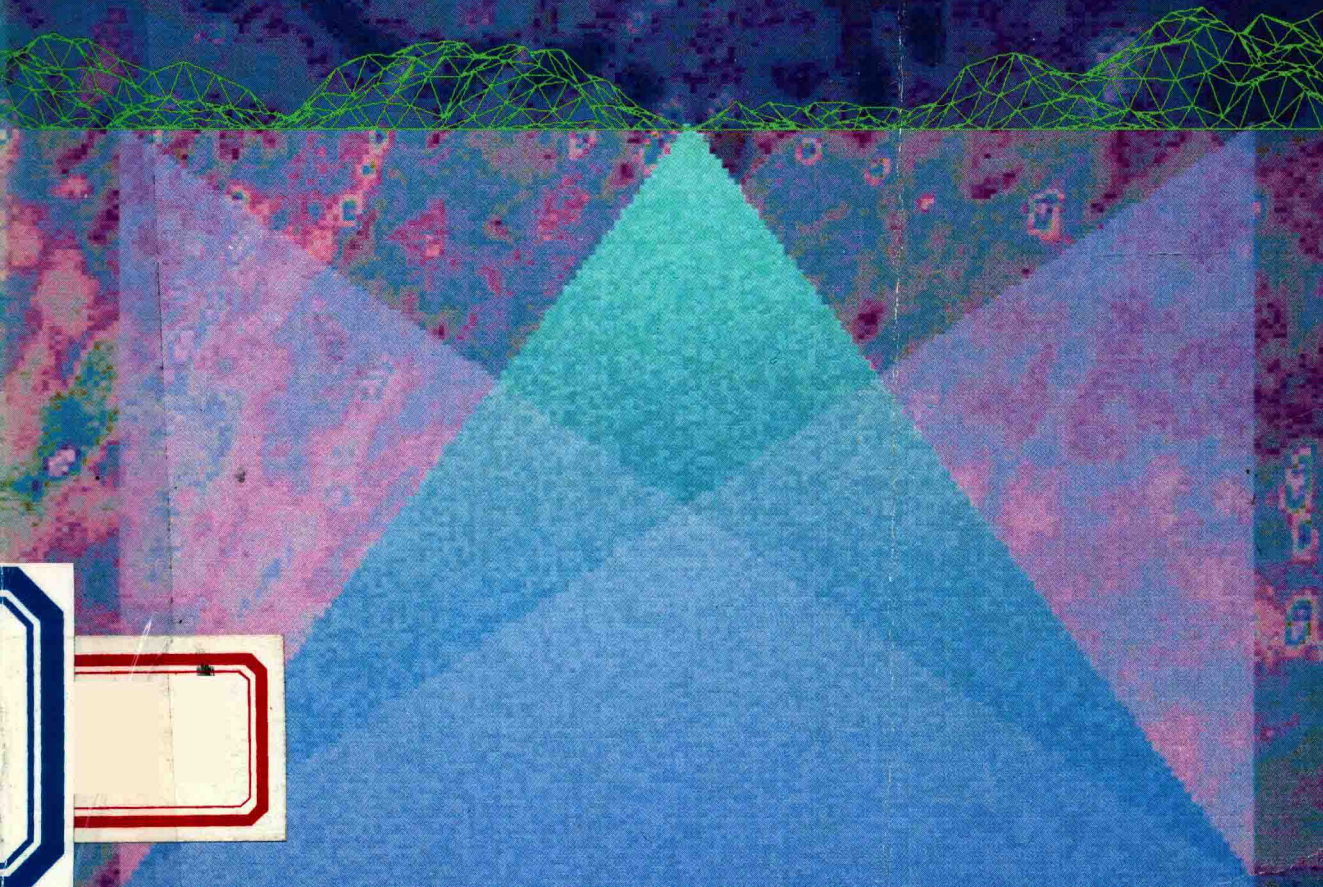


MANAGEMENT INFORMATION SYSTEMS:

PLANNING AND DECISION MAKING



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MANAGEMENT INFORMATION SYSTEMS:

Planning and Decision Making

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PREFACE

THE WIDENING RANGE OF CIS CHOICES

The world of computer information systems (CIS) has taken on many new dimensions over the years. In one dimension, there has been a change from exclusivity to participation. At the outset, computer operations and systems development functions were a domain dominated by technicians and specialists who communicated with operational and top managers with great pain. Eventually, however, users and line executives acquired understanding and a degree of sophistication in computer-related areas. In this dimension, CIS professionals acquired partners in the planning process. The CIS or management information systems (MIS) function became part of the overall corporate and organizational world.

