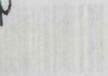


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**Pilot project  
for the  
establishment  
of the Trade  
and Business  
Regional  
Information  
Centre  
for Latin  
America  
and the  
Carib**



Project No. INT/91/K01

Santafé de Bogotá D. C.,  
Colombia



**BOGOTA CHAMBER  
OF COMMERCE**

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DE BOGOTA  
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DE BOGOTA

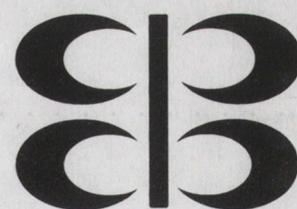
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## PROJECT (INT/91/K01)

**Pilot Project for the Establishment of the Latin American and the Caribbean Regional Center of Business and Commercial Information.**

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# Presentación

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*As President of the Bogota Chamber of Commerce I am pleased to present to the President of the 77 Group the report of the activities developed concerning the pilot project. Project that will become one of the basic factors of development of the business sector and the main making decisions tool for the winning of markets and internationalization of the companies.*

*The assignation of the Bogota Chamber of Commerce as axis will allow to the Latin American and Caribbean chambers of commerce and industry, trough the focal points and thanks to an intensive international work, to develop a promotional, informative, orientating and advising task according to the business needs, and will consolidate the Association and the communities as the most important entities for the protection of the principles of free enterprise and private initiative.*

*From the focal point of the Bogota Chamber of Commerce, at short term, we will be able to offer the best information and promotional service applying from the most common communication means to the most advanced ones, such as the digital in line transmission or the direct access not only from the focal points but also from the potential users' offices to our data bases or those of other countries, as it will be the commercial information network of the developing countries, members of the 77 Group.*

*This goal, even apparently ambitious, may become a reality if, as it has happened in other fields, cooperation and information exchange mechanisms are strenghtened, and if it receives the necessary suport by the international community. In these conditions we will be able to meet the future engagements of development and the execution of new actions demanded by the new international economic order.*

**GUILLERMO FERNANDEZ DE SOTO**

*President*

## I. Background

The representatives of the chambers of commerce and industry of the developing countries, members of the 77 Group, have met in three meetings: Rio de Janeiro (Brazil) December 1987, New Delhi (India) December 1988 and Harare (Zimbabwe) November 1989, giving the priority to the efforts of improving the exchange system of trade and business information between the chambers of commerce and industry, with the purpose of establishing a global commercial information network. This led to the designation of the Cameroon Chamber of Commerce and Mines as the African focal point, the Pakistan Federation of Chambers of Commerce as the Asian and Pacific focal point and, the Bogota Chamber of Commerce as the Latin American and Caribbean focal point.

The goal of these meetings was to establish a link between the information systems of the chambers of commerce at regional and subregional level, to evaluate the existing ones and improve them in order to satisfy the information needs of the chambers, emphasizing in simple, harmonic and standard proceedings with information forms as models for the implementation of an intercontinental network of business and trade information.

After having carried out an extensive study on the capacity of supplying information and potential demand it was determined that the only operative effort was the information system developed by the AICO's network of the Bogota Chamber of Commerce, a regional program, today with a worldwide coverage, an unique system of the private sector that has been operating during 10 years, with a similar organization to the proposed one as model for the chambers of commerce and industry of the developing countries, members of the 77 Group.

In June 1990, at the eighth meeting of the initiatives committee held in Hamburg, it was agreed to establish a permanent committee, constituted by three experts: one coming from Latin America and the Caribbean; one from Asia and, the third one, from Africa succeeding to elaborate the project master plan.

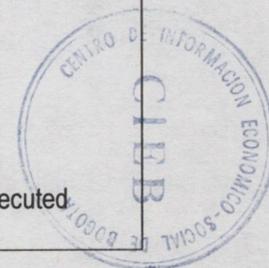
In March 1992 the president's office of the 77 Group, executor of the Project INT/91/K01, concluded, in collaboration with the UNDP, sub-contracting agreements for the assignation of US\$50,000 of the Perez Guerrero Fund with the different entities representing the Asian, African and Latin American and Caribbean focal points. The signed agreement between the 77 Group and the Bogota Chamber of Commerce is presented in the following work plan.

## II. Action Plan

### PROJECT INT/91/K01

Pilot project for the establishment of the Latin American and Caribbean regional business and trade information center to be located in Colombia.

OBJECTIVE	PROGRAM	ACTIVITY	EXECUTION
<p>To create and operate a functioning trade and information network at the level of the regional focal point on a pilot basis.</p>	<p>A. Define all organizational aspects for the regional network": work plan, staffing and training requirements, indentifying all financial and administrative plans.</p> <p>Establishing procedures for all interface between the central unit and national focal point at the country levels.</p>	<ol style="list-style-type: none"> <li>1. Designate interface representatives at the level of national chambers of commerce, evaluate their present capacity to function as participants in the network; develop a technical assistance plan for the exchange of trade information.</li>   <li>2. Organize 3 meetings at the Latin American and Caribbean regional focal point of selected country representatives of chambers of commerce and industry (CCIs) to:                             <ul style="list-style-type: none"> <li>- Orient them on their role and commitment in relation to the proposed master plan for setting up TIN;</li> <li>- Specify the role of focal points;</li> <li>- Establish standards for data collection, classification, processing and dissemination.</li> <li>- Establish priority information profile;</li> <li>- Set standards for compatible hardware and software configuration;</li> <li>- Review the mechanism of exchange between the central unit and national units.</li> </ul> </li>   <li>3. Install equipment, develop all operating documentation, train personnel at the Latin American and</li> </ol>	<p>1992</p> <p>II semester 1994</p> <p>II semester 1994</p> <p>Executed</p>



## PROJECT INT/91/K01

Pilot project for the establishment of the Latin American and Caribbean regional business and trade information center to be located in Colombia.

OBJECTIVE	PROGRAM	ACTIVITY	EXECUTION
		<p>Caribbean regional focal point in equipment operations and methods of data collection in conformity with standards established.</p> <p>4. Develop and install all software at the Caribbean regional focal point for producing the various information specified in the end-users report. Establish plans to modify these packages for national chamber use and study the feasibility and cost of operating the systems.</p> <p>5. Design the system of communication between sub-regional unit and national units; national units and national economic operators. Establish communication with other databases of relevance at national and international levels.</p>	<p>I semester 1994</p> <p>II semester 1994</p>
	<p>B. Collect, codify, process and disseminate trade information on products, exporters, importers, trade regulation, custom tariffs, trade opportunities between all participating units in the network.</p>	<p>1. Prepare a catalogue on services of the systems and circulate among participating units.</p> <p>2. Collect data on exporters, importers, products, codify the data; process data and distribute in the form of exporters and importers registers by country and by product.</p>	<p>I semester 1995</p> <p>Permanent activity</p>

## PROJECT INT/91/K01

Pilot project for the establishment of the Latin American and Caribbean regional business and trade information center to be located in Colombia.

OBJECTIVE	PROGRAM	ACTIVITY	EXECUTION
		3. Define the comprehensive needs of the end-users and develop plans to incorporate them into the system including information such as trade fairs, trade regulation, preferential treatment; prices, joint ventures opportunities, transport schedules; import and trading groups, tender opportunities, etc.	In process
	C. Monitor the effect of system on trade within the region.	1. Select a sample of economic operators and on a systematic basis conduct a survey of the effect of the system on their operations.  2. Select the sample from existing and potential operators in all categories of business.  3. Conduct the initial survey. Share results with the participants.  4. Formulate an assistance plan to continuously upgrade the capacity of economic operators to participate effectively within the network.	II semester 1994  II semester 1994  I semester 1995  I semester 1995

### **III. The experience of the Bogotá Chamber of Commerce with the AICO's Commercial Information System - An opportunity for Latin America and the Caribbean.**

The international trade, being an intensive activity in knowledge and information, needs for its development an homogeneous and very efficient centralized information system. In this sense, the chambers of commerce and industry have been carrying out joint efforts tending to offer to the enterprise sector a tool which will facilitate the commercial meetings and increase the business opportunities.

In this sense, we have to mention the loable initiative and decision undertaken by the Directive Committee of the Conference of Chambers of Commerce and Industry of the 77 Group of creating a Global Commercial Information Network, where the Bogota Chamber of Commerce, through its AICO's Network, is the Latin American and Caribbean focal point as well as the model for the complementation of Asian and African focal points. With the United Nations support and that of the chambers of commerce and industry linked to the 77 Group, we have moved forwards the universalization of the information.

The Bogota Chamber of Commerce, as the Latin American and Caribbean focal point, aware of the need to strengthen the commercial exchange between the countries, has put to the public and private sectors' disposal a total computerized information system, which, within the international trade, facilitates the products and services exchange. Thanks to its background, structure, goals and scopes this information system has become an essential consulting element for the business sector as well for the entities charged to promote the foreign trade in Latin America and the Caribbean.

Since its creation this system has provided the following valuable information to the business sector:

- **Commercial Opportunities of goods of world coverage**, codified under the harmonized system. This service allows specific and multiple searchings, English and Spanish classifications, it provides information on offers and demands on commercial, financial and technological services, emphasizing contacts between businessmen wishing to establish joint venture, representation, or to offer marketing, financing and technology services. The continuous changes of the international economy are reflected in bigger requirements of the business sector, the reason why we have enlarged the coverage of our services, outstanding the following ones:

- **Direct commercial opportunity:** This service consists of sending by fax the different commercial opportunities which are received on a daily basis, to all the national, subregional and international potentially businessmen who have, upon our analyst criterium, enough information to establish a direct contact among them. This service entered in force in October 1993 and since then 750 direct opportunities have been sent.
  
- **Business International Billboard:** This international billboard advertises the most opportune and immediate requirements of buying and saling products and services for a period of 15 days.
  
- **Electronic Post Office Box:** offers the possibility to send messages to one or several users of the system.
  
- **Specialized publications.** Commercial linkage. This publication comprises the following production and commercial sectors: food and beverages; chemicals; minerals, glass and plastic ware; handicrafts; woods; graphic arts; precious stones; leather goods; textiles and garments; metalmechanic and electronic goods; international fairs and events.

Books, directories and lists as consulting and support material to the interested in the international trade: "How to do business with...", "Unified System", among others. Upon the user's request a list may be prepared from any specific information contained in our data base.

- **Translation Service:** essential tool for the business sector, providing the adequate comprehension of texts, brochures and specialized technical texts as well as all kind of commercial correspondence.

The Bogota Chamber of Commerce has been developing a permanent promoting task aiming to motivate and bring together the businessman to make use of these new tools, the available remote and in line systems' users, to have access to the new technological developments and projects contemplated in the Pilot Project.

We are giving direct and immediate solution to an average of 42 daily information requests coming from the business world sector and promoting 72 commercial opportunities, offers and supplies, through five daily published bulletins of specialized sectors.

Different national, international and multilateral entities have recognized the relevance of our Network and they encourage its projection to other world regions.

