HEYDEN ADVANCES LIBRARY IN EDP MANAGEMENT

# Advances in DATA PROCESSING MANAGEMENT

## Volume 1

Editor: Thomas A. Rullo

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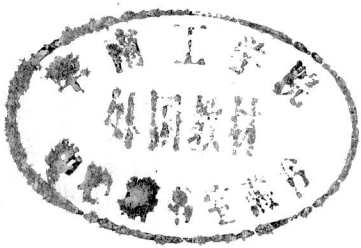
# Advances in Data Processing Management

## VOLUME 1



Edited by
**THOMAS A. RULLO**

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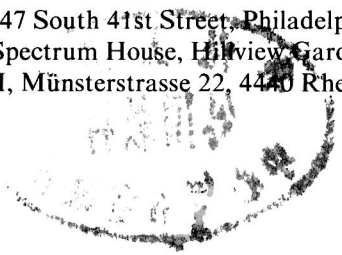

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## LIST OF CONTRIBUTORS

C. WARREN AXELROD, 28 Oxford Boulevard, Great Neck, New York 11023, U.S.A. (p. 138).

ARNOLD BARNETT, C. D. P., President, Barnett Data Systems, Rockville, Maryland 20854, U.S.A. (p. 93).

MARVIN GOLLAND, Peat, Marwick, Mitchell and Co., New York, New York, 10022, U.S.A. (p. 163).

R. E. GROSS, DEXEL Systems Corporation, Atlanta, Georgia 30339, U.S.A. (p. 1).

EARL C. JOSEPH, Staff Scientist—Futurist, Sperry Univac, Saint Paul, Minnesota 55165, U.S.A. (p. 174).

HANS F. LEVY, President, AC Manufacturing Company, Cherry Hill, New Jersey 08034, U.S.A. (p. 85).

JOHN T. LUDWIG, Cincinnati, Ohio, U.S.A. (p. 105).

SANDRA MAMRAK, Computer and Information Science Department, The Ohio State University, Columbus, Ohio 43210, U.S.A. (p. 47).

KENNETH MORRISON, A. I. A., Gensler and Associates, San Francisco, California 94111, U.S.A. (p. 62).

WILLIAM PERRY, CPA, CIA, CDPA, Longwood, Florida, U.S.A. (p. 30)

STEPHEN RUTH, Department of Decision Science, George Mason University, Fairfax, Virginia 22030, U.S.A. (p. 150).

AUGUST W. SMITH, Ph.D., Management Professor, Department of Management, College of Business Administration, Texas A. and M. University, College Station, Texas 77843, U.S.A. (p. 122).

# PREFACE TO THE HEYDEN ADVANCES LIBRARY IN EDP MANAGEMENT

During the past few years the rapid advances in EDP technology have been more than matched by a flood of published materials. It would be impossible to absorb all this new material and still be able to function in a working environment. Because of the information manager's plight, the HEYDEN ADVANCES LIBRARY IN EDP MANAGEMENT has been developed to provide a more useable information system.

A unique concept in the EDP information management field, the Library consists of six individual series, each dealing with a different area of information processing.

ADVANCES IN DATA PROCESSING MANAGEMENT
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These series focus on the most current topics of interest across a broad spectrum. They are not, however, merely collections of papers or readings. Rather, each series presents chapters which have been selected with a specific information need in mind and developed by authors chosen for their expert knowledge and experience. This combination of breadth of material and depth of author knowledge results in a unique and concentrated information management program.

We intend to review the EDP information management field periodically and add to each series so that managers can gain insights into the latest developments. We will also be researching new areas of potential impact. The HEYDEN ADVANCES LIBRARY IN EDP MANAGEMENT is intended to be a continuing and expanding effort, and we would welcome any suggestions or guidance from our readers.

THOMAS A. RULLO
Editor

# PREFACE

The evolutionary change in the role the EDP Manager plays within an organization has precipitated a like change in his information requirements. Managing no longer means simply getting the machine to work (although that still can pose quite a problem). The expansion of the influence of the computer into all areas of an organization, coupled with the demystification of the technology within the management ranks, has removed many of the traditional technical barriers while affording the manager new opportunities for professional growth.

While he is an integral part of his organization and fully aware of its requirements and capabilities, the EDP Manager must still turn elsewhere for the technical nourishment that sustains his technical growth. As an EDP professional, he is obliged to keep abreast of the latest developments in the technology, applications, and management practices. Through continuing education his value to his organization and his stature as a professional are increased.

The EDP industry is now at a stage where the time span from technological breakthrough to common usage is diminishing at an alarming rate. Improved manufacturing techniques bolstered by the new competitiveness of the industry has brought these new systems from the drawing board to the computer room without the extensive examinations in the literature that previously marked their introductions and availability. This rapid progress is accompanied by a comparable information burden. No longer can a manager survive without keeping in touch with developments through the current literature. Although the trade press does a good job of reporting this information as it happens, it cannot project the specific information requirements of a given manager at a point in time. Whether faced with a problem on performance measurement or personnel planning, a manager needs the answers now and at a depth and level for ready application of the knowledge. Waiting for the March issue or going back to "sometime in the spring of the last year" is not a satisfactory solution.

In this book we have brought together a broad base of material of special interest to EDP Managers. We have attempted to provide both practical and theoretical information in a mix that will provide insight into current problems while expanding the information base.

The material in this book ranges from the problems and opportunities inherent

in the selection process through the management of people, and proceeds from there to a view of what the future holds for the EDP Manager. To provide the greatest breadth and depth of information, we have selected a different author for each chapter. Each is an expert in his chosen field; thus, the views and experiences of a broad spectrum of talent are represented in this concise form.

