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Current basic sources of ADP information; Computer research studies, 2

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System Development Corporation

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Current Basic Sources Of ADP Information

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COMPUTER RESEARCH STUDIES

Current Basic Sources Of ADP Information

Foreword

In June 1965, the American Institute of Certified Public Accountants engaged the System Development Corporation, Santa Monica, California to undertake a six-month research program on the impact of computers on the public accounting profession.

Part of the program included the preparation of research studies. This booklet is the second in a series presenting the results of such studies.

The research studies were prepared by, and represent the findings and conclusions of, the System Development Corporation. Accordingly, they do not present the views or an official position of the American Institute of Certified Public Accountants. They are being published only for the information of the Institute membership.

JOHN L. CAREY
Executive Director

February 1966

Preface

This selective set of references is to be used by the person who does not have extensive ADP training. The purpose of this report is to provide useful sources so that a reliable and dependable information base can be acquired. These sources include the following: ADP associations, trade journals, newsletters, books, etc.

This list of references was selected on the basis of: (1) extensive reading, (2) analysis of digests, (3) survey of pertinent bibliographies, and (4) a survey by data processing professionals who have considerable experience in the field.

Naturally, such a set of references reflects some personal opinion. However, in general, these references have been selected because they are considered valid, reliable, appropriate, and readable. This list of references is not offered as the only sources to be used in building an information base. As mentioned before, it is offered as a useful start in this effort.

Table of Contents

I.

Organizations to Contact
for Information

A. ADP Associations

1. Association for Computing Machinery (ACM)
   211 East Forty-third Street
   New York, New York 10017

   Telephone: (212) YU 6-3055

   The purposes of the ACM are to advance and promote the free interchange of information about the sciences and arts of information processing both among specialists and among the public. The methods of the Association for achieving these purposes include but are not restricted to formation of chapters and special interest groups, holding of meetings for reading and discussing papers, sponsorship of national conferences, and the publication of journals, books, conference proceedings, and other materials. Membership is comprised of mathematicians, engineers, physical scientists, business system specialists, analysts, and social scientists interested in computing and data processing.

2. Data Processing Management Association (DPMA)
   505 Busse Highway
   Park Ridge, Illinois 60068

   Telephone: (312) 825-2128

   Data Processing Management Association is an international organization devoted to the study and advancement of the art of data processing and bringing these technological developments to the attention of its membership, which is comprised of all levels of management personnel in the data processing field. Education of nearly 20,000 members and the general public is its primary purpose, and this is accomplished through many educational programs and publications as well as coordination with educational institutions in initiating a data processing curriculum. DPMA also sponsors and publishes the proceedings of the annual International Data Processing Conference and Business Exposition.

3. Systems and Procedures Association (SPA)
   7890 Brookside Drive
   Cleveland, Ohio 44138

   Telephone: (216) 235-4600

   The Systems and Procedures Association is a national professional organization of administrative executives and specialists in systems work serving business, commerce, education, government, and the military. Its professional objectives are: (1) to promote and foster the improvement of systems and procedures through study, education, research, and the exchange of ideas, and (2) to promote a broader understanding of the value of systems and procedures as a component of effective management.

4. Business Equipment Manufacturers Association (BEMA)
   235 East Forty-second Street
   New York, New York 10017

   Telephone: (212) MU 7-5969

   The Business Equipment Manufacturers Association (BEMA) is unlike the organizations listed above in that it is not a professional society but a trade association for the business equipment industry. It is of interest, however, since its Data Processing and Office Machine Groups are the approved American Standards Association sponsors of standardization

programs in their respective fields. Information about these programs and copies of proposed and approved standards are available from BEMA upon request.

