

PN-AAP-156  
ISN 33148

A SURVEY OF SCIENTIFIC AND TECHNOLOGICAL  
INFORMATION RESOURCES IN  
SELECTED EGYPTIAN ORGANIZATIONS

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NSF Contract INT-7924187  
USAID PASA NF/EGY-0016-7-77

September 1981

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National Information and Documentation Centre  
Academy of Scientific Research and Technology  
Cairo, Egypt

## EXECUTIVE SUMMARY

The report presents results of a 1980 survey of scientific and technological information (STI) resources held by 160 Egyptian organizations. The resources surveyed include information manpower (professional and clerical), information activities (publishing, library technical services, user services, consulting, and education), holdings of printed and non-print materials, equipment, physical facilities, and budgets.

The objective of the survey was to obtain an overall impression, rather than a census, of STI resources possessed by Egyptian organizations that are active in the provision and servicing of recorded STI, as a background to the design of a national system of public information services. The 160 organizations represented a non-random sample from an estimated population of 1200 relevant Egyptian organizations, selected because they were known to be involved in some aspect of STI operations. The survey was designed to allow data aggregation by performance sector (production, higher education, and general service), 31 performance subsectors, and by type of ownership (public, government, and private). Although the survey provides useful profiles of information resources in the public and government-owned sectors, no attempt is made to extrapolate the findings for all of Egypt.

The survey results show that in 1979, the 160 organizations employed a total of 3,172 FTE (full-time equivalent) information workers, or 1.1 of their combined labor force. According to position levels, 5 percent of the information workers were managers, 11 percent professionals, 72 percent technicians, and 11 percent auxiliary staff. Eighty-three percent of all managers and 98 percent of all professionals held university degrees; of their combined number (462), 27 percent held degrees in information-related disciplines. Ninety percent of the information technician category had up to 6 months of training in the field.

Ninety-nine percent of all information labor force were active in three areas: publishing (67 percent), technical services (19 percent), and user services (13 percent). Whereas technical and user service functions are distributed across all three performance sectors, over 90 percent of all publishing is carried out in one General Service subsector (education).

As regards technical services, 53 percent of their information workers are in acquisitions, 17 percent in cataloging, 9 percent in computing, 5 percent in reprography. Services to information users are traditional: 93 percent of their staffs are in reference work. Indexing, abstracting, lexicographic and bibliographic specializations and manpower are virtually non-existent.

The survey documents in part the level of use of STI resources by the information clientele of the 160 organizations. In 1979, they had 490,654 registered readers; answered 483,770 reference questions; prepared 318 bibliographies; photocopied 571,002 pages; transacted 4,851 interlibrary loans; loaned 329,744 volumes; and translated 151 documents. A total of 3,900 database searches were requested in 1979 (by four organizations), two-thirds of which were in medicine.

The 160 organizations report that in 1979 they added 92,000 volumes to their holdings, of which 75,000 were cataloged. Their overall holdings appear to be approximately 2 million volumes, half of which was held by the higher education sector. (Note: the survey did not cover the National Library or school libraries.) Together the organizations surveyed subscribed to 8,000 current periodicals (the degree of duplication was not measured); 60 percent of all periodicals held are in English, 33 percent in Arabic. Microform holdings and micrographic equipment were rare. Twenty-five percent of the 160 institutions either possess or have access to computers. Virtually all organizations allocate some space for information activities and users (on the average, 225 square meters for the fictional "average" organization of 1,800 employees).

Survey data regarding training activities and budgets are open to question. Although some 2,500 individuals were reported having received about 7,300 hours of university-level instruction or in-service training, the figure apparently does not include degree students. No useful data were collected regarding domestic fiscal resources for information activities; as a rule, budgets of the organizations surveyed do not itemize such figures.

The report disaggregates these and other results by performance sector and type of ownership. It also briefly annotates ten smaller, supplementary surveys performed in parallel.

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## PREFACE

The design and implementation of an Egyptian system of scientific and technical information services, intended to support the country's socioeconomic development, is part of an Applied Science and Technology Program under a Project Grant Agreement between the Egyptian Academy of Scientific Research and Technology and the U.S. Agency for International Development. Phase I of the project (November 1979–October 1981) consists of a system analysis and design study.

The project is a collaborative effort of Egyptian and U.S. organizations. The Egyptian Academy of Scientific Research and Technology, with its National Information and Documentation Centre, is the Egyptian executive agency. Egypt-based activities are guided by an Advisory Committee comprised of senior Egyptian experts and headed by the President of the ASRT. Technical assistance in Phase I is supplied by a team of U.S. consultants under a National Science Foundation contract (INT-7924187) to the Georgia Institute of Technology. Planning and project management assistance is provided by the National Science Foundation under a U.S. Agency for International Development Participating Agency Service Agreement.

The publication of this report does not imply official concurrence of the sponsoring agencies with the views and opinions expressed therein.

## ACKNOWLEDGEMENTS

This unprecedented nationwide study of Egyptian information resources was conducted under the auspices of the Egyptian Academy of Scientific Research and Technology (ASRT). Former ASRT President Prof. Dr. Hassan Ismail and his successor, Prof. Dr. Ibrahim Badran, have given the study high priority and their personal support.

Executive guidance of the study was espoused by a Steering Committee of the ASRT, several members of which carried major responsibilities: Prof. Dr. Ahmad Gad, Director of the ASRT's National Information and Documentation Centre (NIDOC), whose organization housed the study implementation; Dr. Mohamed A.K. Madkour, Director-General of the Al-Ahram Microfilming and Organization Center, who coordinated the efforts of the various Egyptian parties involved in the study; and Prof. Dr. Ahmad Kamal Azziz, Head of Engineering at Cairo University whose Computation Center assumed responsibility for the survey data processing. Substantial contribution to the study design were also made by other members of the Steering Committee: Prof. Dr. Ossama El-Kholy, then Deputy Director of the Arab League Economic, Cultural and Scientific Organization; Prof. Dr. Saad El-Hagrassy, Dean of Cairo University's Department of Librarianship; and Prof. Dr. Mohamed I. Younis, Head of the Systems and Information Sciences Laboratory of the National Research Center.

The number of individuals who participated in various technical phases of the study is too large to be enumerated; it includes information professionals from NIDOC, IDCAS, programmers from Cairo university, and surveyors from the Central Agency for Public Mobilization and Statistics (CAPMAS). Explicit recognition for very substantial contributions belongs to Mr. Adel El-Duweini (NIDOC) and Miss Ebtasam Nofel (Cairo University Computer Center). For the same reason, I wish to acknowledge the efforts of my U.S. colleagues who participated in the study design; Henry N. Camp, David Hershey, Davis McCarn, Dennis McDonald, and Homer Sarasohn. Miss Ann Lewis edited and produced the master copy of this report with the aid of a micro-computer.

All participants in this study express their appreciation to the executives and key staff members of the Egyptian agencies and organizations who made themselves available for interviews, and who often took considerable pains to gather the data requested of them. It is our sincere hope that they will find the results of their efforts useful.

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## I. INTRODUCTION

It is axiomatic that the process of developing or strengthening public, nationwide information services should begin with two types of assessments, that of the information needs and requirements of the presumed clientele of such services, and that of the information resources that already exist in the country (Vilentschuk, 1975; NATIS, 1976; Gray, 1978; Unesco, 1981). Together with a statement of national policies or overarching objectives regarding the information domain, the two assessments largely shape the system design activity as well as determine the nature of the services to be developed.

This report documents the design, implementation and results of a study that sought to profile selectively the information resources of Egypt. The study was part of a program of development of a national system of selected information services in that country (Madkour, 1981).

The report has the following organization. The introductory Chapter I is concerned with methodology, and with interpretation of the survey findings. Chapters II-IV describe the results of the survey. Chapter V presents the conclusions of the study, and is followed by Appendices A-D which tabulate various characteristics of the organizations surveyed and present the survey instrument. For ease of reading, the tables pertaining to a chapter are gathered at the end of that chapter.

### 1. Delimitation of Terms

In order to provide for a better understanding of the results of the study it is desirable to explain briefly the meaning or delimitation of several terms used in this document: assessment, information domain, and information resources.

"Assessment" may have a variety of connotations. In the present study assessment was not taken to mean "national census"; that is to say, the study did not intend to enumerate the totality of information resource items in Egypt. Although such an objective would be worthwhile and may be pursued at some later date, it was considered too ambitious. Exhaustive

surveys are a difficult undertaking, particularly in developing countries; Egypt, where data collection and information seeking were until recently viewed with some apprehension (El-Kholy, 1980), is no exception.

Rather, the objective of the study was to gain an operationally useful appreciation of the strengths and weaknesses of the resources in the national information domain, and of their approximate distribution among or allocation to various segments of organized society. The latter aspect was of significance because of the Egyptian intention to develop national information services whose primary purpose is to support the country's social and economic development -- an intention which implies a priority ranking of such segments.

The "information domain" is the population for which the study sought such an appreciation. It would perhaps have been attractive to take this term as being synonymous with the concept of the "national information sector" (Porat, 1977), particularly in view of the growing significance of the latter as the fourth sector of national economies. However, the sheer size of this sector -- estimated to encompass over 25 percent of the Egyptian labor force (El-Haddad, 1981) -- as well as its complexity and amorphousness would have required an approach whose elaborateness would have far exceeded the time and effort allowed for the present study. The "information domain" was thus delimited to comprise legal bodies ("organizations") engaged in the servicing of recorded scientific/technological knowledge for public use --i.e., the recording, organization, management, and transfer of this knowledge, and assistance in its usage.

Unfortunately, since no similar surveys of such organizations had previously been carried out in Egypt, the size and composition of this population were unknown. Specifying it would have required approaches (such as random sampling of all legal bodies of Egypt) whose effort far exceeded the means of the study. Consequently, the approach chosen was to identify and survey a subset of legal bodies of Egypt that met certain specified criteria. The methodology of the survey is described in the next sections of this chapter.

Finally, an operational specification of the term "information resources" was necessary. Given the rationale of the study, a broad definition was indicated, and the following types of resources were targeted for inclusion in the project:

- o Policies and legislation pertaining to information activities;
- o Professional and paraprofessional labor force in the information domain;
- o Information activities -- programs, functions and services provided by Egyptian organizations;
- o Information materials and media, both printed and non-print;
- o Information technologies;
- o Physical facilities (space);
- o Financial resources, including internal as well as foreign assistance funds

Excluded from the study were non-public information resources intended for largely internal or administrative functions (such as accounting, process control, industrial automation, etc.), as well as classified information resources. The major, and regrettable, effect of this exclusion is that the study did not account for the domain of general computing and telecommunications, except insofar as they are involved in the servicing of public, recorded knowledge.

## 2. Overall Methodological Approach

The method used to study the information resources was the survey. Survey data was gathered from available documentation, by institutional analysis, and by interviews using questionnaires. The aspiration was to develop, whenever feasible and useful, machine-oriented databases storing survey data in a form that is suitable for analysis and updatable.

The entire study consisted of one "primary survey" and a number of secondary, supplemental surveys. The primary survey is described in this

document. The secondary smaller surveys were each devoted to some aspect of the resource issue. The results of these supplemental surveys were issued as internal project documents intended to assist the system design and implementation activities, and they are not reiterated here except for the following brief annotations.

- o A documentary survey was used in a study of information-related policies and legislation carried out by a task group of the project's Egyptian Steering Committee. The effort produced data showing existing legislation in Egypt to cover such traditional subjects as authorship rights, printing, compulsory depositing of literary works, and assigning responsibility for such activities as statistical data collection, scientific and technical documentation, the National Library, certain computing facilities, and mass communications (Sowallem, 1980; Lotfy, 1980). Based in part on this survey, an extended national "information policy" has been proposed for Egypt (Adams, 1981).
- o Institutional survey and analysis were applied to the National Information and Documentation Centre (NIDOC), the central agency established and charged with a broad agenda of activities and services in the information domain. The analysis (McGarr, 1980) concentrated not only on technical activities of NIDOC but also on issues of governance, management and administration, so as to grasp the degree to which there existed a national executive mechanism for the information domain, and to gauge its apparent effectiveness or potential.
- o A background survey covered the Egyptian publishing world (Sowallem, 1980). It provided insight into the organization of Egyptian publishing of monographs, learned society journals, government documents, newsprint, technical reports, statistical databases, as well as standards, patents and textbooks.
- o An annotated guide to catalogs, directories, and other sources describing printed Egyptian materials was produced (El-Hagrassy, 1980), identifying some 50 published and unpublished items and describing Egyptian current efforts at bibliographic control.

Some of these sources were of assistance in selecting the survey sample, others for comparative purposes in assessing the survey data.

