38	Paraguay	3.12
Dominican Republic	7.26	Peru	2.99
Ecuador	5.45	Puerto Rico	33.35
El Salvador	3.14	Trinidad & Tobago	15.28
Guatemala	2.30	Venezuela	10.06

Source: International Telecommunications Union

American States Inter-American Telecommunications Commission) is collaborating with the ITU (International Telecommunications Union) to address these issues.

International telecommunications carriers (e.g., Sprint, AT&T, IBM, GEIS) do offer limited services with local partners in Latin America. They, too, are constrained by the same weaknesses in local infrastructure.

Although Chile still has a low number of telephone lines per capita, it is a clear exception in LAC with regard to telecommunications services. In major cities there is broad access to telecommunications services—the Internet and commercial networks. This is due to Chile's policy of telecommunications deregulation, resulting in dramatic improvements in service levels and competition among national and international telecommunications service providers.

The other three countries in the field survey have far weaker telecommunications infrastructure, with the relative strengths declining from the Dominican Republic to Colombia to the weakest infrastructure in Guatemala.

The general quality of the Dominican Republic's telecommunications services appears to be superior to that of most Latin American countries. Interviewees generally rated the national telephone company, CODETEL, fairly well for efficiency and its up-to-date technology. CODETEL and two rival companies planned to offer Internet services by the end of June 1995.

Colombia's telecommunications regulatory environment is now becoming more modern and competitive, with full effects starting in 1997. Local phone service is a significant constraint now, partially overcome by the growing use of cellular communications.

Guatemala appears to have the weakest telecommunications infrastructure of the countries visited for this study, with only 2.3 (in 1993) telephone lines per 100 inhabitants. It is the only country visited with no Internet access at all, but that is projected to change by year end. (Some entrepreneurial Guatemalans have managed to overcome this challenge by reaching the Internet via Costa Rica.) The country's telecommunications network is under the authority of the state-owned GUATEL (Empresa Guatemalteca de Telecomunicaciones). Of all the countries of Central America, Guatemala has the highest percentage of its population dwelling in rural areas, which presents even greater challenges. As in other Latin American countries, cellular technology is helping to improve telephone access.

4.3 Hierarchy of Telecommunications Network Capabilities

A hierarchy of telecommunications network capabilities is useful to analyze options for trade facilitation systems targeted for use by lesser developed LAC countries.

Given that accessibility, reliability, and quality of telecommunications services vary in lesser developed countries, it is helpful for the purposes of this study to roughly place telecommunications capabilities in a hierarchy based on the underlying telecommunications infrastructure requirements. This hierarchy is from a lay perspective, not a technical one. Table 2 identifies four ways to use telecommunications networks: electronic mail (email), file transfer, database queries, and WWW access. Electronic mail can also be used for database queries, for example, if a user composes a query and sends it to a database and later receives results l by electronic mail.

Table 2: Matrix of Telecommunications Uses

	Telecommunications Network Characteristics		
	Availability: Can I connect?	Reliability: Can I stay connected?	Quality: Do I have a "clean" connection?
Electronic mail (including database queries by email)	+	+	+
File transfer	++	++	+++
Database queries (on-line)	+++	+++	++
WWW access (real time)	+++	+++	+++

Notes: + not very important, ++ moderately important, +++ very important.

The table shows that the use of electronic mail is least affected by problems with availability, reliability, and quality of connection with access to the WWW at the other end of the spectrum. Although file transfer can be used somewhat more flexibly than on-line access to systems for database queries and the WWW, lack of availability and reliability can frustrate users, and poor quality can eliminate file transfer as a regular option.

4.4 Necessary Characteristics for Electronic Trade Facilitation Systems

Given the current weaknesses of telecommunications infrastructure in at least several LAC countries of interest to A.I.D., electronic trade facilitation systems need certain technical characteristics to be most useful to businesses in these countries.

As LAC countries strengthen their telecommunications infrastructures, they will have a full range of options to use the trade facilitation systems that best suit their businesses needs. Businesses and trade promotion organizations in Chile already have these options, and indeed, some are already using the WWW to promote themselves. However, there is great danger that, given the truly impressive strides in telecommunications occurring today, the economic gap between countries with and without solid telecommunications infrastructures will widen to a chasm. Even with a 25 percent growth rate annually—probably the most optimistic rate that could be achieved—these countries will not be able to catch up in the near term.

At least for the near term, or perhaps one to five years, organizations in other LAC countries (e.g., Guatemala) will be much more limited in their options to use telecommunications.

Fortunately, there are technical approaches that can be encouraged for electronic trade facilitation systems that will enable firms in the weaker countries to bridge the gap at least partially. Any trade facilitation systems targeted for use by these countries should be adaptable—with, for example, alternative access paths—to reduce dependence on robust, reliable, high-quality, and ubiquitous telecommunications. The following technical characteristics would accomplish this. Several are closely related.

- **Shared access**. Allow users access via a shared site or office, reducing the requirement for individual users to have proper equipment and high-quality telecommunications services. Any software used will need to accommodate multiple users or be designed so that services are "mediated" (i.e., designated persons use the system on others' behalf).
- **Electronic mail**. Given that email does not require reliable and high-quality telecommunications, any system that uses email to distribute information and enable queries to databases will be more likely to be usable. This approach will necessarily require more software capabilities on-site in order to sort the electronic mail and make it easily accessible to end users. For example, if a trade organization simply receives trade leads from many other sites by electronic mail, it will need the capability to manage these leads in a database software application on-site that can accept input from email messages.
- **Minimized on-line time**. Any trade facilitation system that requires users to log on (e.g., via Internet's telnet capability or a connection to a remote database on a network) in order to find, post, or exchange information will be difficult if not impossible for organizations in these LAC countries technically and perhaps financially as well.
- **Decentralized databases**. As a corollary to the previous characteristics, a trade facilitation system to support such countries should have an option to either download (via electronic mail or file transfer) or receive by diskette or CD-ROM relevant data. Ideally, this download process would be well supported by a client/server architecture in which databases are automatically kept up-to-date and synchronous. Again, this implies far more elaborate software capabilities for database use at the remote location.
- **Limited WWW Access**. Use of the WWW by a trade facilitation system does not automatically rule out its use by these target countries. Any system using the WWW could have alternative access methods using the foregoing techniques and provide an option to use WWW pages without graphics and those that do not require extensive interaction.

4.5 Benefits of World Wide Web

Countries with weak telecommunications infrastructure need not be fully "locked out" of the benefits of the WWW.

Businesses and trade promotion organizations in LAC countries with weak telecommunications infrastructures can have a presence and reap some of the benefits of the WWW despite not having direct or reliable access to the WWW themselves. Trade facilitation systems could optionally provide this presence, again, as an alternative service tailored to such countries, perhaps delivering any leads or queries to the represented organizations via email, fax, or hard copy mail.

