BUSINESS PLANNING
for an uncertain future
scenarios & strategies

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PREFACE

Unknowingly, collaboration on this book began about 20 years ago. In the early 1960s, while at SRI International, we were first introduced to the concepts of decision analysis by Ronald Howard of Stanford University. At the time, we were attracted by the explicitness and elegance of the analytical techniques for evaluating options and candidate strategies but troubled by the inadequate treatment of the external environment.

In the early 1970s, our collaboration continued at the Institute for the Future, focusing almost exclusively on the development and application of tools for characterizing alternative futures. The points of departure here were the forecasting methods (e.g., Delphi) developed by Olaf Helmer and Norman Dalkey at Rand. Gradually, the techniques for eliciting and aggregating group judgments were extended and tied more closely to the Bayesian statistical decision theory of Ronald Howard, Howard Raiffa, Ward Edwards, and others. In the late 1970s, a synthesis of approaches was begun by drawing together into a single planning framework the perspectives of a variety of actors – including both professional planners/analysts and operational decision makers.

Our intent is not simply to make another addition to the rapidly growing collection of publications on strategic planning, nor is our purpose to generate a comprehensive treatise on the methodology of planning or on organizational planning processes. Our primary objective is to describe and draw together – from a fresh perspective – three key elements of strategic business planning: the characterization of the external environment (uncontrollables); the generation of options or candidate strategies (controllables); and the evaluation of the interplay between environmental scenarios and candidate strategies (models). These three elements serve two important functions. They provide the methodological "handles" for our approach to business planning; and they serve as simple organizational indicators of the "state of planning" describable by the number of scenarios generated, the number of options evaluated, and the types of models used.

The continuum of planning stages extends from "little or no formal strategic planning" to "scenario-driven planning." Within this continuum, strategic management takes on new meaning: It is the continuing matching of planning to the operational needs of the enterprise. The "goodness" of match – and, therefore, a measure of the effectiveness of strategic management – depends critically on the degree of uncertainty in the external environment, the uniqueness of product or service niche, and the dominant management style.

The eleven chapters of the book may be viewed in three parts. The first three chapters lay the groundwork for our proposed planning framework. In chapters 4 through 8 the three key elements of our planning framework – scenarios, candidate strategies, and corporate models – are described in detail, and a number of examples are provided for the use and application of the tools introduced. Finally, chapters 9 through 11 address three softer but equally important aspects of strategic planning – value models, the politics of planning, and the changing nature of the management function. Summary descriptions of each chapter follow.

Chapter 1. Rationale for the Book. This book is about strategic planning in an uncertain environment. It extends the state of the art by providing the manager with new tools, approaches, and understanding for describing an uncertain environment, generating a broad range of candidate strategies, and evaluating the performance of such candidate strategies.

Chapter 2. Strategic Planning: Definitions and Examples. Starting from the simplest definition of planning – thought before action – a new and more useful definition of strategic planning is developed. Ten real-world examples are outlined that illustrate corporate strategies that have been developed or are being considered.

Chapter 3. Development of Our Strategic Planning Framework. A comprehensive framework for strategic planning is developed that defines the major stages of planning. Also provided is a descripton of how this framework is viewed by the principal corporate actors and planning practitioners.

Chapter 4. Scenarios – Shorthand Descriptions of the Future. A step-by-step process is described for generating internally consistent environmental scenarios and metascenarios from component sets of events and trends. Included are the simplest, static, tree-like scenarios as well as complex, dynamic scenarios generated by the use of structural models.

Chapter 5. Candidate Strategies. A candidate strategy is defined by a set of options and their timing. Described here are the processes for generating candidate strategies and the ways such strategies are structured from integrated sets of options affecting human, physical, and financial resources.

Chapter 6. The Corporate (Strategic) Model. The corporate model is the centerpiece of the strategic planning framework. Described are the main components of a corporate model, the way they are interrelated, and how they function.

Chapter 7. Using the Corporate Strategic Model. An operational description is provided for how a strategic model would be "flown" by an actual user. Included are the running of test programs and the description of a number of ways in which new candidate strategies may be generated and evaluated.

Chapter 8. Applications and Examples. Five examples are described that illustrate how the planning tools introduced have been applied in a variety of situations. The examples have been selected to cover the entire range of strategic planning stages from "little or no formal planning" to the full interplay of multiple scenarios and candidate strategies.

Chapter 9. Value Models. Almost everyone agrees that value models are key elements of any planning framework, yet very little guidance exists in the literature on how such models are constructed and when and how corporate objectives should be revised. Described are the processes for setting objectives, comparing them with consequences of simulation, and revising them when appropriate.