B. *Service Centers*

At a cost of $1.00 a directory is available from the:

Association of Data Processing Service Organizations, Inc. (ADAPSO)
947 Old York Road
Abington, Pennsylvania 19001
Telephone: (215) TU 7-1450

C. *Education*

For a free list of colleges and universities offering training and degree courses in data processing, contact:

Association of Educational Data Systems
1201 Sixteenth Street, N.W.
Washington, D.C.
Telephone: (202) AD 4-4848

The manufacturers of computers also offer training courses in data processing. Pages 15 and 16 contain a listing of the manufacturers and their addresses. On request, they will usually provide material outlining the various courses available, the dates the courses are to be given and the educational sites.

II.

Journals

A. *Business Automation*

Articles, application descriptions, product announcements, and news items on business data processing for EDP management

and the interested business executive. September reference issue contains useful reference data. (See under Yearbook and Reference Manuals.) Magazine published monthly by Business Publications International, 288 Park Avenue West, Elmhurst, Illinois 60128, and is available free to qualified executives directly involved with their own organization's business information handling. It is available to others for $5.00 a year, telephone (312) TE 4-9350.

B. *Computers and Automation*

Articles, product announcements, and news items of interest to the computer programmer, EDP management, and the business executive. One of the regular features is a computer census giving for each computer the number of installations, unfilled orders, average monthly rental, and date first installed. June Directory issue contains useful reference data. (See under Yearbook and Reference Manuals.) Magazine published monthly by Computers and Automation, 815 Washington Street, Newtonville, Massachusetts 02160, for $15.00 a year, telephone (617) 332-5453.

C. *Datamation*

Articles, product announcements, and news items of interest to the computer programmer, EDP management, and the business executive. It is published monthly by F. D. Thompson Publications, Inc., 141 East Forty-fourth Street, New York, New York 10017, and is available free of charge to individuals who qualify by Datamation's standards and are employed by manufacturers or users of automatic information-handling equipment in all branches of business, industry, government, and military. It is available to others for $15.00 a year, telephone (212) MU 7-5180.

D. *Data Processing Magazine*

Articles, product announcements, and news items of interest to the computer programmer, EDP management, and the business executive. Magazine published monthly by North American Publishing Company, 134 North Thirteenth Street, Philadelphia, Pennsylvania, for $8.50 a year, telephone (215) 564-0336.

E. *Journal of Data Management and DPMA Quarterly*

Articles, product announcements and news items of interest to the manager of the EDP or EAM installation. Magazine published monthly and quarterly, respectively, by Data Processing Management Association, 524 Busse Highway, Park Ridge, Illinois 60068, for $5.00 a year each (free to members), telephone (312) 825-2128.

F. *Management Services*

Articles designed to expand the knowledge of CPAs and management consultants in the areas of planning, systems, and controls. Magazine published bi-monthly by the American Institute of Certified Public Accountants, 666 Fifth Avenue, New York, New York 10019, for $7.50 a year, telephone (212) LT 1-8440.

III.

Reviews

A. *Computing Reviews*

Reviews of articles, books, and reports on information processing for the computer professional or serious student. Magazine published bi-monthly by the Association for Computing Machinery, 211 East Forty-third Street, New York, New York, free to members of the ACM and $15.00 a year for nonmembers, telephone (212) YU 6-3055.

B. *Data Processing Digest*

Digests of recent articles, reviews of new books, announcement of meetings and training courses, of interest to the business

executive concerned with data processing (average issue, about 35 items in 24 pages). Articles of interest in such related fields as management sciences are also covered, plus specially written material as appropriate. Yearly index classified by title, author and subject is included with subscriptions. Report published monthly by Data Processing Digest, Inc., 1140 South Robertson Blvd., Los Angeles, California 90045, for $36.00 a year, telephone (213) 272-8425.

IV.

Newsletters

A. Business Automation News Report

Nontechnical weekly newsletter. Covers news of interest to the business data processing user and equipment manufacturer including: data processing applications; announcements of new equipment; financial status of manufacturers; contract announcements; meetings; and similar items. Published weekly by OA Business Publications, Inc., 100 East Forty-second Street, New York, New York 10017, for $50.00 a year, telephone (212) MU 7-4378.