5. Findings on Trade-Related Information Databases

This section addresses the characteristics of the existing trade-related information databases and systems reviewed. The line between databases and systems is sometimes blurred, because in some cases databases are grouped into systems, and trade-related services are optionally provided by the providers of some of these databases. For the purposes of this study, the databases reviewed below are essentially systems of trade-related information that have been in operation for several years using proven technology [e.g., CD-ROM or dial-in bulletin board systems (BBS)]. All of the providers of the databases reviewed here are merging or are considering ways to merge with the newer electronic trade facilitation systems reviewed in Chapter 6. These potential or actual linkages will be addressed in Chapter 6. This section will provide

- The characteristics of the databases reviewed, summarized in a table.
- A summary of study findings regarding the examined databases.

5.1 Summary of Database Characteristics by Source

Table 3 summarizes the characteristics of the systems examined:

- SICE (Foreign Trade Information System) from the Organization of American States,
- World Trade Center Network (WTCN),
- TIPS (Technological Information Promotion System), and
- Various databases from the U.S. Departments of Commerce and Agriculture.

5.2 Trade-Related Information Databases Examined

Findings on the existing trade-related information databases that were examined are presented in the following paragraphs.

- The existing systems offer a good range of pre-transaction trade-related data from government and private sources.

  This is the strongest type of information available through these systems. The systems tap a wide variety of government databases from the U.S. government especially. The U.S. government itself makes these data available in a variety of formats and some of these government data are distributed by other trade information systems.

  WCTN offers optional access to trade-related data from private, commercial sources such as Dun & Bradstreet, Moody's, and TRW.

Table 3: Summary of Comparison of Existing Trade-Related Databases

	Foreign Trade Information System (SICE)	World Trade Center Network (WTCN)	Technological Information Promotion System (TIPS)	U.S. Depts. of Commerce and Agriculture Databases
Sponsoring Organization	Organization of American States (OAS).	World Trade Center Association.	Originally United Nations Development Program; now private service of Devnet International (Italy) with regional office in Uruguay.	U.S. Departments of Commerce and Agriculture.
Thumbnail Description	Provides U.S., Canada, and Latin American government trade statistics; tariff schedules; price data; regulatory information; and directories of importers/exporters; U.S. import/export maritime bills of lading. Matchmaking has been very limited. Investment could be included in offers for joint ventures to import or export.	Provides international trade matchmaking and other business opportunities. Also provides access to D&B, Moody's, Kompass, S&P, and TRW databases; message transmission services; and telex and fax message processing services.	Electronic transmission of trade opportunities, news, events, publications, research and development, and market and regulatory information, sent by satellite and call-back system in 20 minute intervals. Provides access to some regional databases, including that of the Chilean EXIM Bank.	National Trade Data Bank; Electronic Bulletin Board; STAT-USA; USDA's AMS Produce Price Database. These provide some trade leads; trade statistics; price statistics; trade regulatory information; and sector studies.
How Information is Accessed by Users	Any IBM-PC compatible with modem, telephone line, and DOS version 3.2 or higher. Direct dial to SICE's mainframe. Has used Sprintnet for telecommunications. Plans to be available on Internet.	Basic computer, modem, and telephone call to GEIS (commercial, international telecommunication service).	By hard copy bulletin or electronically using specialized software, PC, modem, phone line. Local phone call access in cities that have access to AP satellite (in some Latin American countries).	CD-ROM; Internet; fax.
Fees: How Costs are Covered	Two payment options for access. Choice A : $40 monthly fee for one hr of access with additional minutes billed at U.S.$0.67 each. Choice B: $1,200/yr with unlimited access to most of SICE's databases (except U.S. Maritime Bills of Lading and Special Requests, which are billed for separately). Telecommunications charges are additional.	Varies by WTC. Washington D.C. center charges $200 for software and access to Network. Additional charges to post and read ETOs. Online charges of U.S.$10 per hour, on a per minute basis. Charges for a search range from U.S.$3.45-$11.50. Retrieving a single complete record ranges from U.S.$3.45-$39.	Approximately $500 per year for electronic service. No charges for transmission or receipt of information.	NTDB - $24.95/three months through Internet; $360/year for 12 month subscription to CD-ROM. Electronic Bulletin Board - online charges vary. Available in U.S. by fax at rate of $0.65/minute. International access can be set up. AMS Produce Price database - Price N.A. Apparently sold in Latin America through private companies.

Table 3: Summary of Comparison of Existing Trade-Related Databases

	Foreign Trade Information System (SICE)	World Trade Center Network (WTCN)	Technological Information Promotion System (TIPS)	U.S. Depts. of Commerce and Agriculture Databases
Types of Users	Many users are government or non-profit organizations.	190 WTCs and 2000 linked to WTC Network. WTCN disseminates information through public media which allows for other types of users to respond to offers or demands.	Small and medium businesses via trade facilitation organizations such as chambers of commerce.	All kinds of businesses directly or via trade organizations such as chambers of commerce.
Estimated Number of Users	About 135 accounts from 25 countries.	Unknown. WTCA refers to 30,000 total readings per month of full text Bulletin Board ads.	Approximately 35,000 companies have posted trade leads. A much smaller number are paid subscribers.	Unknown.
System Growth Trends, Plans	Currently reevaluating access issues, costs and information content.	Has existed in electronic form for several years. Growth trends unavailable.	Slowly beginning electronic service in Latin America.	Growing through increased use on Internet, access on fee basis part of consolidated access to U.S. government data.
Industry or Regional Focus?	Mostly focused on the Americas, but offers world-wide government tenders and private trade leads. No industry specialty, but tries to list trade leads for products that are non-traditional for Latin American and Caribbean countries.	World-wide System; All Products and Services.	World-wide System; All Products and Services.	World-wide System; All Products and Services.
Types of Information				
Pre-Transaction	Custom data. (Journal of Commerce)	Yes	Yes	Yes
Transaction Trade Leads)	No	Yes	Yes, but none from U.S. yet.	Yes
Post-Transaction	Yes: U.S. maritime bills of lading.	No	No	No
Sources of Information	Private companies involved in international trade; North and Latin American governments; Knight Ridder, Journal of Commerce.	Private companies involved in international trade; U.S. government; D&B, Moody's, Kompass, S&P, and TRW databases; new organizations.	Private companies involved in international trade; Governments and correspondents.	Private companies involved in international trade; U.S. government agencies.

Table 3: Summary of Comparison of Existing Trade-Related Databases

	Foreign Trade Information System (SICE)	World Trade Center Network (WTCN)	Technological Information Promotion System (TIPS)	U.S. Depts. of Commerce and Agriculture Databases
Frequency of Updates	Varies.	Varies.	Varies.	Varies. Trade statistics updated monthly. Sector and regulatory reports updated periodically.
Comments from Field Survey	Some of the data available through SICE is valued in Latin America; however, there were comments about the timeliness and reliability of some Latin American governments' data. We met one attendant who had signed up for SICE at the Miami Conference, but had not received the service as of eight months later.	Some usage in Dominican Republic.	None of the four countries visited had the electronic service up and running. This is only system reviewed that is available in Spanish and French.	These trade statistics and price databases are popular in Latin America. Level of use of trade leads unclear. Some Latin American users of AMS database apparently had obtained it through private intermediary and had to cancel subscription because of high cost.
General Comments	SICE has performed a service of packaging data to promote inter-American trade, but development of the Internet may allow for cheaper, online transmission of this same data.	Appears to be similar product to IBEX in its optional access for users to variety of commercial databases. (But IBEX offers additional services, primarily the matching of members.)	TIPS does not have any U.S. users. TIPS appears ready to join forces with IBEX. (IBEX reported that TIPS and IBEX have an agreement.) TIPS has not yet realized its service plans for LAC.	US's UN Trade Point (TPUSA) provides discounted access to NTDB. Available to other UNGTPs as well.