We have to mention that we are approaching the European Community Commission through the industrial cooperation project AI-Invest, which aims to urge the development of the small and medium companies for the establishment of joint venture investments, subcontracting, commercial, technological and financial associations projects. Within this program framework we intend to carry out business meetings and sectorial fairs between the Latin American and Caribbean businessmen and those of the European market. This achievement would be supplemented by similar systems as BRE, Bureau de Rapprochement des Entreprises-The Industrial Cooperation Center and the BC-Net, Business Cooperation Network.

In this scope we count on a modernization and investment in resources to improve the linking systems between the countries, to reduce the high processing costs and to develop, even further, the telecommunications infrastructure and the access to the systems technology. Those are our work priorities in this field as they are required by the technological advances and the users' requests.

Once estimated the progress done we have also to examine our difficulties. Firstly it is necessary to recognize that the Latin American and Caribbean chambers of commerce and industry are, as shows the survey carried out to a significant group

of chambers of commerce of the region (see annex 1), still behind the technological changes which are increasingly faster in the information field. Delay that is urgent to overcome. Secondly, there is not a real "culture of the information". Sometimes there is a confusion between having computers and the information process itself and perhaps this is the reason why, unfortunately, the business class does not include all the information material to the managing development.

But even with the described limitations, the perspectives are huge. We have to prepare and handle all the elements we have and successfully face the challenges offered by the international conjunction. The first effort must be orientated, consequently, to the technological modernization and criteria unification around the information managing. We have to strengthen the concertation spirit among the public and private sector. The former to improve the telecommunications infrastructure, and the latter to maintain an expeditious, efficient and updated system. All this as support of the information developing strategy.

It is necessary to take advantage of the new opportunities and to face the challenges. So, I urge you to coordinate efforts and give to the focal points and to the chambers of commerce not only the political will that they need, but, also, the tools and resources leading them to a greater modernization and scope.

We have known a significative growth, but its projection is even hopeful. Future will depend not only on our efforts as managers but also on those belonging to the chambers of commerce and industry of the 77 Group.

A greater integration of our countries and businessmen will be the mechanism to successfully face up the new requirements of the world economy. The internationalization of the economy is, in great part, the consequence of technological phenomena, particularly applied to the communications and informatic field, which have begun to cause substantial changes in the economic relations between countries.

#### **IV. Preliminar informatic diagnosis about the technological level of the Latin American and Caribbean Chambers of Commerce and industry**

The 2nd of December, 1993 the Bogota Chamber of Commerce sent 313 questionnaires to the Latin American and Caribbean chambers of commerce and industry (see annex 1). The questionnaire measures the technological infrastructure and the services provided by each chamber of commerce and industry. Up now 18



of them have answered representing 5.5% of the total. Taking this sample we arrived to the following observations:

- All the chambers of commerce possess in some way commercial information.
- Some of them have information on commercial legislation.
- A third part of the chambers which answered the questionnaire count on multi-users systems. They are: 1 AS/400, 1 S/36PC and the rest microcomputers.
- 14 chambers have microcomputers and the majority are 386 or better.
- There are 7 chambers with computers network.
- The only chamber lacking of computer infrastructure is the Cancun National Chamber.
- All the chambers have fax.
- 7 chambers have modem and the range of transmission speed is between 1,200 and 19,000 bps.
- 12 chambers have the capacity of managing X25/X28 networks.
- There are different levels of systematization.
- There is preference for data bases managers of X-BASE (FOX, Dbase and Clipper).

Even if the sample is not representative of the total of the surveyed chambers, we could state that there is a tendency to use small technological platforms (microcomputers, multi-users UNIX/XENIX and networks) and to use data bases

managers of the X-BASE kind, which would facilitate the information exchange between the different chambers.

## **V. Implementation of the work plan**

### **A. Organizational Structure Applied**

With the scope of creating and managing an efficiently commercial information network at a the regional focal point, the Bogota Chamber of Commerce, as technical support to the Pilot Project for the Establishment of the Latin American and the Caribbean Regional Business and Trade Information Center (INT/91/K01) has designed an strategic plan of technological modernization to adapt its information center to the most modern equipments and specialized personnel for the development of the work plan of the Latin American and the Caribbean focal point project.

This information system will have an international organizational structure (annex 2) whose operations center is the Bogota Chamber of Commerce, and some data collection and dissemination sub-centers pertaining to the public and private sectors established in all the countries of the region. The same with external sources of information exchange as result of cooperation agreements with promotional entities

of foreign trade. The information flow will be then granted in an efficient and continuous way.

This focal point counts on the data base of the AICO's Commercial Information Network, which complies with the technological progress and the fast changes experienced by the world, and with the administrative, technical and economical support of the Bogota Chamber of Commerce. This has also facilitated, besides its headquarters, the following equipments:

- IBM computer model 9221-150, 32 megas of RAM memory and 6,800 megas of auxiliary memory in disk.
- Novel Network version 3.12 of 100 users.
- Compaq Proline 3/25s - 84/wt, A 303 HCV 40512 serie, reference 141650-004.\*
- 1 PC/AT/IBM-386
- 2 terminals IBM connected to IBM 9221-150.
- Color monitor Compaq SGVA, 302052776398 serie, reference 143800-001.\*
- Compaq Proline 4/33 240 w + fm, A 322 HER 70607 serie, reference 160102-167.\*
- 2 Hewlett Packard Laserjet printers 4, with 2 MB in RAM, 8 PPM, 600x600 DPI of resolution.\*

\* Donated by United Nations

## **B. Information Analysis and Processing**

The analysts group of the AICO's Network receives and examines the information corresponding to the offer and demand of goods and services, processed in forms (see annex 3) and documents sent to the Asian and African focal points and to the different Latin American and Caribbean promotional foreign trade entities, such as chambers of commerce and industry, ministries of foreign trade, promotional export entities, exporters associations, importers and the business sector, among other. The gradual evolution of the system has, nevertheless, lead to the fact that the businessmen have become, nowadays, the main source of information and the most direct users of the services provided by the focal point.

Later on the information that will be included in the data base is analyzed, codified, translated and typed. This daily task produces the edition in line of specialized bulletins arriving directly to our subscribers. Constant up dated lists and directories are produced from this processed information, using the most advanced techniques of commercial information management.

### **C. Data Collection and Dissemination of the Asian, African and Latin American and the Caribbean focal points**

To promote the south-south trade, as it can be observed in Table 1 and Graph 1, dissemination of the commercial opportunities belonging to the 77 Group was impelled through the AICO's network, and now we count on 8,214 offers 31.15% of which correspond to Asia, 35.95% to Latin America and the Caribbean and 3.14% to Africa.

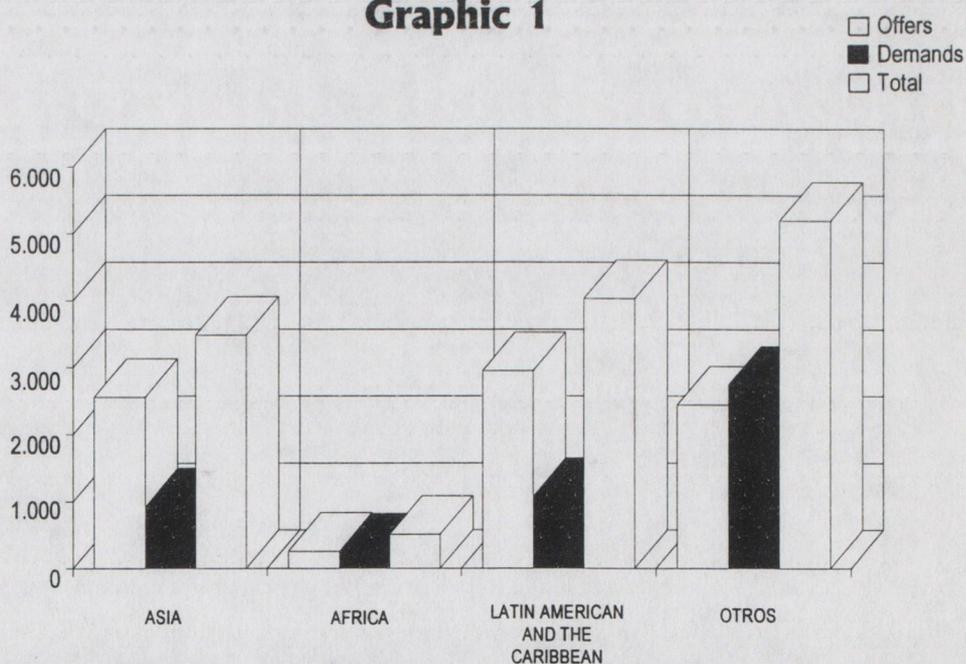
The purchasing needs of the Latin American countries represent 22% of the processed demands in our data base. This figure is the result of the effort of all the chambers of commerce and industry linked and engaged in the Project 77 Group, whose concern, during this period, has been to maintain an increasing collection and constant sending of the information.

with respect to the demand there is a total of purchases of 18.52% corresponding to Asia, 21.55% to Latin America and the Caribbean and 4.99% to Africa. In the same way, our specialized bulletins, 15 African fairs, 62 Asian fairs and 80 Latin American and Caribbean fairs and 150 from other countries were diffused.

**Table 1**  
**Commercial opportunities of the focal point**  
**January-June 1994**

Focal points	No. Offers	%	No. Demands	%	Total	%
Asia	2,559	31.15	928	18.52	3,478	26.37
Africa	258	3.14	250	4.99	508	3.84
Latin America and the Caribbean	2,953	35.95	1,080	21.55	4,033	30.50
Other countries	2,444	29.76	2,753	54.94	5,197	39.30
<b>TOTAL</b>	<b>8,214</b>	<b>100</b>	<b>5,011</b>	<b>100</b>	<b>13,225</b>	<b>100</b>

**Graphic 1**



*Source: Data-base of the AICO Commercial Information Network.*

## **D. Human Resource**

Concerning the human resource the Bogota Chamber of Commerce has exclusively assigned one of its department of the commercial area, formed by a director, a translator, two diagrammers, two secretaries, two auxiliaries and an analyst group specialized in food, handicrafts, leather goods, metalmechanic and chemicals sectors. This analysts group work together with informatic engineers and programmers for the managing of the AICO's network in order to develop the pilot project of the 77 Group and adapt the Latin American and Caribbean focal point.

## **E. Promotional System**

There has been an intensive promotional task of the AICO's network services through the regular sending of "Services Portafolio", including the specialized bulletins with forms for the offers and demands of goods and services. This effort have been particularly directed to businessmen, chambers of commerce and industry, associations, embassadies, diplomatic entities and to any entity which in some way has to do with international trade.

In a parallel way, an important group of participants have being informed about the benefits that they could take if they make use of this information system. This

promotion has taken place during the national and international fairs and events such as the Canary International Fair in Spain, the Hannover Fair in Germany and the following Colombian fairs: XXV Colombian Leather Show, Colombiatex, Agroexpo, X Home's Fair, IV International Book Fair, XXVI Colombian Leather Show, Expociencia, among other.

## **F. Training**

A training program was developed covering the following aspects:

### **1. Training courses**

- Industrial information management
- Organization of an information center, data processing.
- Design and development of information products..
- Strategy and managing of financing projects before the national and international entities.
- Marketing, market and sale of information products.
- Creation and managing of information network.
- Design and updating methodology of data base.



