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Marketing Oriented Strategic Planning Models*

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Marketing decision models have tended to focus on tactical marketing decisions concerning a limited number of marketing variables. Whereas some progress has been made in the development and utilization of more sophisticated and accurate models of this type, marketing modeling has had little impact on the strategic planning efforts of the firm. Planning in the more strategically oriented firms is often a separate corporate function, with few formal links to marketing. Marketing models, when utilized, tend to be employed by or for brand managers and rarely by the planners and top corporate management. Critical corporate decisions such as mergers and acquisitions tend to be made primarily on financial considerations with little attention to marketing inputs. Product portfolio models such as the Boston Consulting Group growth/share matrix ignore basic marketing considerations, such as the possible negative correlation between share and profit¹ and the different response elasticities to different marketing strategies of the various market segments.²

The marketing and planning literature accurately reflects this situation. The major strategic planning texts [e.g., 6, 36, 63] focus primarily on financial and organizational considerations. Their marketing discussion is generally limited, and at the level of an introductory marketing text with

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¹Whenever the profitability of a business is derived from a relatively small fraction of its customers (the 20/80 case) and the structure of its joint cost allows it, the company could improve its profitability by reducing its market share (dropping the less profitable customers).

²For a detailed discussion of the Boston Consulting Group product portfolio approach, see Abel and Hammond [1]. A critical evaluation of this approach and its comparison to other product portfolio models is given by Wind [73].

little attention to key marketing concepts and tools. Even the more technically oriented planning texts, such as the recent Naylor book on corporate planning models [47], and the articles appearing in *Planning Review*, the journal of the Society for Corporate Planning (as reflected, for example, in the recent collection by Allio and Pennington [4]), do not utilize the rich marketing concepts and tools which can be of enormous value in strategic planning. Naylor, for example, restricts his marketing discussion to some forecasting methods, a few examples of econometric demand models, and a policy simulation model.

The strategic planning literature neglect of marketing has not been one sided. The marketing literature has also ignored the needs of strategic planning. Most of the marketing modeling work has been at the tactical level. Furthermore, in a 1976 survey of 346 corporations, Naylor [47, p. 12] found that only 23% of the marketing respondents were very interested in the development of corporate modeling, compared with 30% of top management, 67% of planning, and 54% of finance. Similarly, one of every three marketing respondents indicated no interest in or indifference to corporate modeling, compared with only 9% of top management, 5% of planning, and 8% of the finance people. The few efforts at developing methods, concepts, and findings of relevance for strategic planning have been oversimplistic and often of questionable validity. Even the most grandiose marketing oriented strategic efforts—that of the PIMS (Profit Impact of Market Strategy) project [e.g., 15, 25, 58]—have been restricted by antiquated methodology (overreliance on cross tabulations and simplistic regression analyses).

The premise of this chapter is that marketing can and should be a dominant force in guiding corporate strategic planning efforts at both the corporate and strategic business units (SBU) levels. To realize such a potential, marketing needs to reallocate its research efforts; brighter scholars and practitioners should change their focus from the narrow tactical (and often trivial) modeling efforts to more complex modeling of marketing systems from a corporate management perspective. Such infusion of quantitative modeling efforts into the strategic marketing decision process would deemphasize the role of “war stories” and case discussion of strategies and offer management a rigorous and workable set of strategic models as input and guide to the critical strategic planning efforts of the firm.

In approaching this goal, we in marketing do not start from scratch. Developments in marketing modeling and measurement approaches provide a solid foundation for strategic modeling. The increasing concern and interest in strategic marketing issues as reflected in planning oriented marketing textbooks (such as that of Boyd and Massy [13] and of Hughes [33]), the growing interest in new product development systems [50], the recent focus on product portfolio analysis [20, 66], and the substantive

findings of the PIMS project (see, for example Schoeffler [57] and other PIMS letters) offer some of the necessary substantive information and concepts required for strategic planning.

The objectives of this chapter are to synthesize our knowledge in these areas and, in particular, to focus on the following areas.

1. The key marketing concepts of relevance to strategic planning.
2. The three major types of strategic models.
 - (a) models of systems of activities (such as marketing planning, new product development, and mergers and acquisitions);
 - (b) models for resource allocation among products, markets, and distribution outlets; and
 - (c) response models, which focus on response of specific segments to marketing programs and not just on a single marketing variable.
3. Some of the implementation problems and, in particular, the organizational implications of developing and utilizing marketing oriented strategic planning models.
4. Some of the needed conceptual and methodological developments.

Marketing Concepts for Strategic Planning

The design and implementation of strategic planning models require adherence to the concepts and techniques that govern all planning activities [2, 6] as well as some idiosyncratic marketing concepts and methods.

The general planning concepts include acceptable concepts such as management's need to focus on nonprogrammed areas and establish procedures for programmed areas [62]; the need to develop contingency plans; viewing planning as a continuous process, adaptable to changing conditions; avoiding suboptimization; obtaining top management and operating management involvement and commitment; engaging in both long-term and short-term planning; and the need to plan the planning process.

In addition to these and similar planning concepts, any strategic planning effort should include the following marketing concepts:

Following an Adaptive Experimentation Approach. In developing marketing strategy, it is important to consider an adaptive experimentation approach [3, 40]. To follow this approach it is necessary to design not a single strategy, but rather a *number* of marketing strategies based on an experimental design. The experimental results are used to update a sales response model, and marketing strategies are chosen to maximize the long-term objectives of the firm (for example, expected profit). To date, adaptive experimentation has been applied primarily to promotional spending and to a limited extent to other tactical decisions such as different message design, prices, and distribution outlets. The concept,

however, is equally applicable to marketing strategies. Consider, for example, the benefit for management of knowing the market response function to alternative positioning strategies aimed at different market segments. Whereas adaptive experimentation is conceptually the *best* approach to assure the achievement of long-run optimal strategies, it can be costly and requires considerable implementation effort. Hence, in selecting the strategies to be experimented with, an explicit analysis of the cost versus value of information should be undertaken.

Application of the Market Segmentation Philosophy. Consistent with the market orientation, any product/service offering should be geared toward the satisfaction of the needs of specific target market segments; that is, products should not be developed and marketed for the "total market" but rather should be designed to satisfy the needs of specific and identifiable segments.