Technological and market conditions also changed. At one time, CIS planning involved getting on the right waiting lists for equipment that might be needed somewhere downstream. Then came plug-compatibles, minicomputers, and, finally, microcomputers to usher in an era of computing for everyone. Both the scope and magnitude of hardware and software impacts multiplied rapidly. CIS professionals, in the process, acquired responsibilities for supporting a range of services that encompassed office automation, telephone and computer communication, reproduction services, and others. CIS or MIS planning became financially and operationally critical.

Recognition of real-world need, in due course, led to educational recognition. The Data Processing Management Association (DPMA) Model Curriculum for Undergraduate Computer Information Systems, released in

1981, specified an elective course in CIS planning. This book was developed under DPMA cognizance specifically to meet the requirements of the CIS-14 course entitled *Information Systems Planning*.

VALUE OF THIS BOOK

This book can be of value both for students majoring in CIS or other computer-related disciplines, MIS, and for business majors, particularly those following a sequence in management. With these target audiences in mind, the book has been structured to encompass both the general principles of organizational planning at multiple levels (strategic, tactical, and operational) and the special needs of planning for computer systems and operations.

A theme carried throughout this book stresses that CIS planning is part of the managerial planning process. That is, it is essential both for line and top-level managers to participate in planning for information systems needs and for CIS professionals to dovetail their planning and functions closely with those of the organization at large. The content structure of this book, described below, has been designed to meet the needs of these identified audiences and to deal with the realities of CIS or MIS planning in the modern business or governmental organization.

The relationship to reality is promoted by the fact that a practical, believable case scenario is woven throughout the book, beginning with the final portion of the first chapter and carrying forward into succeeding chapters. The challenges of CIS planning are dramatized in the case through consideration of the CIS planning implications of a corporate merger between two organizations with noncompatible computer systems and methods. As a special feature of this text, one of the RFP documents generated by an actual organization addressing problems similar to those in the merger case is provided for further student study and for actual practice. Appendix B provides a series of problems that the student can undertake, while Appendix C is an extensive RFP for a complex, computerized telephone switching system.

CONTENT ORGANIZATION

This book is about planning as a discipline within the field of management science and as a specific, vital need for the growing group of CIS professionals with managerial capabilities and credentials.

Chapter 1. Given the book's emphasis, the first chapter begins with an overview of the planning process. It is established that planning is results oriented and is necessary to implement growth and goal attainment for any organization. A planning process is reviewed that is based upon a proven decision-making model involving the sighting of targets, the identification of alternatives for meeting needs or solving problems, and the selection and implementation of the most favorable alternative.

The planning function is categorized to conform to basic levels of management responsibility—strategic, tactical, and operational. A distinction is made between strategic plans and strategy, a set of policies and/or guidelines that establishes what a company will be, what markets it will serve, and what organizational structure will be maintained.

The chapter ends by establishing a study case to be pursued throughout the book. This situation involves a merger of two major consulting ("think tank") organizations with divergent business bases and vastly different approaches to CIS management and services.

Chapter 2. In the text presentation, CIS planning is positioned within a framework that includes corporate planning, planning by user departments, and coordinated planning for the CIS function. Elements considered include the set of beliefs, policies, and traditions that establish a corporate culture. CIS planning, it is stressed, must take place within a framework of corporate needs and projections. The impact of the state-of-the-art in the computer industry is covered as a factor in the setting and implementing of CIS plans. CIS planning factors reviewed include methods for budgeting and/or charging user functions for CIS services. The planning factors associated with the study case are used to reinforce the review of principles within the main portion of the chapter.

Chapter 3. This chapter deals with planning strategies and methods. At the outset, planning is defined as an organized method for supporting the achievement of corporate goals and objectives. Planning is achieved through a process of information exchange at multiple organizational levels, both top-down and bottom-up. Tentative plans are formulated and exchanged for

review in several iterations until planners at all levels are satisfied with the targets and their responsibilities for achieving defined results.

Advantages that can accrue from an organized planning process are enumerated. These include the value of plans in directing the efforts of employees, in setting measurable goals to encourage achievement, in resource allocation, in providing a basis for control, and others. Potential pitfalls of the planning process also are discussed, including use of budgets to constrain plans, difficulties in dealing with unexpected developments that do not fit plans, and the possibility that ineffective plans will constrain progress.