## 2. *Advising and technical assistance*

- Top level advising and technical assistance of information centers.
- Managing, marketing and merchandising of industrial information.
- Design, organization and managing of information and telecommunications information.
- Enforcement of national and international standards, terminology and information treatment.
- Telecommunications and information networks of the above mentioned subjects.
- Advising and continuous assistance of some of the nucleus for the information nodes and sources.

## 3. *Apprenticeships and workshops*

- National level apprenticeships to the nucleus, nodes and sources of the national and subregional networks.
- Workshops organization for the exchanging of experience of the national and subregional networks.
- Workshops to find solutions to common problems of the national and

subregional networks.

- Apprenticeships to the industrial information centers more developed existing in the subregion or third countries.

## **G. Connection of the Asian and African focal points with the central node of Latin American and the Caribbean**

### **-- Remote users**

The connection with remote users is done by the AICO's Commercial Information Network.

Proceeding to be connected with the system:

#### ***Hardware requirements:***

- \* AT/XT/PS2 microcomputer or IBM compatible, with 256 KB of memory and a serial port of communications.
- \* Asynchonic modem of 2,400 BPS.

#### ***Software requirements:***

- \* DOS operations system from 2.0 version.

- \* Communications program via modem as : Telix; Carbon copy; Smartcom, etc.

### ***International connection through data base networks***

- \* Define the national network parameters of the country where you make the call.
- \* Make the call to the local node of the corresponding country's network where takes place the call.

Once connected to the network, dial the UIN, user's unique identification number, the Colombia's identification number; the DNIC, the identification number of the data base within the Coldapaq Network.

As follows: UIN - Colombia indication number - DNIC- 2421140.

- \* Eliminate the Network's echo, just dial:

^P

\*Prof10

(See illustration annex 4)

### ***National or international connection via commuted line***

1. Define code:
  - CCITT V.21

- Transmission speed 2,400 BPS - 1,200 BPS
- Full duplex
- 8 bits per character
- Parity none
- 1 bit of stop

2. Do terminal emulation VT100/VT52

3. Make the call

Dial number 3419011

Network will answer: "2400 connected"

Write now: H (in capital letters)

Network will answer: (\*)

4. Eliminate network's echo. Write:

^P

\*PROF10

(See illustration presented as annex 5).

## **VI. Equipment evaluation for the platform of hardware of the Bogota Chamber of Commerce Information Center.**

The following study was carried out from February to November of 1993 and covered the following aspects:

- ▶ Definition of the hardware and software platform base necessary for the Latin American and Caribbean focal point.
- ▶ Initial approachment with suppliers and call definition.
- ▶ Definition of the evaluation mechanism and of the future tests.
- ▶ Initial recommendation.
- ▶ Definition of the data bases manager requirements for the installation of the access programs and operation of the information system.
- ▶ Initial approachment with suppliers and call definition.
- ▶ Definition of the evaluation mechanism and of the future tests.
- ▶ Possibility of connexion to remote data bases.

In this report we present only the information concerning the hardware platform corresponding to the initial recommendation.

## 1. *Requirements*

### a) *Operational framework*

The machine has to operate in a multi-user and multi-area environment, with managing system of data bases and a communication environment (initially X-25)

To be able to run data bases managers "standard in the market" such as :  
ORACLE, INFORMIX, ASABAS, etc.

It is suggested that the machine's design is RISC, due to its best performance in distributed and telecommunications environments (even this is not necessary).

### b) *Operative system*

The machine has to operate under the standard UNIX operative system having at least the following norms and characteristics:

- UNIX laboratories system V version 4
- IEEE POSIX (IEEE standard 1003.1-1988)

- Compilers of CANSI
- Communicators TCP/IP and ONC/NFS
- ONC/MOTIF
- X-Windows

The Operative System UNIX selection obeys to four main facts:

- Its worldwide acceptance as standard of facto for data base environments.
- The standadization and portability of its applications and utilities.
- Its versatility of communication.
- Its low cost.

c) *Number of terminals*

It will need initially 16 terminals distributed as follows:

- System manager	1
- Typists of AICO's Network	3
- Analysts-Programmers	6
- Conexions X-25	4
- Conexions Modem (telephone)	2
<b>TOTAL</b>	<b>16</b>

Once the developing step is accomplished, some of the developing terminals may be assigned to typists or entries X-25. If the direct interface between the equipment and the channel X-25 is used there will be 4 additional terminals.

d) *Secondary Storage*

The following values were estimated:

-Sist Oper with mistakes correction area	200
-SWAP (32 MB RAMU/User) Area	100
- Printer Spool	20
- Data base Manager	100
- Users's area	100
- Temporary files (obj, lst, lnk, etc.)	25
- Projected data for a year	350
<b>Total</b>	<b>895</b>

Taking into account the fact that the machine will be a server of an international network, it must have characteristics of disk I/O very performant and, if possible, having support processors for this function.

The disk unities must be "intelligent" and of high performances (transfer speed, access times, etc.) and, preferably, using the SCSI bus.

It was asked to quote 2 GB in disk taking into account that it was the space capacity, not lower than 1 GB, easier to configurate with SCSI-2 devices. (These were preferred thanks to their performance and throughput).

Two (2) tape unities of high capacity (> 1GB) allowing to make the backups in a fast and safe way must be acquired. Initially, it will be quoted just only one of them.

e) *RAM memory*

All the Data base Managers needs as minimum 1 MB per User (16 MB are not enough); the minimum possible capacity of memory is then 32 MB, living enough space for the operational system and a reserve minimizing the disk swaping and increasing the system efficiency.

2. *Evaluation criteria*

As real tests were not initially carried out (monitoring the execution of the proof programs in computers), it will be employed some standard benchmarck in

industry developed by third parties (companies dedicated to classify computer equipments according to already defined parameters to orientate the buyer).

These third companies are:

- SPEC (Standard Performance Evaluation Corporation)
- AIM

Additionally traditional benchmarks will be used when this information will be available.

This information is related to: growth of the system, space in disk, RAM memory capacity, Speed of the buses, etc., with the purpose of obtaining significative numbers allowing us making decisions.

As benchmarks have an important role in this analysis we will briefly describe them:

- a) *SPEC (Standard Performance Evaluation Corporation)*
- SPEC CINT92

Conformed by six programs solving problems of the actual world, written in C language.

The problems covered are:

- Theory of Circuits
- Interpreter of LISP
- Logic Design
- Data Comprehension
- Worksheet
- Software Development

The geometric mean of these six tests is the SPEC CINT92 result.

-- SPEC CFP92

Conformed by fourteen programs: two written in C language and the other twelve in FORTRAN language. Five of the fourteen programs are of a simple accuracy and the other nine of double accuracy. The programs represent applications in areas such as:

- Design of Circuits
- Monte Carlo Simulation
- Quantum Chemistry
- Astrophysics
- Weather Forecasting

The geometric mean of these fourteen tests is the SPEC CFP92 result.

-- SPECrate (Method of homogenous capacities)

These tests measure the efficiency of the multi-processors systems. They indicate the processing capacity of a system, i.e., how much work may be performed in a given period of time.

These tests are capacity tests, not of speed, indicating the amount of work that may be performed in a fixed period of time, and not how fast it can perform such work.

The formula of this test is:

$$\text{SPECrate} = \frac{\# \text{Executing copies} * \text{Reference Factor} * \text{Time Unity/Given}}{\text{Time for Execution}}$$

- \* The SPECrate-int92 value is the geometric mean of the SPECrate of the six tests of SPEC CINT92.
- \* The value of SPECrate-fp92 is the geometric mean of the SPECrate of the six tests of SPEC CFP92.

b) *AIM (Developed by AIM Technologies)*

This test is designed to measure and forecast the UNIX multi-users systems's performance.

It is conformed of 33 functional tests that are grouped to reflex the activities of different types of applications.

The system factors exercised are:

- \* Timers
- \* I/O Sub-systems
- \* TTY
- \* Tapes Sub-systems
- \* Printers
- \* Virtual Memory Management

This test is run till either obtaining the number of simulated users or either having copied the system capacity.

The 33 tests are divided in six categories, each one exercising one or more basic functions of the UNIX system that are being tested. These categories are:

- \* RAM
- \* Floating Point
- \* Pipe
- \* Logics
- \* Mathematics

This test has not a software of application level. Each simulated user runs a combination of tests of the sub-systems. The charge that all the simulated users put in the system is typical of a UNIX time sharing system. The mixture of sub-systems tests may be changed to simulate environments with different resources requirements. AIM supplies a model by default as a representative indicator of a UNIX system.

The AIM performance is the maximum performance of the system under optimal utilization of:

- \* CPU
- \* Floating Point
- \* Disk cache

An increase of the charge during the highest performance of the system will cause a fall of the performance. The AIM Maximun User Performance Rating value identifies the system capacity under high charges of multi-areas where the disk performance becomes an important factor.

The AIM throughput is the total amount of work processed by the system measured in Works/Minute. The maximun throughput is the point in which the system is able to process the highest amount of Works/Minute.

c) *DHRYSTONE BENCHMARK*

Initially developed as a program in ADA language in 1984 by Reinhold Weicker, it has been rewritten in C language in 1986 by Rick Richardson.

This test measures the processor and compilers efficiency and it is very representative in programming environments. It is normally expressed by Dhrystone Instructions per Second.

The two versions are very different. The 1.1 version contains code sequences which calculates results that are never used again in the programm (this is

called dead code). The compilers, which are able to identify the Dead Code, may eliminate these instructions of the final program; these compilers allow to get a highest Dhrystone result. The 2.1 version was modified to execute all the instructions.

d) *LINPACK 100X199 and 1000x100*

LINPACK is a lineal equations solution written in Fortran and consisted of additions and multiplications in floating point of matrixes; there are two versions.

-- LINPACK 100X100

This test resolves a matrix of 100X100 of simultaneous lineal equations. It is not allowed to make changes to the origin programs in order to use the results and evaluate the compiler's ability to optimize the program.

- LINPACK 1000X100

This test resolves a matrix of 1000X100 of simultaneous lineal equations. It is allowed to make changes to the origin programs so the compilers may be able to optimize.

### 3. *Description of the call*

The factors taken into account to include a company in the call were:

- To possess UNIX open systems
- To offer an UNIX operational system meeting the following standards:
  - UNIX laboratories system V version 4
  - IEEE POSIX (IEEE standard 1003-1-1988)
  - CANSI compilers
  - TCP/IP and ONC/NFS communications
  - ONC/MOTIF
  - X-Windows
- To be a worldwide well known brand
- To have an old and solid representation at national level.

As a matter of fact the following companies were contacted:

- Carvajal Computadores
- Colcomp
- Comware
- IBM de Colombia
- Olivetti

- Phillips
- Sistemas de Tecnología Avanzada (STA)
- Sociedad Colombiana de Informática (SCI)
- Unisys de Colombia

Olivetti and Phillips were immediately disregarded because they only distribute personal microcomputers systems in the country and they do not offer any other alternative in UNIX environment.

#### **4. Description of the Alternatives**

Table 2 describes the most important hardware characteristics of the evaluated equipments.