Chapter 10. The Politics of Planning. Planning is a complex amalgam of art and science. Scenarios, candidate strategies, and corporate models provide only one – and often not the most important – input to changing perceptions and behavior. Some practical implications for those who translate thoughts to action are identified and examined.

Chapter 11. The Future of Management: Ten Shapers of Management in the 1980s. The important economic, technological, and social forces shaping the management function in the next decade are identified. A key aspect of this transformation is the role of the manager as strategic planner.

CONTENTS

CHAPTER 1
RATIONALE FOR THE BOOK

BACKGROUND AND PURPOSE

The environment that corporations face today – and will face increasingly in the future – is markedly different from the past. The most important difference is the much higher levels of uncertainty at which they operate. Corporate managers are now confronted with a much wider variety of economic, social, regulatory, and competitive factors influencing performance. At the same time, the level of understanding of how these factors – singly and jointly – influence achievement of corporate objectives is not keeping pace with management needs.

To deal with distinctly more uncertain external environments, managers must consider broader ranges of choices for meeting corporate objectives. Choices based on historical experience or simple extrapolations, choices that are merely products of an obsolescent corporate culture, or choices that are designed primarily "not to rock the boat" are now almost certain to lead to difficulties. There must be an "opening up" of the choice generation process to mirror – or be responsive to – the sharp increase in the uncertainties of the operating environment.

But a more uncertain external environment and a wider range of choices are only the "what if" and "do what" prologues for the "so what" questions. The interplay of the external environment and corporate choices can now result in far more volatile performance outputs such as sales growth, profit, return on investment (ROI), and so forth.

Such dramatically changed circumstances – a more uncertain external environment, a wider range of candidate choices, and less stable performance – are redefining the whole concept of "what constitutes management" (Mintzberg 1973) and what constitutes strategic planning (Amara 1979). Management must quickly learn to deal effectively with soft (social, political) inputs over a broader range of circumstances where changes can occur more rapidly and unexpectedly than ever before. In these inherently riskier circumstances, strategic planning is no longer a luxury to be indulged only as time permits.

We wish we could make the claim that those who plan well strategically will always fare better than those who do not. We cannot, anymore than we can say that, for any given decision, the rational use of all available information will inevitably result in a desirable outcome. Just as good decisions can lead to poor outcomes, so too, because of the uncertainty of the future, good planning can lead to poor outcomes. *But* – and this is very important – statistically, we expect that good planning or good decisions will lead to favorable outcomes more often than will either poor or no planning, or poor decisions, or decisions reached by default. In a sense, this is the statement of faith on which all rational approaches to human affairs are based.

This book is about strategic planning in an uncertain environment. It addresses precisely those planning and management problems that have just been identified and that all corporate executives will continue to face in the future. The book unifies and extends the state of the art of strategic planning by providing the manager with new tools, approaches, and understanding for describing an uncertain environment, generating a broad range of candidate strategies, and evaluating the performance of such candidate strategies vis-à-vis a set of environmental scenarios.

A PLANNING FRAMEWORK

The simplest planning framework for thinking about these relationships is outlined in figure 1.1.

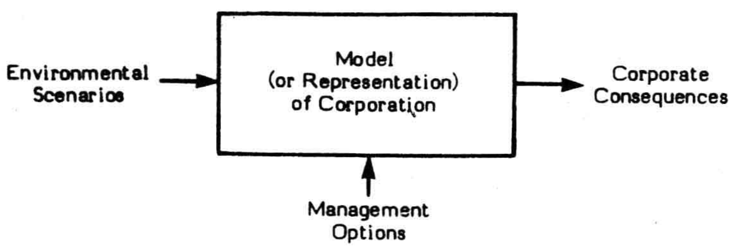

Fig. 1.1. Simplest Planning Framework

We can view this representation in at least two principal ways. One is to think of it (from left to right) in terms of three basic questions:

- What *if?* (scenarios)
- *Do* what? (options)
- *So* what? (consequences)

Another is to view the representation in reverse (from right to left) in terms of a companion set of equivalent questions:

- What do we *want?* (consequences)
- What can we *do?* (options)
- What do we *know?* (scenarios)

In either case, the basic representation is identical. For our present purposes, the framework needs to be expanded further. A more complete representation is found in figure 1.2.