- SICE and TIPS both offer at least some government databases from LAC countries themselves with mixed results. The systems can provide the data, but the government data are not kept current or are not accurate or complete. Interviewees commented on this weakness.

- Although the systems offer transactional data (trade leads), the leads vary widely in quality and timeliness.

  Trade leads are the weakest type of data offered by these systems. Each system offers trade leads of some sort, but in a different format from the others. The quality, specificity, and "freshness" of the trade leads varies considerably. Some may be simply "company profiles," not specific offers or demands for goods, services, or other types of business. Obsolete "leads" are not consistently purged from the systems.

  TIPS does not provide trade leads to or from U.S. companies yet.

- The existing systems offer little if any post-transactional information. Only SICE offers some post transactional information regarding maritime bills of lading.

- All four systems are accessible in some (but not necessarily all) LAC countries, but are not all in electronic form.

  TIPS is available in most LAC countries including Chile, Colombia, Guatemala, and the Dominican Republic. The Santiago Chamber of Commerce and the National Chilean chamber of commerce have just adopted and begun promoting TIPS. TIPS has plans to expand more in LAC countries. TIPS has just begun its marketing program in Colombia. Most LAC users of TIPS use its paper-based services, not electronic services.

- Some field interviewees used all four systems, but especially trade statistics from the U.S. government databases.

  The study's field interviews were not designed to provide a comprehensive assessment of the level of use of the examined systems. We did find that at least some users tapped (or intended to, in the case of TIPS) all four systems examined to a limited extent. No organization used all four systems. In the Dominican Republic, our interviewees at the American Chamber of Commerce were familiar with the systems, but used only the WTCN and only on a limited basis.

  The Trade Points in Bogota and Cartagena used the National Trade Data Bank from the U.S. Department of Commerce on CD-ROMs.

  We interviewed no actual users of TIPS. GEXPRONT (Gremial de Exportadores No-Tradicionales) in Guatemala had an agreement with TIPS but had not yet begun to receive information.

  GEXPRONT representatives also reported that their users were generally unwilling to pay even below market costs for the U.S. Department of Agriculture's AMS market price database for fruits and vegetables.

  After the conclusion of the field work, TPUSA (the trade point in the U.S.) reported that the trade points in Colombia (as well as Brazil) had expressed interest in using TPUSA's capabilities on the WWW. This would mean that TP users in Colombia would have the option to query trade lead databases, prepare and broadcast trade leads, and use several sources of pre-transaction market data all from a WWW site.

- Systems users interviewed use almost no on-line services, opting instead to use paper, fax, or CD-ROM. Only in Chile did we find any significant use of electronic database

services. In all countries visited, trade facilitation centers now use CD-ROMs fairly frequently and some have access to electronic mail.

- At least three systems are changing to take advantage of new telecommunications options or considering cooperation or mergers with the newer trade facilitation systems.

  SICE is currently evaluating its access approach, costs, and information content.

  TIPS has discussions under way with UNGTPN, IBEX, and AgriNet America. (In September 1995, IBEX reported that it had a contract with TIPS.)

  The WTCN is already available on GEIS, a commercial international telecommunications service, as well as in other media.

  The U.S. Department of Commerce and the Department of Agriculture are part of a U.S. government initiative to provide consolidated access to U.S. government information via the WWW on a fee basis, with CD-ROM and other media also available.

6. Findings on Electronic Trade Facilitation Systems

This findings section is composed of three subsections:

- A summary table of the systems' characteristics,
- Sketches of yet two other systems (IBCC-Net and Trade Compass),
- A summary of study findings regarding the examined systems.

6.1 Summary of Characteristics of Electronic Trade Facilitation Systems

Table 4 summarizes the characteristics of the three electronic trade facilitation systems reviewed. The table includes details on each system and concludes with comments.

6.2 Brief Comments on IBCC-Net and Trade Compass

The number of electronic trade facilitation systems is multiplying: at least two were excluded from this study but deserve brief sketches.[7]

IBCC-Net, an interactive, electronic global trading system, was announced in a press conference in May 1995 by the International Chamber of Commerce in Paris. It is a service developed in partnership with IBN (International Business Network), a U.S. firm. IBCC-Net, years in planning, was announced to be operational in its first phase in June 1995, in which company profiles are to be gathered and a database created. It is to be used by interested chambers of commerce worldwide using special "Voyager" software. It will offer databases of company profiles and trade leads. Businesses can use it on a fee-for-service basis, paying by credit card for only leads to which they want to respond by sending an electronic message. Businesses can browse and save an unlimited number of trade leads for no fee.

The system will be accessible via the Internet (telnet access, meaning logging on to a computer accessible via the Internet). It will also provide an optional search service for companies without electronic access. No commitment has been made to use EDIFACT standards for message formats.

Trade Compass is a service of the Washington, D.C., based Horizon Trading Company.[8] It is available via the WWW to any business on a guest or member basis. The service offers a wide (and growing) range of trade information via pointers to other Web sites, consolidated Web pages (e.g., one that consolidates trade-related UN pages), and Trade Compass databases (not yet available). All information today is available for free. Trade Compass plans to offer

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[7] A third, Tradescope, was also identified during the study. It is similar in approach to Trade Compass and is as far along in implementation. It is available on the Internet at http://www.tradescope.com.

[8] See http://hvww.tradecompass.com.