- o A survey was conducted seeking to assess the extent and nature of foreign assistance to Egypt in the information domain (El-Duweini, 1981). This document- and interview-based study has identified both donor and recipient organizations, and it documented the purpose of such programs of assistance. The survey instrument used is shown in Appendix B. A need for a clearing-house function in this area clearly emerged from this survey.
- o A documentary survey of vocational training in information work identified six institutions offering certificates for attendance of their programs. The brief report of this survey (Anon., 1981) supplements an earlier survey and review of Egyptian library education, carried out under other auspices (Palmer, 1978).
- o An analysis of a sample of scientific papers published in Egyptian journals compared the half-life of their citations with those of papers in international journals (McCarn, 1980). The results support conclusions of similar studies in other developing countries, and imply that Egyptian authors have poor access to current research results.
- o A supplemental survey was carried out of several new or planned information system/services known to Egyptian information experts; the survey instrument is shown in APPENDIX D. The organizations interviewed included appropriate units in the Ministry of Reconstruction and New Communities, the Ministry of Electricity, the Ministry of Health, the Foreign Ministry, the Agricultural Documentation Centre of the Ministry of Agriculture, the National Investment Bank, and the General Authority for Investment and Free Zones. The majority of these systems were found to be in various stages of planning or development. Not covered by this survey was the Central Agency for Public Mobilization and Statistics (CAPMAS) which maintains national demographic and statistical databases and was in the process of developing remote

access capability to its central computer.

Egypt currently participates in two international information systems: the TIES system developed by the United Nations Industrial Development Organization (UNIDO) and containing data on the participating countries' foreign contracts; and the AGRIS system operated by the U.N. Food and Agricultural Organization (FAO) to which Egypt contributes abstracts of domestic literature on agriculture.

- o A relatively extensive survey conducted in 29 Egyptian libraries assessed the extent of their holdings of periodicals, indexing and abstracting journals, and reference books in three areas: agriculture, medicine, and science/technology (Zehery, 1981). The survey was intended to gather data for evaluating strategies of strengthening Egyptian national document holdings in these areas (McDonald, 1981). As a useful byproduct, the survey produced data for a preliminary union list of these categories of holdings.
- o Last but not least, a descriptive paper was written on current Egypt (Diab, 1981), in which the authors summarized information and principal data on the country's geography, history, government and legal systems, demography, economy, public services, and the system of national planning.

### 3. Survey Methodology

The methodology of the primary survey of Egyptian information resources first required consideration of the ways in which the organizations surveyed would be classified for purposes of data aggregation. The second issue was the method of selecting the survey sample.

Types of classification. The primary survey used two kinds of categorization for aggregating the data collected: classification by sector of performance, and classification by type of ownership of the organizations surveyed.

The sectoral classification model used distinguishes between three performance sectors: Production, Higher Education, and General Services (Murphy, 1979). The description of these three performance sectors, loosely excerpted from a Unesco guidebook, is as follows (Unesco, 1977):

The production sector comprises domestic and foreign industrial and trading enterprises situated within the country which produce and distribute goods and services for sale, and institutions directly serving them with or without contract, whatever their form of ownership (public and private). It also comprises governmental, non-governmental and non-private institutions most or all of whose science and technology activities indirectly serve one or more of the categories or classes of activities with a two- or three-digit classification in the ISIC. In countries with a centralized economy, industrial institutes attached to the ministries responsible for the different branches of the national economy should be classified in this category of institutions.

The Higher Education sector comprises establishments of education at the third level which require as a minimum condition of admission successful completion of education at the second level or evidence of the attainment of an equivalent level of knowledge, together with research institutes, experimental stations, hospitals and other science and technology institutions serving such establishments, and directly administered by or associated with them.

The General Service sector comprises: 1) bodies, departments and establishments subordinate to the central, state, provincial, district or county, municipal, town or village authorities that serve the community as a whole and provide a wide range of services, such as administration, maintenance and regulation of public order, public health, culture, social services, promotion of economic growth, welfare and technical progress, etc.; 2) institutions such as national scientific research and technology councils, academies of science, professional scientific organizations and other institutions which serve the whole of a community; and

3) institutions whose science and technology activities including research are carried out for the general benefit of agriculture, industry, transport and communications, building and public works or the public electricity, gas and water services -- i.e., activities classified under a single-digit reference in the ISIC.

The actual classification used in this study, together with estimates of the number of organizations in each sector and subsector, is shown in TABLE I-1 below.

The second type of categorization used in the primary survey distinguished among six categories of organizational ownership, as follows:

- 1) "Public" ownership, designating all heavy and medium industries of Egypt which account for 75 percent of the country's industrial output.
- 2) "Central government" ownership, designating ministries of the national government and agencies or institutions affiliated with them (such as universities, central banks, research institutions, etc.).
- 3) "Local government" ownership, designating agencies of governorates, municipal governments, etc.
- 4) "Private (Egyptian)" ownership, designating organizations wholly owned by Egyptian citizens, both profit and non-profit.
- 5) "Private (joint)" ownership, designating organizations in the private sector co-owned by Egyptian citizens and foreigners (or foreign organizations).
- 6) "Private (foreign)" ownership, designating organizations wholly owned by foreigners.

As new forms of legal ownership continued to evolve in Egypt under its "open door" economic policy, the above categorizations may not be entirely encompassing but were found adequate for the purpose of this study.

Selection of Respondent Organizations. TABLE I-1 shows the initial estimate of the population size, the target sample size, and the number of organizations actually interviewed.

The initial estimate of the population size in each subsector was based on the expert opinion of the Egyptian study team members who reviewed and analyzed for this purpose eleven Arab and Egyptian directories: Research Centers Directory; Companies and Institutions; ABC; IDCAS Survey; Cairo Telephone Book; Directory of Government and Public Sector; IDCAS Library and Documentation Centre Directory; Guide to Industrial Information Sources; Guide to Egyptian Academicians; Arab Consulting Firms; and NIDOC Directory of Scientific and Technical Libraries. The study team did not have access to any computerized census regarding Egyptian public or private organizations in the three performance sectors. The second column of figures in TABLE I-1 represents the target number of "parent organizations" recommended by the study team for interview. The principal selection criterion was the likelihood of the organization having significant information resources, in the opinion of the Egyptian study team members. The 400 organizations targeted for interview were distributed across the 31 subsectors, so as to ensure that significant information resources in each subsector were covered. "Parent organizations" were defined as organizational entities having information service components (such as libraries, departments or subsidiary units). For example, faculties and institutes in universities were counted as parent organizations, as were individual companies and major departments in the Egyptian government.

The names and addresses of the target organizations were forwarded to the Central Agency for Public Mobilization and Statistics (CAPMAS), the agency contracted to carry out the interviews and data collection. CAPMAS was supplied with the following criteria for determining whether an organization was to be visited and the information resources questionnaire filled out:

1. Does this organization engage in any publishing activities? Does it generate information on its own which it then prints and distributes in the form of individual reports, documents, or books? Does it print, edit, market, and distribute reports, documents or

books which are created elsewhere? If the answer to any of these questions is yes, identify and interview the individual(s) who can supply data on the volume and types of these activities.

2. Does this organization have a library or information center to which at least three permanent staff members are assigned? If so, interview.
3. Does this organization perform any library technical services (that is, does it acquire, catalog or store documents or books of any type on a regular basis in a permanent collection)? Does it maintain computerized databases of any type, other than those used exclusively for internal management purposes, such as payroll, finances, or accounting? If so, identify and interview people who can describe the extent of these activities.
4. Does this organization provide information services to users? Does it have, for example, staff members who, as part of their job, produce or provide documents to people inside or outside the organization? Does it have staff members who regularly answer questions posed by individual users by searching a variety of printed or recorded information sources? Does it have staff members who translate, evaluate, or synthesize printed documents or other information sources? If so, interview.
5. Does this organization employ individuals who consult or teach others inside or outside the organization how to use information or how to design publications or information systems? If so, interview.
6. Does this organization teach or train students about libraries, library processes, information or computer systems, publishing, reprography, or technical writing? If so, interview.
7. Does this organization have any equipment inside or outside the library which can be used for duplicating, recording, displaying, or storing documents or other recorded materials or data? Does the organization have any computers or computer terminals used for non-administrative information- or database-related purposes?

If so, interview.

CAPMAS was instructed to specifically exclude the following organizations from the information resources survey: 1) publishing departments within organizations responsible for daily or weekly newspapers; 2) publishing of posters, business cards, office forms, or other types of stationery; 3) computerized databases devoted exclusively to financial, personnel, and accounting information of relevance only to that organization; 4) military activities and establishments, and organizations handling documents of a restricted, classified, or secret nature; and 5) publishers producing posters, brochures or advertisements which do not include significant technical details.

CAPMAS was furthermore supplied with the following "special instructions" which further qualified the procedures to be followed in the survey:

1. The information resources survey will involve the interviewing of person(s) responsible for managing library, publishing, and other information activities.
2. Some organizations included in the survey are of such a size that the different divisions within the organization are treated as separate organizations for purposes of the survey. For example, individual university faculties, such as Faculties of Medicine, are treated as separate organizations even though they operate as part of a university.
3. Many university faculties are included in the survey. The chairperson of the faculty is the person who should be contacted first, and that person should then identify other staff member(s) who can answer the questions in the information resources questionnaire.
4. Note that a library should be covered by the information resources questionnaire only if it employs three or more staff members on a permanent basis.
5. Also note that no organization should have more than one information resources questionnaire. If the interviewer must speak with

several different individuals within an organization to fill out the information resources questionnaire, make sure that all the responses are coded into one questionnaire prior to keypunching.

Of the 400 organizations targeted for the resources survey, CAPMAS actually interviewed 160, or 40 percent; their numbers are shown in the right column of TABLE I-1. Although no documentation appears to exist clarifying how or why the majority of the targeted sample was rejected, the assumption made is that in the CAPMAS team's judgment over 250 of these organizations did not meet the above selection criteria.

The 160 organizations are listed by name in APPENDIX A, and some of their characteristics are tabulated in APPENDIX B. Finally, APPENDIX C shows the same characteristics of these organizations arranged by subsector.

#### 4. Survey Logistics

The study of resources began in January 1980, and it involved several partially overlapping phases: formulation of objectives and methodologies (January-February 1980); primary survey (April-June 1980); complementary survey (May-June 1981); data processing and aggregation (August 1980 - August 1981); and data analysis and interpretation (April-September 1981). The complementary survey covered approximately 15 organizations which had been inadvertently left out during the data collection period of April-July 1980.

The responsibility for the primary survey was shared by the STI Project Steering Committee of the Egyptian Academy for Scientific Research and Technology, and a U.S. consultant (Georgia Institute of Technology). The Steering Committee, which operated through its own Task Group and two Egyptian subcontractors (CAPMAS and Cairo University), was in charge of the survey execution; the U.S. consultant provided methodological guidance regarding survey design, data processing, and the synthesis of results.

Following the joint design of the survey, its instruments, and the selection of the survey sample, CAPMAS was provided with the survey questionnaire and copies of an extensive, written document called

"Interviewer's Instructions." The questionnaire for the primary survey is shown in APPENDIX D. "Interviewer's Instructions" discussed each entry in the questionnaire, provided guidelines on conducting the interview, and instructions for completing the questionnaire form.

CAPMAS assigned to the survey approximately 65 professional interviewers; these were given a comprehensive 3-day training course which described the objectives of the survey, and discussed in detail the survey procedures and instrument.

Completed questionnaires were forwarded from CAPMAS to the National Information and Documentation Centre of the ASRT, to be checked by two professionals for data consistency and completeness. Approved forms were forwarded to the Computation Center of Cairo University, subcontracted for the data processing part of the survey. To assist it in this activity, Cairo University was provided with a detailed data dictionary, in a form suitable for programming in both FORTRAN and COBOL. Because its Computation Center did not possess at that time either a database management system or a generalized statistical software package, Cairo University invested a substantial amount of programming effort before being able to tabulate the data collected.

The principal product of the data processing phase was aggregate data tabulations specified at the outset of the study. A small number of such tabulations could not be produced because the data was either lacking or so sparse that aggregations were meaningless. The main example is data dealing with financial resources; budgets of Egyptian organizations do not at this time identify information-related expenditures.

The tabulations were reviewed by Egyptian and U.S. members of the study team and, when required, returned to Cairo University for recomputation or validation. The final analysis and interpretation of these tabulations were the responsibility of the U.S. consultant.

## 5. Interpretation of Survey Results

As noted above, the survey methodology did not employ rigorous statistical sampling; rather, the targeted survey sample comprised a high percentage of organizations having, in the opinion of Egyptian information experts, good probability of being active, in a nontrivial manner, in the information domain. Given the objective of the survey, covering organizations identified through expert opinion was considered a more useful approach than statistical sampling; among other reasons, the distribution of some information resources in Egypt is so scarce that the results obtained through statistical sampling might have very low confidence limits unless the number of organizations surveyed was very large. The methodology used invites, however, the following question: what picture does the survey provide about the actual information resources of Egypt?

The targeted sample comprised 400 organizations of a total population of 1200. The size of the total population is itself an estimate, since the Egyptian survey team did not have ready means of determining it accurately. The number of organizations actually surveyed was only 160, however, or about 13 percent of the estimated total population. Since the sample was not a statistical one, it is clear that the survey does not allow a linear extrapolation of results for either the whole country or for the assumed total population of 1200 organizations. The safe answer to the above question is then to say that the survey results represent a census of information resources of the 160 organizations surveyed (except in the few situations where the data was found to be inconsistent).

A closer analysis of the organizations surveyed permits, however, additional conclusions regarding the representativeness of the survey. This analysis, tabulations and conclusions follow.

As was stated, the number of organizations actually surveyed in the primary survey numbers 160. Of these, 45 belong to the Production sector, 56 to the Higher Education sector, and 59 to the General Service sector (TABLE I-2). The total number of the employees of these organizations is 289,522, averaging 1,809 employees per organization. This represents 1.75 percent of the total Egyptian labor force estimate of 10,459,000 persons

(Diab, 1981). TABLE 1-3 shows the distribution of employees by organizational ownership.

