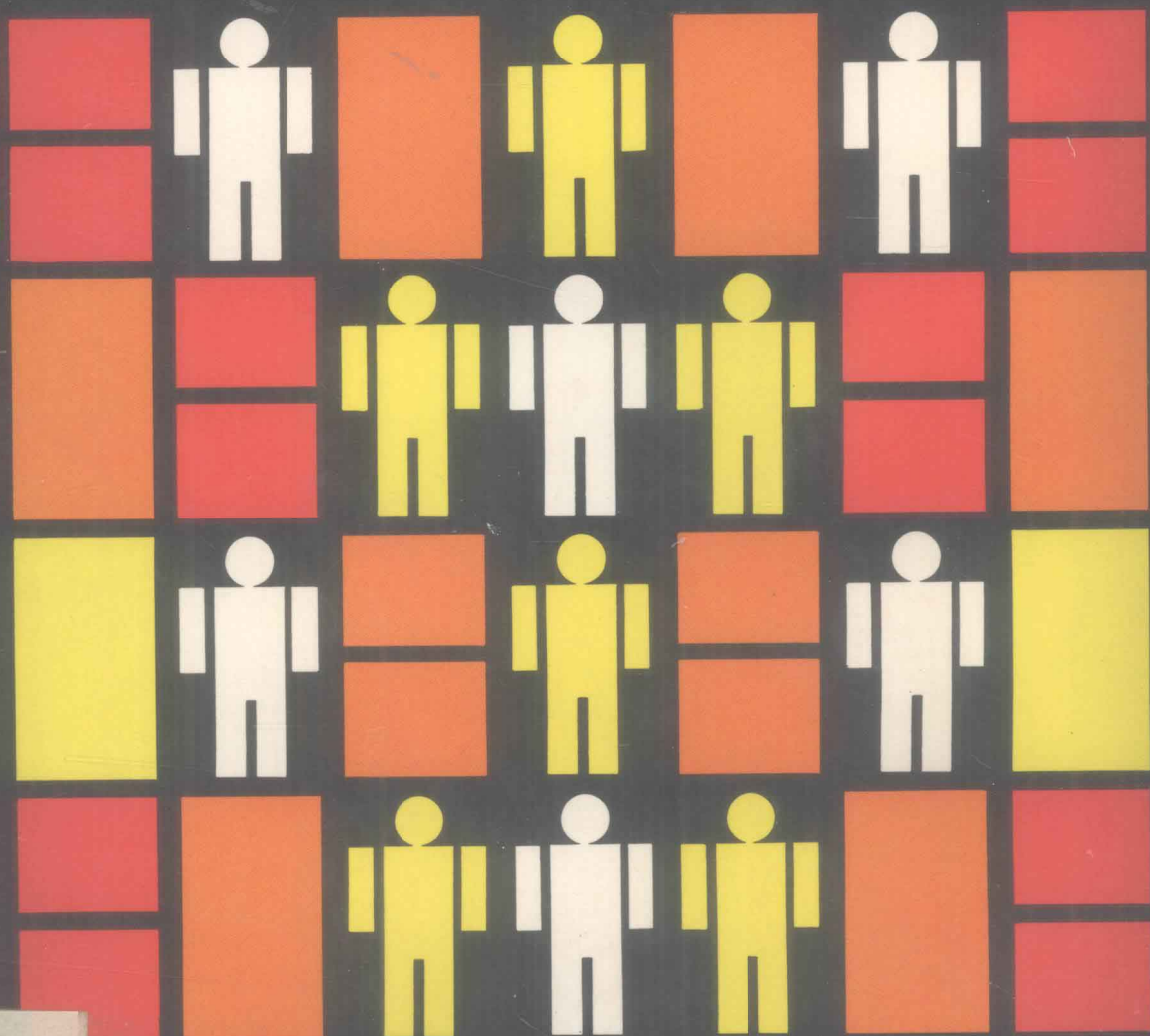


Robert V. Head

# Planning Techniques for Systems Management



Information Sciences, Inc.

**Robert V. Head**

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# Preface

This book will provide the reader—whether a computer professional, manager, or end user—with a thorough grounding in strategic planning for today's information systems. More than a planning “cookbook,” it offers a down-to-earth explanation of planning concepts and relates systems planning to the broader framework of strategy development for the entire business organization.

You will find here proven approaches for implementing a systems plan in your organization, along with an identification of the pitfalls that others have encountered and overcome. The latest developments in the field are treated, such as the integration of end user computing into traditional computer operations and the emergence of new managerial concepts like information resources management. In discussing these matters, I draw upon more than twenty-seven years' experience in information systems, ranging from work on some of the earliest business applications to current involvement with integrating mainframes, minis, and micros into a common planning environment.