Table 4: Summary of Comparison of Electronic Trade Facilitation Systems

	UN Global Trade Point Network (GTPN)	International Business Exchange (IBEX)	AgriNet America (AA)
Sponsoring Organization	UN Conference on Trade and Development (UNCTAD).	U.S. Chamber of Commerce; Canadian Chamber of Commerce.	Caribbean/Latin American Action (CLAA).
Partners	Each Trade Point (TP) develops own partnerships with trade organizations, carriers, banks, government. TPs in LAC Latin countries have developed public/private partnerships with trade promotion agencies, customs brokers, trans, AT&T, other private companies have noted services, equipment.	Global Business Alliance, AT&T; GEIS; D&B; SHL Systemhouse; TIPS; some chambers of commerce in LAC; Simon and Schuster; Chase Manhattan Bank.	Inter-American Institute for Cooperation (IICA); Sprint; possibly U.S. National Agricultural Library (NAL).
Operational Status	As of 7/15/95, 146 TP applications received; 112 processed; 90 have registered as TPs; 46 are operational, including Chile, Colombia (5), Bolivia, Cuba, Venezuela. TPs being established in, Honduras, Nicaragua, Uruguay.	Not yet operational; projected release October 1995.	Not yet operational; possibly some software development by Sprint for pilot project in El Salvador. Also discussions with NAL about creating Internet site.
Thumbnail Description	TPs have 3 components: trade facilitation center, a one-stop shop for trade; a source of trade-related information; a gateway to global networking via the UNGTPN. They are to build on existing trade facilitation efforts, not replace them. The GTPN enables TPs to share databases; broadcast, share trade leads from private companies; and provides technical support to some TPs.	Software for individual firm to prepare, broadcast trade and investment leads and develop business profile; find matches for trade leads; qualify leads; negotiate trade agreements; close deals by agreeing to other party's conditions; document agreements; tap databases regarding creditworthiness, and others.	Planned electronic network for e-mail, bulletin boards and information services (databases, newsletters, news) regarding agribusiness trade in the Americas, weather reports; technology. Training, technical support, personal networking, and matches of buyers and sellers.
Participating Units/Organ-izations	UN Conference on Trade and Development (UNCTAD); public and private trade promotion organizations in each country; chambers of commerce; banks; customs agencies; varies by country, by trade point.	Press conference announcing IBEX reported 30 Chambers of Commerce in the U.S. and 25 Chambers abroad (voluntary participation). TIPS announced as technical and marketing partner in 18 of 19 Latin American countries (excluding Dominican Republic). In some countries will work with export promotion agencies. Also IBEX is negotiating with private entities on five continents to develop electronic markets.	Not yet defined. Possibly trade promotion agencies and business associations.

Table 4: Summary of Comparison of Electronic Trade Facilitation Systems

	UN Global Trade Point Network (GTPN)	International Business Exchange (IBEX)	AgriNet America (AA)
Number of Firms Using as of 6/95	Several thousand worldwide. In Latin America, few users of electronic information systems to date.	None.	None. Beginning pilot project in Guatemala and El Salvador. Eventually plan to include the entire Americas.
Industry or Regional Focus	All industries.	All industries.	Agriculture and Agribusiness.
Target users	Small and medium enterprises, especially in developing countries.	All sizes of enterprises (especially medium and small), both in developed and developing countries. May be used for domestic matchmaking as well. Target IBEX firms have a higher technical capability than GTPN users.	Small, medium enterprises in the Americas only.
Pre-transaction services, information	Varies by TP; users can obtain information, quotes from transportation, customs, insurance, and financing services working with TP.	Subscriber can prepare, broadcast offer to buy, sell, or invest; receive matches; investment services; credit services, export services.	Undefined. Planned matching service.
Pre-transaction databases	Varies by TP; They have access to various databases of market and regulatory information; pricing databases. In LAC TPs, this information is still mainly accessed off-line (bulletins, CD ROM)	D&B databases for market research (export encyclopedia) and to determine creditworthiness of traders; Global Electronic Yellow Pages; possibly TIPS industry-specific information, Exporters' Encyclopedia.	Agricultural Marketing Service (AMS) database on U.S. produce prices. Working with USDA National Agricultural Library to develop Internet site.
Transaction services	Varies by TP. Trade leads exchanged between TPs via e-mail, WWW. LAC TPs have low capacity to sort, respond. Customs; transportation; financing and insurance services offered. LAC TPs are developing private domestic networks to support communications between trade service providers and traders and support regional exchanges of trade leads	Software assists in negotiation process and can be used to document process; various fee-based services accessible; due diligence services; insurance; legal, export management; finance; distribution, investors; enables traders to maintain anonymity until identity required.	Planned messaging to support transactions.
Transaction databases	Varies by TP. Trade Point USA offers NTDB plus private databases (e.g., from Economist) and plans to offer more; available cooperatively to other TPs. UNCTAD's TP Dev. Center offers access to ITC, UN databases. LAC TPs appear not to be using yet.	D&B credit reports and trade lead data bases.	Undefined.

Table 4: Summary of Comparison of Electronic Trade Facilitation Systems

	UN Global Trade Point Network (GTPN)	International Business Exchange (IBEX)	AgriNet America (AA)
Post-transaction	Varies by TP. Plans call for more. Customs agencies and international trade services available to implement transactions.	International trade services available to implement a transaction.	Plans to include Sprint-based EDI.
Internet Access?	UNGTPN uses Internet. Most TPs have Internet access, but most LAC TPs only have email access.	No, except email service offered has gateway to internet. Cannot use IBEX's main services via the Internet, via AT&T and GEIS. (Plans call for access via Microsoft Network.)	Undefined.
Commercial Network Access?	Some Latin TPs are part of domestic, commercial networks . Some TPs have used AT&T or GEIS services provided at no cost for fixed period, no over.	Accessible via AT&T and GEIS. (Planned soon: Microsoft Network and Internet version.)	Sprint.
Worldwide Web (WWW)	Varies by TP. TPUSA uses WWW as default approach. UNCTAD TP Dev. Center offers WWW services and "Incubator" WWW sites/presence for TPs in developing countries including Chile's TP uses WWW but no other LAC TPs do.	Plans call for WWW home page offering information on IBEX, ordering, sample leads.	Discussion with U.S. NAL about WWW site.
Electronic Mail	All TPs have some email access via Internet and have had free GEIS or AT&T mailboxes. Trade leads exchanged via email or other electronic means.	User's choice of GEIS or AT&T electronic mail/fax service.	Undefined.
On-line Access	Varies by TP. Chile's TP, yes. Other LAC TPs, no.	Access to D&B databases.	Undefined.
File Transfer	Varies by TP.	Yes, as attachments.	Undefined.
Hardware, Software requirements for users	Varies by TP. UNGTPDev. Center is developing basic software for TPs. TPUSA has own WWW access; Finland developing alternative approach. Some TPs develop own. LAC TPs (except Chile) weak in this area. Have rec'd some equipment, software.	IBEX proprietary software (approximately $250/user); PC (386 or higher) with Windows, 4 MB RAM; 4MB disk space free; Windows 3.0 or higher; modem.	Undefined.

