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COMPARATIVE MANAGEMENT TECHNIQUES

IS/PAN/75/008

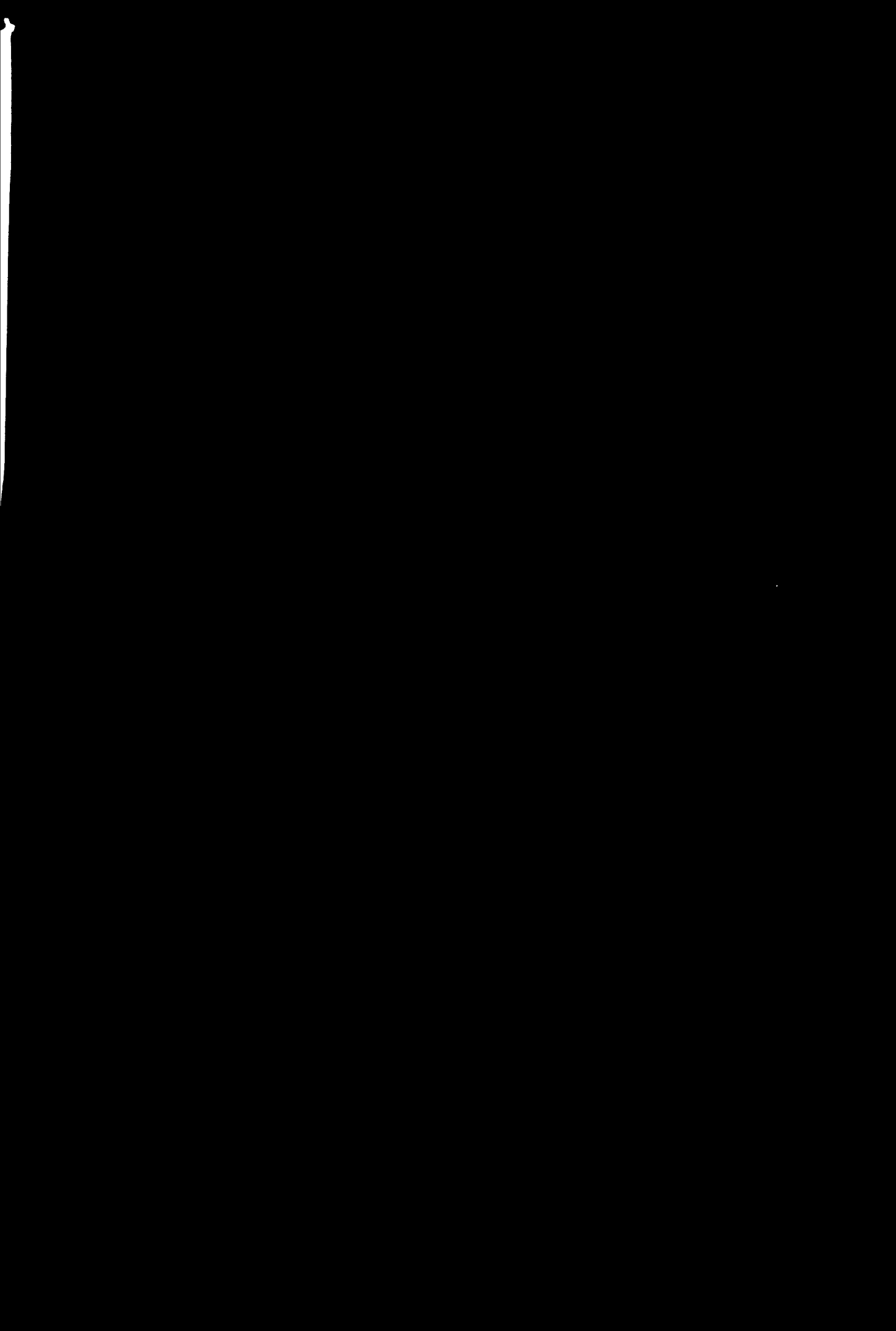