The first three chapters, "Financial Acquisition Alternatives," by Robert E. Gross, "Costing the Acquisition of Small Computers," by William Perry, and "Statistical Decision Theory in the Selection Process," by Sandra Mamrak, all deal with the selection process and provide insight into both the technical and financial aspects of this critical area.

Optimization of the installation itself is addressed in both "Floorplanning for the EDP Centers with People in Mind," by Kenneth Morrison, and "Computer Room Environmental Control," by Hans Levy.

Since the EDP center no longer operates in a vacuum, its relationship with other organizational entities becomes a critical factor in the operation's potential success. In "User Involvement During Systems Development," Arnold Barnett presents a methodology for involving the ultimate system user in the developmental process early on to avoid serious communications problems. In "Interfacing with the EDP Auditor," John Ludwig presents guidelines for accomplishing the EDP audit as painlessly and positively as possible.

August Smith's chapter on "Computer Security" provides an overview of both logical and physical security. A Security Checklist is provided to facilitate the use of these concepts.

In "Resource Management and Scheduling," C. Warren Axelrod provides both a view and analysis of the systems and techniques available to assist the EDP Manager with scheduling and resource allocation problems.

Over the past few years, Management by Objectives has evolved from a new concept to one of the most widely implemented control mechanisms in industry. Stephen Ruth's chapter, "Management by Objectives for the Data Processing Manager," treats the basic MBO theory and its specific application in the EDP Manager's environment.

"Software Packages: Make or Buy," by Marvin Golland, presents a practical and usable approach to this difficult decision-making process.

For our final chapter, we asked Earl Joseph, the noted futurist, to check his crystal ball and provide us with a view of how upcoming advances in computer technology will affect the EDP Manager's role. The resulting chapter, "Future Computers: Impact on Data Processing Management," presents not only an exciting technological scenario, but a meaningful link to the EDP Manager's future as well.

THOMAS A. RULLO

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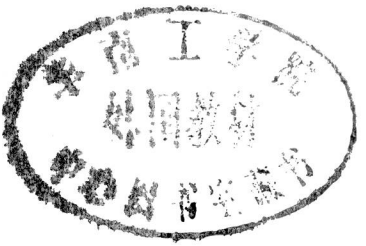

Chapter 1

# FINANCIAL ACQUISITION ALTERNATIVES

R. E. Gross

*DEXEL Systems Corporation*
*Atlanta, Georgia 30339*

The selection of a new computer is a task of enormous technical proportions. Matching the wide variety of available equipment to the needs and business objectives of the organization requires both knowledge and endurance. From a financial standpoint, the decision of how to pay for the computer can be as difficult and meaningful as much of the rest of the process.

When approaching this decision, several questions must be answered:

- Who is responsible for selecting the acquisition method?
- When must this decision be made?
- What acquisition methods are available?
- How does this apply to vendors' delivery systems?
- What comparison tools are available?

This chapter deals with each of these issues and provides an integrated view of the trade-offs involved.

## WHO IS RESPONSIBLE FOR SELECTING THE ACQUISITION METHOD?

The ultimate responsibility for this selection belongs to the senior profit center manager. In a small company this may be the chief executive officer but in a large organization it is a senior manager with both profit and loss responsibility. A computer system affects the profitability of a business on a gross basis through the efficiencies and better management decision-making capabilities it provides. In addition, the acquisition method affects after-tax profits because of certain investment tax credit and tax effect considerations.

The business's financial officer (controller or treasurer) also has an important part in the decision. At this point the cash flow aspects are important inasmuch as the method of acquisition affects the timing of payments. Also, the financial

officer sees more of the tax picture of the computer acquisition in relation to other investments.

The administrative officer or data processing manager also has an interest in this decision. Here the concerns are to establish a balance between lowering costs to the business and maintaining the flexibility to meet processing needs in the future. For example, the flexibility of a cancelable rent arrangement is weighed against the lesser cost of purchasing the system. In this choice, planning for future needs is an important requirement. Without a future plan it is not possible to make any benefit trade-offs to select the best acquisition method for the business.

Other individuals in the firm or other viewpoints may also be important. The opinions of people in the "approval matrix" must be considered, and a balanced or weighted decision is usually in the best interest of the firm.

## WHEN MUST THE ACQUISITION METHOD BE SELECTED?

With rare exception, the first task is to select the best combination of computer hardware and software from the available alternatives. This decision will have the greatest effect on the return on the computer investment.

When the best hardware and software solution has been chosen, then the method of payment needs to be considered in light of the firm's objectives and financial considerations.

If fine tuning is desirable or necessary on the entire computer decision, look at the less functionally desirable, but still acceptable, hardware/software alternatives. See whether some other acquisition method may not provide a better combination. For instance, the best functional solution may be one which its vendor will only sell. Lease of a less desirable, but still acceptable, system may provide a better cost alternative to the firm.

## WHAT ACQUISITION METHODS ARE AVAILABLE?

In the financial sense, there are only three methods of acquiring a computer (exclusive of gifts)—rent, lease, and purchase. There are, however, many variations on these basic approaches, depending on the vendor and equipment. The clearest way to compare these methods is to balance the specific advantages and disadvantages to the acquirer.

**Rental** is a common method of obtaining the use of a computer and has been the mainstay of major data processing vendors since the first computers were introduced. Essentially, a rental contract is an agreement under which the vendor retains ownership of the hardware and provides its use to the renter, together with maintenance, for a monthly payment. The agreement may be terminated by the renter, generally, with 30 days' notice. This arrangement is extremely flexible

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