Additional discussions deal with the nature of the planning function, the role of the budget within the planning process, and some specifics about planning at strategic, tactical, and operational levels. In the case, a framework is evolved for the CIS plans of the merged company.

Chapter 4. The planning process is reviewed in terms of the sequence of events—the planning cycle—followed in the development and release of formal plans for implementation. Cycles occur in the timing of the work done and in the organizational level at which activities take place. Typically, preliminary plans are initiated at the top, or strategic level. These first drafts are cycled down the organization for responses and inputs about projected achievements. These reviews, then funnel upward for responses and evaluations at succeeding higher levels. At the top level, revisions are made and the cycle is repeated until sufficient consensus is achieved so that the plan provides a basis for managing the company during the future period covered by the plans. The chapter becomes highly specific about the process for developing budgets that implement plans. Emphasis and in-depth reviews are conducted on the specific requirements and methods used in developing CIS budgets.

Chapter 5. The area of systems planning is identified as the point at which a CIS function interfaces with its environment. Emphasis in this chapter is on identification of opportunities and the selection of systems to be developed. This presents a conscious separation between evaluation of needs and actual project planning involving the development of selected systems. User requirements for development of information systems are seen as a driving force that motivates and guides the management of a CIS function. Activities associated with selection of systems for development are reviewed from

a managerial perspective. Topics range from allocation of CIS costs among users, to motivations that lead users to request computer systems, to procedures appropriate for selection of projects to be developed from among a portfolio of candidate systems.

Chapter 6. Planning for systems development projects is presented as a major CIS management responsibility. A major, early planning requirement is a decision on whether to buy and possibly adapt an application package or to do custom programming. Criteria are provided for justification of either alternative, depending upon situations. Planning steps for review and acquisition of software packages are covered, as are the needs associated with custom development. This chapter is worth citing for its objective, complete set of guidelines comparing the alternatives of application packages and custom software development.

Chapter 7. Planning for CIS staffing is presented as an activity that requires coordination with corporate personnel practices and operations if plans are to be respected and implemented. Options covered include the hiring of temporary personnel, consultants, and contract workers. In-depth discussions deal with employee evaluation and career consultation with people who can make a significant contribution.

Chapter 8. Hardware planning requires a special set of structure activities, which are reviewed in this chapter. The first requirement is identified as recognition that there are major differences between plans that establish new facilities and those that upgrade or modify existing computer centers. Another special requirement lies in determining the lead times involved in implementing any hardware plan. Lead times can be long. Further, on complex systems, lead times can vary dramatically among multiple vendors. Another highlighted requirement is consideration of the state of technology. Decisions frequently involve trade-offs between ordering available equipment for early delivery and decisions to wait in the belief that current equipment will be superseded within the time frame of the plans being formulated.

Chapter 9. This chapter presents and provides guidance in the use of a systematic approach to decision making. A procedure for considering, reaching,

and implementing major decisions is provided. This includes a series of steps, or phases, for stating objectives, identifying alternatives, evaluating and choosing the best alternative, and implementing the choice. Also described are requirements and mechanisms that provide and capitalize upon feedback dealing with decision-making effectiveness.

Chapter 10. A major trend in the management of computing resources—known as information resource management (IRM)—is reviewed in this chapter. IRM is a management style based upon recognition that databases or other sets of information are major resources of the owning organization. Accordingly, it is felt, information resources should be managed with the same caliber of care and at the same corporate level as financial, manufacturing, or natural resources. Effectively managed, information resources are shown to represent a potential for a competitive edge, or even for increased profitability, for the organization as a whole. One effect of the acceptance of IRM approaches is increasing stature and professional recognition for computer professionals.

Chapter 11. Conversion planning, the topic of this chapter, involves preparation for implementation and activation of new computer information systems. Conversion plans, in turn, center around the setting up of the files that will support new applications. Detailed coordination is needed for installation of hardware, acquisition of software, and validation and capture of data. Conversion methods, including parallel, phased, or abrupt, are covered.

Chapter 12. In this chapter, emphasis is on the role oversight management plays in relation to the CIS function and its effect upon communication between CIS management and top management. CIS planning is related directly to an organization's capital budgeting processes. The point is stressed that the level of expenditures involved in CIS programs requires continual policy review and evaluation. Charts, reports, diagrams, and other tools appropriate for overseeing the information resources function and its operations are reviewed.

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