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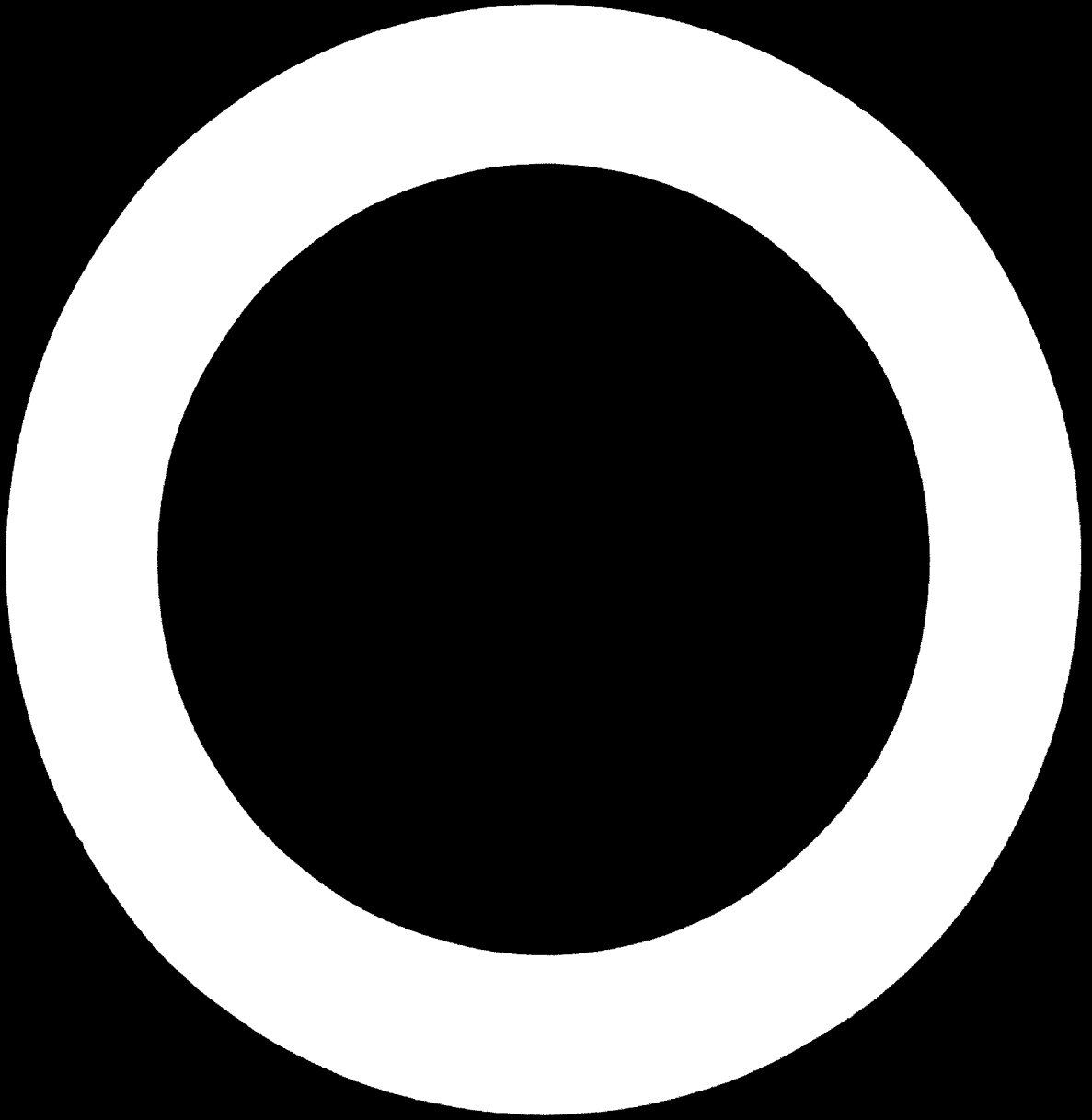
TERMINAL REPORT .