##### **a) Companies**

#### **CARVAJAL DE COMPUTADORES**

\* Attention and Service.

Despite the fact of being the last contacted company, and therefore not having the same time of the others, the client service (quotes, services proposals and

brochures) was opportunely and effectively performed. They were always in conditions to supply the required information. Follow-up calls complemented the good service received.

#### \* Coverage of Needs

This machine Hewlett Packard could initially cover the project needs, but it is not the most powerful. The operational system is solid (it counts on many years in the market and has some versions) and meets with all the standards required. The communications and interconnection (X-25, SNA and TCP/IP) support of the same are monitored and even it is offered a control program, leader in the market (OPEN-VIEW).

Expansion is contemplated by replacing the processor card by a faster one, keeping the compatibility of the object code.

It was also offered a very interesting proposal in the communications area bringing modularity to the network control.

#### \* Expansion

The expansion ranges both for the RAM memory (512 MB) and disk space (70 GB) are enough. Calculation power may be increased if necessary.

## Table 2

BRAND	MODEL	PROCESSOR	STRUCTURE	RAM MAX	DISK MAX
DATA GENERAL	AVION 4605	MOTOROLA 8800	RISC 32 BITS	128 MB	58 GB
DIGITAL	ALPHA 3000 - 400	ALPHA 21064	RISC 64 BITS	256 MB	36.7 GB
HEWLETT PACKARD	8000-G30	HP PA-RISC	RISC 32 BITS	512 MB	70 GB
IBM	RISC-6000/550	POWER IBM	RISC 32 BITS	256 MB	51.5 GB
IBM	RISC-6000/580	POWER IBM	RISC 32 BITS	1 GB	67.5 GB
SOLBOURNE	5E/701	SPARC	RISC 32 BITS	640 MB	15 GB
SUN	SPARC 10-51	SUPER SPARC	RISC 32 BITS	512 MB	41 GB
SUN	SPARC 1000	SUPER SPARC	RISC 32 BITS	2 GB	100 GB



\* Advantages

It is worldwide known the high quality of Hewlett Packard products as well as their high performance and technology. The same company makes almost everything:

- Hard disks
- Communication and expansion cards
- Chips

This offer a guarantee for their spare parts and support. They are also in condition to offer advising and design in the communications area.

\* Disadvantages

There is a somehow lack of confidence to the representative company in Colombia (Carvajal Computadores S.A.) due to their delays in dispatching and support services. Nevertheless, some information tends to deny this fact.

\* Commentaries

N/A

## COLCOMP

### \* Attention and Service

The proposal was opportunely and complete passed. There were some follow-up calls but a requested list of clients was never obtained.

### \* Coverage of Needs

The DATA GENERAL machines cover, in their totality, the hardware needs. They offer a solid and standard operational system with all the utilities and managers required (TC/IP and XWindows, for example), its supports all the communications and standard network spectrum of the market (Ethernet, X25, DECnet, etc.). Among the same family of machines it can be reached up to 8 processors and 235 MPS (the price is very high); all of them are compatible at binary code level.

We have to mention that COLCOMP is also a communications company (CODEX and MOTOROLA), but, in spite of the fact that this was mentioned during the interviews with the sales representative, we never had an invitation nor a proposal of their services in this area of communications.

\* Expansion

The memory expansion may be a smaller one (128 Mb) if we take into account that programs of great memory will be manage (ORACLE, for example). The disk capacity is 58 GB is enough.

\* Advantages

COLCOMP is an old and solid company in Colombia. Its machines, well-known and of quality, offer a good range of expansion and there is the possibility that the communications support may be offered by the same supplier.

\* Disadvantages

This company has a bad reputation due to its support, high prices and some failures in the pre-sale client service. It is not recognized as a "good server of data bases". There is not a version of Data Bases Manager ADABAS available for the DATA GENERAL machines.

\* Commentaries

N/A

## COMWARE

### \* Attention and Service

At the beginning their attention was less than good, but when they change of sales representative the attention was excellent. The company's image was one of a solid and serious company, multi-disciplinary in the systems field as they are in charge of the sale of equipments up to the development of applications, managing also automatization, communications, etc. We received serious proposals of machines amazingly fast and at low cost. All doubts and questions were always resolved.

### \* Coverage of needs

Both SPARC SERVER 10 and the SPARC SERVER 1000 cover fully the needs of almost any project. They offer the advantages of being able to growth in processors and of being supported by an operational system very solid and known in the market meeting all the standards and offering all the possibilities of the necessary interconexion (TCO/IP,SNA, X-25).

### \* Expansion

These machines offer the best option of expansion thanks to the possibility

of adding processors. Initially the two (SS-10 and SS-1000) are equivalent but the difference relies on the capacity of expansion. The SS-10 goes up to 4 CPUs and the SS-1000 up to 8 CPUs. Capacities in disk are the highest ones of all the evaluated machines.

#### \* Advantages

It counts on the support of a company that is in conditions to give advice and support in all the project areas. The SUN machines are worldwide reputed to be the best networks servers. They offer an excellent ratio between cost benefits and excellent expansion growth. It is one of the hardware platforms preferred by the software developers (almost any important program runs in SUN machines).

The Andes University was consulted about the COMWARE support and the commentaries were the following ones:

- Reliable and efficient
- Quick answer
- Good spare parts stock

\* Disadvantages

N/A

\* Commentaries

N/A

## **IBM DE COLOMBIA**

\* Attention and Service

The attention and service are excellent. They have the advantage of knowing very well the Chamber of Commerce as they are the central equipment (9377) suppliers. They have carried out several dates and meetings, demonstrations and so on. The client follow-up is total. As UNISYS their service and attention are the best. They scheduled visits to their customers to show their machines in operation.

\* Coverage of Needs

Needs are covered completely by the products of the RISC/6000 family. Support, either in advising or in communications, is excellent. They offer the best operational system in the market (AIX), which is standard and comes with all the required utilities and managers (TCP/IP and Xwindows, for example).

It bears all the communications and standard network spectrum of the market (Ethernet, X.25, DECnet, etc.). It is the faster machine of all the evaluated ones.

Besides, IBM offers its services of telecommunications through its IBM network and this would allow us access to the whole world, more than 90 countries.

\* Expansion

The capacity of expansion in memory and disk are the highest of the evaluated machines, and, therefore, they are more than satisfactory. Concerning the calculation power, the RISC/6000 580 model is the biggest one that can be reached within the family and the second concerning expansion. This was preferred to the 370 model (almost of same calculation power) due to the expansion limits of the latter (maximum memory 226 Mb, maximum capacity of disc storage 48.3Gb and number of slot expansion memory 4). The small number of expansion slots was a determinant factor to disregard this model.

Besides, the 580 model offers the characteristics shown in table #1 and 8 expansion slots, which is enough to support the machine expansion. IBM offers a card for X.25.

\* Advantages

It is an excellent machine well known in the market. The visit to the Javeriana University facilities showed an environment of interconnected network with a great number of users and TCP/IP working very satisfactory. The Chamber is acquainted with the excellent service and support given by IBM all through these years.

\* Disadvantages

It is the biggest machine of the family and can not be more expanded, even the calculation power offered is enough for now being and in the future. It would be ideal to count with the alternative of "expanding" towards a bigger machine.

\* Commentaries

N/A

## **SISTEMAS DE TECNOLOGIA AVANZADA (STA)**

\* Attention and Service

At the beginning they did not pay attention to the Chamber's enquiry and they

sent general quotes without having received information about the project. It is supposed to be due to the "boom" of launching the Alpha family. After our complaint the situation changed and we received an excellent attention. Some visits were planned to STA and we saw the machines working in different environments. The follow-up has been good since then.

\* Coverage of needs

The AXP-400S machine amply COVERS the needs of the project, it is the second in speed surpassed only by the IBM-580. The operational system satisfies all the requirements and it is well known by its quality in communications ("if there are two IBMs which do not talk put a DEC between them, so they will talk"). RAM capacity (512 MB) and disk capacity (53 GB) more than enough.

\* Expansion

Ram (512 MB) and disk (53 GB) capacities more than enough but unable to expand in calculation power without changing the machine. The number of expansion slots it is very limited.

\* Advantages

Advanced technology (64 bits processor). Excellent performance and

calculation capacity, possibility of ever more bigger machines (compatibles in object code) within the same family. Firm in communications.

\* Disadvantages

The AXP-400S can not be any more expanded. Machine must be replaced to obtain more calculation power (which we believe it is not necessary). The number of slots could represent an expansion problem in the future.

\* Commentaries

N/A

**SOCIEDAD COLOMBIANA DE INFORMACION (SCI)**

\* Attention and Service

The proposal was passed complete and opportunely. There were several follow-up calls and the required clients list was received. Among the clients listed there are some important ones such as: Tejidos Lafayette, Ecopetrol, Inductrina Inca, Seguros Bolívar, Superintendencia Bancaria, etc. They presented a quote based in AST Manhattan equipemnts, multi-processor 80486 type with BUS EISA, but due to its high cost and the lack of information

on its capacities and possible expansion, it was not taken into account. There was not client follow-up.

\* Coverage of needs

The "machine" needs are covered. We have to point that it presents the smallest expansion of disk SCSI (maximum 5.2GB), which, nevertheless, seems enough. There is no support in the communications area and the SCI company does not mention products of this kind in the proposal. Working with Kbus and VME-bus makes possible to find communications adapters such as X.25 or SNA/SDLC, with third party suppliers.

\* Expansion

The fact of being a multi-processor machine it allows a great expansion in calculation power, which, in any case, surpass IBM's one.

The MIP number presented in the brochures was overestimated, and therefore, it was revised by comparison with other tests more standard in the market as SPEC tests.

The expansion capacity in SCSI disk is small, but this problem can be solved with other interfaces.

\* Advantages

SCI is appreciated by important corporations as Superintendencia Bancaria, where the machines work and respond perfectly.

\* Disadvantages

Even the SCSI disk expansion is enough it is the smallest one (5.2 GB) of all the evaluated machines.

The SCI's few years of experience and its small size lead us to doubt its capacities to suitably respond to a big support of our needs (if the CPU burns, will they be able to manage this problem in two days?)

\* Commentaries

N/A

**UNISYS DE COLOMBIA**

\* Attention and Service

Together with IBM they presented the best service and attention. Presentations, proposals and client follow-up were excellent. We had 2 sale executives dedicated to our attention. They offered additional services as: Advising in



telecommunications, Advising in network design and measurement, Project audit, etc.

\* Coverage of Needs

The U/6065 machine meets all the technical needs, offers a firm and standard operational system with all the utilities and managers necessary (TCP/IP and Xwindows, for example). They support all the communications range and standard networks of the market (Ethernet, X.25, CECnet, etc.). UNISYS is also a communications corporation (distributes TIMPEX) and some visits and talks were carried out on this aspect.

\* Expansion

The machine offers high expansion capacities and within the same family of machines they can go up to 5 processors. All are compatible at a binary code level. They offer also X.25 cards. This is not a RISC machine, so comparisons with RISC machines is difficult and there is necessary to observe attentively the Benchmarks, particularly the SPECint92 and AIM ones.