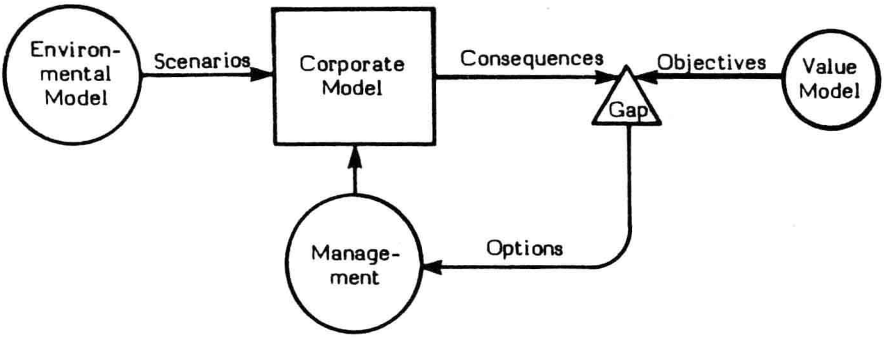

Fig. 1.2. Expanded Planning Framework

Several additions have been made. First, the external environment has been shown in two parts: an environmental model representing key trends and events in the form of environmental scenarios; and a value model representing the objectives of the principal corporate stakeholders (shareholders, employees, regulatory agencies, management, etc.). Second, a feedback loop has been included that emphasizes the iterative nature of the planning process. At each stage, consequences derived from the operation of the corporate model are compared with performance objectives. Based on the mismatches between such consequences and objectives, new options are generated by management and evaluated. In principle, this process continues until a satisfactory match is obtained and an input is then provided to management for actual resource allocation.

The last statement indicates that we have drawn only "half" of the planning framework. And indeed we have, describing only the thinking or analyzing half. In fact, the half we have described so far is the mirror image of the acting or implementing half that is normally considered the "real" (physical) world. Each element of our mirror image is, in fact, a representation of a corresponding element in the physical world where the correspondences are:

Acting/Implementing		Thinking/Analyzing
Environment	⟷	Environmental Model
Trends/Events	⟷	Scenarios
Corporation	⟷	Corporate Model
Decisions	⟷	Options
Results	⟷	Consequences
Goals	⟷	Objectives
Stakeholders	⟷	Value Model

The complete representation is shown in figure 1.3 together with a glossary of all terms used in table 1.1. For the moment, we will focus only on the top half, outlining the basic approaches to be developed in succeeding chapters.

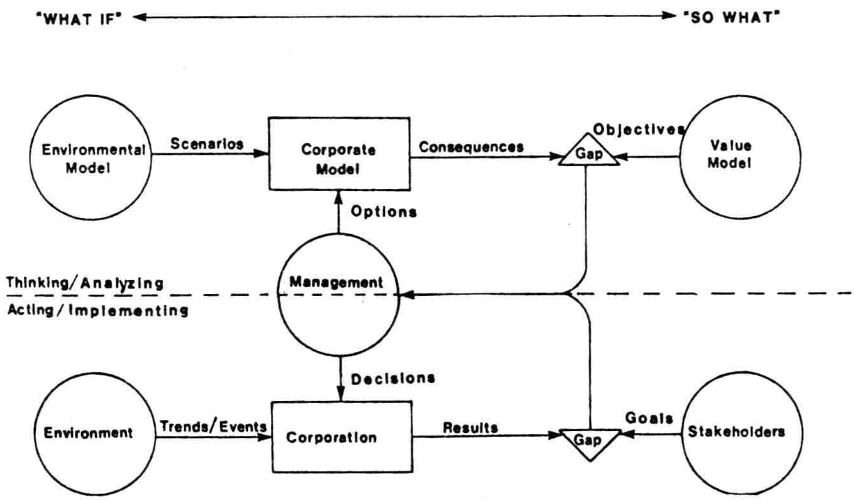

Fig. 1.3. Corporate Planning Framework

SCENARIOS

To outline the approach we will develop in this book, let's look more closely at different parts of the total system. A good place to begin is with the genera-

Table 1.1. Glossary of Terms

Candidate Strategy:	An orchestrated set of options over time designed to achieve specified goals and objectives.
Consequence:	Outcome of the evaluation of a particular option or candidate strategy.
Corporate Model:	Representation of basic relationships among decision variables, key external factors, and performance measures (i.e., results) that are significant in managing a business.
Corporation:	Human, physical, and financial assets to be managed for specified objectives and goals.
Decision:	Allocation of resources.
Environment:	External environment affecting performance of a business and including economic, demographic, labor force, regulatory, competitive, and technological factors.
Environmental Model:	Representation of basic relationships governing interaction of key trends/events affecting an organization.
Goal:	A measure of some point or milestone (along the way toward an objective) to be attained, typically but not always, in budgetary or financial terms.
Objective:	An end or "destination" to be attained.
Option (or Choice):	Candidate decision to be evaluated.
Result:	Outcome of a particular decision or strategy.
Scenario:	Representation of an interconnected sequence of trends/events describing an internally consistent alternative future.
Stakeholders:	All groups having a stake in an organization (or business) including owners, employees, customers, suppliers, lenders, management, government, the community, and society at large. As a stakeholder group, management is responsible for achieving results that satisfy the legitimate interests of each group.
Strategy:	An orchestrated set of decisions over time designed to achieve specified goals and objectives.
Trends/Events:	External developments or factors – usually but not always uncontrollable – affecting operating results.
Value Model:	Representation of priorities, as well as time and risk preferences, of stakeholders of an organization in a form in which comparisons may be made to specified objectives.