Consistent with this philosophy is one of the major findings of the PIMS project (Schoeffler, undated), that a business's absolute and relative share of its served market—the specific segment of the total potential market (defined in terms of products, customers, or areas) in which the business actually competes—has a positive impact on its profits and net cash flow.

Application of the Marketing Concept of all Stakeholders. The survival and growth of any firm depends not only on its customers, but increasingly on a large number of stakeholders. These include government agencies, suppliers, competitors, consumer and other environmental groups, security analysts, and others with a stake in the future of the corporation. Design of corporate strategies requires understanding of the current and likely needs, attitudes, and behavior of these groups. A marketing approach to the understanding of these groups and the design of strategies to reach them are therefore essential components of modern strategic planning.

Search for and Implementation of a Strategy with a Differential Advantage. Corporate strategy should be designed to benefit from the firm's special competitive advantages and to focus on those strategy components that offer the firm a unique differential advantage as reflected, for example, in a unique product positioning.

The importance of a unique positioning (as one of the expressions of a strategy with a differential advantage) is clearly evident in the following findings from the PIMS project: "Quality, defined as the customers' evaluation of the business's product/service package as compared to that of competitors, has a generally favorable impact on all measures of financial performance" [57].

Encouraging Creativity. The generation of innovative product and marketing strategies requires strong emphasis on creativity and original thinking. Given the strong pressures for continuation of current strategies or the introduction of "me too" strategies, it is especially important to encourage the generation of new creative strategies.

Use of Appropriate Marketing Research Techniques. Most planning decisions require inputs on likely consumer needs, problems, and reactions to new product and marketing concepts, as well as information on likely changes in environmental conditions and competitive activities. In collecting, analyzing, and disseminating such information, appropriate research techniques should be used. Familiarity with multivariate statistical techniques is essential, and research programs that incorporate a number of research techniques are of special value.

Developing a "User-Oriented" Marketing Information System. Planning requires continuous inputs of market, competitive, and environmental conditions, as well as information on the performance of the firm's products and services. The volume of such inputs requires the design of a user-oriented information system, that is, a system that provides only relevant information in a form that is easy to comprehend and utilize.

System Models

System models, unlike typical marketing models (such as media selection, salesmen allocation to territories, or estimated sales and share of a new product), are not intended to offer a solution in terms of selection of a specific course of action from among a number of alternatives. Rather, they are designed to offer a framework for organizing a series of activities involving data collection, analysis, and dissemination; allocation and optimization modeling; and implementation procedures. System models range from the most comprehensive strategic planning models to relatively specific systems for design and development of new products, identification and selection of merger and acquisition candidates, and the identification of products that should be modified or deleted. These models provide the framework for organizing the activities and strategic decisions required to achieve the corporate long-term objectives, given alternative environmental scenarios and internal resources.

The value of such frameworks has long been recognized; they constitute the core of the formal strategic planning orientation. More recently, there have also been a number of studies that established explicitly the value of strategic planning. Consider the following examples.

A content analysis of successful and unsuccessful (in terms of return on equity and sales) firms in the food processing industry found that the less successful firms complained more about the environment and talked less about possible changes in it and less about their product/market portfolio and the direction in which they are going [12].

A study of Belgian firms found that firms with consistent product policy tended to outperform (in terms of average return on equity over six years) those having weak product policy [32].

Planning firms³ in each of three industries—machinery, chemicals and drugs, and electronics—outperformed over a ten-year period (in terms of annual growth of sales, earnings per share, net income, and mean annual operating margin) nonplanning firms [35].

Based on acceptance of the value of strategic planning, the premise of this chapter is that strategic planning should be designed with a marketing orientation. In addition to the key modeling concepts for strategic planning discussed earlier, which should guide the design of corporate strategies,⁴ a corporate strategic plan should incorporate a specific marketing program. This program should include a target portfolio of products/markets and distribution outlets, a specific positioning for the various products (by market segments), detailed product/service offerings at appropriate prices, and an associated advertising and promotion campaign.

Such a program should be integrated with the planning of the other business functions. Product decisions, for example, require inputs from finance, accounting, research and development (R&D), manufacturing, personnel, and top management. At the same time, product decisions affect all of these functions; hence, product/marketing planning requires strong and continuous coordination of the product/marketing planning function with the plans of the other business functions. Of special importance in this respect is the design of a new product development system as an operational link between marketing, R&D, production, finance, and personnel. The program should avoid the dominance of one function (whether marketing or R&D) and strive for a balanced and coordinated

³Karger and Malick [35] used a very restrictive definition of planning as (a) the presence of a written plan for the overall organization, for each division, and for each plant within each division with (b) the plan having at least a five-year horizon accompanied by a more detailed one- or two-year plan, (c) the written plan distributed to the involved executives, and (d) the CEO using the plan in marketing decisions.

⁴For a discussion of the integration of these concepts in other system models for (a) new product development, (b) product modification and deletion, and (c) mergers and acquisitions, see Wind [69, 71]. A more detailed discussion of the mergers and acquisitions model is also given by Wind [70].

operation that takes into account the relevant perspectives and expertise of the various functions and integrates them into a cohesive operational system that is tied into the corporate resource allocation system and budgetary procedure. The profit and resource requirements should be clearly stated and included as an integral part of any plan transmitted for corporate approval. In addition, product plans should include an explicit allocation of resources among products and markets over time.

The resulting system (*process and specific outputs*) should "fit" the unique characteristics of the strategic business unit and the firm. This required compatibility with the user organization has been defined by Schultz and Slevin [59] as "organizational validity," which together with the technical validity of the model (the model capability of providing some solution, often an optimal one, to the stated problem) increases the probability of having a successful model and outcomes. No planning system should be transferred directly from one company to another. The fact that a given system has proved successful in company X does not imply that it will be appropriate for company Y. Planning systems should be designed to fit the idiosyncratic characteristics of the given company—its management style, objectives, resources, and competitive advantages.

An Illustrative Marketing Planning Model

Figure 1 presents an illustrative marketing planning model⁵ that has been applied in a number of cases and is based on seven interrelated phases:

1. determination of corporate mission, objectives, resources, and constraints;
2. monitoring of the current and anticipated (domestic and multinational) environment;
3. situation analysis;
4. market/product portfolio analysis and decisions;
5. generation of alternative marketing programs;
6. evaluation of alternative programs and selection of the "best" ones; and
7. organization for marketing action, implementation, and control.