Prepared for the Government of Panama by the
United Nations Industrial Development Organization,
executing agency for the
United Nations Development Programme



United Nations Industrial Development Organization





United Nations Development Programme

COMPARATIVE MANAGEMENT TECHNIQUES

PANAMA

IS/PAN/75/003

Project findings and recommendations

Prepared for the Government of Panama
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of P. de Jong and Dan L. Morris,
experts in industrial management

United Nations Industrial Development Organization
Vienna, 1976

Explanatory notes

A comma (,) is used to distinguish thousands.

References to dollars (\$) are to United States dollars.

The following abbreviations are used in this report:

APEDE	Asociación Panameña de Ejecutivos de Empresa (Panamanian Association of Business Executives)
CESA	Centro de Estudios Superiores de Administración (Centre for Advanced Studies of Administration)
EDP	Electronic data processing
INTEL	Instituto Nacional de Telecomunicaciones (National Telecommunications Institute)
MIS	Management Information Systems

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- 2 -

CONTENTS

<u>Chapter</u>	<u>Page</u>
SUMMARY.....	4
INTRODUCTION.....	5
I. MISSION ACTIVITIES.....	6
II. FINDINGS.....	7
III. RECOMMENDATIONS.....	8

Annexes

I. Staff and participants, Comparative Management/MIS Technical Clinic, 1-5 September 1975, Panama.....	11
II. Project agenda.....	12
III. Organizations visited.....	14
IV. Proposal relating to government agencies and autonomous enterprises.....	15
V. Proposal relating to the Ministry of Industry and Commerce and the Ministry of Planning and Political Economy.....	16

SUMMARY

In September 1971, following a request of the Government of the Republic of Panama to the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO) sent experts, one in industrial management and organization and one in industrial management (systems engineering) to acquaint top-level government officials and industrialists with advanced management techniques that could be applied in the Panamanian environment.

The mission took the form of a seminar, conducted by the two experts over four consecutive evenings, which was organized by the Asociación Panameña de Ejecutivos de Empresa (APEDE) and attended by leading figures in Government and industry. These evening sessions were preceded by visits by the experts to government agencies and public and private enterprises.

Based on their experience during their mission, the experts prepared and submitted to the Government two proposals for long-term collaboration between UNIDO and the Government of Panama: one relating to government agencies and autonomous enterprises, the other relating to the Ministries of Industry and Commerce and of Planning and Political Economy. These proposals are annexed to the present report (annexes IV and V).

INTRODUCTION

In 1975, at the request of the Government of Panama, the United Nations Development Programme (UNDP) approved a project "Comparative Management Techniques" (IS/PAN/75/003) which provided a team of industrial management specialists to acquaint top-level industrialists and government officials with management techniques that could be applied to the Panamanian environment. The team was to consist of three experts: one on industrial management and organization, one on industrial management (systems engineering) and one on financial management. The sum of \$US 3,000 was allocated to the project. However, the financial expert was unable to join the team because of other commitments.

The team leader had proposed a management seminar to be designated as the "Comparative Management/MIS (management information systems) Techniques Clinic", that would run for three or four consecutive eight-hour days (that is, for 24 or 32 hours). It was to consist of a series of lectures and discussions. This proposal was adopted in part by the Asociación Panameña de Ejecutivos de Empresa (APEDE) and described in a brochure. However, this seminar, as proposed by APEDE to its membership, was to be for only 12 hours, that is, from 5 p.m. to 8 p.m. on four consecutive evenings. Furthermore, the efforts of APEDE to organize the seminar and ensure a good attendance were hampered by several postponements. In view of these difficulties, the team leader decided that the seminar could attain its desired success and impact if the time before the sessions (8 a.m. to 5 p.m.) was devoted to working meetings with as many industrial and government officials as possible.

I. MISSION ACTIVITIES

The staff of the Comparative Management/MIS Techniques Clinic and the participants are listed in annex I; the project agenda is presented in annex II. At the suggestion of the representatives of APEDE, the evening seminars emphasized management and the design and implementation problems associated with the advanced use of modern computers. All of the participants had strong interest in these subjects because their government departments and enterprises were all in the stages of planning, implementation or broader development of manufacturing control or information systems.