TABLE I-4 shows the distribution of organizations according to type of ownership: 36 belong to the public sector, 112 are owned by government, and 12 are private enterprises. The majority of Production sector organizations (32 of 45) are publicly owned; nearly all (53 of 56) of the Higher Education sector organizations belong to government; and 47 of 59 General Service organizations are also governmental.

Given other inputs, we may further characterize the survey sample as regards the performance sectors, as follows.

The Production Sector. TABLE I-5 shows that with one exception (the electricity industry) all production subsectors are represented by between 2 and 9 organizations. Based on the total number of employees, the survey organizations represent 1.9 percent of the Egyptian Production sector (TABLE I-6); if agricultural production is excepted (on the intuitive grounds that its information resources are negligible), the survey coverage is 3.9 percent of the Production sector.

Further, it is known that the Egyptian labor force is divided approximately evenly between public/government and private ownership (Diab, 1981); and that the Production sector consists of about 200 large or medium public organizations as well as some 15,000 very small private companies. TABLE I-4 showed that 32 of the 45 Production sector organizations surveyed are publicly owned, with a total employee count of 138,585, which averages 4,331 employees per organization (median = 1,993 employees); it is thus probable that many of these belong to the group of the large public corporations of Egypt.

On the basis of this evidence it may be said that the survey represents rather well the publicly-owned Production sector. On the other hand, the survey included only a handful of the estimated 15,000 privately owned production enterprises.

The Higher Education Sector. A total of 56 organizational entities in the Higher Education sector were surveyed, representing over 23,000 employees (TABLE I-2). This distribution by discipline is given in TABLE I-7,

which also shows that all but three of the 56 organizations are government-owned.

An estimate of the percentage of the total Higher Education sector represented by the survey sample is given in TABLE I-8. The suggestion that the sample represents over 60 percent of the Higher Education sector is based on reasoning that the total number of university-trained employees in the survey was 12,375 as compared with the total of about 20,000 teachers in all of Egypt's higher education (Diab, 1981). Quite likely the survey coverage was substantial: most of the organizational entities surveyed were universities, and the reported number of their university-trained employees (12,375) actually exceeds the reported (Diab, 1981) total number of faculty members of the 12 Egyptian universities (about 11,000).

The General Service Sector. TABLE I-2 showed that 59 organizations were surveyed in this sector, with a total of 111,480 employees, averaging 1,889 employees per organization. TABLE I-9 breaks down these totals according to the service subsectors, as well as to the form of ownership. The ownership distribution was as follows: government, 47 organizations; private, 8 organizations; and public, 4 organizations. As the number of employees in the 8 private organizations totaled only 5,423, the survey of this performance sector was also heavily biased toward governmental/public ownership whose 51 organizations totaled 106,057 employees. All subsectors except two (communication and sports/recreation) were represented in the survey.

The service-sector organizations surveyed employ 2.65 percent of the total number of 4,353,000 employees in the Egyptian General Service sector (TABLE I-10). Since these organizations represent mostly high-echelon government agencies, the sample is biased in that direction; and if such agencies are more likely to be active in the information domain than low-level departments, the sample would be more representative than the employee ratio suggests. However, since the sample selection was not random, it would be speculative to attempt to extrapolate the survey results without knowing more about the characteristics of the organizations in this sector.

In conclusion, it is thus possible to state that the primary survey represented a good (although not statistically valid) cross-section of two of the three types of organizational ownership of Egypt, the public and the governmental. To the extent that public ownership of the sample organizations was heavily co-extensive with the Egyptian non-private Production sector, the survey should offer a good profile of a hypothetical, average organization of the latter sector. To the extent that governmental ownership of the organizations in the sample is almost entirely coextensive with the Higher Education performance sector, the survey should offer a very good profile of the information resources of an average institution of Egyptian higher education.

The survey is almost nonrepresentative of Egyptian private organizations. These exist mostly in the Production sector, and, although their number is large (15,000), they are invariably small firms. One can speculate that the large majority of these firms are not active in the information domain as intensively as defined in this survey, and that nontrivial information resources would be found in only rare instances (such as banks).

TABLE I-1. SURVEY POPULATION VS. SAMPLE

SECTOR	Est. Population Size	Target Sample Size	Actual Sample Size
<b>PRODUCTION SECTOR</b>			
1. Agriculture	47	15	5
2. Textile	55	15	4
3. Petroleum & Petrochemicals	81	15	4
4. Chemical & Pharmaceutical	44	20	6
5. Paper & Printing Mater. & Equip.	11	10	4
6. Foodstuffs	99	30	6
7. Mining & Metallurgical	65	30	9
8. Building & Construction Mater.	27	15	4
9. Furniture & Leather	32	20	2
10. Electrical & Electronic	48	15	0
11. Other Production Sector	36	15	1
	595	200	45
<b>HIGHER EDUCATION SECTOR</b>			
1. Arts, Soc. Sci., Humanities	84	20	9
2. Pure Science	42	15	6
3. Biomedical Sciences	80	30	20
4. Eng., Math., Comp. Sci.	39	15	7
5. Agricultural Science	31	10	6
6. Law, Pol. Sci., Economics	12	5	1
7. Commerce, Mgt., Business	22	5	4
8. Other Higher Ed.	14	5	3
	324	105	56
<b>GENERAL SERVICES SECTOR</b>			
1. Housing	34	10	3
2. Transportation (incl. marine)	45	10	1
3. Communications & Telecomm.	4	4	0
4. Mass Media & Tourism	34	11	7
5. Public Health	8	8	12
6. Justice, Soc. Affairs, Public order	20	10	4
7. Public Utilities	10	10	4
8. Finance & Banking	87	10	2
9. Culture & Religion	13	10	5
10. Education	6	6	6
11. Sports & Recreation	1	1	0
12. Other Gen. Services	24	10	15
	286	100	59

TABLE I-2. CHARACTERISTICS OF ORGANIZATIONS SURVEYED, BY SECTOR

SECTOR	NO. OF ORGANIZATIONS SURVEYED	TOTAL OF EMPLOYEES IN ALL ORGANIZATIONS	NO. OF EMPLOYEES/ORGANIZATION			
			Max.	Min.	Average	Median
Production	45	154,779	32,328	37	3,439	16,137
Higher Education	56	23,263	1,227	10*	415	613
Service	59	111,480	23,455	9	1,889	11,732
All sectors	160	289,522	32,328		1,809	16,119

\*Two questionnaires did not provide personnel data.

TABLE I-3. DISTRIBUTION OF EMPLOYEES, BY OWNERSHIP

CHARACTERISTIC	OWNERSHIP						Total
	Public	Government		Private			
		Central	Local	Egyptian	Joint	Foreign	
No. of organizations in ownership category	36	110	2	3	2	7	160
Total number of employees	179,917	103,469	438	4,979	77	642	289,522
Average number of employees	4,998	941	219	1,660	38	92	1,809

TABLE I-4. DISTRIBUTION OF ORGANIZATIONS, BY OWNERSHIP

SECTOR	TOTAL NO. OF ORGS.	Public	O W N E R S H I P				Private	
			Government Central	Local	Egyptian	Joint	Foreign	
Production	45	32	12	0	1	0	0	
Higher Education	56	0	51	2	0	0	3	
Service	59	4	47	0	2	2	4	
<b>TOTAL</b>	<b>160</b>	<b>36</b>	<b>110</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>7</b>	

TABLE I-5. CHARACTERISTICS OF THE PRODUCTION ORGANIZATIONS

SECTOR CODE	SECTOR NAME	NO. ORGS SURVEYED	OWNERSHIP			NO. OF EMPLOYEES				
			Publ	Govt	Priv	Total	Max	Min	Avg	Median
101	Agriculture	5	5			5,444	3,612	37	1,088	1,824
102	Textiles	4	4			57,999	32,238	1,050	14,499	16,644
103	Petroleum & petrochemicals	4	4			15,155	6,181	1,993	3,788	4,087
104	Chemicals & pharmaceuticals	6	6			13,356	3,391	638	2,226	
105	Paper & printing	4	3	1		8,527	3,229	107	2,131	
106	Foodstuffs	6	4	2		20,973	9,573	42	3,495	
107	Mining & metallurgical	9	4	5		17,880	4,000	123	1,986	2,061
108	Bldg/Construction materials	4	4			8,210	2,300	1,242	2,052	
109	Furniture & leather	2	2			1,911	1,128	783	955	
110	Electrical & electronic	0				-	-	-	-	
111	Other produc- tion areas	1	1			6,324	6,324	6,324	6,324	
All production sectors		45				154,779	32,328	37	3,439	16,137

TABLE I-6. SIZE OF PRODUCTION SECTOR SURVEYED

SECTOR	TOTAL 1979 MANPOWER*	MANPOWER OF ORGANIZATIONS SURVEYED	SURVEY COVERAGE (%)
Agriculture	4,155,000	5,444	0.13
Industry	1,332,700	120,646**	9.05
Petroleum	19,200	15,155***	78.93
Electricity	60,200	0	0
Construction	629,200	8,210	1.3
All production sectors	8,000,000****	154,779	1.9

\*Source: CAPMAS, Statistical Yearbook. Cairo, July 1980. P. 226.

\*\*Includes the following industries: textile, chemical, paper, printing, foodstuffs, mining, metallurgy, furniture, leather.

\*\*\*Includes petrochemical industry.

\*\*\*\*Based on estimate that 51 percent of Egyptian labor force is in agriculture.

TABLE I-7. CHARACTERISTICS OF HIGHER EDUCATION ORGANIZATIONS

SECTOR CODE	SECTOR NAME	NO. ORG. SURVEYED	OWNERSHIP			NO. OF EMPLOYEES			
			Pub	Govt	Priv	Total	Maximum	Minimum	Mean
201	Arts, soc. sci., humanities	9	7	2		2,036	829	35	226
202	Pure sciences	6	6			3,090	840	158	515
203	Biomedical sci.	20	20			8,861*	1,227*	96*	466*
204	Engineering, math, comp sci.	7	7			3,718	750	208	619
205	Agricultural sciences	6	6			3,734	1,146	166	622
206	Law, political science, econo- mics	1	1			201	201	201	201
207	Commerce, mgmt, business admin.	4	4			1,215	519	169	303
208	Other higher education areas	3	2	1		412**	402**	10**	206**

\*Count based on 19 organizations (1 did not provide personnel data).

\*\*Count based on 2 organizations (1 did not provide personnel data).

TABLE I-8. SIZE OF HIGHER EDUCATION SECTOR SURVEYED

SECTOR	TOTAL TEACHERS* (1979)	MANPOWER OF ORGANIZATIONS	SURVEY COVERAGE (%)
Humanities	8,688		
Sciences	2,214		
TOTAL	20,000	12,375	61+

\*Source: Egypt in Focus, pp. 17.

\*\*University graduates only.

TABLE I-9. CHARACTERISTICS OF SERVICE ORGANIZATIONS

SECTOR CODE	SECTOR NAME	NO. ORGS. SURVEYED	OWNERSHIP			NO. OF EMPLOYEES			
			Pub	Govt	Priv	Total	Maximum	Minimum	Mean
301	Housing	3		3		871	398	173	290
302	Transportation	1	1			4,849	4,849	4,849	4,849
303	Communication	0							
304	Mass media, tourism	7	1	3	3	8,613	4,845	27	1,230
305	Public Health	12	1	10	1	27,155	23,455	14	2,262
306	Justice, soc. affairs	4		4		21,180	19,990	130	5,295
307	Public utilities	4		4		579	238	50	144
308	Finance & banking	2	1	1		18,175	14,807	3,368	9,087
309	Culture & religion	5		5		252	114	9	50
310	Education	6		4	2	4,023	3,455	16	670
311	Sports & recreation	0							
312	Other service areas	15		13	2	12,518	5,000	19	834

TABLE I-10 SIZE OF SERVICES SECTOR SURVEYED

SECTOR	TOTAL 1979 MANPOWER*	MANPOWER OF ORGANIZATIONS SURVEYED	SURVEY COVERAGE (%)
Transportation	452,000	4,849	1.07
Finance & trade	1,128,700	18,175	1.61
Housing	155,000	871	0.56
Public utilities	64,000	579	0.90
Total Services Sector	4,553,000	111,480	2.56

\*Source: CAPMAS, Statistical Yearbook. Cairo, July 1980. P. 226.

## II. SURVEY RESULTS: INFORMATION ACTIVITIES

The survey instrument elicited data from the participating organizations regarding five types of information activities they engaged in during 1979: publishing, library technical services, services to different categories of information users, liaison/advisory services, and education for information work. The results are tabulated and discussed below

### 1. Publishing

TABLE II-1 lists 23 types of information products produced during 1979 and broken down by sector.

A detailed study of computer printouts revealed, however, that two organizations (No. 152 and No. 351) were responsible for unrealistically high estimates in several of the information product categories. The following entries in TABLE II-1 may therefore be questioned as to their accuracy: books and monographs (the two mentioned organizations alone accounted for 12,900 titles); scientific/technical journals (one of the two organizations claimed to have published 800 periodical titles); trade magazines (one of the two organizations claimed to have published a total of 21,000 titles); product announcements (one of the two organizations claimed to have published 5,000 such announcements); standards (one of the organizations claimed to have published 1,000 standards); and proprietary technical reports (one organization claimed to have published 20,000 such reports). For this reason, the publishing statistics of the survey are not discussed further; it is suggested that the data provided by these two organizations be re-examined.