It is interesting—and, I think, instructive—to speculate on why this subject of systems planning has been growing in importance. An obvious reason is

that information processing is now more than ever big business, both in an absolute dollar sense as well as in the proportion of company resources being earmarked for computer systems. With this expansion has come increasing top management scrutiny—and a demand that sound business planning practices be applied in managing the systems function.

This has been the case within large, well-managed companies for some time. In my speeches and seminars, I have long stressed that any organization with an annual budget of more than \$100 million for data processing is *managerially deficient* if it is not following a formalized strategic systems plan. And, of course, the number of companies—and government agencies—falling into this spending category has been growing apace. But I discern, also, increasing adherence to strategic planning precepts within smaller organizations, those, say, with systems budgets of around \$10 million.

But size of the systems department, whether measured by dollar expenditures, headcount or throughput capacity, does not alone account for the current preoccupation with strategies for systems management. Technological change, especially the advent of the personal computer, is having a profound effect. The acquisition of micros by managers and other end users has extended the scope of data processing beyond the boundaries of the systems department and has raised troublesome issues of planning and control.

Today's personal computer usage is intrinsically *different* from mainframe systems operations but it evinces the same *need* for managerial strategies to guide the orderly introduction of new technology and avoid uncontrolled growth.

The concepts and methods presented in this book should be of value not just to systems managers and professionals. They should be equally relevant to senior managers concerned with controlling escalating—and often hidden—computer costs and to the growing body of end users eager to exploit the new technology.

# Contents

## **Preface**

<b>Chapter 1: The Importance of Information Systems Strategy</b>	<b>1</b>
1.1 <i>Some Basic Definitions</i>	1
1.2 <i>Planning Goals and Objectives</i>	3
1.3 <i>The Systems Planning Hierarchy</i>	4
1.4 <i>Duration of Systems Planning</i>	7
1.5 <i>The Planning Process</i>	8
1.6 <i>Elements of Systems Planning</i>	9
1.7 <i>Conceptual Basis for Planning</i>	14
1.8 <i>Is Strategic Planning Necessary?</i>	19
1.9 <i>Benefits of Planning</i>	21



<b>Chapter 2: Organizational Considerations</b>	<b>25</b>
2.1 Growth Stage Theory and Strategic Planning	25
2.2 The Evolving Information Systems Organization	29
2.3 Future Organizational Patterns	32
2.4 Decentralization and Distribution Strategies	36
2.5 Distributed Processing Considerations	38
 <b>Chapter 3: Systems Planning and Business Planning</b>	 <b>41</b>
3.1 Top-Down and Bottom-Up Planning	41
3.2 Linking Business Plans and Systems Plans	44
3.3 Translating Business Objectives into Systems Objectives	46
3.4 Systems Planning and Budgeting	50
3.5 Information Resources Management	52
3.6 Rationale for an IRM Organization and Program	55
3.7 Broadening the Scope of Systems Planning	58
 <b>Chapter 4: Controlling the System Development Process</b>	 <b>61</b>
4.1 Systems Planning and Project Planning	62
4.2 End-User Computing	65
4.3 Management Control over Personal Computing	68
4.4 Setting Project Priorities	70
4.5 Risk and Failure in System Development	76
4.6 System Development Life-Cycle Management	82
 <b>Chapter 5: Preparatory Planning Steps</b>	 <b>93</b>
5.1 Getting Started	93
5.2 Preparing for Planning	95
5.3 Hardware Capabilities Inventory	95
5.4 Assessing the Applications Portfolio	96
5.5 Personnel Resources	99
5.6 Financial Resources	102

<b>Chapter 6: Systems Planning Methodologies</b>	<b>105</b>
6.1 <i>Packaged Planning Methods</i>	107
6.2 <i>Management by Objectives</i>	108
6.3 <i>Requirements Analysis</i>	111
6.4 <i>Decision Support Systems</i>	112
6.5 <i>Critical Success Factors</i>	116
6.6 <i>Business Systems Planning</i>	119
6.7 <i>Projecting Demand for Services</i>	123
6.8 <i>Technology Assessment</i>	125
 <b>Chapter 7: Improving Planning Effectiveness</b>	 <b>135</b>
7.1 <i>Deterrents to Effective Planning</i>	135
7.2 <i>Ad Hoc versus Annual Planning</i>	140
7.3 <i>Planning in a Decentralized Environment</i>	141
7.4 <i>Central Staff Controls</i>	142
7.5 <i>Format of Strategic Plans</i>	145
7.6 <i>What Makes a Good Systems Planner?</i>	151
7.7 <i>Ten Precepts for Systems Planning</i>	153
 <b>Index</b>	 <b>157</b>