\* Advantages

We will count on the UNISYS support which is undoubtedly a worldwide well

known company. The telecommunications support is excellent and it is possible to buy a nodal processor of TIMPEX.

\* Disadvantages

Cost is very high. It is not a RISC machine which is, without discussions, superior to CISC ones for the processing data base tasks and as servers in UNIX environments.

It was known that in the Andes University where they have a U6000, and despite the fact the students have not experienced any inconvenience, it tends to clog when it works with ORACLE and when all the users are connected aggravated by the fact that it an academic environment and the data bases are not superior to 10,000 enters and that most of them have entire fields o small fields of characters.

b) *Options (graphs 2,3 and 4)*

c) *Costs*

The table 3 summarizes the most important characteristics of the machines evaluated. Prices correspond to the following configuration:

- RAM 32 MB
- Disk 2 GB
- 16 users (with terminals)
- Communications X.25

Prices are given in CIF Bogota and do not include 14% of T.V.A.

d) *Preliminar Evaluation*

It is impossible to estimate different machines only by their cost, therefore it is necessary to undertake some tests to measure their real performance in actual situations. But, we can take tests carried by third parties in order to obtain an indication for further decisions.

In this scope we are going to calculate a performance measure against cost for each machine estimating so the cost of each performance unity. We will use the SPECint92 and AIM Benchmarks (performance index) as they are the most relevant and the most available in all the machines to be evaluated. We will divide the total value of the proposal by the number of unities of performance (SPEC or AIM) to obtain a mean of Cost/Performance. Results can be appreciated in the following tables.

We can conclude from the previous calculations:

- Soulbourne and Unisys machines present very high costs per unity of performance, and consequently they must put aside.
- Sun and Digital machines offer the lowest costs per unity of performance and consequently they must be kept in the bid.
- IBM presents moderate costs and excellent performances and furthermore the existing relation with the Chamber of Commerce its offer it taken into account.
- Hewlett Packard is within the costs average and offers a good capacity of expansion and good performance of CPU (SPECint92). Its quality and proposals of communications accompanying the equipment sale indicate to be taken into account.
- Data General presents average costs but a low index of CPU performance (SPECint92). It did not offer any support in communications and some data bases managers do not run in this brand. Besides there is distrust of the COLCOMP support, so it is put aside from the bid.

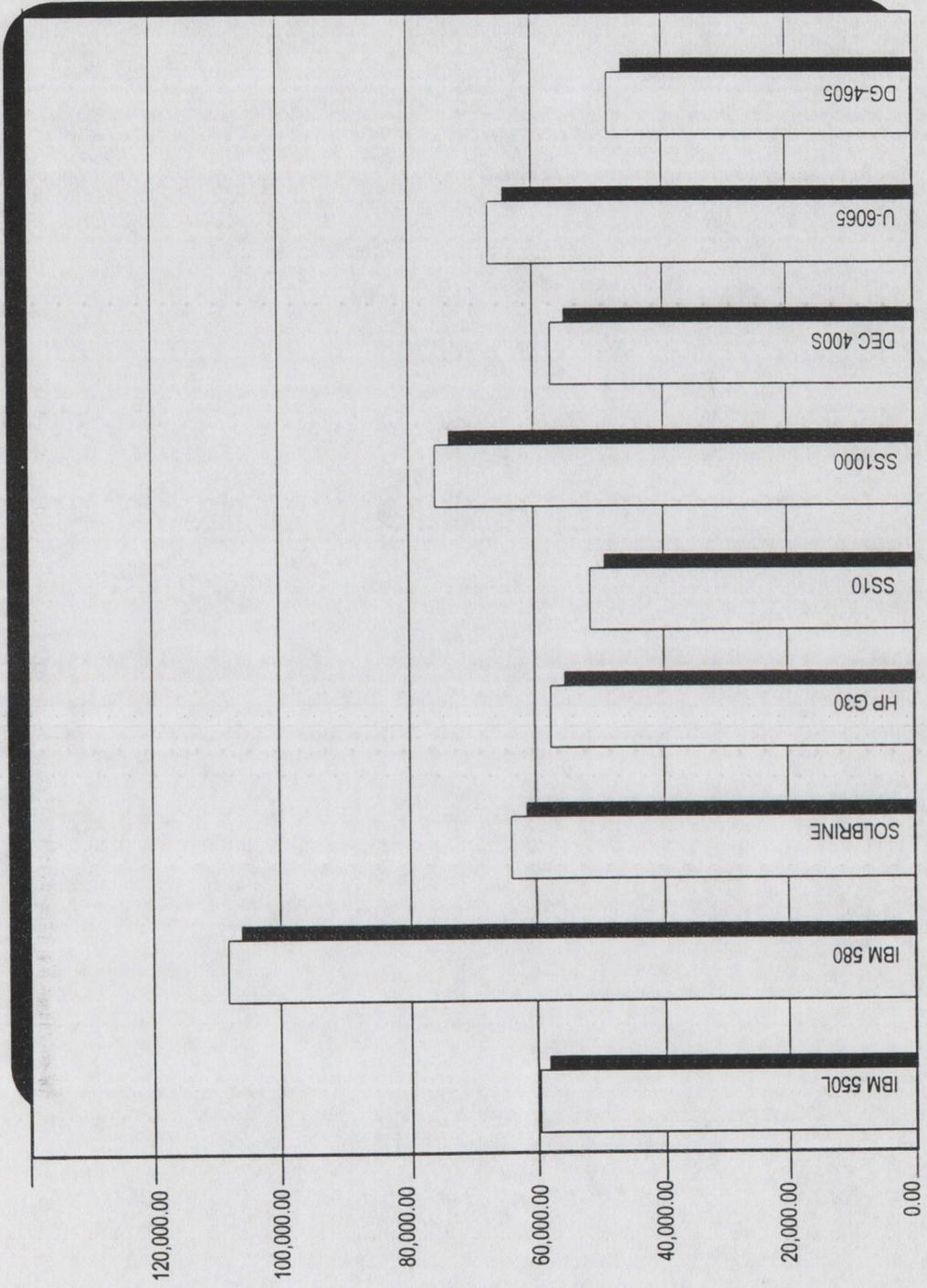
e) *Preliminar Recommendation*

Taking into account the previous evaluation, it is recommended to carry out real tests on the IBM, DIGITAL, SYN and HEWLETT PACKARD machines.

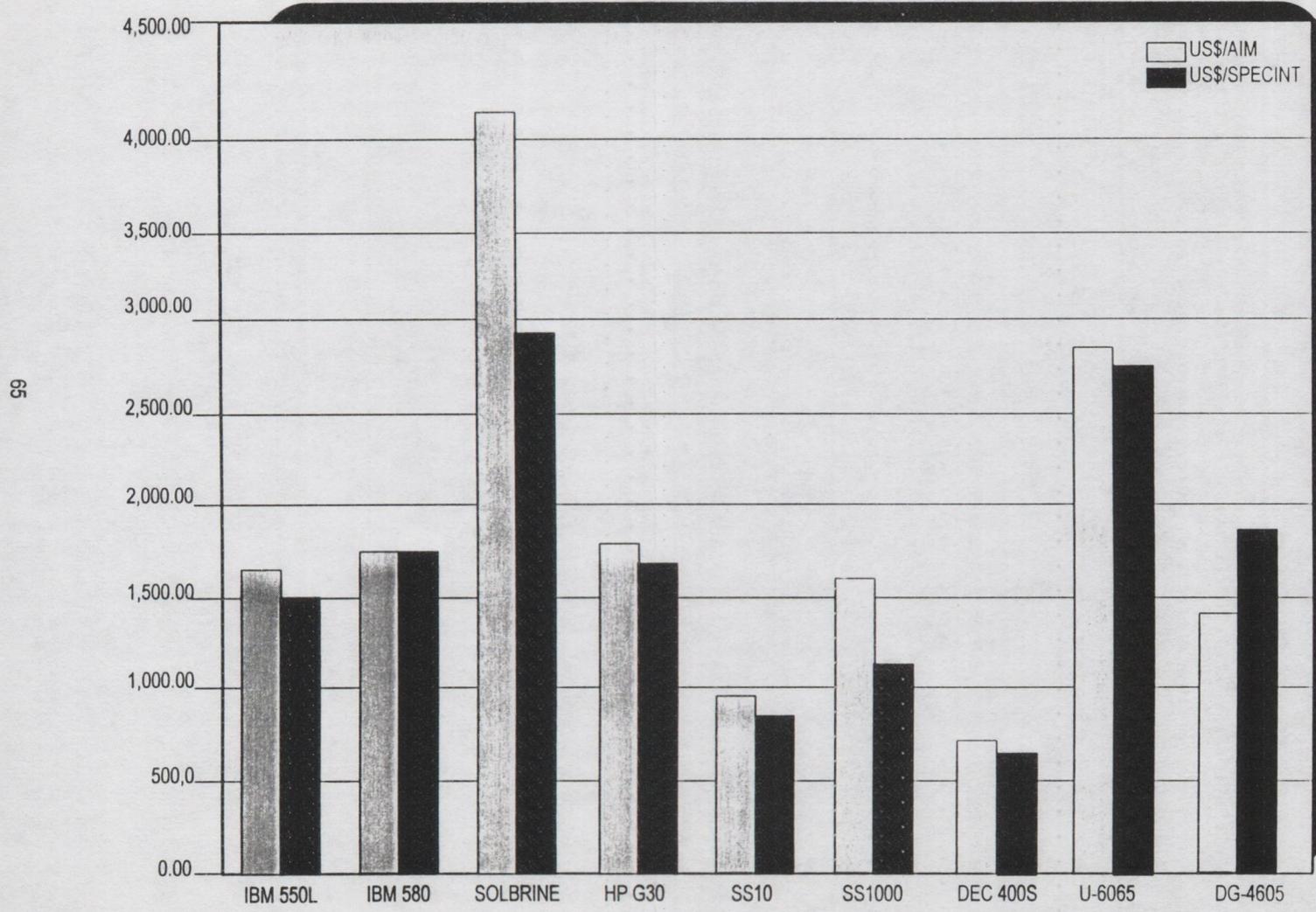
These tests should be carried out, if possible, on data base managers. (Preferably the candidates to be evaluated for the software platform) and to simulate complex consults (by different keys) and users charge. Only when real and concrete data will be available for each machine, we could reach to a definitive recommendation.

This initial evaluation of equipments will serve as reference to be taken into account for the definition of a new technological platform, defined by the Bogota Chamber of Commerce to be implemented in the first semester of 1995, which will facilitate to reach the fixed goals in the work plan.