The first three phases and the market/product portfolio analysis constitute the marketing activities that provide the necessary inputs to all the marketing activities of the firm. The decision part of the fourth phase and the content of the fifth and sixth stages are the set of unique product-marketing decisions. The process followed in phases 5–7, on the other hand, are common to all planning models. Some of the major features of the first six stages are briefly outlined next, whereas the seventh stage is discussed in the last section of this chapter.

⁵The model is fully developed by Wind [73]. It is also presented by Wind [71].

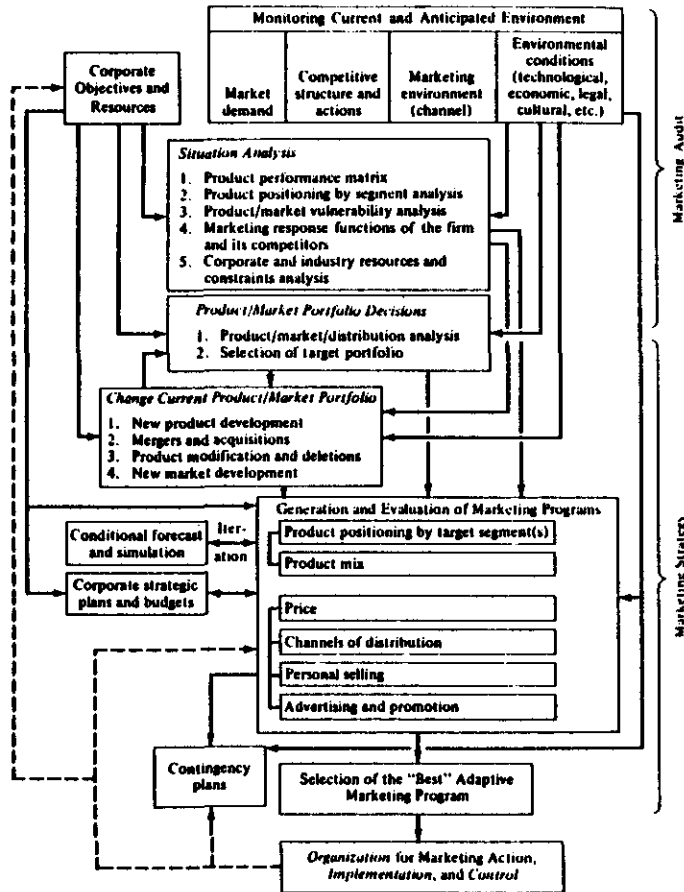


Figure 1. A strategic marketing planning model.

Setting Objectives. The determination of the corporate and marketing objectives requires two major steps: identification of the relevant objectives and determination of the relative importance of each.

The identification of corporate and strategic business unit objectives is a relatively easy task that can be performed in the context of a management

brainstorming session. This can further be aided by the identification (using unstructured research approaches) of the criteria used by relevant publics (such as security analysts) and various management levels to evaluate corporate performance. The objectives should be consistent with the stated corporate mission, which in turn should not be viewed as a given constraint but rather should be subject to critical examination. The mission definition is critical for the determination of the acceptable boundaries for the firm's product/market portfolio and should be subjected, not unlike the objectives, to periodic examination.

Having identified a set of relevant corporate objectives and derived from them the appropriate marketing related objectives (criteria), the key question is, how important is each? To establish the relative importance of the various objectives, the relevant group(s) of managers can be asked to evaluate them directly or to respond to a conjoint analysis task [28]. In both of these cases the task should be done in a group setting allowing for an explicit discussion of any disagreement and leading to consensus or, in extreme conflicts, to the forcing of a specific point of view. The complexity of the process of establishing the relative importance of the various objectives is quite evident if one considers questions such as the following:

Who should be involved in the process?

If both "top down" and "bottom up" approaches are being used, what is the best iterative procedure, and how can conflicting objectives be reconciled?

In case of unresolvable conflicts, whose position should be accepted?

What should be the long versus short-term trade-off among objectives?

How often should objectives be reevaluated and how responsive should they be to changes in environmental conditions and performance measures?

The explicated criteria provide guidelines for the evaluation of all marketing decisions (ranging from the corporate product/market portfolio to specific brand decisions). The objectives are influenced not only by management preference structure but also by the corporate resources and corporate environment.

Monitoring the Environment. The monitoring of the relevant environment and projection of its trends are major inputs to all the marketing and corporate planning activities of the firm. In particular, four sets of environmental forces should be monitored:

1. market demand;
2. competitive structure and actions;
3. marketing (for example, channel) environment (including the power relation in the channel); and
4. technological, economic, social, cultural, and legal environment.

It is this last set of environmental conditions that are the most complex and difficult to monitor. Yet all planning activities require detailed input on the current and projected state of these environmental forces, their interrelationship (cross impact), direction and magnitude of change, and likely effect on the firm's operations.

Given the extremely large number of environmental factors and their complex interrelationship, effective planning calls for the identification of a relatively few environmental scenarios. These scenarios should be spelled out and include at least the extreme scenarios of disaster and most optimistic conditions and the continuation of the status quo. Having identified the key (manageable number of) scenarios, strategic corporate (and marketing) planners should take explicitly into account the likely occurrence of each scenario and assure that the accepted plan could be achieved under (adopted to) any scenario. In addition, the explication of the various scenarios provides the framework for the development of a series of contingency plans and the identification of the events that should trigger these activities. Whereas the scenarios are the culmination of environmental analysis, the collection, analysis, and projection of each environmental force can offer additional valuable inputs to the generation of marketing strategies for the base and contingency plans of the firm and the relevant SBUs.

Situation Analysis. Situation analysis is an essential part of any marketing planning procedure. It offers answers to questions "Where are we?" and "Where are we going, assuming no changes in our marketing strategies, competitive actions, or environmental conditions?" To provide answers to these questions a fivefold procedure is suggested, based on an analysis of the firm's current position and historical and projected trend.