### 2. Library Technical Services

TABLE II-2 shows that the 160 organizations held altogether 1,925,000 volumes of publications of all types. In 1979 they added nearly 92,000 volumes, of which 75,000 items were cataloged.

The figures for the Higher Education sector show library holdings of about 1 million. This appears low if other estimates are correct; for example, Cairo University libraries alone were said to have had 685,000 books in 1975 (Palmer, 1978).

As regards the General Services sector, the major omissions from the survey are the Egyptian National Library with its branches, and public libraries; the two were reported in 1979 to have cumulatively almost 1.7 million volumes (CAPMAS, 1980), but it is not known what percentage of these is in science and technology.

### 3. Services to Information Users

TABLE II-3 shows that information activities in the Production and General Service sectors support heavily inhouse staffs but are also available to university faculties and, to a lesser degree, students. On the other hand, only ten of the 56 government-owned higher education institutions provide information services to others than faculty and students.

The statistics of user services are given in TABLE II-4. As regards the Higher Education sector, the figures evidence certain trends, as follows: interlibrary loans are extremely rare; circulation statistics translate to 0.5 volume borrowed per student/faculty member per year; photocopying statistics translate to one scientific paper copy for each ten students/faculty members annually; and four out of ten student/faculty members are not registered as readers. Nearly 4,000 computerized bibliographic searches were carried out by four institutions in 1979 (of these, 75 percent were in medicine). The overall low volume of translations (none performed in higher education) implies a high degree of multilingual capability among Egyptian information users.

### 4. Liaison/Advisory Services

Statistics for various types of information-related projects engaged in by the 160 organizations is shown in TABLE II-5. In general, this activity is very sparse. From the 8 organizations listing "extramural consulting on information systems and service design," all but 150 of the more

than 5,000 projects were carried out by one organization (No. 349), suggesting that the question may have been misunderstood.

## 5. Educational Activities

The survey attempted to assess the type and extent, during 1979, of educational activities in the information domain. The questionnaire (Document C of APPENDIX D) identified four "groups" of skills consisting of 20 subjects of instruction or training in that domain. The results of this survey are aggregated in TABLE II-6 and TABLE II-7.

As regards undergraduate education, about 1,000 individuals received, in calendar year 1979, a total of 2,100 hours of instruction. One should infer that the 20 subjects or skills are taught not as university courses but as some sort of seminars for undergraduates; this conclusion is contradicted, however, by the fact that Cairo University offers both undergraduate and graduate degrees in librarianship and archives. Since the Cairo University Department of Librarianship was one of the organizations surveyed, the correctness of the data must be questioned.

As regards the Information Production/Use skill group, those taking undergraduate courses were enrolled approximately evenly in technical translation (120 persons) and publishing (130 persons). The subjects covered in the Information Processes group were acquisitions (130 persons), cataloging and classification (410 persons), indexing and abstracting (70 persons), and reference work (295 persons). The only subject taught in the Advanced Technology group was reprography, attended by 75 persons.

As regards graduate-level education, a course in technical translation accounts for the 24 enrollees in the first group. The same librarianship subjects (acquisitions, cataloging, indexing and abstracting, and reference) in the Information Processing group account for the enrollment of 155; since they were each given 2-4 hour lectures only, the data is suspect for the same reason as that mentioned in the previous paragraph. In the Advanced Technology group, only reprography continued to be covered with a 3-hour lecture.

Some 900 persons attended continuing education presentations totaling 2,372 hours. The majority attended 1800 hours of presentations on data and information analysis, synthesis and evaluation.

TABLE II-6 further shows that 133 persons participated in in-service training, averaging 10 hours per person. The computerized disaggregated figures are confusing, however, in that some respondents show participants but no hours, while others list hours taught but show no students. Consistent data exist only for technical translations (75 persons for 150 hours), acquisitions (2 persons for 90 hours), information analysis and synthesis (1 person, 30 hours), information storage and retrieval (1 person, 232 hours), and 32 persons for 210 hours of reprographic in-service training.

Finally, 300 persons participated in a 10-hour conference or seminar on information analysis, synthesis, and evaluation.

On the (very tenuous) assumption that there was no overlap among the individuals enrolled in these different instruction modes and subjects, some 2,500 persons received about 7,300 hours of instruction in 1979. The instruction was in rather traditional subject areas of the profession (except, possibly, the non-degree seminar in information analysis, synthesis and evaluation).

The data collected is rather sparse, and other analyses (e.g., by sector) were not attempted for this report.

Comparing the survey data with an earlier study of Egyptian library education (Palmer, 1978), it is clear that the survey results do not offer a good picture of formal (degree programs) education in information-related disciplines in Egypt.

TABLE II-1. PUBLISHING ACTIVITIES BY SECTOR

ITEM	UNIT	S E C T O R			Total
		Production	Higher Ed.	Service	
Books, monographs	titles	20	12,003	1,981	14,004
Sci/tech journals	titles	9	3	1,178	1,190
Trade journals	titles	0	1,007	180	1,187
Dissertations, theses	titles	24	241	0	265
Handbooks	titles	1	12,002	9,102	21,105
Directories	titles	1	4	38	43
Product catalogs	products	2,529	2,000	2	4,531
Product announcements	products	207	5,000	12	5,319
Manuals	titles	5	0	1	6
Patents	patents	0	0	0	0
Trademarks	trademarks	500	0	0	500
Government documents	titles	1	0	1,200	1,201
Standards	standards	0	1,000	50	1,050
Norms	norms	1	0	3	4
Technical reports (public)	titles	15	3	93	111
Technical reports (proprietary)	titles	130	0	20,178	20,308
Acquisitions lists	citations	665	1,000	35	1,700
Bibliographies	bibliographies	1	1,004	33	1,038
Abstracting journals	abstracts	0	0	819	819
In-house abstract. bulletin	abstracts	13	2	14	19
Biblio. database	database items	0	0	0	0
Numeric database	database items	99,999	1	6	100,006
Audiotapes, records	items	0	50	0	50

TABLE II-2. LIBRARY TECHNICAL SERVICES, BY SECTOR

TYPE OF SERVICE	S E C T O R			Total
	Production	Higher Ed.	Service	
No. of volumes added	8,742	54,090	29,122	91,954
No. of items cataloged	10,341	44,871	20,057	75,269
Total no. of volumes held	190,960	937,087	797,892	1,925,939
No. of computerized databases	0	0	1	1
No. of manual databases	0	0	1	1

TABLE II-3. TYPES OF USERS SERVED, BY ORGANIZATIONS SURVEYED

SECTOR	TOTAL NO. OF ORGS. SURVEYED	NO. OF ORGANIZATIONS SERVING				
		Staff	Faculty	Students	Public	Other
Production	45	45	10	8	5	1
Higher Education	56	35	56	55	10	2
Service	59	50	26	21	19	5

TABLE II-4. SERVICES TO INFORMATION USERS, BY SECTOR

TYPE OF SERVICE	UNIT	S E C T O R			Total
		Production	Higher Ed.	Service	
Reference service	users served	54,035	332,281	97,454	483,770
Interlibrary loan	transactions	826	747	3,278	4,851
Circulation	vols loaned	23,790	259,339	46,615	329,744
Photocopying	pages	56,282	321,997	192,723	571,002
Readers registered	readers	44,447	321,572	114,525	490,654
Preparation of bibliographies	bibliographies	30	44	244	318
Current awareness services	users served	1,428	21,174	5,891	28,493
Manual on-demand searching	searches	19	16,892	5,315	22,226
Computerized on-demand searching	searches	300	3,000	609	3,909
Information evaluation/ synthesis	requests filled	100,000	4,957	1,128	106,092
Information repackaging	requests filled	250	82	18,169	18,501
Translation	documents translated	131	0	20	151

TABLE II-5. LIAISON/ADVISORY SERVICES, BY SECTOR

TYPE OF SERVICE	UNIT	S E C T O R			Total
		Production	Higher Ed.	Service	
Referral Services	requests filled	1,774	7,143	2,974	11,891
Extramural consulting	projects	5,050	11	144	5,205
In-house consulting	projects	350	120	599	1,069
Extension services	projects	0	708	425	1,233

TABLE II-6. SURVEY OF ACTIVITIES IN EDUCATION AND TRAINING FOR INFORMATION WORK: ENROLLMENT

SUBJECT GROUP	ENROLLMENT (FTE)				
	Undergrad	Graduate	Cont.Ed.	In-Service	Conferences
Info. Production and Use	150	27	20	75	0
Information Processes	705	155	700	14	300
Advanced Library Technology	75	15	0	32	0
Research	0	15	0	0	25
Other	80	10	185	12	0
<b>TOTAL</b>	<b>1,010</b>	<b>222</b>	<b>905</b>	<b>133</b>	<b>325</b>

TABLE II-7. SURVEY OF ACTIVITIES IN EDUCATION AND TRAINING FOR INFORMATION WORK: NUMBER OF HOURS.

SUBJECT GROUP	NUMBER OF HOURS				
	Undergrad	Graduate	Cont.Ed.	In-Service	Conferences
Info. Production and Use	1072	806	20	410	0
Info. Processes	936	497	1800	442	10
Advanced Library Technology	72	78	0	210	0
Research	0	48	0	0	16
Other	10	11	552	36	0
<b>TOTALS</b>	<b>2090</b>	<b>1440</b>	<b>2372</b>	<b>1368</b>	<b>26</b>

### III. SURVEY RESULTS: INFORMATION MANPOWER

#### 1. Manpower Distribution by Activity Type and Job Level

TABLE III-1 presents the totals of full-time equivalent information personnel for the 160 organizations surveyed. It shows a total of 3,172 FTE persons being employed in these organizations, or 1.1 percent of their total labor force. These information workers were active almost exclusively (99.5 percent) in three of the five activity types: publishing (67 percent), technical services (19 percent), and user service functions (13 percent). Manpower employed in liaison/advisory and education functions is less than 0.5 percent; since one of the organizations surveyed is known to have about 23 FTE faculty members in the discipline (Palmer, 1978), the manpower data for the education function must be questioned as to its correctness.

While distributing the total manpower by job level, we find 5 percent managers, 11 percent professionals, 73 percent technicians and 11 percent auxiliary personnel. Job level distribution within publishing shows a predominance of sub-professional labor. In contrast to technical services which are relatively heavy on management/professional labor, publishing is highly clerical-labor intensive. Thus 68 percent of all managers, and 56 percent of all professionals counted are active in technical services, compared to 4.5 percent managers and 11 percent professionals active in publishing. Publishing also accounts for 71 percent of all technicians, and 60 percent of all auxiliary personnel. User services lie in-between these two extremes.

Non-information technicians comprise the largest job level category in all three activity types. Non-information professionals outnumber significantly (by a ratio of about 2 to 1) information professionals in all three activity types; the same holds for the ratio of non-information technicians to information technicians.

TABLES III-2 through III-4 offer insight into the manpower breakdown among the specializations of the three activity types. Thus we note, from

TABLE III-2, that publishing is strongest in composition and printing staff (83 percent), editing staffs (15 percent), and distribution personnel (8 percent). Specializations associated with information processing functions (indexing, abstracting, lexicography, and bibliography) comprise only 0.5 percent.

TABLE III-3 displays manpower distributions in the technical services activity. Over one-half (53 percent) of the labor force works in acquisitions, 17 percent in cataloging, 11 percent in storage/archives, 5 percent in microfilming, 5 percent in copying, and 9 percent in computing and database jobs. The predominance of the acquisitions staff is noteworthy.

TABLE III-4 breaks down the manpower specializations in user services, showing that 93 percent of the work force are reference staff members. Specializations associated with more advanced user services -- information search, analysis, synthesis, evaluation and translation -- are nonexistent.

A comparison of TABLES III-3 and III-4 indicates that in terms of numbers of personnel, technical services are substantially stronger than user services. The difference is particularly pronounced with respect to professional and managerial manpower, where the ratio is nearly 2 to 1 in favor of technical services.

The respondent organizations reported about 5 persons to be engaged in consulting.

## 2. Manpower Distribution by Level of Education

TABLE III-5 summarizes findings concerning the education and training of information manpower in the 160 organizations surveyed. It indicates that 94 percent of managers/professionals hold university degrees; of these, 27 percent are in information-related fields (i.e., library, information, or computer science), 16 percent in other (hard) science or engineering fields, and 56 percent in humanities and social sciences.

Of the total of 2,652 non-university graduates, 99 percent are in sub-professional positions (technicians and auxiliary personnel); 79 percent have less than a secondary education. Interestingly, all employees but one

in the "information technician" category have secondary school education, compared with only 6 percent of the "non-information technician" employees. Almost 90 percent of the "information technician" category employees received up to six months of training in information work, and 7 percent received more extensive training in the field.

### 3. Manpower Distribution by Performance Sectors

It will be recalled that the survey covered 45 Production sector organizations, 56 organizations in the Higher Education sector, and 59 organizations in the General Service sector (TABLE I-2). Of the total 3,172 FTE information personnel surveyed, 6 percent were employed by the Production sector, 18 percent by the Higher Education sector, and 76 percent by the General Service sector (TABLE III-6). There is a substantial difference among the three sectors in the average number of information employees per organization: 4.2 FTE for a Production-sector organization averaging 3,439 employees (0.12 percent); 10 FTE for a Higher Education institution averaging 412 employees (2.4 percent); and 41 EFT for an organization in the General Service sector whose average staff is 1,889 (2.2 percent). It must be remembered, of course, that these "average organizations" are fictitious.