# Figures

1.1	Goals, Objectives, and Projects	5
1.2	Duration of Systems Planning	7
1.3	IBM CPU Technology Processing Power	11
1.4	Organizational Characteristics	12
1.5	Potential of Information Technology	12
1.6	Strategic Analysis: Key Outside Company External Factors	13
1.7	Strategic Analysis: Key Company External Factors	15
1.8	Strategic Planning Framework	16
1.9	Levels of Data Usage	17
1.10	Benefits Achieved from Information Systems Planning	22
2.1	Stages of DP Growth	27
2.2	DP Department: 1960s	30
2.3	Information Systems Department: 1970s	31
2.4	Organizational Pattern A: 1980s	33
2.5	Organizational Pattern B: 1980s	35

2.6	Centralization and Distribution	37
2.7	Distribution of an Application	39
3.1	Business Planning and Systems Planning	42
3.2	A Method of Segmenting a Business	45
3.3	Impact of Business Planning Practices on Achievement of Information Systems Planning Benefits	47
3.4	Impact of Linkage on Achievement of Information Systems Planning Benefits	48
3.5	MIS Opportunities, Problems, and Strategy	49
3.6	Current and Projected Costs	51
3.7	MIS Financial Statement	53
3.8	Information Life-Cycle Management	54
3.9	Disciplines Contributing to Information Resources Management	56
4.1	Hardware/Software Cost Trends	63
4.2	The Resource Allocation Problem	64
4.3	End-User Classification	67
4.4	Microcomputer Support Structures	69
4.5	Microcomputer Roles and Responsibilities	71
4.6	Software Conversion Prioritization	77
4.7	Project Size and Complexity	79
4.8	"Ideal" Project Evolution	80
4.9	PERT Network of Events and Activities	81
4.10	Project Life Cycle	84
4.11	Key Activities of the Initiation Phase	85
4.12	System-Development Life-Cycle Costs	91
5.1	Equipment Inventory Data Elements	96
5.2	Distribution of Computer Resources	97
5.3	Application Inventory Data Elements	97
5.4	Assessment of Current Applications	98
5.5	Analysis of Ongoing Projects	100
5.6	Personnel Summary	102
5.7	Cost Baseline Analysis	103
5.8	Machine Costs by Application	104
6.1	Objective Statement Outline	108
6.2	Traditional Decision Support	113
6.3	On-Line Decision Support System	114

6.4	Typical DSS Applications	116
6.5	DSS Benefits	117
6.6	BSP Study Steps	120
6.7	BSP Study Results	122
6.8	Work-load Projection	124
6.9	Key IS Management Issues	128
6.10	Cross-Impact Matrix	133
7.1	Sources of Problems for Information Systems Planning	137
7.2	An ADP Planning Process	143
7.3	Application Planning Form	146
7.4	Inclusion of Components in Information Systems Plans	147
7.5	Major Oil Company's Ten-Year Plan	148
7.6	Manufacturing Company's Plan	149
7.7	Military Agency's Master Plan	149
7.8	Federal Agency's Ten-Year Plan	150
7.9	State Government's Three-Year Plan	150
7.10	Finance Company's Three-Year Plan	151

# 1

## The Importance of Information Systems Strategy

Although a disciplined and formalized approach to systems planning is new to most organizations, the rationale and conceptual basis for such planning have their roots deep within the field of applied systems technology. To provide a common frame of reference, it is first necessary to set forth some basic definitions and to sketch out the conceptual underpinnings for strategic planning. It is also useful to explore the nature of the planning process and the essential elements that must be kept in mind as plans are formulated. Finally, there must be recognition of the necessity for systems planning and the benefits that will accrue to organizations that do an effective job of applying the basic planning concepts.

### 1.1 SOME BASIC DEFINITIONS

The terminology of strategic planning for information systems has been adapted from military parlance. Military organizations traditionally have made a distinction between broad operations, such as those that might take place

within a major theater of war, and the maneuvering of units in the field. This is evident in the following dictionary definitions:

**Strategy:** (A) The science of planning and directing large-scale military operations, specif. (as distinguished from tactics) of maneuvering forces into the most advantageous position prior to actual engagement with the enemy; (B) a plan or action based on this . . . .

**Tactics:** (A) The science of arranging and maneuvering military and naval forces in action or before the enemy, esp. (as distinguished from strategy) with reference to short-range objectives; (B) actions in accord with this science . . . .