tion of scenarios capturing the essential elements of the external environment, as shown in figure 1.4.

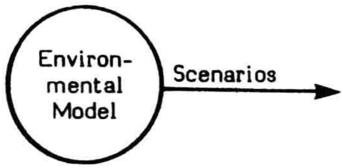

Fig. 1.4. Representation of External Environment

A relevant description of the external environment in which the corporation is likely to operate has become essential for two primary reasons. As already noted, the environment has become more complex and uncertain; and such an environment must become an increasingly major factor in forcing an "opening up" of candidate decisions and strategies a corporation must consider in order to thrive. The principal dimensions of the external corporate environment are:

- Economic/Resource, including macro indicators on the state of the economy and natural resource supply and demand factors;
- Consumer/Demographic, including changes in demographic characteristics, life-styles, and values affecting consumer demand and government at all levels as a consumer in its own right;
- Labor force/Work place, including developments affecting labor force characteristics and objectives;
- Regulatory/Political, including all factors affecting the government/private sector interface;
- Competitive/Institutional, including descriptors of organizational, market, and competitive developments and changes;
- Technology/Capital, including descriptors of technological advances and the climate for capital investment.

Each major dimension may be aggregated geographically into international, domestic, and even regional or state bases.

A key consideration in the description of the external environment is *selectivity*. Which external factors are most relevant or important to a corporation, and how do we shape the selection of factors in accordance with such judgments? In the broadest terms, we try to identify those factors that are most likely to influence achievement of corporate objectives or "goodness" (the success or failure) of corporate options. More specifically, the identification of such factors must be done by top management supplemented by inputs from outside the corporation to guard against "blinders" imposed by the internal corporate culture. And a number of direct and indirect methods for eliciting information for developing a profile of key external factors have been developed. These are based on management interviews that rely on "soft" as well as quantitative responses to structured sets of questions.

The identification of such factors is the starting point for the preparation of individual forecasts for each principal factor or variable. For time horizons of five to ten years or longer, the generation of such forecasts must necessarily rely heavily on judgmental inputs. Here, questions of the number and type of "experts" as well as the focus of elicitation and the methods for aggregation of individual judgments are key. Increasingly, quantitative methods using subjective probabilities are being used effectively to capture the full range of uncertainty in the perceptions of groups of knowledgeable individuals.The individual forecasts, in turn, provide a point of departure for structuring interrelationships among the key factors identified. Premodeling or structural modeling methods that may be used look for both qualitative and simple quantitative relationships. The most useful are either tree-like or matrix structures that can describe simple probabilistic and time-varying relationships.

The outputs of such structural models can lead directly to the generation of scenarios. Or, alternatively, scenarios may be generated by less direct means using the knowledge of intervariable relationships as a general guide. Usually, scenarios are chosen to span or bound a range of preassigned probabilities (such as from the lowest to the topmost decile), although often three scenarios may be used to provide "upper" and "lower" bounds around a "central" scenario. Scenarios normally include both quantitative and qualitative descriptions in a form that permits subsequent evaluation of corporate options. We shall return to this point shortly. In our planning framework representation, we may now expand the "environmental model" element in the fashion shown in figure 1.5.

OPTIONS

One of the most demanding aspects of a manager's job is the generation and evaluation of options prior to commitment to a particular course of action. Because of the closely intermingled nature of option generation and resource allocation, both "ends" of the management process need to be examined. Thus, in figure 1.6, although our primary interest is in the "option" half (above the dashed line), we need to look at the "decision" portion as well.