For the purpose of the seminar, the UNIDO experts developed an actual case history of the design and implementation of a data base system that was applicable to service organizations such as utilities and to government agencies such as the Ministry of Industry and Commerce, as well as to manufacturing organizations. Particular emphasis was laid on the following aspects of the problem:

- The responsibilities of management
- The conservation of resources
- The modular or building-block approach
- Comparison of design approaches for government-owned and privately owned industries, noting their similarities and differences
- Consideration of specific practical problems that were encountered by the participants in their own environments

Indicative of the favourable reception engendered by this approach was the fact that all of these evening sessions lasted much longer than scheduled. Indeed, the duration of the sessions was limited more by the staying power of the experts than by the interest of the participants.

After having learned the specific interests of the participants during the first evening session, it was suggested and agreed that the experts would make work visits to most of them and their managers during the day. These visits proved to be very fruitful; they enabled the experts to become productive in the sense that they could be of practical assistance in solving actual systems problems. Moreover, these working visits served effectively to create a far more rapid understanding of the environment, its problems and receptiveness to development proposals. The organizations visited and their managers are listed in annex III.

II. FINDINGS

The findings recorded here are based on the observations of the experts during discussions with government officials, during visits to government and private enterprises, and during discussion sessions in the seminar. It is to be expected that, the enterprises and organizations represented at the seminar are reasonably representative of Panama and that the pertinent facts about management, management techniques, and hardware are excellent.

Government departments of medium-sized and larger organizations, and some government departments, are keenly aware that the current development of the managerial environment calls for the application of new management techniques, specifically: management by objectives; project management techniques; applied operations research; and systems management. These techniques are obtainable with the available hardware.

Management is confronted with the dilemma of having few places to which to turn to obtain practical implementation-oriented assistance in making the required changes. At the same time, it is aware that it lacks the financial resources to undertake major projects of this kind without external assistance.

Some departments of the Panamanian Government, namely the Ministry of Planning and Political Economy, the Comptroller General's Office and the Ministry of Industry and Commerce are aware that they must provide and/or develop the means by which improved national planning and management of its activities and resources can be achieved. There is keen awareness of the need to make access to the great volume of reliable information on which informed and socially acceptable decisions can be based. In addition, the need to measure national results and the desirability to provide both Government and industry with pertinent statistical data must be realized.

Informed government officials are aware that these needs point towards the employment of computers and MIS.

In the private sector, management is experiencing major economic pressure to undertake rapidly the necessary steps to implement up-to-date computer technology and information systems. The need to improve management control over

scarce resources is recognized. Management is aware of the theoretical possibilities in establishing and maintaining optima for the productive output of men and machines and of inventory investment levels.

The avenues towards achieving such goals are opened by the employment of modern computers. All of the medium-sized enterprises visited by the team had full access to the latest computing equipment but very limited access to the technical know-how and experience required to employ it at anywhere near its capacity. In itself, this situation could be the source of a less than desirable return on the investment in the equipment.

It should be made clear here that wherever it went, the team was impressed with the urgency with which both the private and public sectors are pursuing systems implementation and the establishment of in-house organizational competence. Evidence of some early success in this area is seen in the financial planning and control system in the office of the Comptroller General, in the efforts expended in INTEL (the state telephone corporation) to establish an integrated information system and in the initial implementation of computer systems in all of the enterprises that were visited.

The approaches to the implementation of systems and systems technology are varied. Government organizations are beginning to become involved with large-scale systems, whereas private industry appears to lean towards the use of minicomputers. The office of the Comptroller General, for instance, employs an IBM-370 computer with numerous on-line terminals located in various ministries and in the office of the President. The system uses the IBM OSVS (Operating System Virtual Storage) operating system and has implemented the IBM CICS (Communicative Information Control System).

In private industry the team found, primarily, minicomputer installations such as the IBM System 3, that are excellently suited for medium-sized enterprises. All had begun with such obvious and everyday applications as payrolls, bookkeeping (ledgers) and inventory control.

In neither case, however, were the implemented applications on a par with the quantitative or technological capacity of the equipment. The limitations quite clearly result, on the one hand, from management's lack of familiarity with the theoretical possibilities of the equipment and, on the other, by the low level of the practical know-how of the specialized personnel.