Table 4: Summary of Comparison of Electronic Trade Facilitation Systems

	UN Global Trade Point Network (GTPN)	International Business Exchange (IBEX)	AgriNet America (AA)
Options for end users without technology	Varies by TP; most TPs (all in LAC) are sites where end users can use services, equipment. TPUSA is a virtual TP, assuming any user worldwide has access to WWW.	IBEX encourages the development of information hubs for end users without technology. They expect that TIPS and American chambers of commerce can offer these services in Latin America and Caribbean.	Probably will allow small agricultural producers access through information hubs.
National, International standards used	TP trade lead format moving to EDIFACT in 1995. Already trade leads use Harmonized codes. By use of WWW and email for distribution, trade lead exchange open to all.	X.400 (email msg envelope standard); X.500 (unclear for what) Harmonized codes; SIC	Undefined.
Fees	Varies by TP. LAC TPs have free or subscription services. TPUSA has $75/month subscription for unlimited access to most of the resources offered. A $14.95/month option is also being introduced which offers more of the resources on an a la carte basis.	Profile is free; $2-$5/transaction. Estimate of $50 to $150/month for active users.	Undefined.
Comments	To date, Latin American trade points have emphasized provision of international trade services, not exchange of trade leads. Interested in regional exchanges and regional data as well. Other than in Chile, LAC TPs cannot sort, search, create, and broadcast trade leads easily. They have focused on the development of domestic, private networks. TPNetwork is now working on further stages of organization, support and rationalization after 3 years of rapid (and sometimes frustrating) growth.	Plans to announce EFT capabilities in late 1995; plans for more than just e-mail access to Internet in the future. Only system reviewed that plans to support electronic negotiation process between two parties unknown to each other. Requires use of commercial network and proprietary software. Plans to tap high quality commercial database services. Includes electronic mail.	Not clear how AA will develop; technical approach it will take. May use Sprint, Internet. Limited to one industry may hurt its development, but enable its services to be tailored well to agribusiness in LAC. Start up timing unclear; pilot project in Guatemala and El Salvador only; may require several years to become hemisphere-wide system.

some data and some search capabilities (using its own planned sophisticated search service) on a transaction fee basis.

Trade Compass offers an innovative example of an electronic trade service by an aggressive private company. It taps Horizon Trading Company's track record as an importer and exporter of a wide range of products and it is tapping into trade data all over the WWW. It will also be one of the "ground floor" content providers on the Microsoft Network, accessible from the Windows 95 operating system in late August 1995.

6.3 Electronic Trade Facilitation Systems Reviewed

Findings on the electronic trade facilitation systems reviewed are presented in the following paragraphs. See Table 4 for detailed comments and descriptions of the three systems.

- Of the three systems reviewed, only the UN Global Trade Point Network (UNGTPN) is operational.

  Although at the study outset, IBEX and AgriNet America had planned to begin imminently. Only a very modest shell of AgriNet is now operational, and IBEX planned to be operational in October 1995 with plans for 1,000 users in the United States only.

- The study team visited TPs in Santiago, Chile, and Cartagena and Bogota, Colombia.

  The Chilean TP was operated by a major bank (Banco BHIF) and was focusing on trade services, not trade leads. The TP in Bogota was just beginning operations, and the one in Cartagena had just changed leadership. Both appeared to be focusing on regional trade facilitation and intra-country trade and communication.

- The TPs visited were not focused on exchanging trade leads with the UNGTPN and had trouble using the leads they received.

  In Colombia, the TPs reported difficulty in sorting through the trade leads from the UNGTPN because of inadequate software. They rarely used the trade leads they received from the UNGTPN. They appeared most interested in exchanging leads regionally.

- The Chilean TP had full Internet access (WWW); TPs in Colombia had basic electronic mail only.

  In Colombia, the focus was on establishing electronic connectivity between the trade points in Colombia. All three trade points visited focused primarily on use of fax services to communicate with their subscribers, not even electronic mail.

- It appears that the LAC TPs may be fairly isolated from UNCTAD's efforts to rationalize and advance the UNGTPM.

  UNCTAD reports numerous activities and plans for improving the UNGTPN. It also reports significant progress with TPs in developing countries, especially in regions outside LAC. These encouraging reports contrasted with the reports the study team received from LAC TPs. (The UNGTPN's WWW site information on one of the TPs visited was five months outdated with incorrect contact names and email addresses.)

  The UNGTP Technical Development Center is indeed developing incubator WWW sites for some TPs, even some in LAC (Trade Point Buraramanga in Colombia and the TP in Cochabamba, Bolivia). It is not clear how these incubator sites will be accessible by the TPs they support if the link will be fully supported by electronic mail alone.

TPUSA (the U.S. trade point) has offered its WWW trade point services to LAC countries, and TPUSA reports that Colombia has expressed interest. This may be a good way for TPs in LAC countries to leverage development already done by other TPs to offer more services to trade point users.

- Interviewees knew little or nothing about AgriNet America and IBEX plans.

  One trade group in the Dominican Republic was considering a proposal from IBEX to participate. The AT&T and GEIS interviewees in Colombia had not heard of IBEX, but IBEX reports negotiations with AT&T and GEIS occur globally, not locally.

- All three systems are designed to build on existing trade promotion organizations, such as chambers of commerce or pro-trade organizations. Commendably, none of the systems proposed to build new trade promotion organizations.

- The systems all tap or plan to tap existing trade databases. Again, commendably, the systems harness or plan to harness existing data sources and make them more accessible to end users by use of technology.

- Each system plans to significantly expand the pool of quality trade leads, but only UNGTPN has concrete plans to move to EDIFACT.

  This is perhaps the most significant effect these systems may have: enabling many more companies to create and broadcast trade leads and find those fitting their needs.

  However, IBEX has no plans to share its trade leads with other systems, except with IBEX partners.

  It is not clear what AgriNet America will do.

  UNGTPN is now developing EDIFACT implementation guides for trade leads as well as company profiles. These guides will be available to the public, so UNGTPN is truly creating an open marketplace.

- All three systems provide or plan to provide access for trade promotion groups, not just individual firms.

  The UNGTPN already does so. IBEX (and its current software) focus on individual business users, but it too has plans to support access from group sites using IBEX hubs. How AgriNet America will do so is not clear.

- IBEX plans sophisticated support of the trade process between unknown parties.

  It plans to do so as part of the software each IBEX subscriber will use. The software enables users to advance through the negotiation process step by step, revealing only what they want the other party to have. The process is supported by D&B's credit rating services electronically and optionally enables a subscriber to hire a service to conduct a background check or credit report on a potential partner.

  IBEX plans to ensure the quality and timeliness of trade leads in its system. UNGTPN plans to add this as well, on the basis of trade lead expiration dates and optional local TP lead certification.

  IBEX will also eventually support the exchange of EDI transactions (presumably in EDIFACT formats) between trading parties once an agreement to trade is reached.

- UNGTPN already enables TPs to use services based on electronic mail access only, CD-ROM, and fax; it appears that IBEX's approach is email based as well.

Trade points can exchange trade leads in the UNGTPN using electronic mail. Doing so requires front-end software to manage the trade leads and make them easily accessible, which apparently some trade points in LAC countries do not yet have. This has been an obstacle for the trade points visited and perhaps other trade points in LAC. Trade points can also exchange trade leads in the UNGTPN via the WWW, if they have access to it.

- IBEX will be usable by subscribers without computers via an IBEX adviser.

7. Conclusions

The conclusions of the study are presented in this chapter.