Graphic 2  
Price of equipments

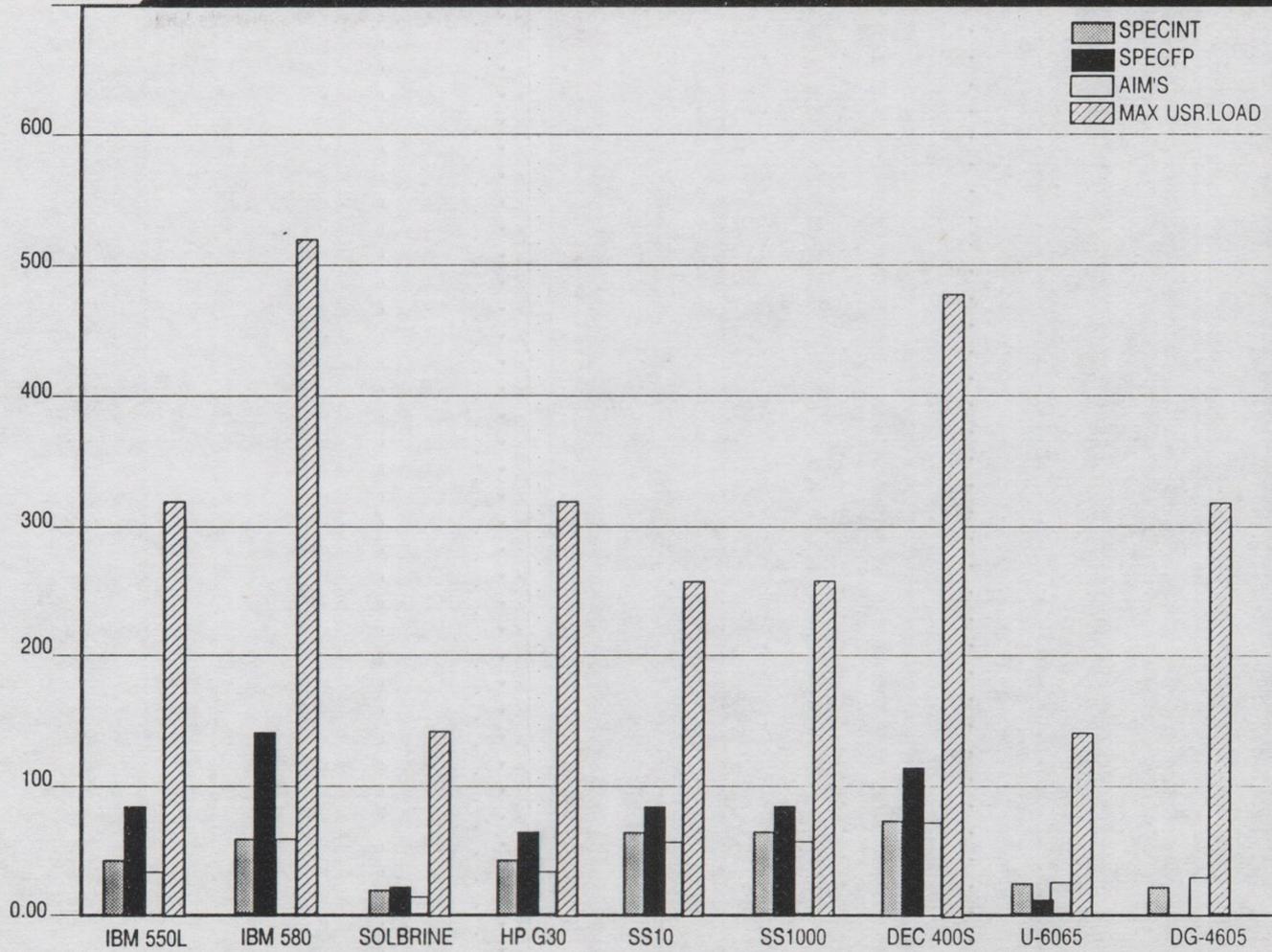


Graphic 3  
Costs per performance unity



# Graphic 4

## Benchmarks of the analyzed equipments



**Table 3**

Comparative table of the evaluated equipments for the Group of 77 project  
 Requested configuration: 32 MB in RAM, 2 GB in disc (SCSI-2). 16 terminals-connection X-25

	IBM 550L IBM RISC 6000/550L	IBM 580 IBM 580	Solbrne Solbourne SE/700	HP G30 HP G30	SS10 SUN SS10-51
Proposal's value in Y\$\$	\$60.134.64	\$109.722.21	\$63.921.41	\$59.331.00	\$54.718.00
CPU's (evaluated/maximum)	1/1	1/1	1/4	1/4	1/4
Clock frequency Mhz	41.7	62.5	40.01	40.01	50
Processed	RISC/Power IBM	RISC/Power IBM	RISC/SPARC Cypress	RISC/SPARC Cypress	RISC/SUPER-SPARC
Chache (internal/external)	40K (32 D 8K 1)/Na	96K(64K D 32K 1)/Na	Na/128K	Na/128K	36 (16K D 20K 1)/1024K
Bus width	64 bits MCA	128 bits MCA	64 bits KBUS	64 bits K BUS	64 bist SBUS
Transfer speed CPU-RAM	200 MG/Seg	1000 MB/Seg	Na	Na	320 MB/Seg
Bus throughput	40 MB/Seg	83 MB/Seg	128 MB/Seg	128 MB/Seg	
RAM memory maximum	256 MB	1000 MB	640 MB	640 MB	512 MB
Dise	SCSI-2/51.1GB	SCSI-2/67.5 GB	SCSI-2/5.2 GB	SCI-2/5.2 GB	SCSI-2/41 GB
Slots number	4	8	7K BUS y 1 VME BUS	4	4
SPECint92	40.7	61.9	21.8	37.8	65.2
US\$ value per SPECint	\$1.477.51	\$1.772.57	\$2.932.17	\$1.569.60	\$839.23
SPEC fp92	83.3	134.6	22.7	62.4	83
SPECrate_int92				890	1546
SPECrate_fp92				1483	1969
LINKPACK 100x100	18.8	38.1	4.3	15.2	27.3
LINKPACK 1000x1000					
MIPS Drystone l.1			28.5	52.7	135.5
AIM's Performance index	36.6	62.1	15.4	32.9	55.375
US\$ value per AIM	\$1.643.02	\$1.766.86	\$4.150.74	\$1.803.37	\$988.14
AIM Max. User Loads	319	609	142	314	253.75
AIM Throughput (jobs/minute)	358.2		151.1	322	527.625
Comments			Is used interfaces other than SCSI-2, it may be in 16 GB or 86GB disc.		Each additional CPU module costs US\$13.000.00.
Additional		32 MB RAM		2GB Ribbon	CD-ROM 150 MB ribbon 32 MB RAM

	SS1000 SUN SS1000	DEC 4005 DEC 4005	DEC 6005 DEC 6005	DEC 8005 DEC 8005	U-6065 U-6000	DG-4605 DG-4605
Proposal's value in Y\$\$	\$77,177.00	\$58,595.79	1/1	1/1	\$70,463.00	\$49,558.00
CPU's (evaluated/maximum)	1/8	1/1	175	200	1/4	1/2
Clock frequency Mhz	50	133			50	33
Processed	RISC/SUPER-SPARC	RISC/ALPHA 21064			CISC/INTEL 80486	RISC/MOTLA 88100
Cache (internal/external)	36 (16K D 20K I)1024K	16(8K D 8K I)512K			8K/1024K	Na/96K(32K D 64K I)
Bus width	64 bist SBUS					
Transfer speed CPU-RAM	320 MB/Seg					
Bus throughput		90 MB/Seg				
RAM memory maximum	2000 MB	512 MB			256 MB	128 MB
Dise	SCSI-2/100 GB	SCSI-2/535 GB			SCSI-2/44.2 GB	SCSI-2/58 GB
Slots number	12				9	2
SPECint92	65.2	74.7			25.7	26.1
US\$ value per SPECint	\$1,183.70	\$784.41			\$2,741.75	\$1,898.77
SPEC fp92	83	112.5			12.2	
SPECrate_int92	1546	1763				
SPECrate_fp92	1969	2662				
LINKPACK 100x100	27.3	26.4				
LINKPACK 1000x1000		91.7				
MIPS Drystone 1.1	135.5	134.3				39
AIM's Performance index	55.375	70.3			24.4	32.9
US\$ value per AIM	\$1,393.72	\$833.51			\$2,887.83	\$1,506.32
AIM Max. User Loads	253.75	485			239	317
AIM Throughput (jobs/minute)	527.625	688.7			235	322.2
Comments						
Additional	CD-ROM 150 MB ribbon 32 MB RAM	CD-ROM 600 MB ribbon			Discount 20%	

## Survey

"Commercial information and its management and operation infrastructure in Latin American the Caribbean." 1993.

# 1. Entity's Description

This section of the survey is intended to obtain a profile of the entity or organization and to estimate its main services.

## 1.1 Type of entity:

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## 1.2 Number of affiliates, subscribers and/or users:

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1.3 *Main services offered:*

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1.4 *It offers some kind of commercial information, meaning by that a channel by which businessmen offer their products in a specific market and know through the same the existence of products which may be useful in their companies. It includes information on products, prices, quantities (demanded and offered), kind of packaging, etc.*

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**2. Commercial information**

This section is intended to know the present situation of the entity or organization concerning the collection, handling and offer of the commercial information

2.1 *Is it offered some kind of commercial information to the affiliates or subscribers? Detail.*

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2.2 *Is it offered some kind of commercial information to the non affiliated or non subscribers? Detail.*

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2.3 *Classify in the following table the kind of commercial information that you handle. If you do not have information for any of the proposed types, leave it in blank.*

By "mean" it is understood the type of data storage. For example magnetic means, paper, optical disks, etc.

Kind of information	Source	Updating periodicity	Mean
National offers of products			
National offers of services			
International offers of products			
International offers of services			
National demands of products			
National demands of services			
International demands of products			
International demands of services			
National exporters			
National importers			
National prices			
International prices			
National and international fairs and events			
Commercial legislation			



Kind of information	Type of Users	Aproximate Coverage in number of users	Distribution's periodicity	Mean
National offers of products				
National offers of services				
International offers of products				
International offers of services				
National demands of products				
National demands of services				
International demands of products				
International demands of services				
National exporters				
National importers				
National prices				
International prices				
National and international fairs and events				
Commercial legislation				



### **3. Hardware and Communications**

This section is intended to know the technological situation of the entity or organization in computer and communications equipments relating exclusively to the managing of commercial information.

If you do not have any of the listed equipments, leave it in blank.

In order to answer this section it is important to unify some criteria to facilitate answers and processing of the same.

Multi-users equipment: It is that formed by an intelligent central unity and some non intelligent terminals (or microcomputers emulating a terminal).

Mono-user equipment: It is that formed by an unique intelligent central unity where only one user may work at a time.

Computers network: It is an autonomous group of computers linked by a data transmission mean in a direct way (cable, optique fiber) or in a remote way (telephonic line, microwaves, satellite) allowing them to share information and/or ressources.

#### **3.1 Computer Equipment**

##### **3.1.1 Multi-users equipments**

Number of equipments as described	
Trademark and model	
Processor (type)	
RAM memory (Mb)	
Disk capacity (Mb)	
Number of remote terminals	
Number of local terminals	
Number and type of cartridge unities	
Operational systems applied (name, manufacturer and version)	

If there is more than one type of the multi-user equipment for the managing of the commercial information, please fill a photocopy of the same.

**3.1.2 Mono-user systems**

Please put in a same group the mono-user computers according to its trademark.

By "group" it is understood the microcomputers which have the same trademark or have characteristics so similar that allow an unified description.