It was remarkable, however, that all of the senior management were aware of this problem. Wherever the team went, it found that some effort to start correcting this situation had been taken. Invariably, the information systems function reported directly to the chief executive of the organization. The presence of some of these executives at the seminar was an excellent illustration of the general awareness of the importance of this reporting relationship.

The pace at which the most sophisticated development and implementation of management systems is now taking place is determined solely by the development of human resources. The experience gained by others, transferred to a new environment to the Republic of Panama, could considerably accelerate the development of these human resources, while at that same time providing tangible up-to-date end-results.

Similarly, the most significant needs in the Republic of Panama, as determined during the brief period of the mission, are:

- (a) To provide assistance to the Panamanian managers, in both the private and public sectors, in applying current managerial approaches to their organizations' involvement in the development of MIS, that is computer-based decision-making information systems;
- (b) To provide assistance to the data-processing manager in applying current development and implementation techniques relative to MIS, optimization approaches, and simulation methods.

Through the management association APEDE, the Panamanian executive has created a viable forum and a vehicle for professional exchange and cross-fertilisation of ideas. The possibilities thus opened are amply illustrated by the fact that the seminar held during this mission was hosted ably by APEDE, and that this association had instantaneous access to the potential participants.

Panama has similar professional organizations in such fields as law, medicine and accounting. The growth of professional activities often runs parallel to that of the relevant professional societies. The establishment of such societies in the information processing and computer technology area is an established fact in some other countries. The computer managers in Panama specifically mentioned that they felt the lack of a forum or a place for exchanging professional ideas. It is clearly time to do something in this direction in Panama. It seems that APEDE could be instrumental in the formation of such a professional organization.

III. RECOMMENDATIONS

The team of experts made the recommendations detailed below.

1. The Government of Panama should secure assistance for its agencies and autonomous enterprises in the design and development of a large-scale, integrated, computer-based information system (annex IV).

2. Technical assistance should be secured specifically for the Ministry of Industry and Commerce in developing and implementing a national data bank and retrieval system directed at computer storage and retrieval of data within the scope of this Ministry that are of national, economic, and commercial interest (annex V). These developments and implementations would also serve the other ministries and autonomous agencies, and especially the Ministry of Planning and Political Economy.

3. The means should be provided, through discussions, seminars, studies and documentation, for other Panamanian state-owned enterprises, government departments and possibly private enterprises to obtain access to the experience thus gained in order to attain the greatest multiplier effect of the efforts expended.

The above recommendations open broad possibilities for international technical co-operation. Details beyond the two proposals (annex IV, annex V) would have to be worked out between UNDP and the Government of Panama. Any additional interrelated assistance could be adopted as offshoots of the main project. On the basis of its role and experience in current assistance projects in the field, UNIDO would be the logical agency to carry out these proposals.

Annex I

**STAFF AND PARTICIPANTS, COMPARATIVE MANAGEMENT/MIS TECHNIQUES
CLINIC, 1-9 SEPTEMBER 1978, PANAMA**

UNIDO experts

Fred de Jung (team leader), senior industrial management and organization expert

Dan L. Morris, expert on computer-based manufacturing information systems (MIS)

APEDA (Asociación Panameña de Ejecutivos de Empresa) and collaborators

Marcos J. de Obaldia, Director of APEDA

Antonio Ibarra, UNIDO expert

Participants

Ana Cecilia J. Arango (Cfa. Panameña de Aceites, S.A.)

César Castro (Cfa. Panameña de Aceites, S.A.)

Rosa Kant (Corporación Azucarera "La Victoria")

Orlando Miranda M. (INTEL)

Jorge Alcibiades Núñez G. (INTEL)

Roberto Zauner (Concreto, S.A.)

Enrique O. Othón E. (Concreto, S.A.)