- Electronic trade facilitation systems are means, not ends. The importance of current and new electronic trade databases and systems must be kept in perspective. They are simply tools to be used by those interested in increasing trade for an individual business or businesses in a particular industry, country, or region. They are useful to the extent that they (1) make it easier to reach and search existing trade-related databases, (2) provide new sources of data needed to facilitate trade, and (3) make it easier for more business and trade promotion organizations to use these databases and services.
- The new trade systems still have not shown their potential, and indeed are not yet fully operational. The systems reviewed are so new that it is far too soon to declare them useful or not useful to LAC countries. Many of their planned services are not yet operational; those that are have few users in LAC countries.
- In general, the older trade-related databases, where effective, are being tapped now by the newer systems or re-vamped to take advantage of today's telecommunications options. As described in Chapters 5 and 6, the sources and sponsors of the trade-related databases and systems that have been available for the past three to five years are taking action to merge with the newer systems or are re-vamping themselves.
- The biggest potential for trade-related data from the new systems is in the area of trade leads (transactional data)—the capability of companies to create and broadcast high-quality, timely, and complex offers and demands for goods and services.

  Trade leads have been available for many years and for as many years there have been complaints about their quality, timeliness, and specificity. The new systems enable or plan to enable firms to prepare detailed and timely offers and demands for trade and broadcast them in minutes to the marketplace. Broader access to technology as well as new technological tools make this possible. This potentially is a significant step forward for trade facilitation systems. In addition, some of these systems (IBEX) are working to improve the quality and timeliness of the leads by adding options for credit reviews on firms; using expiration dates to purge databases of older trade leads; and even using a "source" field as an indicator of the reliability of the lead. Certain sources will commit to confirm that the trade lead preparer is a legitimate trader. (For example, IBEX has this in an optional Dun and Bradstreet service, and the UNGTPN plans to build this into the pending EDIFACT format for trade leads.)
- Even more electronic trade systems will be available in the future. Given the dramatic growth and changes occurring in telecommunications services and options, especially the WWW, old systems and databases are taking on appealing and easy-to-use looks, and new systems—or at least apparently new—are emerging or being announced at an impressive pace. During the three months this study was under way, three new systems were formally announced. Their number will inevitably increase in the coming months and years.

- Competition will sort the winners from losers. Not all of these systems will survive, and none of them will stay the same. The successful systems will adapt to the demands of the trade promotion organizations and individual firms using them. Some will add access to databases and services; some will narrow their focus to particular markets and industries; others may increase ways firms can use them; some will disappear or become parts of others. It is highly likely that several will operate simultaneously, even offering access to overlapping sets of databases, because of variations in their other characteristics.
- All the systems reviewed and more that may be created could be of use to some organizations in LAC countries. Each of the reviewed systems has potential appeal to at least some organizations in LAC countries. These organizations will want to have access to information not yet available (nor planned) via these systems, so they will also want to turn to other sources of information as they do today.
- Not all systems need to be usable by LAC countries. The systems overlap in capabilities, and they (or new ones) may soon specialize in types of trade or regions of no interest to LAC countries.
- On the basis of the previous conclusions, it is neither appropriate nor necessary for A.I.D. to choose a trade facilitation system to endorse or encourage. There are directions in which A.I.D. may choose to encourage systems to develop and guidance it may choose to provide to LAC countries regarding trade facilitation systems. These suggestions are addressed in the recommendations in Chapter 8.
- At least for the next three to five years (and perhaps much longer), most LAC countries' telecommunications infrastructures will lag significantly behind those of developed countries. Even under the best conditions and with rapid progress, accessibility, availability, and reliability, such services will not soon reach levels taken for granted in more developed countries.
- Organizations in LAC countries with advanced and widespread telecommunications infrastructure will be able to choose which systems suit them. If well informed, they will be able to weigh the costs and benefits of using the available systems and choose the right ones to use. Trade promotion organizations (and even individual firms) may choose to use more than one system.
- Organizations in LAC countries with weak telecommunications capabilities will be have a much more limited choice of systems. Depending on how the systems are designed, the organizations may be unable to use any of them.
- If electronic trade facilitation systems become widely used and successful, companies in LAC countries with weak telecommunications infrastructures may face even greater obstacles to increase foreign trade.

  Further, regardless of if and how the electronic trade systems thrive, global electronic commerce is steadily growing. The countries with poor access to full telecommunications capabilities will put such organizations and the companies they serve at a dramatic disadvantage in the global electronic marketplace.
- This disadvantage will contribute to the gap between "haves" and "have nots" (in LAC and elsewhere) unless steps are taken by the countries affected and A.I.D. and organizations with related missions. The following chapter recommends steps for A.I.D. to take regarding access to electronic trade facilitation systems for these countries.

- Given the fast changes in electronic trade systems, it is difficult for potential users in LAC countries and elsewhere to determine which systems fit their needs and identify their technical constraints. The following chapter suggests ways in which A.I.D. can help trade facilitation organizations in these countries address this challenge.

8. Recommendations

The study recommendations are categorized in three groups:

- Trade facilitation systems, that is, recommendations for A.I.D. designed to make the systems themselves more useful to LAC countries with weak telecommunications infrastructure.
- Use of trade facilitation systems by organizations in LAC countries.
- General education and training in the use of electronic trade facilitation systems.

8.1 Trade Facilitation Systems

In order to increase the usefulness of the reviewed trade facilitation systems to LAC countries and to maximize the number of systems accessible by LAC countries with weak telecommunications, A.I.D. should encourage the reviewed systems to adopt these recommendations. One set of recommendations is specifically for UNGTPN, because, of all the systems reviewed, A.I.D. may have the most influence over its design because it is sponsored by the United Nations. A.I.D. can take two tacks to provide input and recommendations to the systems themselves:

- For private systems, A.I.D. can simply inform the systems of the recommendations and encourage them to consider them.
- For the UN sponsored system (UNGTPN), A.I.D. can provide recommendations directly to UNCTAD via the appropriate government channels. (Of course, A.I.D. can suggest these same UNGTPN recommendations to any other new trade facilitation system, such as IBEX or AgriNet America.)

Not all of the trade facilitation systems need to adopt these recommendations. However, the more that do, the more options LAC businesses with poor access to telecommunications will have.

8.1.1 Open Standards in System Design

To reduce the learning threshold for users and minimize requirements for special equipment and software, A.I.D. should encourage the systems to use open standards in their technical design. These open standards include ITU (International Telecommunications Union) X.400/ITU X.435 (electronic mail envelope standards) or, alternatively, MIME (a robust electronic mail standard comparable to X.435 for the Internet); TCP/IP; UN/EDIFACT for business transactions; TCP/IP. Commercial systems can, of course, limit access to subscribers; but it will be easier for organizations to use the system(s) that make sense if they can do so using open standards.

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8.1.2 Common Format for Trade Leads and Emphasis on Quality and Timeliness

It is important to encourage the trade facilitation systems to adopt EDIFACT standard formats for trade leads and other business transactions for reasons beyond those mentioned. Using EDIFACT will enable system users to

- Handle any business transactions from the systems with a wide range of EDI translation software already available in the marketplace;
- Take full advantage of the security and transaction management options; and
- Handle leads from different systems using the same tools, when appropriate.