1. *Product (business) performance.* A product performance matrix [74] can be utilized to assess the current and anticipated changes in the products' (and business's) sales, profits, and market share positions by market segment. Data on these or other performance measures consistent with management objectives are essential for both the continued control of product performance and input to the generation and evaluation of new strategies. In addition, to the extent that it is desirable to compare the product/business performance to some norms, PIMS data on PAR ROI reports [26] can be used to provide the following:

An estimate of the normally expected rate of return for the business given its

market attractiveness,
competitive position,
differentiation from competitors,

capital/production structure,
discretionary budget expenditures,
a comparison of the trend in actual ROI relative to PAR ROI, and
an indication of the sensitivity of the PAR rate of return of this
business to changes in each data input.

2. *Product positioning by market segment.* This analysis [67] can provide insights into the way various consumer segments, and other relevant publics, perceive and evaluate the firm's products vis-à-vis its competitors on the relevant determinant attributes. Understanding the current positioning (by segment) of the firm's products and the changes in it over time (in response to the competitive marketing activities) offers critical insight into the competitive position of the firm as perceived by relevant market segments. It can also identify product weaknesses, assess changes in competitive activities, and identify gaps in the current product offerings.
3. *Product vulnerability.* This analysis [68] attempts to supplement market share data by identifying the users' degree of positive attitudes toward the product. Users with negative attitudes are viewed as vulnerable to competitors, whereas nonusers with positive attitudes are potentially convertible to clients. The size of the vulnerable segments of the firm versus that of its competitors is an important indication of the strength of the firm's market franchise and its trend.
4. *The market response functions to the firm's marketing efforts.* Understanding the market response elasticities to advertising and other promotional and marketing activities is an essential input to the firm's decision how to allocate its marketing resources. In addition, if the current marketing activities are not effective, it can offer an incentive for the development of new marketing tools. Such analysis requires a well-organized information system and the implementation of straight-forward econometric models. The assessment of the market response function can be further aided if management follows an explicit adaptive experimental program involving large changes in the type and range of marketing variables employed.
5. *Corporate and industry resources, constraints, strengths, and weaknesses.* Some of these factors have been included in the GE, McKinsey, and Shell portfolio analyses. Yet, to the extent that management uses a portfolio model that does not include all these variables, an explicit analysis of the following variables should be included as part of the firm's situation analysis.

Corporate and industry technology and production facilities. Current technological strengths and weaknesses, trends in technological developments, the technological competitive advantages of the firm, and the production (facilities, personnel, and material) resources of the firm and its competitors.

Corporate and industry investments and financial resources. The cost of entry to and exit from the industry, the importance of capital investment and its sources, the rate, size, and type of assets, and especially the current and potential liquid financial resources available to the firm and its competitors.

Corporate and industry management style and competitive profile. Management style, capabilities, and competitive actions offer clues to the likely internal receptivity to various courses of action. A similar analysis of the firm's major competitors offers insights into their likely competitive behavior, including likely response to competitive actions and the nature of such activities. The identification and forecast of competitive activities is a critical yet mostly ignored input to the strategic decisions of most businesses.

Corporate and industry marketing strengths and weaknesses. The size and type of marketing resources and activities of the firm and its competitors, for example, the nature and strength of the firm's distribution system, corporate image, and advertising and sales promotion clout.

The analysis of these factors is geared not only toward an understanding of the firm's *current* strengths and weaknesses, but primarily toward the identification of *future* strengths and weaknesses. In this context, these analyses are closely tied to the environmental analyses since it is extremely important, for example, to identify *future* competitors (who might employ drastically new technology that today is *not* considered competitive). Consider, for example, the watch industry prior to digital watches, or the x-ray industry prior to computer tomography.

Product/Market Portfolio Analysis and Decisions. After the situation analysis, the next step in the corporate marketing planning focuses on the firm's portfolio of products/markets and distribution outlets. This phase involves:

1. an analysis of the current product/market/distribution portfolio; and
2. the selection of the *desired* portfolio of products/markets/distribution outlets.

The analysis of the current product/market/distribution portfolio of the firm follows one of two major approaches: factor listing or the framework proposed by one of the product portfolio models. *Factor listing* takes into consideration those factors used in making decisions on the width and depth of the product mix and the associated marketing program required to reach effectively the desired market segment(s). These factors include corporate objectives, resources, current marketing strengths and weaknesses, current and potential demand estimates (reflecting customer interests, problems, and purchase plans), competitive offerings (type and range

of products offered by competitors and their market position), and other environmental factors.

The *product portfolio* models offer a more structured set of dimensions on which the current product portfolio of the firm can be analyzed. These dimensions include market share (as a measure of the business's strength), growth (as a measure of the business's attraction), and other specific dimensions, such as profitability, expected return, and risk. Most models tend to focus on two dimensions, company (product) capabilities and market attractiveness. Yet the specific dimensions vary from one portfolio model to another and include both models with a normative set of dimensions, such as the Boston Consulting Group's growth/share dimensions [20] or the risk/return dimensions of the financial portfolio model [66], and models such as the product line matrix approach [74] which allow management to identify dimensions they consider relevant. Figure 2 lists in schematic form and Table 1 summarizes some of the key characteristics of the major portfolio models. (For further discussion of these models, see Wind and Mahajan [78].)

Following a classification of the existing (and occasionally, potential new) products of the firm on the specific dimensions, the major managerial task is to decide on the desired target portfolio. A target portfolio should not be limited, however, to products and should ideally include target market segments and distribution outlets. Such a portfolio reflects management's objectives, desired direction of growth, and the interactions among products, markets, and distribution outlets. The specification of a target portfolio should be accompanied by specific guidelines for allocation of resources among the components of the portfolio.

Having decided on the desired target portfolio, to the extent that it differs from the current portfolio, the next step is an explicit evaluation of the most appropriate ways of reaching the target portfolio. These courses of action can include (a) the addition of new products, either through internal development or mergers/acquisitions; (b) the modification or (c) the deletion of existing products; and (d) changes in the allocation of resources to the various products (and markets). Decisions whether to invest/grow or to harvest/divest have significant implications for each element of marketing strategy as well as for the overall effort placed behind each product. In addition, since desired portfolios should focus on products, markets, and distribution outlets, the determination of desired changes in the current portfolio should encompass an examination of the internal and external (mergers and acquisitions) methods that can be employed to change (develop, add, or delete) markets served by the firm and distribution outlets employed to reach these markets.