James E. Smith (Consultant)

Ignacio Rolino (Ministry of Industry and Commerce)

ANNEX II

PROJECT AGENDA

<u>Dates and times</u>	<u>Activities</u>
<u>1 September</u> Daytime	Conferences with: Dinas Pires, UNEP Deputy Resident Representative
Evening	Marcos J. de Obaldia, Director, APDES Comparative Management/MIS Techniques clinic
<u>2 September</u> Daytime	Conferences with: Ignacio Molino, Director, Centre for Industrial Productivity and Development (Centro de Desarrollo y Productividad Industrial)
Evening	José María Cabrera, Ministry of Commerce and Industry Comparative Management/MIS Techniques clinic
<u>3 September</u> Daytime	Conferences with: Carlos E. González de la Lastra, General Manager, Administración de Seguros, S.A. and President, APDES Dinas Pires, UNEP Deputy Resident Representative José Sokol, Vice Minister, Ministry of Planning and Political Economy Damián Castello, Comptroller-General, Republic of Panamá Roberto Zauner, General Manager, Concreto, S.A.
Evening	Enrique O. Othon E., Data Processing Manager, Concreto, S.A. Comparative Management/MIS Techniques clinic

Dates and times

Activities

4 September

Daytime

Conferences with:

Rolando E. González Salerno, Administrative Assistant to the Director General and Director of Finance

Jaime J. Fábrega, General Manager, Cfa. Panameña de Aceites, S.A. and Cfa. Istmica de Plásticos, S.A.

César Castro, Chief, Data Processing, Cfa. Panameña de Aceites, S.A.

Orlando Miranda, Director of Administration, INTEL

Jorge A. Núñez, Chief, Data Processing, INTEL

Evening

Comparative Management/MIS Techniques clinic

Annex III

ORGANIZATIONS VISITED

APEDA (Asociación Panameña de Ejecutivos de Empresa). An association of Panamanian executives. Marcos J. de Obaldia (Director); Carlos E. Gonzalez de la Lastra (President)

Ministry of Planning and Political Economy. José Sokol (Vice Minister)

Ministry of Industry and Commerce. José María Cabrera; Ignacio Molino (Director del Centro de Desarrollo y Productividad Industrial)

Comptroller-General's Office. Danián Castillo (Comptroller-General, Republic of Panama)

INRE (Instituto de Recursos Hidráulicos y Electrificación). State-owned company responsible for basic utilities; gas, water and electricity. Rolando E. González Salerno (Administrative Assistant to the Director General and Director of Finance)

INTEL (Instituto Nacional de Telecomunicaciones) State-owned company responsible for telecommunications. Orlando Miranda (Director of Administration); Jorge A. Baines (Chief, Data Processing)

Concreto, S.A. Privately owned company. Roberto Zauner (General Manager); Enrique O. Othon E. (Data Processing Manager)

Cía. Panameña de Aceites, S.A. Privately owned oil company. Jaime J. Párraga (General Manager); César Castro (Chief, Data Processing)

Annex IV

PROPOSAL RELATING TO GOVERNMENT AGENCIES AND AUTONOMOUS ENTERPRISES

Project objectives

To assist the Republic of Panama (Ministry of Industry and Commerce and the Ministry of Planning and Political Economy) in developing and implementing an EDP information system. This recommended UNDP assistance would have two general aspects: managerial and technical.

Managerial assistance would be provided at four Panamanian management levels: ministerial, enterprise directorate, enterprise operating management and enterprise EDP management.

Technical assistance would be provided to two groups: enterprise EDP organization and enterprise systems-level personnel.

Project scope

Managerial and technical assistance would be provided to state and/or autonomous agency enterprises.

Managerial and technical assistance would be provided to support the proposed new integrated information systems of the enterprises.

Recommended managerial assistance would be directed to staff-type support; that is, advice, recommendations, performance related project studies and assistance in the definition of management objectives as viewed by a computer-based MIS.

Recommended technical assistance would be directed to:

EDP and user management guidance

Systems analysis and design or systems architecture

Data base programming expertise support

Duration of support would be limited by UNDP/Panama funding arrangements. Most logically, funding should be accomplished in time increments with the end-objective being full project support. This would mean that support would be carried all the way through successful project implementation.

Areas of assistance

Assistance provided to Panamanian management should be directed at helping it translate its objectives into an integrated MIS. The translation process would be required between each level of management and between management and the EDP development group.