The data shows that -- on the average -- in the Production sector, 4.2 FTE persons per organization share the full range of information activities: technical services, user services, and some publishing. In comparison, an average information staff in higher education institutions numbers 10 persons who perform almost exclusively technical and user services. The average General Service sector organization has few staff members in technical and user services; its 41 FTE information personnel is heavily subprofessional and engaged almost totally in publishing.

As regards the distribution of the information activities, when analyzed from manpower data, across the 31 socioeconomic sectors (not tabulated in this report), publishing emanates very heavily from the General Service subsector of Education; technical and user services are distributed, in different intensities, across all subsectors surveyed; and information education emanates almost exclusively from the Arts and Humanities subsector of the Higher Education sector.

#### 4. Manpower Distribution by Type of Organization Ownership

When distinguished according to the type of their ownership, the institutions surveyed included 36 public-nongovernmental, 110 central governmental, 2 local governmental, 3 private-Egyptian, 2 private-joint, and 7 private-foreign organizations. For purpose of this analysis the six categories were combined into three groups: public-nongovernmental, governmental (central and local), and private.

TABLE III-7, the distribution of information manpower according to the three types of ownership, shows that of the total manpower surveyed, 3 percent were employed in public non-governmental, 95 percent in governmental, and 2 percent in privately owned organizations. The difference in the average size of staff is also apparent: the average government organization employs 27 persons (or 2.9 percent of its total labor force) in information work, compared with 2.6 (0.5 percent) and 4.5 (0.9 percent) for the public (non-government) and private organizations, respectively. If "public" is taken to mean Egyptian industry and "private" foreign industry, the data suggests that the former has a considerably smaller average information staff than the latter.

The data also shows governmental organizations to be heavily responsible for the publishing activity: nearly three-fourths of their information manpower are engaged in it (mostly in one subsector, however). The staffs of public (non-government) and private organizations are more active in provision of information services. However, there is a major difference between the two groups, in that public organizations devote twice the effort to technical services that they do to user services, whereas the private sector divides the effort almost equally between these two services. The reader is cautioned, however, that the findings regarding the private sector are based on data from only 12 organizations.

TABLE III-1. FULL-TIME EQUIVALENT MANPOWER, BY JOB LEVEL AND ACTIVITY TYPE

ACTIVITY/TYPE	J O B    L E V E L						TOTAL*
	I	II	III	IV	V	VI	
A. Publications	11	20	44	161	1,686	216	2,139
B. Technical Services	97	72	91	109	161	79	610
C. User Services	71	39	72	45	119	57	403
D. Liaison/Advisory Activities	3	3	1	-	-	1	9
E. Information Education Activities	1	7	1	2	-	-	11
<b>TOTAL*</b>	<b>182</b>	<b>143</b>	<b>209</b>	<b>318</b>	<b>1,967</b>	<b>353</b>	<b>3,172</b>

\*Totals may not agree with sums of columns or rows, due to rounding-off.

TABLE III-2. DISTRIBUTION OF MANPOWER IN PUBLICATION

STAFF SPECIALIZATIONS	J O B L E V E L ( E F T )						TOTAL
	I	II	III	IV	V	VI	
1. Editing staff	7.5	8.8	22.2	25.5	43.3	214	321
2. Composition/printing staff	1.0	3.4	16.2	130	1,635	0.3	1,788
3. Distribution staff	0.5	3.4	3	5	10	1.4	23
4. Lexicographic staff	0.5	4.1	-	-	0.3	0.5	5
5. Indexing staff	1.5	2.0	0.5	-	-	-	4
6. Abstracting staff	0.2	-	1.1	-	-	-	1
7. Bibliographic staff	-	-	1.0	-	-	-	1
<b>TOTAL</b>	<b>10.5</b>	<b>20</b>	<b>44</b>	<b>161</b>	<b>1,690</b>	<b>216</b>	<b>2,143</b>

TABLE III-3. DISTRIBUTION OF MANPOWER IN TECHNICAL SERVICES

STAFF SPECIALIZATIONS	J O B L E V E L ( E F T )						TOTAL
	I	II	III	IV	V	VI	
1. Acquisition staff	82	35	44	34	77	52	324
2. Cataloging staff	6	20	31	27	17	3	104
3. Copying staff	2	3	1	6	13	3	28
4. Microfilming staff	2	4	3	10	9	4	31
5. Storage/archives staff	3	3	6	6	31	16	66
6. Database/computing staff	2	8	6	27	14	1	47
<b>TOTAL</b>	<b>97</b>	<b>72</b>	<b>91</b>	<b>109</b>	<b>162</b>	<b>79</b>	<b>611</b>

TABLE III-4. DISTRIBUTION OF MANPOWER IN USER SERVICES

STAFF SPECIALIZATIONS	J O B L E V E L ( E F T )						TOTAL
	I	II	III	IV	V	VI	
1. Reference staff	68	29	65	42	116	57	377
2. Information search staff	2	10	2	3	4	-	21
3. Information analysis/ synthesis/evaluation staff	1	-	4	-	-	-	5
4. Technical translation staff	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>71</b>	<b>39</b>	<b>71</b>	<b>45</b>	<b>120</b>	<b>57</b>	<b>404</b>

TABLE III-5. INFORMATION MANPOWER: LEVELS OF EDUCATION AND TRAINING

LEVEL OF EDUCATION/TRAINING	J O B L E V E L (E F T)						TOTAL
	I	II	III	IV	V	VI	
1. U. degree in info/comp/ library science	39	84	-	2	-	-	125
2. U. degree in science/ technology	20	31	24	0	1	-	76
3. U. degree in other disciplines	63	13	183	2	-	-	261
4. Post-secondary training in info work (more than 6 mo.)	8	1	6	34	9	-	58
5. Post-secondary training in info work (less than 6 mo.)	1	-	1	285	32	-	319
6. Secondary school diploma	14	-	3	22	213	3	255
7. No secondary school	1	-	-	1	1,730	346	2,078
<b>TOTAL</b>	<b>146</b>	<b>129</b>	<b>217</b>	<b>346</b>	<b>1,985</b>	<b>349</b>	<b>3,172</b>

TABLE III-6. SELECTED INFORMATION MANPOWER CHARACTERISTICS OF MAJOR SECTORS

INFORMATION MANPOWER CHARACTERISTICS	S E C T O R			
	Production	Higher Education	Service	Total
No. of organizations surveyed	45	56	59	160
Total information manpower in sector (EFT)	191	560	2,421	3,172
Information manpower distribution by sector (%)	6	18	76	100
Average size of information staff in average organization (EFT)	4.2	10	41	-
Information personnel as percentage of total work force of sector	0.1	2.4	2.2	1.1

TABLE III-7. SELECTED INFORMATION MANPOWER BY TYPE OF ORGANIZATIONAL OWNERSHIP

INFORMATION MANPOWER CHARACTERISTICS	TYPE OF OWNERSHIP			TOTAL
	Public	Government	Private	
No. of organizations surveyed	36	112	12	160
Total information manpower in ownership category (EFT)	97	3,021	54	3,172
Percent of total manpower in ownership category (%)	3	95	2	-
Average size of information staff per average organization in ownership category (EFT)	2.6	27	4.5	-
Information personnel as percentage of total work force in ownership category (%)	0.05	2.9	0.9	-

#### IV. SURVEY RESULTS: INFORMATION MATERIALS AND FACILITIES

The survey sought to quantify various types of information materials held, equipment available, and physical space assigned for information activities. The survey results are tabulated and discussed below.

##### 1. Information Materials

TABLE IV-1 tabulates responses regarding holdings of printed material. For a number of reasons, the accuracy of some of the data is suspect, however. First, some of the entries are highly improbable: for example, the holdings of scientific and technical journal titles connote that each of the responding organizations had, on the average, 1,943 titles; this is clearly unlikely. Second, there should be some correspondence between figures in TABLE IV-1 and TABLE II-2, since the latter includes a listing of "total number of volumes held." However, the figures in these two tables are not consistent: while adding the number of copies for the Production sector in TABLE IV-1 yields a figure approximate to the total shown for that sector in TABLE II-2, the same procedure applied to data from the Higher Education sector produces a 30 percent difference. Third, comparing figures in TABLE IV-1 with the reported 1979 publishing outputs in TABLE II-1, one is struck by various anomalies. For example, a total of 20,308 proprietary technical reports were reported published in 1979 (TABLE II-1), but the total holdings of this document type number only 5,000 (TABLE II-1). Similarly, 500 trademarks were issued in 1979 but only 400 are said to be held by the organizations surveyed. A possible source of some of these anomalies may be the questionable entries in TABLE II-1 discussed earlier.

TABLE IV-2 shows that microfiche is used in the Higher Education and the General Service sectors; there is nearly complete absence of any microform media in the Production sector. Only seventeen of the 160 organizations responded to this questionnaire item; nine claimed to have collections of audiotapes.

A total of 93 organizations reported carrying cumulatively 8,017 current periodical subscriptions (TABLE IV-3); clearly, an unknown degree of title duplication is involved. The response in TABLE IV-4, regarding languages of periodicals held, was provided by 158 organizations; the discrepancy in the number of respondents is taken to mean that whereas 158 organizations have periodicals on their shelves, only 93 actually carry current subscriptions. TABLE IV-4 shows that 60 percent of the overall periodicals held is in English, followed by Arabic (33 percent).

A total of 154 organizations contributed data to TABLE IV-5. The figures suggest that, on the surface, there exist relatively ample provisions to assist users in locating the materials held. The survey did not, however, delve into the consistency, detail of information, or up-to-dateness of these access tools; a related survey (Zehery, 1981) has reported the quality of library catalogs to be poor.

## 2. Equipment

The tally of equipment in TABLE IV-6 represents answers from 155 organizations. The data is indicative of traditional methods of information work. The low use of micrographic equipment across the board is noteworthy; on the other hand, some 40 organizations (25 percent) indicate that they either possess or have access to computers. Narrow-band telecommunication facilities (telex) are conspicuously absent in the Higher Education sector.

## 3. Space

Responses aggregated in TABLE IV-7 yield a useful picture of the average space available for information work. Notably, the responses show that nearly all (157 of 160) organizations have a physical area designated for both staff offices and document collections, and almost as many (147) also have space reserved for users. The total average space per organization is about 225 square meters (the average organization surveyed had about 1800 employees).

TABLE IV-1. HOLDINGS OF PRINTED MATERIALS, BY SECTOR

ITEM	UNIT	S E C T O R		
		Production	Higher Ed.	Service
Books, monographs	titles	96,685	921,257	357,351
Sci/tech journals	titles	36,004	142,750	132,107
Trade magazines	titles	6,640	8,645	4,753
Dissertations/theses	titles	1,724	26,256	3,496
Handbooks	titles	3,246	13,596	3,277
Directories	titles	282	10,958	2,839
Product catalogs	titles	12,105	74	347
Product announcements	titles	7,303	40,100	1,000
Manuals	titles	992	10,058	2,425
Patents	titles	2	0	3,000,000
Trademarks	trademarks	300	0	100
Gov't documents	titles	6,012	53	113,135
Standards	standards	3,257	821	215,936
Norms	norms	1,026	0	50
Technical reports (public)	titles	10,410	576	46,688
Technical reports (proprietary)	titles	1,676	19	3,353
Acquisition lists	citations	2	2,101	221,436
Bibliographies	no. compiled	23	136	836
Abstracting journals	abstracts	2,850	41	1,663
Biblio. databases	records	0	0	12
Numeric databases	records	100,000	1	3,507

TABLE IV-2. HOLDINGS OF OTHER MEDIA, BY SECTOR

ITEM	UNIT	S E C T O R		
		Production	Higher Education	Service
Microfiche	cards	0	23,526	98,086
Microfilm	reels	0	2	6,369
Ultrafiche	cards	0	0	0
Other microforms	strips/cards	340	0	33
Audiotapes	tapes	11	50,403	41,003

TABLE IV-3. SUBSCRIPTIONS TO CURRENT PERIODICALS, BY SECTOR

ITEM	UNIT	S E C T O R		
		Production	Higher Education	Service
Current periodicals	titles	340	6,143	1,534

TABLE IV-4. LANGUAGES OF PERIODICALS HELD, BY SECTOR

LANGUAGE	NUMBER OF ITEMS HELD		
	Production	Higher Education	Service
Arabic	1,868	1,652	1,780
English	2,287	3,594	3,496
French	89	205	342
Other	136	118	161

TABLE IV-5. AVAILABILITY OF COLLECTION ACCESS TOOLS, BY SECTOR

ITEM	UNIT	ACCESS TPOOLS AVAILABLE		
		Production	Higher Education	Service
Public card catalog	catalogs	18	42	49
Card catalog (staff use)	catalogs	40	52	44
Per. holding list (staff use)	lists	47	125	69
Other holding lists	lists	22	10	69
Bibliographies	no. compiled	14	63	91
Other access tools	items	8	16	24

TABLE IV-6. AVAILABILITY OF INFORMATION PROCESSING EQUIPMENT, BY SECTOR

ITEM	EQUIPMENT UNITS		
	Production	Higher Education	Service
Duplicators	45	67	152
Offset print/stencil	39	44	50
Microform readers	4	8	24
Microfiche readers	1	6	22
Microfiche duplicators	0	0	3
Microform reader/printer	1	1	14
Microfiche reader/printer	0	1	7
Other projection devices	24	40	32
Video recorders	1	4	4
Video players	0	4	4
Card stencil printer	1	2	6
Computers	6	9	7
Computer terminals	0	1	15
Access to computers	0	7	12
Electric typewriters	266	100	43
Telephones	3,511	1,394	1,596
Telex	23	2	15

TABLE IV-7. SPACE FOR INFORMATION WORK

SPACE TYPE	NO. OF ORGANIZATIONS	TOTAL SPACE (m sq.)	AVERAGE SPACE (m sq.)
Staff offices	156	3,846	24
Reading rooms	147	16,076	109
Stacks	157	14,547	92
Other space	28	1,251	44

## V. CONCLUSIONS

This survey provides a profile of information resources reportedly held in 1979 by 160 Egyptian organizations. The "goodness" of the profile is a matter of the quality of data collected. It was shown that in some instances the data is open to question, and hence some of the apparent conclusions may be misleading, particularly those regarding total volumes of STI held, manpower in education, and the volume and kind of training activities.