In a very real sense, management decision making is synonymous with resource allocation. Such corporate resources may be basically of three kinds: financial, physical, and human. Financial resources are derived from equity capital, debt instruments, or retained earnings. Physical resources include

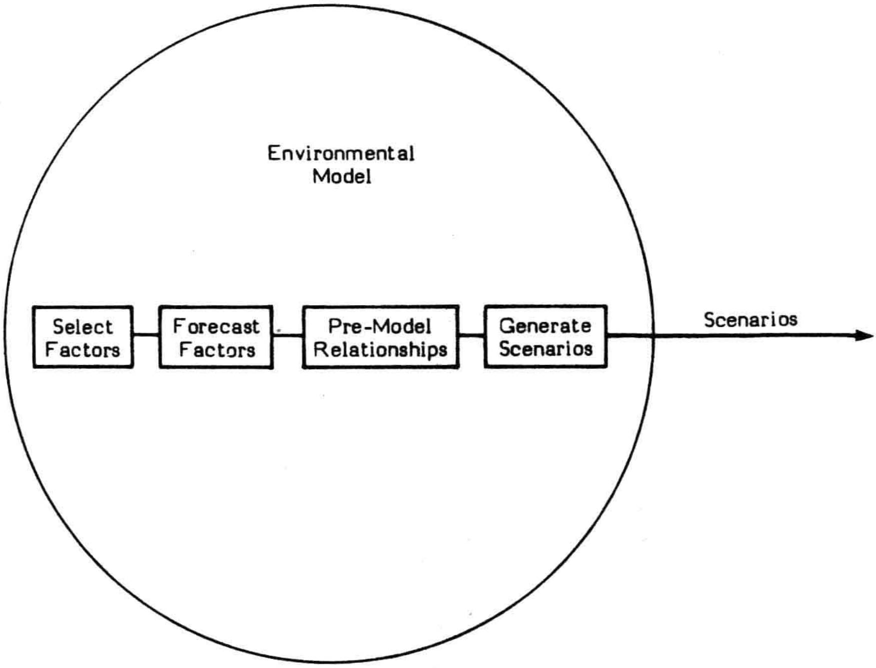

Fig. 1.5. Environmental Model

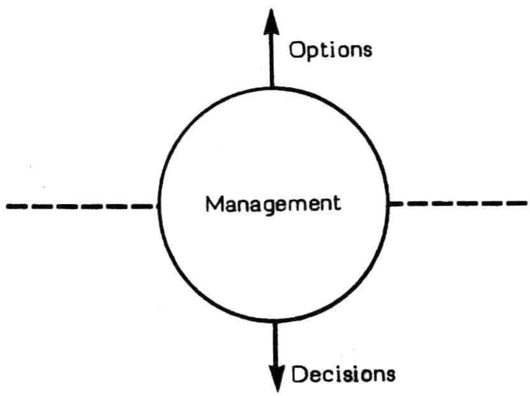

Fig. 1.6. Representation of the Management Function

all plant and equipment needed to carry out R&D, product/service design and development, and product/service production and marketing. Human resources are the pool of human talent and skills required to carry out corporate functions.

Management's major decisions are circumscribed by these three classes of resources; and such decisions are, of course, strongly interacting and overlapping. For example, management can raise capital through equity offerings, borrowings, or retained earnings by controlling debt/equity ratio and by determining what proportion of earnings to distribute as dividends to shareholders. It can choose the size and direction of its research and development effort, where to build a new plant, how large it should be, and what manufacturing processes should be used. It can determine the level and kind of marketing effort to be allocated on a product/service-by-product/service basis. It can decide who to hire, when to hire, who should manage what, and under what incentive structures; and *each combination* of specific decisions with respect to each major resource category – including acquiring or selling particular segments of a business – is precisely what we mean by resource allocation.

Normally, management explores and examines a very small part of the "option space" defined by the dimensions outlined above before decisions are made. Traditionally, the primary focus has been on *financial* and *physical* resource management – with far more emphasis on the former than the latter. The most elaborate corporate models are financial, followed by less elaborate models for planning and managing production resources. Corporate market forecasting and marketing models, and R&D planning models are somewhat less commonly used; it is fairly recently that initial attempts have been made to link the human resources area to corporatewide planning.

How, indeed, are corporate options normally generated by management? No simple answer can, of course, be given. In a majority of cases, the answer is by force of historical precedent or by *incrementalism* based on the experience of the last "learning period" and conditioned largely on a fairly simple-minded projection or extrapolation of that experience. In fact, operational incrementalism has long been recognized as a repeatable and effective approach to option or candidate strategy generation. The term "muddling through" (Lindblom 1959) was first introduced to describe the essentially "cut-and-try" small steps that are typically used by management in some form to feel one's way into a new direction. More recently, a more elaborate extension of this approach has been described (Quinn 1980) based on a study of strategic change in 10 major corporations. According to Quinn, "logical incrementalism" is a shorthand for an "artful blend of formal analysis, behavioral techniques and power politics to bring about cohesive step-by-step movement toward ends which initially are broadly conceived, but which are then constantly refined and reshaped as new information appears."