Management objectives, translated into an integrated MIS, means such things as:

- The definition and design of data bases and data elements
- Management report formats, data entry/capture methods and procedures
- Quantitative analysis of data volumes, frequencies, points of origination and termination
- Developing efficient channels of communication between management of the organization and the EDP development group

Recommended technical assistance would be aimed at such things as:

- Developing effective EDP project control techniques
- Proper use of documentation standards
- Development of an integrated hardware-software data base-application program mix (usually called "system architecture design")
- Programming assistance in the implementation of the systems data base

Specific assistance from UNDP

Proposal duration and starting date

The recommended duration of this project would be from two to three years. Based on current needs, the project should commence in 1976.

Assignment of international staff

	<u>Duration (months)</u> ✓
Project Manager - management organization MIS expert	36
EDP-MIS analysis and design expert	36
Data base programmer	30

✓ To be committed in increments of at least 12 months.

UNDP-provided supplies and equipment

None required.

Specific assistance from the Republic of Panama

Assignment of local staff

(All full-time for duration of project. Number to be determined by the enterprise.)

Data processing manager

Systems analysts

Programmers

Full-time participating users enterprises

Secretaries

Data base/documentation clerk (2)

Annex V

PROPOSAL RELATING TO THE MINISTRY OF INDUSTRY
AND COMMERCE AND THE MINISTRY OF PLANNING AND POLITICAL ECONOMY

Project objective

To assist the Republic of Panama, and specifically the two ministries, in developing and implementing an MIS. The recommended UNDP assistance would consist of two general elements: (a) managerial and (b) technical.

Managerial assistance would be provided to three Panamanian management groups:

The Ministry of Planning and Political Economy

The Ministry of Industry and Commerce

A data processing group associated with the subject ministries MIS

Technical assistance would be provided to two groups:

The Ministry of Industry and Commerce

A data processing group.

Project scope

Managerial and technical assistance would be provided to the Ministry of Industry and Commerce.

It would be directed towards helping the Ministry to define, design, develop and implement an MIS.

The scope of the MIS to be developed has not yet been defined. However, the general intent is that such a system would provide assistance to both the public and private sectors of the Republic of Panama. The results of this assistance would be measured in greater development of national resources, improved national productivity and greater social benefits.

Recommended managerial assistance would be in the form of advice, recommendations, performance of related project studies and assistance in definition of ministry objectives as viewed by a computer-based MIS.

Recommended technical assistance would be of two general categories:

National statistics: foreign expertise in such areas as national statistics and national coding structures would be provided. This expertise would be required to design a national data base system.

UNDP technical assistance would provide EDP and user management planning, systems analysis and design (or computer architecture) and data base programming expertise support.

The duration of support would be limited by UNDP/Panama funding arrangements. Most logically, funding should be accomplished in time increments with the end objective being full project support. This means support would be carried all the way through initial implementation.

Areas of assistance

Assistance provided to the Panamanian management should be directed at helping it to translate its objectives into an integrated MIS. The translation process would be required between each level of management and between management and the EDP development group.

Management objectives, translated into an integrated MIS, include such things as:

- The definition and design of data bases and data elements
- Management report formats, data entry/capture methods and procedures
- Quantitative analysis of data volumes, frequencies, points of origination and termination
- Developing efficient channels of communication between management and the EDP development group

Recommended technical assistance would be aimed at such things as:

- Developing effective EDP project control techniques
- Proper use of documentation standards
- Development of an integrated hardware-software-data base-application program mix (often called system architecture design)
- Programming assistance in the implementation of the systems data base
- The identification and design of what public and private national sector data should be collected, how the data should be reduced and how it should be managed within the systems data base

Specific assistance from UNDP

Proposed duration and starting date

The recommended duration of this project would be from two to four years. Based upon the current position of the Ministry of Industry and Commerce the project should start in 1976.

<u>Assignment of international staff</u>	<u>Duration</u> <u>(months) a/</u>
Team leader/MIS expert	36
National statistics expert	36
EDP-MIS analysis and design expert	36
Data base programmer	36

UNDP-provided supplies and equipment

None required.