B. EDP Industry and Market Report

This semi-monthly newsletter provides a nontechnical description of important economic and technical developments which affect computers and data processing equipment and the companies which build them. It is published by the International

Data Publishing Company, Inc., 355 Walnut Street, Newtonville, Massachusetts 02160, for $49 a year, telephone (617) 332-8840.

C. *EDP Weekly*

Indexed newsletter on contracts, government policy, new equipment, literature, marketing trends and other computer news for the business executive involved with EDP. It is published weekly by Industry Reports, Inc., 514 Tenth Street, N.W., Washington, D.C. 20004, for $55 a year, telephone (202) 737-0124.

V.

Yearbook and Reference Manuals

A. *Business Automation*

The September Reference issue of *Business Automation* contains the following type of information (price is included in $5 a year subscription for *Business Automation*—see above):

1. "Data Gathering and Transmission Equipment Chart."
2. "Data Display Equipment."
3. "Computer Characteristics Chart (U.S. Models)."
4. "Computer Characteristics Chart (Non-U.S. Models)."
5. "Microfilm Microfiche Reader and Printer Comparison Chart."
6. "Facsimile Equipment Chart."
7. "EDP Personnel Recruitment, Placement Services."
8. "Service Bureaus."
9. "Manufacturers, Alphabetical."
10. "Manufacturers, According to Products."
11. "Trade Names in Common Use."

B. *Computers and Automation*

The June Directory issue of *Computers and Automation* contains the following type of information (price is included in $15 a year subscription for *Computers and Automation*—see above):

1. "Roster of Organizations in the Computer Field."
2. "Roster of Products and Services: Buyers' Guide to the Computer Field."
3. "Roster of Electronic Computing and Data Processing Services."
4. "Roster of School, College, and University Computer Centers."
5. "Roster of Computer Associations."
6. "Survey of Consulting Services."
7. "Survey of Software Suppliers."
8. "Survey of Special Purpose Computers."
9. "Descriptions of General Purpose Digital Computers."
10. "Characteristics of General Purpose Analog Computers."
11. "List of Over 800 Areas of Application of Computers."
12. "Computer Users Groups—Roster."

C. *Data Processing Yearbook*

State-of-the-art reports on various aspects of automatic data processing, for the business executive and EDP management. Book published by American Data Processing, Inc., Book Tower, Twenty-second Floor, Detroit 26, Michigan, for $15, telephone (313) 962-8040.

Examples of the contents of the yearbook are:

1. Feature articles on tools, techniques, and tactics.
2. Reference information on:
   a. Data processing at colleges and universities.
   b. Private schools of data processing.
   c. Private and public institutes.
   d. Associations with an interest in data processing.
   e. Computer users' organization.
   f. Audio-visual aids.
   g. Data processing products and services.

VI.

Computer Characteristics

Computer Characteristics Quarterly

This quarterly report describes the main features of all general purpose computers. It covers typical price, internal speed, storage capacity, input-output equipment and special features for each system. New equipment or changes are added as they appear. Published quarterly by Charles W. Adams Associates, 575 Technology Square, Cambridge, Massachusetts 02139, for $10 a year, telephone (617) 491-6555.

VII.

Glossary

A. *Glossary of Automatic Data Processing*

By the Bureau of the Budget, Executive Office of the President, December, 1962, 62 pages. Can be requested from the Superintendent of Documents, United States Government Printing Office, Washington, D.C., price—40 cents.

B. *Proposed American Standard Vocabulary for Information Processing*

By the American Standards Association Sectional Committee for Computers and Information Processing (ASA X3). Can be re-

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quested from Business Equipment Manufacturers Association, 235 East Forty-second Street, New York, New York—no charge.

VIII.