Fortunately, UNGTPN current work on implementation conventions for two EDIFACT messages to handle business opportunities (trade leads) and company profiles appears promising. This may be the use of EDIFACT that A.I.D. can encourage the other systems to follow.

The reviewed trade facilitation systems that enable the creation of trade leads all appear concerned with quality and timeliness. These characteristics are so important that it would still be helpful for A.I.D. to encourage them to be stressed in design and procedures.

8.1.3 Exchange of Trade Leads Across Systems

All trade facilitation system users will gain if a broad electronic marketplace is established for electronic trade leads instead of separate marketplaces supported by each trade facilitation system. A.I.D. can encourage the systems to share trade leads across systems for the benefit of the end user in LAC and elsewhere.

At least the for-profit systems have an incentive to keep their systems closed so that potential users of their trade leads will need to pay to use them. Other systems may want to restrict exchanges to recover costs. Each system certainly will want to add value to the use of trade leads and link them to other services. A.I.D. can encourage the systems to collectively figure out an approach to exchanging leads, despite cost factors. It may be that the systems themselves can establish limited reciprocity with payments between systems based on tracking of the net exchanges between systems.

To exchange leads across systems, the systems need not agree on how quality and timeliness will be handled. Each lead can simply be identified by source so the marketplace will know how to assess the quality of each lead.

8.1.4 Alternative Access Paths to Telecommunications Services

Alternative access methods should be provided to databases and services for use by organizations and businesses with poor access to telecommunications. These methods could include one or more of the following:

- Electronic mail for exchange of trade leads and queries of remote databases and any trade-related services offered by the systems;
- Distribution of relevant subsets of databases to local sites via file transfer, which would require greater software capabilities at the local site to receive and process updates to databases and enable users to query the databases;
- Distribution of relevant subsets of databases via CD-ROM or even paper form via regular air mail;

- Possibly the exchange of trade leads (new ones and responses to queries) by fax, although this may be too time-consuming and costly;
- Options to use the systems via a shared access point, such as a chamber of commerce or industry association office, as an alternative to an individual company's location. This will possibly mean adaptations of front-end software to manage queries and results from multiplier users (e.g., multiple electronic mailboxes).

8.1.5 New, High-Quality Trade-Related Data

The reviewed trade lead systems are for the most part not creating new databases (the important exception being new databases of trade leads); they are instead making available data more accessible and searchable. A.I.D. can encourage them to seek out and even create new, high-quality trade-related data. A.I.D. can facilitate this for trade data of specific interest to LAC trade promotion organizations by tracking what data they would want but cannot find and informing the new systems.

New trade-related databases may be created from growing electronic flows of business transactions available to the public. For example, many governments consider the prices they pay for goods and services to be public information. The U.S. federal government has now begun broadcasting this information (for commodities) using ANSI ASC X12 formats. These price history data are just one example of a new source of data that trade promotion organizations may find useful.

8.1.6 UNGTPN-Specific Recommendations

All of these recommendations are consistent with the UNGTPN's mission, goals, and plans. Some of these efforts are under way or planned, but many have not yet affected trade points in LAC significantly.

- Focus attention on strengthening TPs (planned or operational) in LAC to take better advantage of tools and services offered by UNCTAD and its TP Development Center(s).

  As determined through the study interviews, the trade points in LAC are not able to take full advantage of the growing services and tools planned or now offered by UNCTAD to trade points in developing countries. Perhaps the planned trade point regional center for South America will improve this weakness.

  TPUSA (the U.S. trade point) has offered its WWW trade point services to LAC countries and TPUSA reports that Colombia has expressed interest. This may be a good way for TPs in LAC countries to leverage development already done by other TPs to offer more services to trade point users.

- Enable all LAC countries to have a presence on WWW regardless of telecommunications infrastructure.

  The UNGTPN is offering TPs the option to use the WWW to market themselves. (Trade Point Buraramanga in Colombia already has such a Web page, as do the TPs in Santiago, Chile, and in Cochabamba, Bolivia.)

  Despite that some TPs, including some in LAC, may not be able to use the WWW routinely or at all, it is still beneficial to give them an option to have a Web presence. In this way, they can reach some Web users they might otherwise be unable to reach. Actual exchanges of information or services between Web users and the TPs can be accomplished using means available to the TPs, such as electronic mail.

- Enable and encourage TPs to add access to high-quality, new (or old) trade-related information to their services.

  This is consistent with the goal of the UNGTPN. Truly working as a network, the TPs can collectively gain from each TP's efforts to seek out and provide access to high-quality trade-related information and share these data across the network with other UNGTPN users.

  UNCTAD's support staff for the UNGTPN, to the extent resources permit, could also increase their efforts to spearhead the sharing of relevant databases, from the UN and elsewhere, across TPs. Discounted fees for commercial or government databases could be negotiated for the entire network with a payment process set up to have those TPs opting to use the data to pay their share.

  Making these databases available via the WWW alone is not sufficient because of the telecommunications constraints faced by LAC TPs and others. Alternative access approaches should be offered as recommended in Section 8.1.4.

- Enable and encourage individual TPs to form regional foci.

  TPs should be encouraged to develop intra- or inter-country networks, databases, and services. TPs in the UNGTPN network have basic features in common but will adapt to their local trade environments. UNCTAD can encourage and facilitate this by tracking a few successful models and sharing them with other TPs for possible application. It could also provide support to TPs in regions that want to work more closely together (e.g., in South America) by ensuring that this option is considered in the evolving UNGTPN technical architecture, policies, and procedures.

- Support and share experience across TPs of innovative intra-country TP networks that adapt to local telecommunications weaknesses.

  UNGTPN can publicize among TPs the successful ways TPs with weak telecommunications infrastructure adapt their procedures and help share across TPs the tools used (e.g., application software). For example, the UNGTPN could monitor the success of systems supported by fax, voice phone, and even cellular phone networks. Of course, a TP that develops a successful approach will probably need to recover some of its costs when it shares its capabilities with other TPs.

8.2 Use of Trade Facilitation Systems in LAC Countries

8.2.1 Information and Training on Options

A.I.D. should help trade promotion organizations (including industry associations active in LAC countries) understand the features, costs, strengths, and weaknesses of the growing number of trade facilitation systems so that they can make informed choices about which, if any, to use and when to get started. They may opt to use none or more than one. This recommendation could be accomplished in a variety of ways:

- Adapt portions of this report as a training document, updating at least annually if not semi-annually.
- Include as part of the document a framework for assisting the potential users to evaluate which system(s), if any, meet their needs and their telecommunications capabilities.
- Conduct training sessions on the trade facilitation systems for LAC trade promotion organizations. The sessions would focus specifically on helping the potential users of

the systems figure out which one(s) make sense to them and which systems are available to them or can be adapted, given their telecommunications constraints.

8.2.2 Assistance on Technical Prerequisites: Equipment, Software, Know-How

Once a trade promotion organization in LAC is sufficiently informed to know which, if any, systems would be effective tools, A.I.D. should consider proposals to cover the up front costs of getting started with a system or adapting local capabilities to use the system effectively.