Development and Evaluation of a Marketing Program. Having established corporate objectives, assessed the current and anticipated environment,

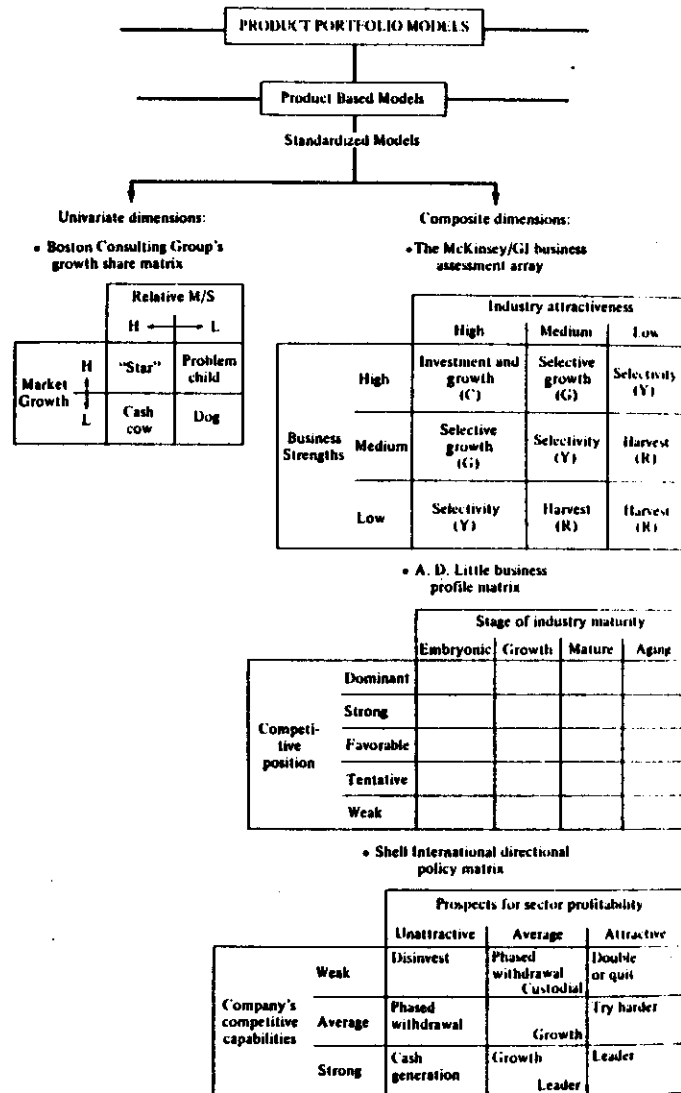


Figure 2. Portfolio models.

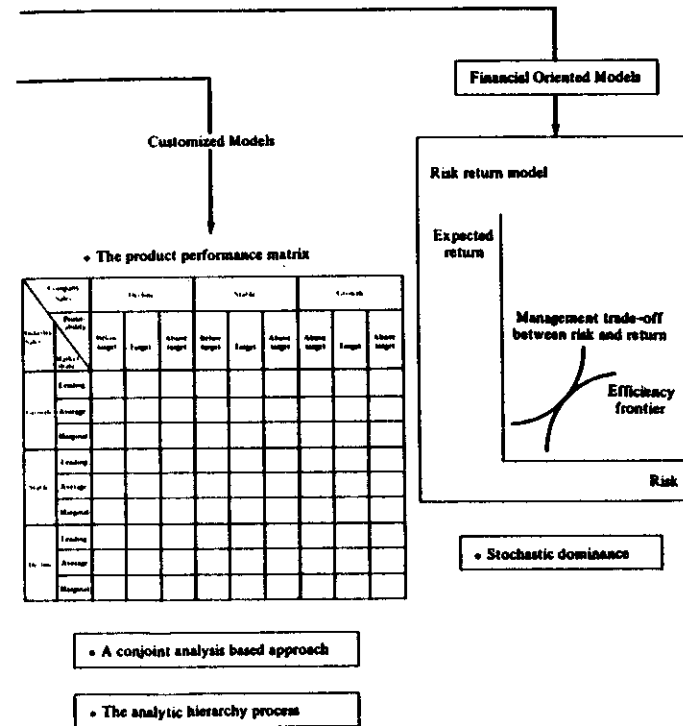


Figure 2 (continued)

completed the situation analyses, and made the basic decisions concerning the desired product/market/distribution portfolio, management is now ready to design its marketing program.

The program itself is based on two parts: (1) the product decisions, involving the determination of desired positioning by segment as well as the specific product mix to be offered; and (2) the interrelated marketing decisions of price, distribution, personal selling, advertising, and promotion. Since management can easily generate a very large number of possible product/marketing programs, it is essential first to assure the generation and evaluation of a *manageable* number of strategies that cover the entire range of possible strategies and are not limited to minor variations around the current strategies. There is no rule as to how many

Table 1. Key Characteristics of the Nine Portfolio Models

Model	Degree of adaptability	Specific dimensions
1. BCG growth/share matrix	None. A rigid framework	1. Relative market share (cash generation) 2. Market growth (cash use)
2. McKinley/G. E. business assessment array	Limited through the selection of variables used to determine the two composite dimensions	1. Industry attractiveness 2. Business strengths
3. A. D. Little business profile matrix	Same as McKinley/G. E.	1. Competitive market position 2. Industry maturity
4. Shell International directional policy matrix	Same as McKinley/G. E.	1. Profitability of market segment 2. Competitive position in the segment

strategies should be generated and evaluated. Given the typical time and money constraints, management patience, and the different resource requirements of the strategy generation and evaluation activities, one solution would be to generate as many diverse and creative strategies as possible, then group them into types of strategies and evaluate in depth only *types* of strategies. Alternatively, a two-step evaluation procedure can be developed, one for initial screening of the larger number of strategies and a followup detailed evaluation of the surviving strategies. Next, the evaluation of the strategies requires a quantification of the expected outcome of each program. This suggests the need to develop conditional forecasts of sales, profit, and market share (or other performance measures) for each product/marketing program. The program should be further related to the corporate strategic plans and budgets to assure their compatibility with the corporate objectives and resources. Furthermore, since the product/marketing plans are designed for the future, they should take explicitly into account alternative futures. Hence, a series of contingency plans should be designed for each reasonable future scenario.