Books

A. *EDP General*

1. Gregory, R. H., and Van Horn, R. L., *Automatic Data-Processing Systems*, Second Edition, Wadsworth, 1963, 816 pages.

   This book is a complete and comprehensive introduction to automatic data processing systems used in business and accounting problems. The reader does not require previous knowledge of electronic computer systems. The book blends a theoretical approach with a practical approach in order to explain the "why" as well as the "what" and "how" of data processing.

2. Chapin, N., *An Introduction to Automatic Computers*, Second Edition, Van Nostrand, 1963, 503 pages.

   This book explains the way automatic computers are put to work doing data handling tasks and how computers are used at different levels and phases of business, industry, and government. What computers can do, how they operate, what their demands are, and how specific results can be achieved are treated in practical and realistic terms.

3. Davis, Gordon B., *An Introduction to Electronic Computers*, McGraw-Hill Book Company, N.Y., 1965, 514 pages.

   This book is an introduction to concepts and basic features of electronic computers. It discusses in detail two machine-independent languages, FORTRAN and COBOL, which can be

used on most modern computers. The book examines the historical development of EDP, uses for computers, program modification, detection of errors, and computer evaluation. References and exercise materials are included at the end of each chapter.

B. *Computers and Management*

1. Canning, R. G., *Electronic Data Processing for Business and Industry,* Wiley, 1956, 332 pages.

    This book, a classic in its field, discusses electronic data processing as a management tool; it covers the patterns of data processing, equipment characteristics, programming, systems study, initial design, and detailed design.[1]

2. Gallagher, J. D., *Management Information Systems and the Computer,* American Management Association, Inc., 1961, 191 pages.

    This book undertakes to put the management information system into perspective by showing how to organize a system for management planning and control and develop the relationship between systems work and the management information system. It contains case studies of the American Airlines SABRE system and the experience of Sylvania Electric Products, Inc., with business data processing.[2]

C. *Computer Programming*

1. Cutler, D. I., *Introduction to Computer Programming,* Prentice-Hall, 1964, 216 pages.

    This book is an excellent elementary introduction to computer programming. The author employs a hypothetical computer, the EX-1. There are chapters on number systems,

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[1] *Referenced items are from Appendix III,* Automatic Data-Processing Systems: Principles and Procedures, *Second Edition, by Robert H. Gregory and Richard L. Van Horn, page 780.* © *1960, 1963 by Wadsworth Publishing Company, Inc., Belmont, California, by permission of the publisher.*

[2] Ibid., *page 781.*

data representation and organization, flow diagramming, programming techniques, advanced fixed point techniques, a typical modern giant computer, a higher level language, and programming systems. This book would be most suitable for self-instructional use.

2. McCracken, D. D., Weiss, H., and Lee, T. H., *Programming Business Computers,* Wiley, 1959, 510 pages.

In 21 chapters, this book covers the structure of files, flowcharting, data processing equipment, programming (arithmetic operations, address computation, loops and index registers, sub-routines, and input-output devices) and verification of program accuracy. Also covers machine-aided coding, sorting, operating techniques, steps in planning and programming computer applications, and auditing.[8]

D. *EDP Standards*

Brandon, D. H., *Management Standards for Data Processing,* Van Nostrand, 1963, 404 pages.

As the preface states, "The primary objective of this book is to outline formal methods for organizing the data processing program. It provides formal guidelines for every aspect of the program and for the techniques necessary to evaluate the progress and performance on a controlled basis. The book has been designed to:

• Provide data processing management with a definite methodology for the installation of good standards and procedures

• Provide the skilled data processing technician with the proper methods for organizing his own work

• Provide top management with a guide for the continued review of progress."

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[8] Ibid., *page 783.*

E. *On-line Real-Time*

Sprague, R. E., *Electronic Business Systems: Management Use of On-Line—Real-Time Computers,* Ronald Press Company, 1962, 168 pages.