The issue of the extent to which the survey represents the entire Egyptian situation cannot be settled on the basis of the on-hand information about Egyptian legal bodies. Even though the 160 organizations do not represent a statistical sample, they nevertheless all possess some type of information resources, and for this reason were selected from a larger sample of 400 organizations which themselves had, in the opinion of Egyptian information experts, good probability of having information resources. This substantial number of organizations covered undoubtedly provides a useful profile of information resources; this notwithstanding, one cannot claim that the profile holds for all of Egypt unless the total population of Egyptian organizations is appropriately characterized and the relationship determined between the sample and this population.

### 1. General Conclusions

The survey results show that in 1979, the 160 organizations employed a total of 3,172 FTE (full-time equivalent) information workers, or 1.1 of their combined labor force. According to position levels, 5 percent of the information workers were managers, 11 percent professionals, 73 percent technicians, and 11 percent auxiliary staff. Eighty-three percent of all managers and 98 percent of all professionals held university degrees; of their combined number (462), 27 percent held degrees in information-related disciplines. Ninety percent of the information technician category had up to 6 months of training in the field.

Ninety-nine percent of all information labor force were active in three areas: publishing (67 percent), technical services (19 percent), and user services (13 percent). Whereas technical and user service functions are distributed across all three performance sectors, over 90 percent of all publishing is carried out in one General Service subsector (education). As regards technical services, 53 percent of their information workers are in acquisitions, 17 percent in cataloging, 9 percent in computing, 5 percent in reprography. Services to information users are traditional: 93 percent of their staffs are in reference work. Indexing, abstracting, lexicographic and bibliographic specializations and manpower are virtually non-existent.

The survey documents in part the level of use of STI resources by the information clientele of the 160 organizations. In 1979, they had 490,654 registered readers; answered 483,770 reference questions; prepared 318 bibliographies; photocopied 571,002 pages; transacted 4,851 interlibrary loans; loaned 329,744 volumes; and translated 151 documents. A total of 3,900 database searches were requested in 1979 (by four organizations), two-thirds of which were in medicine.

The 160 organizations report that in 1979 they added 92,000 volumes to their holdings, of which 75,000 were cataloged. Their overall holdings appear to be approximately 2 million volumes, half of which was held by the higher education sector. (Note: the survey did not cover the National Library or school libraries.) Together the organizations surveyed subscribed to 8,000 current periodicals (the degree of duplication was not measured); 60 percent of all periodicals held are in English, 33 percent in Arabic. Microform holdings and micrographic equipment were rare. Twenty-five percent of the 160 institutions either possess or have access to computers. Virtually all organizations allocate some space for information activities and users (on the average, 225 square meters for an organization of 1,800 employees).

Survey data regarding training activities and budgets are open to question. Although some 2,500 individuals were reported as having received about 7,300 hours of university-level instruction or in-service training, the figure apparently does not include degree students. No useful data

were collected regarding domestic fiscal resources for information activities; as a rule, budgets of the organizations surveyed did not itemize such figures.

## 2. Future Work

Several directions of effort suggest themselves to extend the utility of the survey.

It should be useful to compare the aggregated data of this survey with results of several specific surveys conducted or reported earlier by others (e.g., Badr, 1976; Palmer, 1978; Madkour, 1980a). Such comparisons might help verifying the conclusions of these surveys, and extend the knowledge about Egyptian information resources.

The data collected lends itself to further, more detailed analyses than presented in this report. On the one hand, the analysis can be extended to the level of subsectors; on the other hand, various directories and lists can be produced listing organizations possessing specific information resources. A comparative assessment of Egyptian information resources vis-a-vis international standards and recommendations should be illuminating. The survey database is in machine form and should be able to support academic theses and dissertations; for even greater utility, it should be converted so that it can be more easily manipulated by a database management software.

At some time in the future Egypt will undoubtedly wish to repeat the survey of information resources, and to carry it out in a manner that provides reliable data for the entire country. Such an objective can be accomplished only if the survey design team has access to data regarding the population to be studied, so that reliable statistical sampling techniques can be used. Considerably more time and effort should be allocated to the preparation of such a survey than was allowed for the design of the present study; and stricter procedures for assuring data quality and consistency should be followed.

Meanwhile, the perhaps most important task of the Egyptian information community is to assess the broader implications of this study. A thoughtful reader of this report can make a number of generic inferences: Egypt is wanting in information resources; this notwithstanding, some information resources are underutilized; administrations in all sectors of performance do not view information as a distinct, manageable resource item; Egypt possesses no means of rapidly and widely disseminating applied research results; professional manpower in the information domain is well educated but in subject areas which are traditional and in skills that are near-obsolete; collaboration in the information domain is rare; and so on. Neither the survey nor this report have addressed the cause of these symptoms. Thus apart from its utility to the system design and development process, the value of this study will be enhanced if the Egyptian information community takes time to discuss the causes and implications of these findings, interprets them in terms that are understandable to decision makers, and formulates thoughtful proposals and programs of action.

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APPENDIX A

ALPHABETICAL LIST OF ORGANIZATIONS SURVEYED

Legend

Control No. = number assigned to organization for survey  
control purposes

Organization = name of legal body or unit surveyed

## APPENDIX A. ALPHABETICAL LIST OF ORGANIZATIONS SURVEYED

Control No.	Organization
322	Acad. of Arts, High Institute of Cinema, Giza
172	Acad. of Sci. Res. & Technol., M.-Eastern Radio Isotope Center, Giza
409	Acad. of Sci. Res. & Technol., Nat. Info. & Doc. Center, Cairo
369	Acad. of Sci. Res. & Technol., Patents Office, Cairo
169	Agric. Res. Center, Animal Prod. Res. Inst., Giza
8	Agric. Res. Center, Desert Institute, Cairo
157	Agric. Res. Center, Inst. of Soil & Water Res., Giza
365	Agric. Res. Center, Plant Diseases Res. Inst., Giza
331	Agric. Research Center, Flora Res. Center, Cairo
171	Ain Shams U., Faculty of Alsun, Cairo
321	Ain Shams U., Faculty of Arts, Cairo
241	Ain Shams U., Faculty of Girls, Cairo
329	Ain Shams U., Faculty of Medicine, Cairo
410	Al Ahram Organization, Center for Polit. & Strategic Studies, Cairo
323	Al Ahram Organization, Information Dept., Library Section, Cairo
330	Al Azhar U., Faculty of Engineering, Cairo
314	Al Azhar U., Faculty of Science, Cairo
315	Alexandria U., Faculty of Agriculture, Alexandria
233	Alexandria U., Faculty of Commerce, Alexandria
180	Alexandria U., Faculty of Dentistry, Alexandria
333	Alexandria U., Faculty of Engineering, Alexandria
320	Alexandria U., Faculty of Law, Alexandria
259	Alexandria U., Faculty of Medicine, Alexandria
254	Alexandria U., Faculty of Pharmacology, Alexandria
3	Alexandria U., Faculty of Science, Alexandria
181	Alexandria U., Faculty of Veterinary Medicine, Alexandria
175	Alexandria U., High Inst. of Public Health, Alexandria
412	American U., Cairo
347	American U., Secretarial Institute, Cairo
337	American U., Social Research Center, Cairo
351	Assyut U., Faculty of Agriculture, Assyut
363	Assyut U., Faculty of Commerce, Assyut
312	Assyut U., Faculty of Engineering, Assyut
331	Assyut U., Faculty of Medicine, Assyut
310	Assyut U., Faculty of Pharmacology, Assyut
354	Assyut U., Faculty of Science, Assyut
300	Assyut U., Faculty of Veterinary Medicine, Assyut
364	Assyut U., Public Library, Assyut
344	Atomic Energy Establishment, Nuclear Info. Dept., Cairo
413	Cairo U., Dept. of Librarianship & Archives, Cairo
184	Cairo U., Faculty of Archeology, Giza
313	Cairo U., Faculty of Dar El Uloom, Cairo
183	Cairo U., Faculty of Med., Tech. Sec. School of Nursing, Cairo
222	Cairo U., Faculty of Medicine, High Inst. of Nursing, Cairo
353	Cairo U., Faculty of Pharmacology, Cairo
289	Cairo U., Faculty of Veterinary Medicine, Giza
245	Cairo U., Inst. of Statistical Studies & Research, Giza
243	Cairo U., National Cancer Institute, Cairo

420 Central Ag. for Pub Mobil. & Statistics, Cairo  
 359 Central Ag. for Pub. Mobil. & Stat., Population Center, Cairo  
 249 Deutsche Evangelische Gemeinde, Deutsche Schule, Giza  
 358 Egyptian Scientific Council, Cairo  
 336 El Menia U., Faculty of Agriculture, El Menia  
 362 El Menia U., Faculty of Eng. & Technology, El Menia  
 271 Facultyory Products Arabian Ink (REINZ), Cairo  
 209 Gen. Eg. Book Org., Docum. Center for Contemp. History, Cairo  
 340 Gen. Eg. Book Org., Nat. Center for Bibl. Serv. & Sci. Comm., Cairo  
 339 Gen. Eg. Book Org., Restoration & Microfilm. Center, Cairo  
 349 Gen. Eg. Oil Org., Misr Oil Co., Cairo  
 236 Gen. Org. for Hospitals & Ed. In., Diabetes Mellitus Inst., Cairo  
 234 Gen. Org. for Hospitals & Ed. In., Inst. of Ophthalmology, Giza  
 319 Gen. Org. for Hospitals & Ed. In., Res. Inst. for Trop. Med., Cairo  
 404 Gen. Org. for Industrialization, Eng. & Design Dev. Center, Giza  
 152 Gen. Org. for Information, Cairo  
 6 Helwan U., Faculty of Phys. Ed. for Men, Giza  
 306 High Council for Culture, Nat. Center for Film Culture, Cairo  
 216 Housing Research Center, Giza  
 403 Industrial Devel. Center for Arab States, Doc/Info Dept, Cairo  
 406 International Business Machines, Inc., Cairo  
 348 Mansoura U., Faculty of Agriculture, Mansoura  
 297 Mansoura U., Faculty of Dentistry, Mansoura  
 303 Mansoura U., Faculty of Engineering, Mansoura  
 301 Mansoura U., Faculty of Medicine, Mansoura  
 334 Mansoura U., Faculty of Pharmacology, Mansoura  
 355 Mansoura U., Faculty of Science, Mansoura  
 367 Menofeya U., Faculty of Electronic Eng., Menofeya  
 324 Menofeya U., Faculty of Science, Shebin El Kom  
 10 Meteorological Authority, Gen. Dir. of Sci. Research Cairo  
 407 Military Technical College, Cairo  
 252 Min. des Univ. Paris, Inst. Franc. d'Archeol. Orint., Cairo  
 365 Min. of Admin. Devel., Central Ag. for Admin., Cairo  
 212 Min. of Agriculture, Agr. Research Center, Giza  
 309 Min. of Agriculture, Eg. Doc. & Info. Center for Agr., Giza  
 242 Min. of Civil Aviation, Egypt Air Co., Cairo  
 256 Min. of Culture, Middle East News Agency, Cairo  
 402 Min. of Defense, Military Medical Academy, Cairo  
 251 Min. of Econ. & Foreign Trade, Gen. Org. for Internat. Exhibitions, Cairo  
 190 Min. of Economy, Misr Insurance Co., Cairo  
 401 Min. of Electricity, Eg. Electricity Authority, Cairo  
 304 Min. of Electricity, Nat. Center for Radiation Res. & Tech., Cairo  
 247 Min. of Finance, Tax Administration, Cairo  
 162 Min. of Health, Central Lab. for Biol. & Vaccine Prod., Giza  
 192 Min. of Health, Chem. Ind. Development Co., Giza  
 219 Min. of Health, El Nasr Pharm. & Chem. Co., El Kalubeya  
 7 Min. of Health, El Nile Co. for Pharmac. & Chem. Ind., Cairo  
 203 Min. of Health, Inst. of Cardio-thoracic Surgery, Giza  
 231 Min. of Health, Main Library, Cairo  
 257 Min. of Health, Nat. Org. for Drug Control Research, Giza  
 255 Min. of Health, Nutrition Institute, Cairo  
 13 Min. of Higher Educ., Acad. of Arabic Language, Giza  
 360 Min. of Housing, El Nasr Co. for Hardboard Mfg, Domyat  
 317 Min. of Housing, Portland Cement Co., Helwan  
 305 Min. of Industry, Abu Zabal Fertilizer Chem. Co., Cairo  
 193 Min. of Industry, Dept of Productivity & Voc. Training, Giza