Allocation rules	Comments
1. Allocation of resources among the four categories (move "cash" to "problem child," etc.) 2. Consideration for product deletion (e.g., "dogs") 3. No explicit portfolio recommendation except with respect to the balance of cash flows	Widely used but conceptually questionable given the forcing of two dimensions, the unique operational definition, and lack of rules for determining a portfolio of "dogs," "stars," etc. No consideration of risk, no weighting of dimensions
In its simplistic use, it offers a slightly greater precision than BCG (nine cells vs four and better definition of dimensions). In its more sophisticated uses (as by G. E.), the classification of products on these two dimensions is used only as input to an explicit resource allocation model. Same as McKinley/G. E.	Forcing of two dimensions which might not be the appropriate ones. The empirical determination of the correlation of the two dimensions is superior to the BCG approach, yet, given the tailoring of factors to each industry, comparability across the industries is difficult. No consideration of risk Same as McKinley/G. E.
Same as McKinley/G. E.	Same as McKinley/G. E.

(continued)

The selection of a specific plan should be in accord with (1) the achievement of the corporate mission and the corporate and SBU's objectives, such as sales, profit, and market share levels; (2) corporate resources and differential advantages; (3) the most likely scenarios concerning the future; and (4) the "adaptive experimentation" philosophy.

Upon completion of the selection procedure, an evaluative mechanism should be designed to provide continuous feedback on the performance of the marketing program and supply the input for continuous adjustment and changes aimed at achieving the firm's long-term objectives.

Thus the program development and evaluation procedure requires three distinct sets of skills: (1) the creative skill to generate a large, diverse, and innovative set of alternative programs utilizing some of the information generated in earlier stages of planning process; (2) a managerial evaluative skill involving the ability to evaluate the various courses of action, select a course of action, and determine the size, allocation, and sources of required resources; and (3) an implementation skill to carry out effectively the selected course of action.

Table 1 (continued)

Model	Degree of adaptability	Specific dimensions
5. Product performance matrix	Considerable. The specific dimensions are selected by management	1. Industry sales 2. Product sales 3. Market share 4. Profitability all by market segment
6. Conjoint analysis based approach	Fully adaptable to management needs	No general dimensions. The dimensions determined by management judgment
7. Analytic hierarchy process	Fully adaptable to management needs	As with conjoint analysis, determined by management judgment
8. Risk/return model	None. A theory derived model	1. Expected return (mean) 2. Risk (variance)
9. Stochastic dominance	Same as risk/return model	The entire distribution of return

Allocation Models

Whereas system models specify the framework for organizing a set of activities required for designing and implementing the given strategic plans, many of the corporate strategic decisions involve a resource allocation decision, specifically, the determination how to allocate corporate resources among current product, current and new products, current markets, current and new markets, etc. Product portfolio models should offer guidelines for these resource allocation decisions. Yet, as seen in our brief discussion of the various portfolio models, most of them do not offer rigorous specific guidelines for resource allocations, and at best can only

Allocation rules	Comments
Same as BCG but based on projects results in response to alternative marketing strategies	Limited applications (major user: International Harvester), yet it offers the conceptual advantage of management-determined performance dimension and allocation of resources based on projected rather than historical performance. No weighting of dimensions.
Based on computer simulation which incorporates management utility functions (for the dimensions of the portfolio), and product performance data (supplemented to the extent needed by management perceptions of current and new products and businesses)	Limited applications. Very demanding of management time
Optimal allocation among all items of the portfolio (e.g., products, market segments) determined algorithmically	Limited applications. Conceptually and mathematically very appealing. Allows management to evaluate strategic assumptions and allocate resources across products, market segments, and distribution networks optimally under different scenarios of market and competitive conditions. Weighting of dimensions explicitly considered
Determination of optimal portfolio	Conceptually the most defensible, yet, difficult to operationalize for the product portfolio decision. Limited real-world applications
Same as risk/return	Same as risk/return

suggest the need for further examination of specific actions such as further investment to build share, or divestment. In contrast to the product portfolio models, allocation models such as mathematical programming, system dynamics, game theory, and computer simulations, although designed to give specific guidelines to resource allocation, have a number of serious limitations, since they tend to focus on

1. "optimization" of a single objective (in contrast to the frequent situation of multiple objectives, such as profitability, market share, and sales growth);
2. existing alternative courses of action (and not future courses of action

- under alternative competitive conditions and environmental scenarios);⁶
3. a single decision maker (ignoring the fact that most corporate decisions involve a number of intracompany participants with diverse and often conflicting views and preferences);
 4. tangible dimensions (ignoring the intangible but critically relevant dimensions that encompass the "political" setting of the organization); and
 5. researcher-designed models (whether accurately reflecting the respondent's "true model" or not) without allowance for model modification to reflect the respondent's experience or other personal characteristics.

Given these limitations, many managers have been willing to live with the restrictive nature of the conventional resource allocation models when applied to relatively narrow tactical decisions, using judgments and organizational political considerations for the key strategic decisions of the firm. Given the importance of correct resource allocation at the strategic level, it is desirable to formulate a different resource allocation model that is not subject to the above limitations. The analytical hierarchy process (AHP) is one such process and is briefly discussed next.

The Analytical Hierarchy Process

The analytical hierarchy modeling and measurement process [52, 53] is a recent addition to the various approaches used to determine the relative importance of a set of activities or criteria. The novel aspect and major distinction of this approach is that it structures any complex, multiperson, multicriterion, and multiperiod problem hierarchically. Using a method for scaling the weights of the elements in each level of the hierarchy with respect to an element (for example, criterion) of the next higher level, a matrix of pairwise comparisons of the activities can be constructed where the entries indicate the strength with which one element dominates another with respect to a given criterion.