Specific assistance from the Republic of Panama,
Ministry of Industry and Commerce

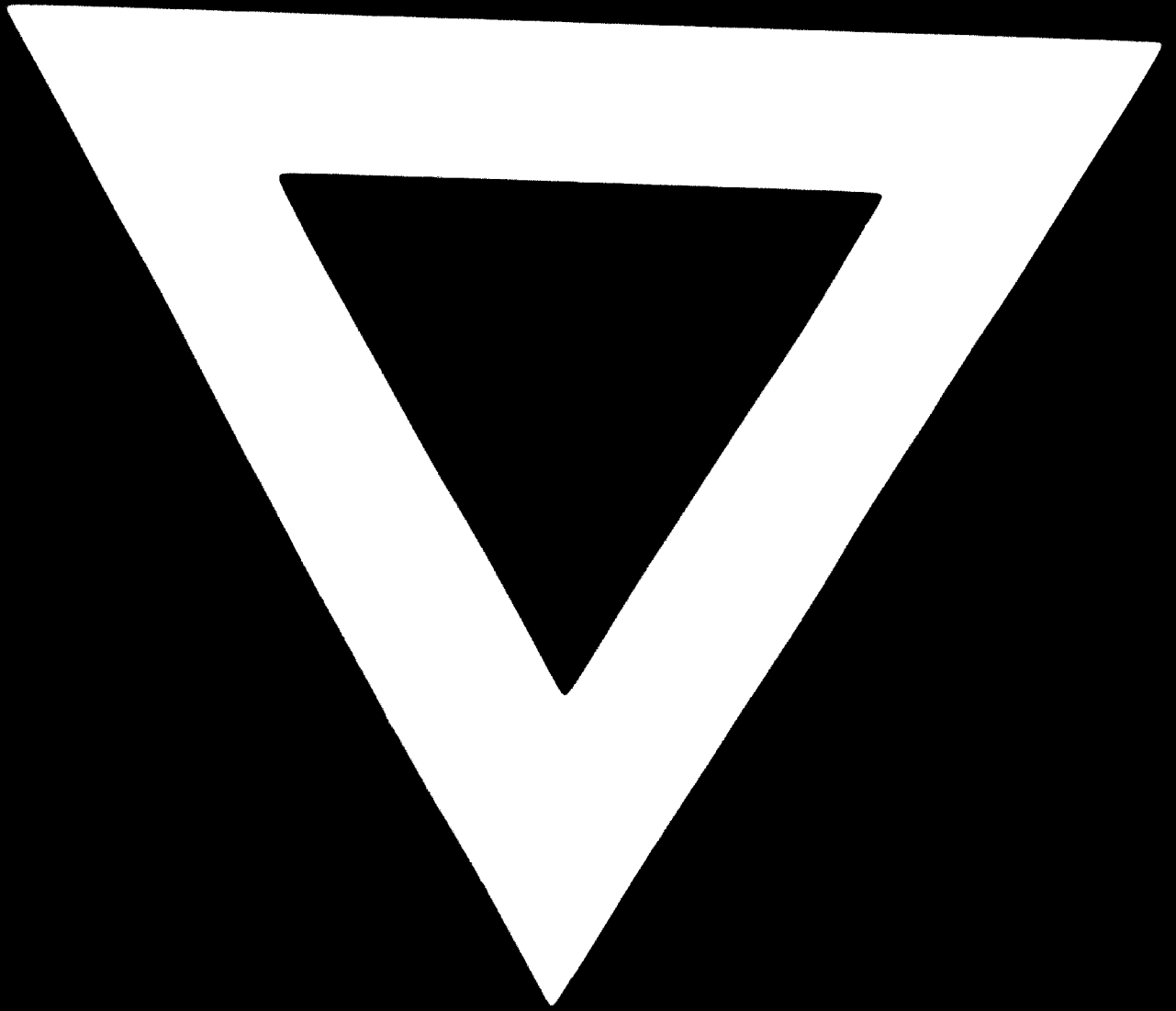
Assignment of Local Staff

- Modern computer center with appropriate staff
- Data processing manager
- Systems analysts
- Programmers
- Full-time participating Ministry user representatives
- Secretaries
- Data base/documentation clerks

The number of personnel in each of the last four categories can be established after further study of the proposed NIS.

a/ To be committed in increments of at least 12 months.





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