366	Min. of Industry, Eastern Co., Giza
211	Min. of Industry, Eg. Geol. Survey & Mining Authority, Cairo
253	Min. of Industry, Eg. Org. for Standardization, Cairo
316	Min. of Industry, Eg. Starch, Yeast & Detergents Co., Alexandria
411	Min. of Industry, Eg. Sugar & Distil. Co., Cairo
298	Min. of Industry, El Nasr Co. for Preserved Food (KAHA), El Kalubeya
332	Min. of Industry, El Nasr Glass & Crystal Co., Cairo
361	Min. of Industry, El Nasr Spinning, Weaving & Dyeing Co., El Mehalla El Kobra
224	Min. of Industry, El Nasr Steel Pipes & Fittings Ind., Cairo
239	Min. of Industry, El Nasr Tanning Co., Alexandria
343	Min. of Industry, El Nasr Wool & Textile Co., Alexandria
338	Min. of Industry, El Tebbin Metal. Inst. for Higher Studies, Cairo
210	Min. of Industry, Gen. Co. for Ceramics & Porc. Products, El Kalubiah
167	Min. of Industry, Gen. Co. for Paper Ind., Alexandria
342	Min. of Industry, Gen. Org. for Printing Office, Giza
294	Min. of Industry, Kaft El Zayat Co. for Pesticides, Kafr El Zayat
290	Min. of Industry, Misr Co. for Mfg of Spinning & Weaving Eq., Cairo
302	Min. of Industry, Misr Spinning & Weaving Co., El Mehgalla El Kobra
201	Min. Of Industry, Moharram Ind. Printing Co., Alexandria
200	Min. of Industry, Nassr Boilder & Pressure Vessels Mfg Co., Giza
244	Min. of Industry, Nat. Co. for Cement Production, Cairo
246	Min. of Industry, National Paper Co., Alexandria
159	Min. of Industry, National Plastics Co., Cairo
237	Min. of Industry, Nile Matches Co., Alexandria
188	Min. of Industry, Portland Cement Co., Alexandria
318	Min. of Industry, Salt Soda Co., Alexandria
414	Min. of Industry, SEMAF, Cairo
341	Min. of Interior, Identification Dept., Cairo
335	Min. of Irrigation, Inst. of Water Distribution, Cairo
408	Min. of Irrigation, Res. Inst. for Water Resources Devel., Giza
179	Min. of Irrigation, Water Res. Center, Cairo
214	Min. of Justice, Supreme Constitutional Court, Cairo
352	Min. of Military Prod., Helwan Co. for Metallic Appliances, Cairo
223	Min. of Military Prod., Helwan Co. for Non-Ferrous Ind., Cairo
186	Min. of Petroleum, El Nasr Petroleum Co., Alexandria
248	Min. of Petroleum, Petroleum Pipelines Co., El Kalubeya
345	Min. of Reconstruction, Gen. Org. for Phys. Planning, Cairo
296	Min. of Social Affairs, Nat. Center for Soc. & Crimin. Res., Giza
11	Min. of Social Affairs, Social Insurance Org., Cairo
198	Min. of Supply, Egyptian Co. for Metals Trade, Cairo
258	Nat. Inst. of Management Development, Cairo
325	Nat. Inst. of Occupational Safety & Health, Cairo
240	National Res. Center, Metall. Res. & Devel. Institute, Giza
135	Remote Sensing Center, Cairo
346	T.V. and Radio Federation, Radio & TV Inst., Cairo
228	Tanta U., Faculty of Medicine, Tanta
293	Tanta U., Kafr El Sheikh Faculty of Agriculture, Kaft El Sheikh
299	The Arab League, Arab Res. & Studies Institute, Cairo
350	The Egyptian Antique Org., Egyptian Museum, Cairo
250	U.S. Navy, Medical Research Unit NAMRU-3, Cairo
238	Water Res. Center, Hydraul. Res. Sedimentation Inst., El Kalubeya
307	Zagazig U., Faculty of Agriculture, Zagazig
308	Zagazig U., Faculty of Commerce, Zagazig
328	Zagazig U., Faculty of Medicine, Zagazig
357	Zagazig U., Faculty of Pharmacology, Zagazig
327	Zagazig U., Faculty of Science, Zagazig

## APPENDIX B

### SELECTED CHARACTERISTICS OF ORGANIZATIONS SURVEYED

#### Legend

org\_no: control number of organization surveyed

ownership: 1 = public  
2 = government (central)  
3 = government (local)  
4 = private (Egyptian)  
5 = private (Egyptian and foreign)  
6 = private (foreign)

sector: see TABLES I-5, I-7, I-9

empl\_univ: no. of employees with university education

empl\_total: total no. of employees in organization

APPENDIX B. SELECTED CHARACTERISTICS  
OF ORGANIZATIONS SURVEYED

org_no	ownership	sector	empl_univ	empl_total
3	2	202	475	840
6	2	208	224	402
7	1	104	323	3391
8	2	101	326	434
10	2	312	278	1830
11	2	306	5600	19990
13	2	309	43	114
135	2	312	50	160
152	2	304	1100	2500
157	2	101	646	843
159	1	103	103	2380
162	2	305	328	1238
167	1	105	152	3229
169	2	106	180	220
171	2	201	37	110
172	2	301	120	300
175	2	203	127	234
179	2	307	25	70
180	3	203	36	265
181	3	203	11	173
183	2	310	5	83
184	2	201	80	160
186	1	103	435	4601
188	1	108	115	1242
190	1	308	730	7013
192	1	104	400	2800
193	2	312	502	3960
198	1	107	187	1500
200	1	107	96	987
201	1	105	149	2700
203	2	305	110	300
209	2	309	27	31
210	1	108	144	2300
211	2	107	609	2347
212	2	101	531	3612
214	2	306	38	130
216	5	312	15	40
219	1	104	274	2148
222	2	203	55	96
223	2	107	190	4000
224	2	107	265	3651
228	2	203	290	672
231	2	305	4	14
233	2	207	155	277
234	2	305	15	63
236	2	305	68	214
237	1	104	150	2700
238	2	307	29	238
239	1	109	61	1128

240	2	107	90	123
241	2	201	557	829
242	1	302	2110	9849
243	2	203	178	545
244	1	108	137	1568
245	2	207	120	250
246	1	105	129	2491
247	2	308	6307	14807
248	1	103	272	1993
249	6	310	79	150
250	6	305	160	240
251	2	312	78	201
252	6	201	3	92
253	2	312	227	426
254	2	203	156	317
255	2	305	180	300
256	1	304	465	1015
257	2	305	515	727
258	2	310	200	300
259	2	203	632	1082
271	4	105	4	107
289	2	203	282	512
290	1	102	85	1050
293	2	205	258	471
294	1	104	50	638
296	2	306	106	302
297	2	203	62	129
298	1	106	262	4395
299	5	304	13	37
300	2	203	132	238
301	2	203	303	501
302	1	102	843	32238
303	2	204	233	516
304	2	312	150	500
305	1	104	153	1679
306	2	310	10	19
307	2	205	318	912
308	2	207	358	519
309	2	312	13	19
310	2	203	115	231
311	2	203	301	467
312	2	204	247	681
313	2	201	129	206
314	2	202	281	397
315	2	205	664	1146
316	1	106	97	1581
317	1	108	107	2100
318	1	106	220	5162
319	2	305	64	167
320	2	206	87	201
321	2	201	250	400
322	2	201	86	128
323	4	304	869	4845
324	2	202	57	158
325	2	305	142	371
327	2	202	226	436

## APPENDIX B-3

328	2	203	864	1096
329	2	203	839	1227
330	2	204	325	526
331	2	101	12	37
332	1	111	245	6324
333	2	204	67	527
334	2	203	111	250
335	2	307	41	221
336	2	205	69	166
337	6	201	41	76
338	2	107	94	260
339	2	309	19	55
340	2	309	27	42
341	2	306	122	758
342	2	310	77	3455
343	1	102	223	10218
344	2	312	1600	5000
345	2	301	120	173
346	2	304	18	77
347	6	310	11	16
348	2	205	263	476
349	1	103	944	6181
350	2	304	34	112
351	2	205	259	563
352	1	107	84	2168
353	2	203	274	521
354	2	202	373	568
355	2	202	373	691
356	2	101	283	518
357	2	203	72	215
358	2	309	7	9
359	2	305	24	56
360	1	109	32	783
361	1	102	395	14493
362	2	204	117	208
363	2	207	105	165
364	2	208	3	10
365	2	312	877	1623
366	1	106	338	9573
367	2	204	163	510
369	2	312	31	73
401	1	305	3460	23455
402	2	203	0	0
403	6	312	36	68
404	2	301	255	398
406	2	312	40	80
407	2	204	500	750
408	2	307	15	50
409	2	312	76	168
410	4	304	24	27
411	2	106	14	42
412	6	208	0	0
413	2	201	32	35
414	1	107	139	2844
420	2	312	660	3000

## APPENDIX C

### ORGANIZATIONS SURVEYED, BY SUBSECTOR

#### Legend

sector: see TABLES I-5, I-7, I-9

org\_no: control number of organization surveyed

ownership: 1 = public  
2 = government (central)  
3 = government (local)  
4 = private (Egyptian)  
5 = private (Egyptian and foreign)  
6 = private (foreign)

empl\_univ: no. of employees with university education

empl\_total: total no. of employees in organizations

APPENDIX .C.  
ORGANIZATIONS SURVEYED, BY SUBSECTOR

sector	org_no	ownership	empl_univ	empl_total
101	157	2	646	843
101	212	2	531	3612
101	331	2	12	37
101	356	2	283	518
101	8	2	326	434
102	290	1	85	1050
102	302	1	843	32238
102	343	1	223	10218
102	361	1	395	14493
103	159	1	103	2380
103	186	1	435	4601
103	248	1	272	1993
103	349	1	944	6181
104	192	1	400	2800
104	219	1	274	2148
104	237	1	150	2700
104	294	1	50	638
104	305	1	153	1679
104	7	1	323	3391
105	167	1	152	3229
105	201	1	149	2700
105	246	1	129	2491
105	271	4	4	107
106	169	2	180	220
106	298	1	262	4395
106	316	1	97	1581
106	318	1	220	5162
106	366	1	338	9573
106	411	2	14	42
107	198	1	187	1500
107	200	1	96	987
107	211	2	609	2347
107	223	2	190	4000
107	224	2	265	3651
107	240	2	90	123
107	338	2	94	260
107	352	1	84	2168
107	414	1	139	2844
108	188	1	115	1242
108	210	1	144	2300
108	244	1	137	1568
108	317	1	107	2100
109	239	1	61	1128
109	360	1	32	783
111	332	1	245	6324
201	171	2	37	110
201	184	2	80	160
201	241	2	557	829
201	252	6	3	92
201	313	2	129	206
201	321	2	250	400

## APPENDIX C-2

201	322	2	86	128
201	337	6	41	76
201	413	2	32	35
202	3	2	475	840
202	314	2	281	397
202	324	2	57	158
202	327	2	226	436
202	354	2	373	568
202	355	2	373	691
203	175	2	127	234
203	180	3	36	265
203	181	3	11	173
203	222	2	55	96
203	228	2	290	672
203	243	2	178	545
203	254	2	156	317
203	259	2	632	1082
203	289	2	282	512
203	297	2	62	129
203	300	2	132	238
203	301	2	303	591
203	310	2	115	231
203	311	2	301	467
203	328	2	864	1096
203	329	2	839	1227
203	334	2	111	250
203	353	2	274	521
203	357	2	72	215
203	402	2	0	0
204	303	2	233	516
204	312	2	247	681
204	330	2	325	526
204	333	2	67	527
204	362	2	117	208
204	367	2	163	510
204	407	2	500	750
205	293	2	258	471
205	307	2	318	912
205	315	2	664	1146
205	336	2	69	166
205	348	2	263	476
205	351	2	259	563
206	320	2	87	201
207	233	2	155	277
207	245	2	120	250
207	308	2	358	519
207	363	2	105	165
208	364	2	3	10
208	412	6	0	0
208	6	2	224	402
301	172	2	120	300
301	345	2	120	173
301	404	2	255	398
302	242	1	2110	9849
304	152	2	1100	2500
304	256	1	465	1015

APPENDIX C-3

304	299	5	13	37
304	323	4	869	4845
304	346	2	18	77
304	350	2	34	112
304	410	4	24	27
305	162	2	328	1238
305	203	2	110	300
305	231	2	4	14
305	234	2	15	63
305	236	2	68	214
305	250	6	160	240
305	255	2	180	300
305	257	2	515	727
305	319	2	64	167
305	325	2	142	371
305	359	2	24	56
305	401	1	3460	23455
306	11	2	5600	19990
306	214	2	38	130
306	296	2	106	302
306	341	2	122	758
307	179	2	25	70
307	238	2	29	238
307	335	2	41	221
307	408	2	15	50
308	190	1	730	7013
308	247	2	6307	14807
309	13	2	43	114
309	209	2	27	31
309	339	2	19	55
309	340	2	27	43
309	358	2	7	9
310	183	2	5	83
310	249	6	79	150
310	258	2	200	300
310	306	2	10	19
310	342	2	77	3455
310	347	6	11	16
312	10	2	278	1830
312	135	2	50	160
312	193	2	502	3960
312	216	5	15	40
312	251	2	78	201
312	253	2	227	426
312	304	2	150	500
312	309	2	13	19
312	344	2	1600	5000
312	365	2	877	1623
312	369	2	31	73
312	403	6	36	68
312	406	2	40	80
312	409	2	76	168
312	420	2	660	3000

## APPENDIX D

- Document A: Organizational data
- Document B: Information activities
- Document C: Educational activities
- Document D: Collection of materials
- Document E: Equipment
- Document F: Manpower
- Document G: Expenditures/budgets
- Document P: Special Survey of Information  
Systems/Services



DOCUMENT B

SURVEY OF INFORMATION ACTIVITIES ENGAGED  
IN BY THE ORGANIZATION

INSTRUCTIONS: Check all activities in which the organization engages on a regular and budgeted or remunerated basis.