This scaling formulation is translated into a largest eigenvalue problem that results in a normalized and unique vector of weights for each level of the hierarchy (always with respect to the criterion in the next level), which in turn (by a principle of hierarchical composition) by means of a series of multiplications results in a single composite vector of weights for the entire hierarchy. This vector measures the relative priority of all entities at the lowest level that enables the accomplishment of the highest objective of the hierarchy. These relative priority weights can provide the guidelines for

⁶Some simulations do overcome this limitation; see, for example, Schultz and Dodson [60].

the allocation of resources among the entities at the lower levels of the hierarchy. When a hierarchy is designed to reflect likely environment scenarios, corporate objectives, and alternative product, market, and distribution options, the analytic hierarchy process (AHP) could provide a framework and methodology for the determination of the firm's target product/market/distribution portfolio, and resource allocation among the components of the portfolio.⁷

The basic premise of the analytic hierarchy process is that measurement evolves out of comparisons, particularly pairwise comparisons. Let us suppose that we have n objects A_1, \dots, A_n whose vector of corresponding weights $w = (w_1, \dots, w_n)$ is known. Let us form the matrix of pairwise comparisons of weights

$$A = \begin{matrix} & A_1 & \cdots & A_n \\ \begin{matrix} A_1 \\ \vdots \\ A_n \end{matrix} & \begin{pmatrix} w_1/w_1 & \cdots & w_1/w_n \\ \vdots & & \vdots \\ w_n/w_1 & \cdots & w_n/w_n \end{pmatrix} \end{matrix}$$

We note that we can recover the scale of weights w_1, \dots, w_n by multiplying A on the right by w , obtaining nw , and then solving the eigenvalue problem $Aw = nw$, which has a nontrivial solution since n is the largest eigenvalue of A . (The matrix A has unit rank; hence, all but one of its eigenvalues $\lambda_1, \dots, \lambda_n$ are zero. Since

$$\sum_{i=1}^n \lambda_i = \text{trace}(A) = n,$$

n is the maximum eigenvalue.)

In general, we do not know the ratios w_i/w_j , but we may have estimates of them from data and experiments or even from experienced judges. We would elicit a judgment and automatically enter its reciprocal in the transpose position. In that case we have perturbations of A , which lead to perturbations in the eigenvalues of A . We can show that now we must solve the problem $Aw = \lambda_{\max} w$ to obtain an estimate of the weights w . Saaty [52] proved that $\lambda_{\max} > n$ always and that $(\lambda_{\max} - n)/(n - 1)$ serves as

⁷Note that the application of the AHP is only to the selection of a target portfolio and the allocation of resources among its components. It is not concerned, at this stage, with the identification of the current portfolio of the firm (the portfolio analysis part, which is at the core of the existing approaches to product portfolio such as the Boston Consulting Group's model).

a consistency index, which gives the departure from consistency in estimating the ratios w_i/w_j , with consistency (which is stronger than transitivity) holding if and only if $\lambda_{max} = n$. Consistency is defined by the relation between the entries of A : $a_{ij}a_{jk} = a_{ik}$, which means that if we have n entries that form a spanning tree, the remainder of the matrix can then be generated from them. In the AHP approach to measurement, inconsistency is admissible provided one can specify its effect on the final results.

To provide numerical judgments in making pairwise comparisons, Saaty [53] developed a reliable and workable scale.⁸ The scale assumes that the elements involved in any comparison are of the same order of magnitude; that is, their relative weights do not differ by more than 9. If they do, they are separated into different clusters. The nine-point scale used in typical analytical hierarchy studies is presented in Table 2.

With the scale, a pairwise comparison reciprocal matrix is used to compare the relative contribution of the elements in each level of the

Table 2

Intensity of importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the specific objective.
3	Weak importance of one over another	Experience and judgment slightly favor one activity over another.
5	Essential or strong importance	Experience and judgment strongly favor one activity over another.
7	Demonstrated importance	An activity is strongly favored and its dominance is demonstrated in practice.
9	Absolute importance	The evidence favoring one activity over another is of the highest possible order of affirmation.
2, 4, 6, 8	Intermediate values between the two adjacent judgments	When compromise is needed
Reciprocals of above nonzero	If activity i has one of the above nonzero numbers assigned to it when compared with activity j , then j has the reciprocal value when compared with i .	

⁸For a discussion of the specific scale used and its justification, see Saaty [53].

hierarchy to an element in the adjacent upper level. The principal eigenvector of this matrix is derived and weighted by the priority of the property with respect to which the comparison is made. That weight is obtained by comparing the properties among themselves as to their contribution to the criteria of a still higher level. The weighted eigenvectors can now be added componentwise to obtain an overall weight or priority of the contribution of each element to the entire hierarchy.

This process of principal eigenvector extraction and hierarchical weighting and composition leads to a summary unidimensional scale of the priorities of the elements in any level of the hierarchy. The resulting priorities represent the intensity of the respondent's judgmental perception of the relative importance of the elements represented in the hierarchy considering the importance of and trade-offs among the criteria.

The major attractive features of the AHP as the conceptual and measurement approach for the determination of the firm target portfolio and allocation of resources within it are

a flexible formulation of the hierarchy reflecting management value systems.

a flexible hierarchy that can incorporate *any* objectives (of varying units of measurement) and *any* courses of action (current and innovative as well as competing and complementary activities) under *any* set of environmental scenarios;

a measurement procedure based on the relevant managers' perceived relationship among the various forces, actors, actions, and personal and organizational objectives;

a built-in extension to incorporate the judgments of any number of decision makers and to resolve conflicting views among them [23]; and

a flexible *process* allowing for iteration in both the structure of the problem (for example, alternative hierarchies) and judgments.

To understand the application of the AHP to the resource allocation problem, consider the following simplified illustration, which is based on an actual application of the AHP in a large insurance company to the selection of a desired target portfolio of products/markets and distribution outlets, and allocation of resources among the portfolio's components.⁹

A hierarchy was developed jointly with the company president and is presented in a disguised form in Figure 3. This hierarchy was based on three major levels.

⁹This application is borrowed from Wind and Gross [76], and is based on a project conducted jointly with Thomas L. Saaty.

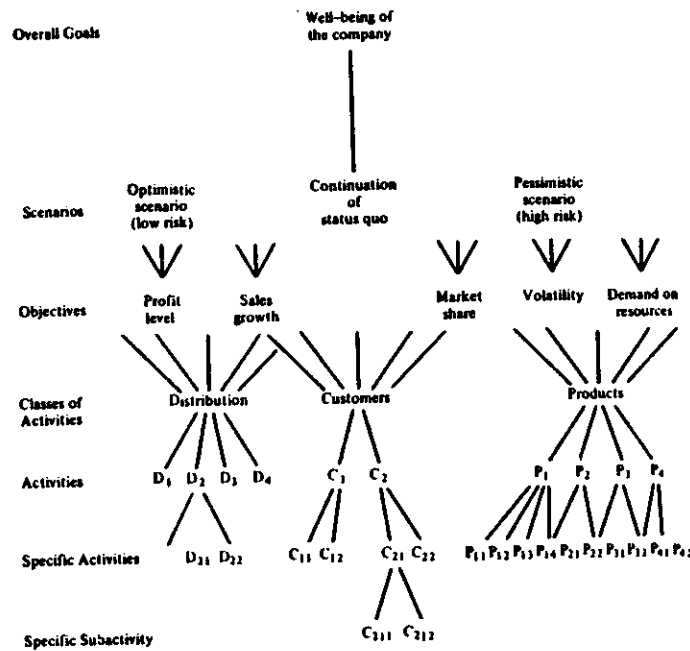


Figure 3. A disguised analytical hierarchy for the selection of the target product/market/distribution portfolio for Colonial Penn Insurance Company.