As adapted to business practices, strategic planning is concerned with the broad mission and goals of the organization, such as those having to do with competitive position, market share, and new product introduction, while tactical planning pertains to those activities necessary to support day-to-day operations within various operating components.

Similarly, within the information systems function, strategic planning pertains to goals and objectives essential to support business strategies, whereas tactical planning addresses those tasks needed to maintain and perform day-to-day data-processing operations, such as getting the payroll checks out on time or assuring sufficient processing and storage capacity to accommodate anticipated increases in user demand.

### Some Further Definitions

Besides the distinction between strategy and tactics, some further definitions are in order.

**Planning:** Deciding future actions with the objective of having favorable influence over future events.

**Forecasting:** Estimating the future without seeking to influence it by actions or decisions.

**Budgeting:** Planning an organization's activity for a specified time period,—for example, one year, for the purpose of integrating component plans.

It is important to note the difference between planning and forecasting. The purpose of planning is to permit the organization to exercise a favorable influence over future events. Forecasting has the more limited purpose of

providing an estimate of the future without seeking to *influence* that future through planned actions and decisions.

Budgeting can be viewed as a specific and immediate form of planning, in which resources are earmarked for particular operations, usually a year or at the most two years into the future.

### **Where Does the Emphasis Lie?**

Strategy and tactics are necessarily interrelated, regardless of whether one thinks of them in the traditional military sense or in terms of their applicability to a business enterprise. Strategic plans would be worthless without tactical plans to support them, and tactics would represent a disorganized and self-defeating deployment of forces without the guiding discipline of an overall strategic plan. Recognizing that these two planning activities cannot be divorced, strategic planning places *primary* emphasis on broad strategies and only secondarily emphasizes immediate tactics.

The same comment is applicable to long-range and short-range plans. Strategic system planning concentrates on the long range, that is, what the organization should be doing with its information resources over a future period that may extend five years or more. The long-range future is where the major emphasis must be placed. However, short-range considerations must receive recognition as well, so that occurrences over the next year or two that could affect the long-range future are not overlooked. For example, a decision made today to commit the organization to a particular data base management system will almost certainly have long-term implications.

Thus, strategic systems planning focuses on long-range strategies but cannot neglect the tactical steps that must be taken in the immediate future.

## **1.2 PLANNING GOALS AND OBJECTIVES**

Among the methodologies that have been adapted from general management practice to the more specialized field of systems planning is “management by objectives” (MBO). Under this approach, the goals of the organization are first formulated and agreed upon. These then become the basis for preparation of specifically detailed objectives.

A goal may be defined as *an abiding statement of purpose*. Goals should be documented in succinct and general terms and should be selected for their relevance throughout the duration of the planning period, whether this is three, five, or ten years.



The following are examples of goal statements for a systems organization:

1. Provide the telecommunications capability to deliver data to any company computer center from any remote site at reasonable cost.
2. Increase the ability to respond to top management requirements for information and facilitate the collection and maintenance of such information.

These goal statements are *nonquantitative*. They do not refer to target dates or indicate the resource requirements needed to carry them out. That kind of specificity is contained in an objective statement.

In formulating goals, care should be taken not to identify too many. In most organizations, the principal systems strategies can be captured in fewer than a dozen goal statements. A review by the author of numerous planning projects reveals a range from a single organizational goal to more than forty at the other extreme. A single-goal organization is epitomized by some of the early banking and airline reservation systems where virtually the sole purpose of the systems function was, in the one case, to convert demand deposit accounting to automated processing and, in the other, to process passenger reservation data electronically. Single-goal organizations remain today, though they are a rarity.

If an organization deems it necessary to pursue as many as forty separate goals, these goals should be grouped into categories for purposes of managerial review and tracking, such as a set of goals having to do with telecommunications, another dealing with data base management, and so on.

The decision as to what is important enough to constitute a goal is, of course, judgmental and somewhat arbitrary. One manager might view a particular activity as weighty enough to be reflected in a goal statement while another might relegate the same initiative to the subordinate level of an objective.

Objectives lend specificity to goals and provide a basis for assignment of responsibilities and the follow-up needed to assure that goals are being accomplished. Though the objective statement contains detailed information not appropriate for a goal, it still should be fairly short, preferably not more than a page or two.

### 1.3 THE SYSTEMS PLANNING HIERARCHY

There is a hierarchical relationship between the different kinds of planning documentation. This is illustrated in Figure 1.1, which shows the relationship between goals, objectives, and projects. Most organizations should be