ACTIVITY	ACTIVITY VOLUME IN 1979	
	Number	Unit
<b>A. PUBLISHING ACTIVITY. (Check all items actually issued by the organization)</b>		
01. Books, monographs .....		titles
02. Scientific/technical journals .....		titles
03. Trade magazines .....		titles
04. Dissertations and theses .....		titles
05. Handbooks .....		titles
06. Directories .....		titles
07. Product catalogs .....		titles
08. Product announcements .....		products
09. Manuals .....		titles
10. Patents .....		patents
11. Trademarks .....		trademarks
12. Government documents .....		titles
13. Standards .....		standards
14. Norms .....		norms
15. Technical reports (publicly available) .....		titles
16. Technical reports (proprietary) .....		titles
17. New acquisitions lists .....		citations listed
18. Bibliographies .....		bibliographies issued
19. Abstracting/indexing journals (for public use) .....		abstracts
20. In-house abstracting bulletin/circular .....		abstracts
21. Bibliographic data base .....		data base items
22. Numeric data bases .....		data base items
23. Audio tapes and records .....		items
<b>B. LIBRARY TECHNICAL SERVICES (Check only if this activity is provided as a regular function of the organization.)</b>		
1. Acquisition of literature (all types) .....		physical volumes added
2. Cataloging .....		items cataloged
3. Storage/archive .....		vols. of total holdings
4. Maintenance of computerized bibliographic databases .....		databases
5. Maintenance of nonbibliographic computerized databases...		databases

DOCUMENT B (cont)

SURVEY OF INFORMATION ACTIVITIES (CONT.)

ACTIVITY	ACTIVITY VOLUME IN 1979	
	Number	Unit
C. <u>USER SERVICES</u> (Check only if this activity is provided as a regular function of the organization.)		
01. Reference Services .....	<input type="checkbox"/>	users served
02. Interlibrary loan .....	<input type="checkbox"/>	transactions
03. Circulation .....	<input type="checkbox"/>	volumes loaned
04. Photocopying .....	<input type="checkbox"/>	pages
05. Readers registered .....	<input type="checkbox"/>	number
06. Preparation of bibliographies .....	<input type="checkbox"/>	bibliographies
07. Current awareness (SDI) services.....	<input type="checkbox"/>	users served
08. Manual on-demand searching of catalogs, indexes, abstracts .....	<input type="checkbox"/>	searches
09. Computer-aided on-demand searching of above.....	<input type="checkbox"/>	searches
10. Information evaluation and synthesis.....	<input type="checkbox"/>	requests filled
11. Information repackaging .....	<input type="checkbox"/>	requests filled
12. Document translated .....	<input type="checkbox"/>	documents translated
13. Referral services .....	<input type="checkbox"/>	requests filled
D. <u>LIAISON/ADVISORY ACTIVITIES</u> (Check only if these activities are provided as regular services of the organization, either budgeted in-house or for a fee.)		
1. Extramural consulting on information system and sources design .....	<input type="checkbox"/>	projects
2. In-house consulting .....	<input type="checkbox"/>	projects
3. Extension services .....	<input type="checkbox"/>	projects

DOCUMENT C

**INSTRUCTIONS:** This questionnaire describes activities of education or training for information work, organized and implemented by the organizations surveyed. Four categories of activities are distinguished: formal programs (university degree or diploma courses), continuing education programs (specialized short courses, etc. for professional or sub-professional personnel, organized by university, industry, professional association, etc.); in-services training (programs for in-house employees); and conferences and workshops. "No. of hours" is the total number of instruction hours offered in 1979 in the subjects shown. "Enrollment" is the total number of registered participants in each program and subject for 1979.

79

	a. Undergraduate Courses		b. Graduate Courses		c. Cont. Ed. Courses		d. In-service Training		e. Conferences Workshops	
	(1) No.hrs.	(2) Enroll.	(1) No. hrs.	(2) Enroll.	(1) No. hrs.	(2) Enroll.	(1) No. hrs.	(2) Enroll.	(1) No. hrs.	(2) Enroll.
A. Information Production & Use .....										
1. Technical translation .....										
2. Publishing .....										
3. Scientific communication .....										
4. Training information use .....										
B. Information processes .....										
1. Information sources and media .....										
2. Acquisitions .....										
3. Cataloging & classification .....										
4. Indexing/abstracting .....										
5. Reference .....										
6. Information analysis/synthesis/ evaluation .....										
7. Information needs & services .....										
8. Information storage and retrieval .....										
C. Advanced Library Technologies .....										
1. Reprography .....										
2. Library automation/computers/ communications .....										
3. Micrographis .....										
4. Information science (theory) .....										
5. Information system design .....										
D. Research .....										
1. Research methods in information science.....										
F. Other (specify): _____										
G. TOTALS .....										

DOCUMENT D

COLLECTION

- A. Identify primary users of library/information center:
1. Staff of parent organization .....
  2. Faculty and instructors .....
  3. Students .....
  4. General public .....
  5. Other (specify) \_\_\_\_\_

List of total number of items in the collection by type of material.

Material Type	Unit	Annual Added in 1979	Total
B. PRINT MATERIALS (HARD COPY) .....			
01. Books, monographs .....	titles		
02. Scientific/technical journals..	titles		
03. Trade magazine .....	titles		
04. Dissertation & theses.....	titles		
05. Handbooks .....	titles		
06. Directories .....	titles		
07. Product catalogs .....	titles		
08. Product announcements .....	products		
09. Manuals .....	titles		
10. Patents .....	patents		
11. Trademarks .....	trade- marks		
12. Government documents .....	titles		
13. Standards .....	standards		
14. Norms .....	norms		
15. Technical reports (publicly available) .....	titles		
16. Technical reports (proprietary)	titles		
17. New acquisitions list .....	citations listed		
18. Bibliographies .....	bibliogra- phies issued		
19. Abstracting/indexing journals (for public use) .....	abstracts		
20. In-house abstracting bulletin/ (circular) .....	abstracts		
21. Bibliographic data base .....	data base items		
22. Numeric databases .....	data base items		
C. PRINT ON MICROFORM .....			
01. Microfiche, microform cards ...	cards		
02. Microfilm reels .....	reels		
03. Ultrafiche .....	cards		
04. Other microform .....	strips or cards		
D. 01. Audio tapes and records .....	titles		
E. OTHER MATERIALS (Specify) .....			
01. _____			
02. _____			

COLLECTION

F. Number of current subscriptions to periodicals \_\_\_\_\_

G. What percentage of the total collection is in each of the following languages?

	<u>Percent</u>			
1. Arabic .....				
2. English .....				
3. French .....				
4. Other (specify) _____				
5. _____				
6. _____				
7. _____				
	1	0	0	%

H. What types of access to holdings are provided?

1. Public card catalog .....	
2. Card catalog for staff use only .....	
3. Holding list of periodical titles .....	
4. Other holding lists (specify) _____	
5. _____	
6. _____	
7. Bibliographies .....	
8. Other means of access (specify) _____	
9. _____	

I. Describe any unique strengths in the collection. These must be very specialized collections in a narrow subject field.

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INFORMATION MANPOWER SURVEY

DOCUMENT F

**INSTRUCTIONS:** This questionnaire is intended for organizations which engage regularly in information activities A-E below. The manpower units are man-hours per week, for full-time and part-time employees.

AX	ACTIVITY	INFORMATION MANPOWER (Hrs/Week)						
		(a) Management Executive	(b) Professional (Info.)	(c) Professional (Non-Info.)	(d) Technician (Info.)	(e) Technician (Non-Info.)	(f) Auxiliary	(g) Total
<b>A. PUBLICATION</b>								
	1. Editing staff .....							
	2. Comp/Printing staff .....							
	3. Distribution staff .....							
	4. Lexicographic staff .....							
	5. Indexing staff .....							
	6. Abstracting staff .....							
	7. Bibliographic staff .....							
<b>B. TECHNICAL SERVICES</b>								
	1. Acquisition staff .....							
	2. Cataloging staff .....							
	3. Copying staff .....							
	4. Microfilming staff .....							
	5. Storage/archive staff .....							
	6. Database/computing staff .....							
<b>C. USER SERVICES</b>								
	1. Reference staff .....							
	2. Information searchers .....							
	3. Information analysis/synthesis evaluation staff .....							
	4. Technical translators .....							
<b>D. LIAISON/ADVISORY/ACTIVITIES</b>								
	1. Information consulting staff .....							
	2. Information services marketing staff .....							
	3. Extension service agents .....							

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ANNUAL EXPENDITURES/BUDGETS FOR INFORMATION ACTIVITY

**INSTRUCTIONS:** The objective of this section is to account for actual direct expenditures in calendar year 1979 (indirect or overhead expenditures should not be accounted for). "Personnel Expenditures" should correspond to figures in Manpower Survey Questionnaire. "Document and Information" expenditures should include information materials purchased in support of all the five types of information activities indicated. Major "Equipment" purchases should be prorated on a 5-year basis (equipment older than five years is considered paid off). Organizations whose budgets do not break down information expenditures as shown in the questionnaire are requested to make an attempt to estimate their expenses as well as possible.

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1979 DIRECT EXPENDITURES (LE)

	Personnel Expenditures (a)	Document and Information Acquisition (b)	Equipment (prorated for 1979) (c)	Other supplies, communication, travel training expenses, consultant fees, etc. (d)	Total (e)
A.					
1. Information publication .....					
2. Technical services .....					
3. User services .....					
4. Liaison/Advisory activities .....					
5. Information education activities .....					
6. TOTALS .....					

B. THE ABOVE TOTALS, show source of funds (in Egyptian Pounds)

1. Internal budget allocation .....					
2. Income from services .....					
3. Income from publications .....					
4. Extramural grants .....					
5. Other : _____					

Survey of Information Systems/Services

Instructions: This questionnaire is intended for a personal interview, to be filled out by the interviewer. Please fill out one questionnaire for each information system/service by checking appropriate items.

I. ORGANIZATIONAL QUESTIONNAIRE.

[Use here document A].

II. DESCRIPTION OF INFORMATION SYSTEMS

1. Name/designation of system/service: \_\_\_\_\_
2. Status (check one):
  - operational since (date): \_\_\_\_\_
  - under development, scheduled for operation in (mo., yr.): \_\_\_\_\_
  - in feasibility/planning phase
3. Type of database (check all that apply):
  - dynamic (contents are updated)
  - static (contents is frozen, no updating)
  - bibliographic (storing data about documents -- ( g., library catalog, citations of journal articles or reports, etc.)
  - scientific (repositories of data generated from scientific research such as physical properties, biomedical experiments, weather monitoring, water and soil research, social science research, etc.)

- o factual (records of events, patents)
- o Statistical (population, labor, employment, education, industry, agricultural, trade, etc. statistics)

4. Content of database (describe what the data is about): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. Form of database (check and circle appropriate entries):

- o analog:
  - card file
  - printed directory
  - looseleaf directory
  - microfiche
  - charts
  - maps
  - special forms
  - other (describe): \_\_\_\_\_
- o digital:
  - punched cards
  - paper tape
  - magnetic tape
  - floppy disc
  - optical coincidence cards

6. Database size (approximate volume of data in units of your choice such as cards, records, items, characters, bits)

- o current size/volume:           unit
- o annual increment:           unit

III. DESCRIPTION OF INFORMATION SERVICES

1. Information services based on database (check all that apply):

- o consulting for clients, to help formulate searches, solve information problems
- o database searching, with analysis and/or further output processing
- o supply of documents identified by search of database

- reproduction (xerox) of portions of database
- sale or rental of database
- microfilming or microfilm reproduction

2. Information Services Clientele (please answer all questions).

a) What types of organizations use, or are intended to use, your system/services? \_\_\_\_\_  
 \_\_\_\_\_

b) What are the job or position categories of individuals who use or are intended to use, your system/services? \_\_\_\_\_  
 \_\_\_\_\_

c) What limitations/conditions are there on the use of your system/services by other organizations? Please check all that apply:

- no limitations/conditions
- request for service must be submitted in person only
- client must first be registered and approved as user
- user must have permission for each separate use of service
- user must pay for service
- other (please describe): \_\_\_\_\_