**Group No.** \_\_\_\_\_

Equipment's trademark	
Processor (type)	
Group's average RAM memory (Mb)	
Group's average capacity in disk (Mb)	
Operational system used (version)	
Drive's type	
Number of equipments of the group	

Group No. \_\_\_\_\_

Equipment's trademark	
Processor (type)	
Group's average RAM memory (Mb)	
Group's average capacity in disk (Mb)	
Operational system used (version)	
Drive's type	
Number of equipments of the group	

If you have more microcomputers "groups", please fill a photocopy of this sheet.

### 3.1.3 Computers networks:

Server trademark	
Server processor	
Server's RAM memory (Mb)	
Server's disk capacity (Mb)	
Total network disk capacity (Mb)	
Number of connected computers	
Type of connected computers	
Kind of network	
Network software (name and version)	
Conventions used to be connected with other network or equipment	

3.2 *Communications equipment*

3.2.1 Do you have: Telex? \_\_\_\_\_ Number: \_\_\_\_\_

3.2.2 Do you have: Fax? \_\_\_\_\_ Number: \_\_\_\_\_

3.2.3 In any of your computer is there a modem-fax card installed? \_\_\_\_\_  
Number: \_\_\_\_\_ Trademark \_\_\_\_\_ Model \_\_\_\_\_

3.2.4 Has the entity modems? \_\_\_\_\_

Trademark \_\_\_\_\_ Model \_\_\_\_\_ Speed \_\_\_\_\_

3.2.5 Do you have remote terminals? \_\_\_\_\_

Describe:

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3.2.6 Telephonic lines

- Maximun speed at which data can be transmited \_\_\_\_\_
- Interruption frequency in calls \_\_\_\_\_
- Is there noise during the calls or the transmions? \_\_\_\_\_

3.2.7 Has your country a network dedicated to the exclusive data transmission ? (X.25-X.28 type)?

Describe

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Is there any convention with Colombia?

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## 4. Software and standards

### 4.1 Software

All the following questions concern software for the commercial information managing.

4.1.1 Which processes related to the commercial information are systematized?

Describe

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4.1.2 Which data-bases are used in your multi-users computers?

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4.1.3 Which data-bases managers are used in your mono-user computers?

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4.1.4 Which data bases managers are used in your computers network?

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4.1.5 Which communications programs are used in your multi-users computers? Whay kind of emulations do they allow?

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4.1.6 Which communications programs are used in your mono-user computers? What kind of emulations do they allow?

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4.1.7 What kind of communications programs are used in your computer network? What kind of emulations do they allow?

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## 4.2 Standards

4.2.1 Do you have any kind of code or standard\* to classify the commercial information? Detail

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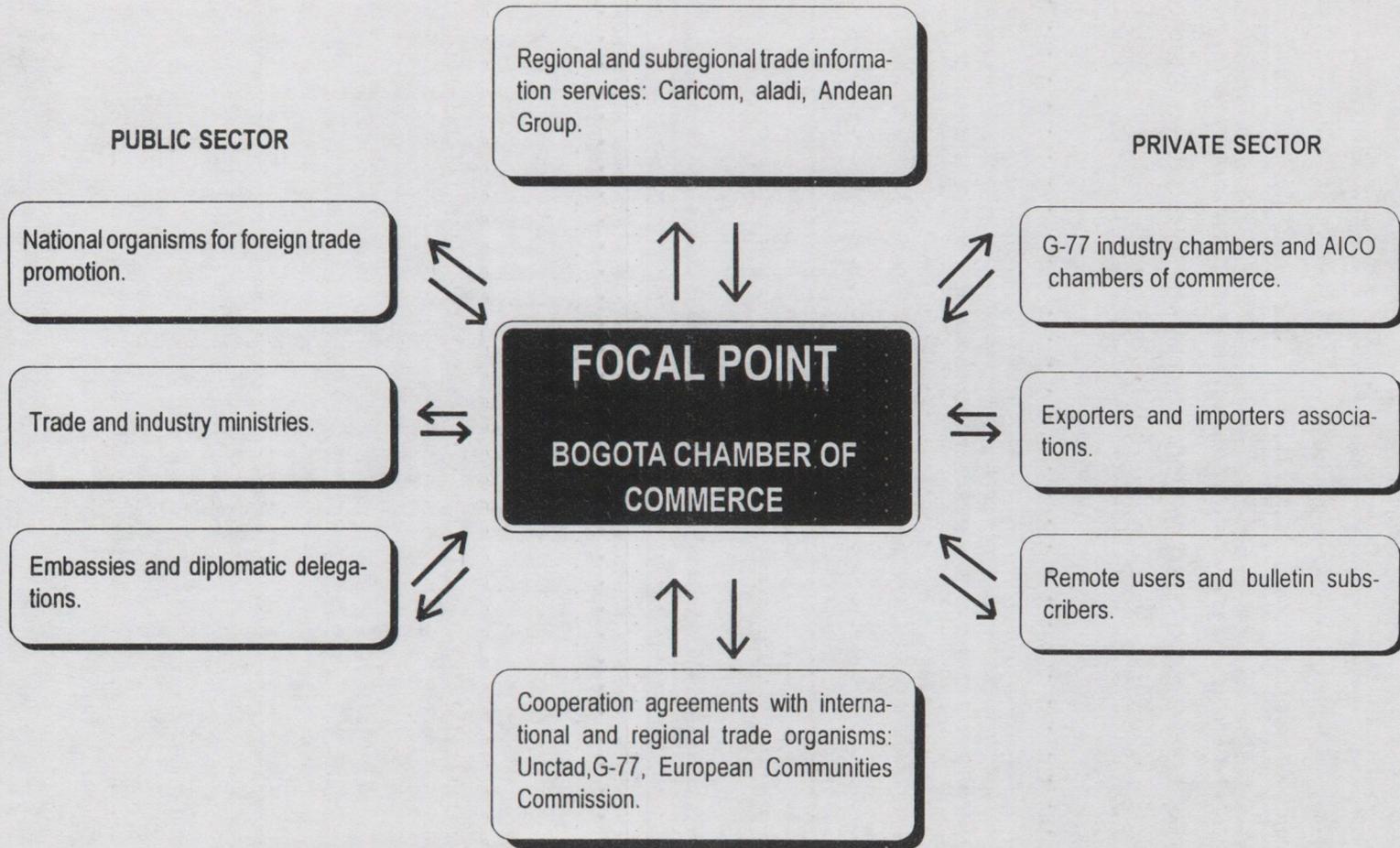
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\* One example of these standards would be the harmonized system (HS) for products and the CIIU for industrial classifications, among others.

# Organizational structure

**Annex 2**



Forms

Goods and services supply  
and demand

**Annex 3**



# Focal Point for Latin America and the Carib



P. O. Box 5609. Telephone: 2861572. Fax: 2847735. Télex: 45574 CACBO CO.  
Santafé de Bogotá, D.C., Colombia.

## OFERTA DE PRODUCTOS / PRODUCTS SUPPLY

Si su empresa está interesada en establecer relaciones con importadores y/o distribuidores en los mercados del mundo, favor llenar el presente formulario usando máquina de escribir. / If your organization is interested in contacting importers and distributors in the markets of the world, please fill out this form. Typewriter only.

No llenar / Do not fill

Empresa / Company: \_\_\_\_\_  
 Dirección / Address: \_\_\_\_\_ P. O. Box: \_\_\_\_\_  
 Ciudad-Estado / City-State: \_\_\_\_\_ País / Country: \_\_\_\_\_  
 Teléfono / Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ Télex: \_\_\_\_\_  
 Responsable / Responsible: \_\_\_\_\_ Cargo / Position: \_\_\_\_\_  
 Referencias bancarias / Bank references: \_\_\_\_\_

## PRODUCTOS QUE DESEA EXPORTAR / PRODUCTS FOR EXPORT

Clasificación arancelaria / Harmonized System (HS): \_\_\_\_\_  
 Producto / Specific product: \_\_\_\_\_

Descripción / Detailed description: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Uso y/o aplicación / Its use and/or application: \_\_\_\_\_  
 \_\_\_\_\_

Unidad utilizada / Used unit:      Toneladas / Tons       Kilos / Kilograms   
    Unidades / Units       Otros / Other \_\_\_\_\_

Volumen disponible para entrega / Volume available for supply: \_\_\_\_\_

Inmediata / Immediate       Mensual / Monthly   
 Semestral / Biannually       Anual / Annually

Precio FOB por unidad en US\$ / FOB price in US\$: \_\_\_\_\_

Puerto de embarque / Port of shipment: \_\_\_\_\_

Exporta a / Exporting to: \_\_\_\_\_

Empaque y embalaje para exportación / Packing and packaging for export: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



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Santafé de Bogotá, D.C., Colombia.

## DEMANDA DE PRODUCTOS / PRODUCTS DEMAND

Empresa está interesada en establecer relaciones con productores y/o exportadores del mundo, favor llenar el presente formulario utilizando máquina de escribir. / If your organization is interested in contacting manufacturers and/or exporters of the world, please fill out this form. Use typewriter only.

No llenar / Do not fill

Nombre de la Empresa / Company: \_\_\_\_\_  
 Dirección / Address: \_\_\_\_\_ P. O. Box: \_\_\_\_\_  
 Estado / City-State: \_\_\_\_\_ País / Country: \_\_\_\_\_  
 Teléfono / Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ Télex: \_\_\_\_\_  
 Responsable / Responsible: \_\_\_\_\_ Cargo / Position: \_\_\_\_\_  
 Referencias bancarias / Bank references: \_\_\_\_\_

## PRODUCTOS QUE DESEA IMPORTAR / PRODUCTS FOR IMPORT

Clasificación arancelaria / Harmonized System (HS): \_\_\_\_\_  
 Producto específico / Specific product: \_\_\_\_\_

Descripción / Detailed description: \_\_\_\_\_

Uso y/o aplicación / Its use and/or application: \_\_\_\_\_

Cotizaciones requeridas / Required quotations:

FOB  Puerto de destino / Port of destination  FOB  Otras / Other \_\_\_\_\_

Compras anuales / Annual purchases US\$ \_\_\_\_\_ Unidades / Units \_\_\_\_\_

Toneladas / Tons \_\_\_\_\_ Kilos / Kilograms \_\_\_\_\_ Litros / Liters \_\_\_\_\_

Docenas / Dozens \_\_\_\_\_ Metros / Meters \_\_\_\_\_ Otros / Other \_\_\_\_\_

Periodicidad de la compra / Purchasing schedule:

Mensual / Monthly  Trimestral / Quarterly  Semestral / Biannually

Anual / Annually  Ocasional / Occasionally

Paquete y embalaje requerido / Required packing and packaging \_\_\_\_\_

Información adicional / Additional information \_\_\_\_\_



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Santafé de Bogotá, D.C., Colombia.

## OFERTA DE SERVICIOS / SERVICES SUPPLY

Empresa está interesada en ofrecer algún servicio a empresas extranjeras, favor llenar el presente formulario, utilizando máquina de escribir. / If your organization is interested in supplying any service to overseas companies, please fill out this form. Use typewriter only.