This might mean covering the costs of a personal computer, a modem, telecommunications software, or installation of a separate phone line, and technical training on the use of Internet electronic mail or how to actually connect to the system technically.

If consistent with A.I.D. policy and permitted by available resources, A.I.D. might also cover a trial subscription in the system(s) chosen by the trade promotion organization itself.

8.3 General Education and Training

To support A.I.D.'s goal to generate sustainable and equitable economic growth for the world's least developed countries, including those in the LAC region, A.I.D. should take steps to increase the general understanding of the potential uses of the new electronic trade facilitation systems. Those that could benefit from more education and training include

- A.I.D. and other U.S. agency staff focusing on increasing economic growth in LAC countries;
- Government leaders in LAC countries working on economic, business, trade, and telecommunications policy and procedures;
- Trade promotion organization and industry association representatives in LAC and those in other countries interested particularly increasing trade with LAC; and
- Businesses in LAC interested in increasing international trade.

Education and training could be at a more general level than that identified in Section 8.2.1 but still cover the following:

- A framework for comparing the current, new, and future electronic trade facilitation systems to evaluate their appropriateness for particular users, industries, and countries; their telecommunications requirements; and their operational status today.
- Information on the new trade facilitation systems themselves; this could come in two forms. First, summary information could be provided so that consistent information is available across systems. Second, the systems themselves could be given an opportunity to have hands-on demonstrations with potential users.

Ideally, this education and training would be provided at least sometimes as part of larger economic development conferences, so that the trade facilitation systems would be kept in context as yet one more set of potentially useful tools to use to increase international trade.

Appendix

Organizations Contacted

United States (or electronic mail)

AgriNet America
Julie Wolinsky, Caribbean/Latin American Action (C/LAA)
Mari Stull, Inter-American Institute of Agriculture (IICA)
Rodolfo Garcia, Executive Director, Sprint International

Blue Book Services
Brian Baird, Product Representative

Friends of the National Agricultural Library (NAL)
Tom Bryan

IBEX
Dr. Mady Jalinous, President & CEO, Global Business Alliance
Mark Van Fleet, IBEX Manager, U.S. Chamber of Commerce

International Business Network
John Monteleone

Market & Technology Partners
John E. Lamb

Multilateral Investment Guaranty Agency (MIGA)
Adan Hassan

North America Trade Point Development Center/Trade Point USA (TPUSA)
Michael Lanese
John Wille

Organization of American States
Bernardo Gluch, Principal Specialist, SICE
Saul Hahn, Director, Red Hemisferica Universitaria de Ciencia y Tecnologia (REDHUCYT)

TIPS
Eric Russi, Consultant

Trade Compass
J. Browning Rockwell, President, Horizon Trading Company, Inc.

United Nations Conference on Trade and Development
Bruno Lanvin (Geneva, by electronic mail)

USAID Center for Trade and Investment Services
Mary Porter Peschka, Business Advisor

World Trade Center Washington D.C.
Linda Polak

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Chile

Asociación de Exportadores de Manufacturas (ASEXMA)
Mauricio Fry Vasquez, General Manager

BBS Comunicaciones S.A.
Carolina Galmez Balmaceda, Account Manager
Francisco Bernales. CEO

Camara de Comercio de Santiago
Claudio Ortiz Tello, General Manager
Andres Bustos Stargarder, Manager of Services
Andres Fischer Echeverria, Chief, International Operations

Comercial Jamanaco Ltda
Oscar Quinta
Edwin Eyzaguirre

Frizol Ingenieros S.A.C.
Miguel Angel Oliva

Fundación Chile
Flavio Araya Mourgues, Director of Agroindustry Department

Ofiserve Impresos
Alfonso Ureta Matte

PROCHILE
Alejandro Moya, Director of Information Systems

Reuna
Pablo Azevedo, Commercial Director
Carlos Belltran, Information Director

TIPS/Chile
Juan Trimboli, Director
Andres Bustos, Director
Andres Fischer Echeverria, Product Manager
Angel Tamayo, Technical Manager

TIPS Regional Office for Latin America
Esteban Valenti, Regional Director
Daniel Barrios, General Director

Trade Point/Santiago
Carlos Fuenzalida Vicuna, Director

Transaxion - Red de Transacciones Electrónicas S.A.
Carlos Lexutt R., General Manager
Jaime Rodriguez M., Operations Manager

U.S. Embassy
Carlos Poza, Commercial Attache
Richard Helm, Agricultural Attache

Colombia

Asociación Colombiana de Medianas y Pequeñas Empresas (ACOPI)
Mr. Jaime Alberto Cabal Sanclemente, Executive President
Maria Del Pilar Villa L., Manaqer of Projects and Services

Cámara de Comercio de Bogotá
Guillermo Fernandez de Soto, President
Luz Mery Munoz G., Director of Marketing
Herman Alberto Ortega Enriquez, Director of Information Systems

Carvajal Casa de Software
Ricardo Torres

InterRed
Jaime Tabares Mesa, Executive Director

TIPS/Colombia
Luis Garcia Echeverria. Director

Trade Point/Santafe de Bogota
Ignatio Londono, Director

Trade Point/Cartagena
Xenia Jimenez, Director

U.S. Embassy
John Jones, USAID
Clyde Gumbman, Agricultural Attache
Linda Archer, Commercial Attache

Dominican Republic

Alagro, Felix Vasquez C. por A., Arrocera Nagua
Juan Jose Agramonte, Executive Vice President

American Chamber of Commerce (AMCHAM) of the Dominican Republic
Arthur Valdez, Executive Vice President
Mercedes Jimenez de Rodriquez, Director of Services and Regional Offices

Asociación Dominicana de Zonas Francas (ADOZONA)
Eddy Martinez M., Executive Director

Bon Helados
Jaime Moreno. President

CODETEL
Jesus Olivares, Senior Operations Assistant
Mitsutero Nishio, Business Analyst

Data Proceso, S.A.
Viriato A. Sanchez Peha, General Manager

Dominicana de Inversiones y Exportaciones, S.A. (DOMINEX)
Hugo Ramirez Risk, Vice President
Jose Alejandro Ayuso, Executive Director

Instituto Tecnológico de Santo Domingo (INTEC)
Lucero Arboleda de Roa. Executive Library Director

Junta Agroempresarial Dominicana (JAD)
Siomara Cruz de Garcia, Manager of Information Systems
Juan Jose Espinal, Director of Administration
Jaime Moreno, Treasurer, Board of Directors

Guatemala

Academy for Educational Development (AED), Regional Information Clearinghouse
Steve Dorsey, Chief of Party

Cámara Empresarial de Guatemala (CAEM)
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Confederación Guatemalteca de Federaciones Cooperativas (CONFECOP)
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Secretaría Permanente del Tratado General de Integración Económica (SIECA)
Herson Rodriguez, Director, Office of Systems and Statistics

PRODATA, S.A.
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USAID/Guatemala
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U.S. Embassy/Guatemala, Foreign Commercial Service
Raul Villagran, Telecommunications specialist