As the preface states, this book undertakes to show that "by 1970 all electronic data processing systems will be of the on-line—real-time variety." The book covers the effect of pressures upon system requirements, developments in data processing and communications and current potential developments in on-line—real-time systems. Chapters deal with the impact of data systems on industrial manufacturing and the organization structure.[4]

F. *Auditing*

1. Kaufman, F., *Electronic Data Processing and Auditing,* Ronald Press Company, 1961, 180 pages.

   This book focuses on the problem of control in electronic data processing and shows how data flow through an organization by means of two examples: (1) payroll and sales functions, and (2) accounts receivable, purchases, and disbursements. The book will be of interest to auditors and others concerned with controlling the accuracy of data processing, since it covers redundancy and the reliability of data and the effects of data processing systems on internal control and audit-trail conditions. It also raises some of the control problems associated with the use of data processors.[5]

2. Boutell, W. S., *Auditing thru the Computer,* University of California Press, 1965, 181 pages.

   As stated in the preface, "The purpose of this book is two-fold: (1) to examine the environment within which business

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[4] Ibid., *page 784.*
[5] Ibid., *page 782.*

data processing systems function, and (2) to explore possible solutions to the problems which the auditor faces in reviewing these systems. This book discusses computer audit programs in the form of relatively simple models that suggest how the auditor may benefit, rather than suffer, from the increasing use of computers in business."

G. *Business Systems*

Radamaker, T., *Business Systems,* Volumes I and II, Systems and Procedures Association, Cleveland, Ohio, 1963, Volume I—258 pages; Volume II—325 pages.

This two-volume book has already been adopted for use in more than 30 universities and colleges throughout the United States. Developed and written by systems educators and practitioners, this book is also intended as a reference work for system professionals and for in-company training of new systems personnel. Volume I covers management and systems, organization concepts, systems concepts, systems survey and fact gathering, systems analysis, installation and follow-up, forms design and analysis, work measurement, and case studies.

Volume II covers forms control, records management, office equipment, EDP feasibility studies, integrated data processing, information retrieval, operations research, systems planning and control, PERT, and case studies.

IX.

List of Manufacturers of General Purpose Digital Computers

The manufacturers have a great deal of excellent information. On request, they will provide materials such as: brochures on types of service, educational matter, films and briefings, bibliographies, guides and indices, consultant type material, hardware and software specifications, operator manuals, and users guides.

The Bunker-Ramo Corporation
  8433 Fall Brook Avenue
  Canoga Park, California

Burroughs Corporation
  6071 Second Avenue
  Detroit 32, Michigan

Clary Corporation
  408 Junipero Street
  San Gabriel, California

Computer Control Company, Inc.
  Old Connecticut Path
  Framingham, Massachusetts

Control Data Corporation
  8100 Thirty-fourth Avenue
    South
  Minneapolis 20, Minnesota

Digital Equipment Corporation
  Main Street
  Maynard, Massachusetts

Friden, Inc.
  2350 Washington Street
  San Leandro, California

General Electric Company
  Computer Department
  13430 North Black Canyon
    Highway
  Phoenix, Arizona

Honeywell Electronic Data
  Processing Division
  60 Walnut Street
  Wellesley Hills 81,
    Massachusetts

International Business Machines
  Corporation
  Data Processing Division
  112 East Post Road
  White Plains, New York

Monroe International, Inc.
  550 Central Avenue
  Orange, New Jersey

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The National Cash Register
  Company
  Main and K Streets
  Dayton 9, Ohio

Philco Corporation
  Government and Industrial
    Group Computer Division
  3900 Welsh Road
  Willow Grove, Pennsylvania

Radio Corporation of America
  Electronic Data Processing
    Division
  Front and Cooper Streets
  Camden 2, New Jersey

Raytheon Computer
  2700 South Fairview Street
  Santa Ana, California

Scientific Data Systems, Inc.
  1542 Fifteenth Street
  Santa Monica, California

UNIVAC, Division of Sperry
  Rand Corporation
  1290 Avenue of the Americas
  New York, New York 10019