No llenar / Do not fill

Empresa / Company: \_\_\_\_\_

Ciudad / Address: \_\_\_\_\_ P.O. Box: \_\_\_\_\_

Municipio, Estado, Zona / City, State, Zone: \_\_\_\_\_ País / Country: \_\_\_\_\_

Fax: \_\_\_\_\_ Teléfono / Telephone: \_\_\_\_\_

Responsable / Responsible: \_\_\_\_\_ Cargo / Position: \_\_\_\_\_

Referencias bancarias / Bank references: \_\_\_\_\_

Referencias comerciales / Business references: \_\_\_\_\_

### Servicios comerciales / Commercial services:

Agente / Agent  Representante / Representative  Distribuidor / Distributor   
 Comercializadora / Trading  Asesoría comercial / Commercial advise

### Servicios financieros / Financial services:

Empresa mixta / Joint Venture  Asistencia financiera / Financial assistance

### Servicios tecnológicos / Technological services:

Plantas llave en mano / Turn-key plants  Conocimientos técnicos / Know-how   
 Tecnología y licencias / Technology and licences  Ingeniería y consultoría / Engineering and advising

### Descripción del servicio / Description of the service:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# Focal Point for Latin America and the Carib



P. O. Box 5609. Telephone: 2861572. Fax: 2847735. Télex: 45574 CACBO CO.  
Santafé de Bogotá, D.C., Colombia.

## DEMANDA DE SERVICIOS / SERVICES DEMAND

Empresa está interesada en contactar algún servicio de empresas extranjeras, favor llenar el presente formulario, utilizando máquina de escribir. / If your  
company is interested in contacting any service of overseas companies, please fill out this form. Use typewriter only.

No llenar / Do not fill

Empresa / Company: \_\_\_\_\_

Dirección / Address: \_\_\_\_\_ P.O. Box: \_\_\_\_\_

Ciudad, Estado, Zona / City, State, Zone: \_\_\_\_\_ País / Country: \_\_\_\_\_

Fax: \_\_\_\_\_ Teléfono / Telephone: \_\_\_\_\_

Responsable / Responsible: \_\_\_\_\_ Cargo / Position: \_\_\_\_\_

Referencias bancarias / Bank references: \_\_\_\_\_

Referencias comerciales / Business references: \_\_\_\_\_

### Servicios comerciales / Commercial services:

Agente / Agent  Representante / Representative  Distribuidor / Distributor

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### Servicios tecnológicos / Technological services:

Plantas llave en mano / Turn-key plants  Conocimientos técnicos / Know-how

Tecnología y licencias / Technology and licences  Ingeniería y consultoría / Engineering and advising

### Descripción del servicio / Description of the service:

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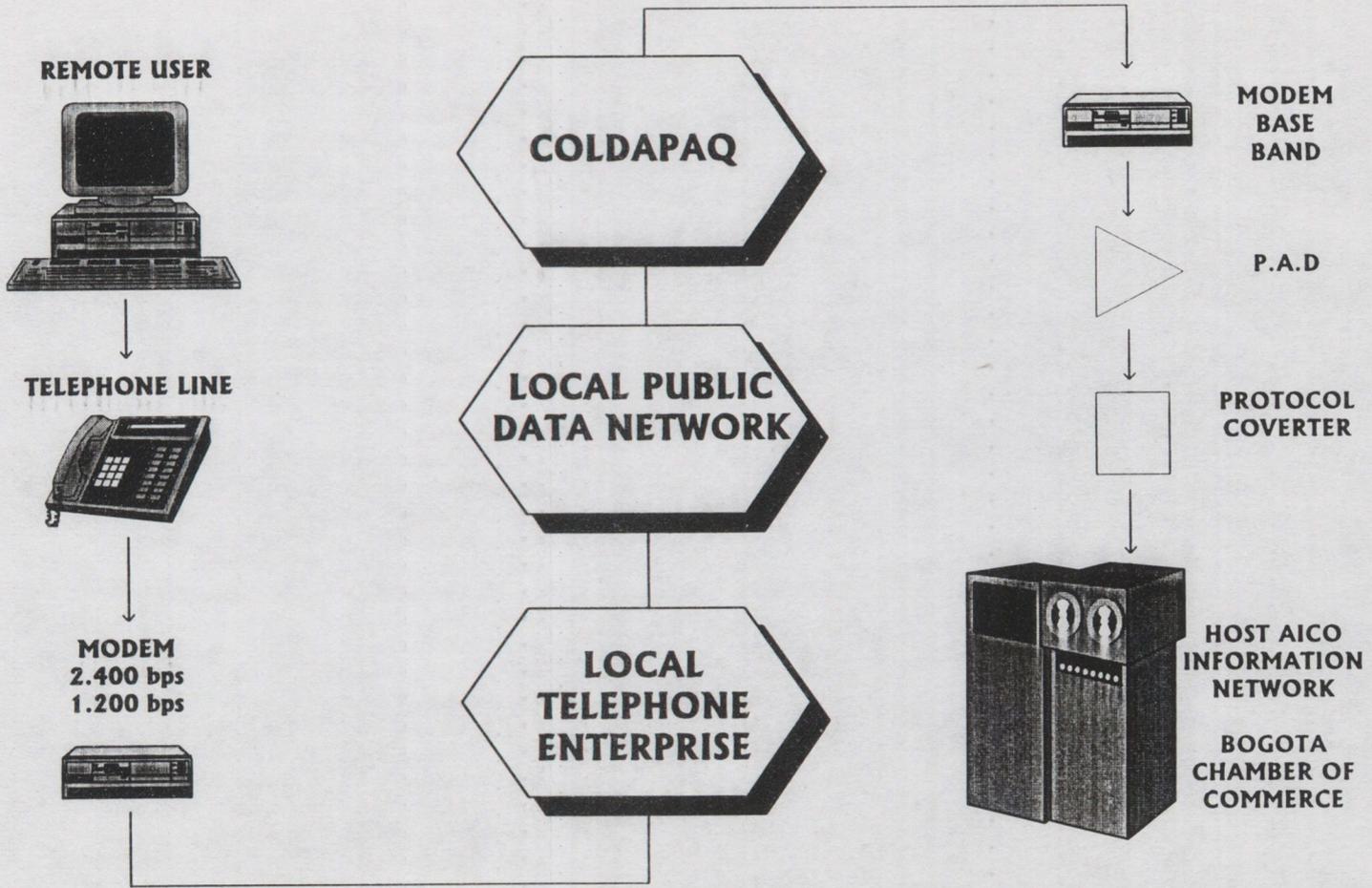


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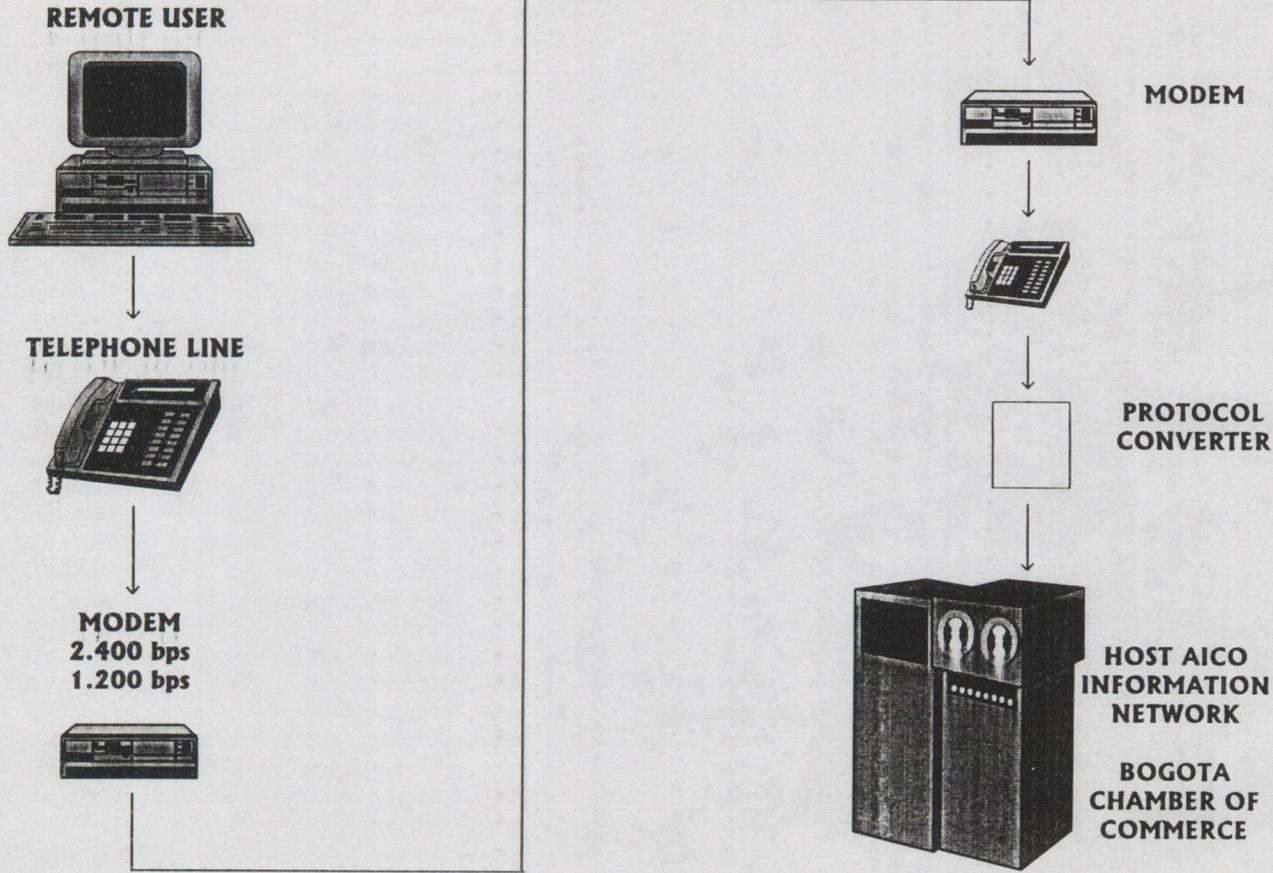
International connection  
through the Coldapaq  
Network

**Annex 4**



National or international  
connection via  
commuted line

**Annex 5**



## VII. Financial report

### Report of the Perez Guerrero Fiduciary Fund's contributions

**US\$50,000**

**(Project expenses)**

<b>ITEMS</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>
<b>Total investment</b>	21,500	20,000	8,000
Adviser	4,500	4,500	8,000
Human resources	7,500	7,500	---
Training	7,500	7,500	---
Miscelanea	2,000	1,000	---

### Expenses budget

From the total budgeted the Perez Guerrero Fund's contributions for 1992-1994, it was executed 84%, remaining 16% for engaging an external adviser specialized in telecommunications. This adviser will have in

charge to develop, together with the Latin American and the Caribbean chambers of commerce and industry representatives, the software installation for the production of specific information, to create programs, to determine the communication systems to be applied between the sub-regional unity and the national unities, and to establish communication with other important data-bases at a national and international levels.

CAMARA DE COMERCIO  
DE BOGOTA

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