1. The *environmental scenarios*, expressed as three summary scenarios reflecting
 - an optimistic environment (low-risk and potentially high-return environmental conditions),
 - continuation of the status quo, and
 - a pessimistic scenario (high-risk and potentially low-return environmental conditions).
2. *Corporate objectives*—the criteria for the evaluation of the various courses of action. Five objectives were identified:
 - profit level,
 - sales growth,
 - market share,
 - volatility, and
 - demand on resources.

3. The *courses of actions—activities*. These include the three sets of products, markets, and distribution outlets but went into considerably greater specificity of potential activities, including various new distribution outlets not currently used by the firm, new market segments, and specific new product activities.

Given the sensitive nature of information on the firm's plans for allocation of its resources among alternative courses of action, the actual options are disguised and referred to by letters and numbers that do not correspond in any order to the items listed above.

Having selected the hierarchical structure outline in Figure 3, the president evaluated all pairwise comparisons using the nine-point scale discussed earlier. These evaluations take the form of reciprocal matrices of the components of each level against the items in the level above. Consider, for example, the evaluation of the three major sets of activities against the objectives. This involved five pairwise matrices of the importance of products, custom, and distribution with respect to each of the five objectives. One of these five pairwise matrices is illustrated in Table 3.

In this case, the president judged distribution to be of strong importance (5) over product in leading to the achievement of the firm's target profit level, but somewhat less important when compared to customers (4). In evaluating customers versus products, the president judged customers to be less important than products (3). Given the three judgments, the reciprocals were added and the president continued with the pairwise comparison tasks. These tasks included the evaluation of

- scenarios against the overall objective of the firm,
- objectives against each scenario,
- the class of activities (and subactivities) against each of the objectives, and
- the cross-impact evaluation of the likely occurrence and impact of each component given each of the other components at the same level of the hierarchy.

These data provided the input to the eigenvalue analysis [52], and a resulting partial hierarchy is presented in Figure 4.

Table 3

Profit level	Products	Customers	Distribution
Products	1	3	5
Customers	3	1	4
Distribution	5	4	1

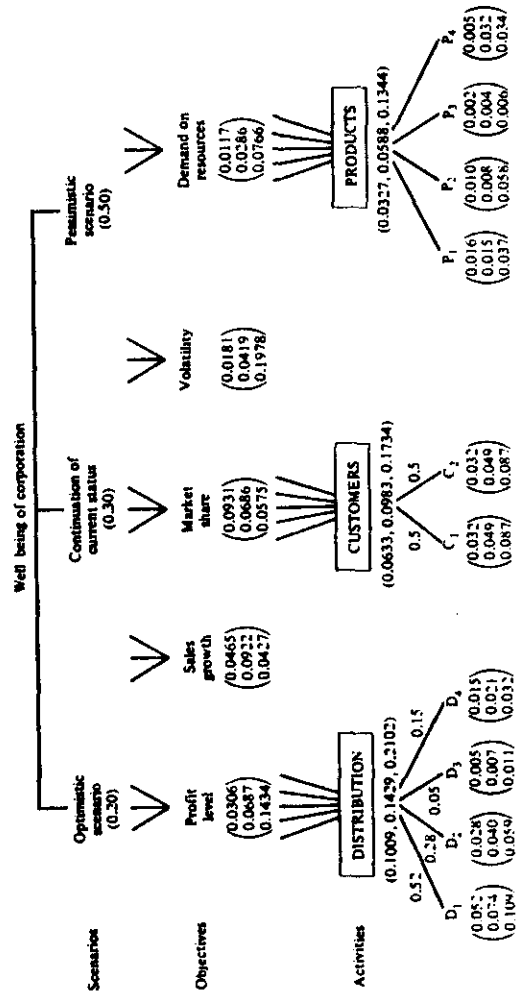


Figure 4. An analytic hierarchy of the products/customers/distribution portfolio of an insurance firm.

An examination of this figure suggests explicit rules for allocating the firm's resources in development of products, markets, and distribution vehicles under three alternative scenarios. In the disguised example presented in Figure 4, the president has a strong preference for the development of distribution outlets. In fact, the allocation of the developmental resources of the firm under this example should be 0.44 to the development of new distribution outlets, 0.34 to the development of new markets, and 0.22 to the developments of new products. This allocation rule is based on allocating resources in proportion to the priorities. Other resource allocation rules, such as the ratio of priorities (benefits) to costs, can also be used. The output as presented in Figure 4 provides a significant amount of information, such as

- The perceived likelihood of occurrence of the three scenarios:
- optimistic, 0.2,
 - status quo, 0.3,
 - pessimistic, 0.5.

- The relative importance of the five objectives.
- profit level, 0.24,
 - sales growth, 0.18,
 - market share, 0.21,
 - volatility, 0.25,
 - demand on resources, 0.11.

The relative importance of the various objectives varies considerably by the anticipated scenario:

- Sales growth is twice as important under continuation of the status quo than the other two scenarios (0.92 versus 0.045 and 0.042).
- Market share is most important under an optimistic scenario (0.93 versus 0.68 and 0.057).
- Profit level, volatility, and demand on resources are most important under pessimistic scenarios.

A sensitivity analysis was conducted using alternative hierarchical formulations, as well as different assumptions concerning the likely occurrence of the various scenarios. These analyses resulted in a range of priorities. This range, which suggested an allocation of resources significantly different from the firm's current resource allocation pattern, has led the president to reevaluate his firm's activities and to assign task forces to those aspects of the portfolio (as suggested by the detailed priorities of Figure 4) that have not received the attention and resources they deserve.

These task forces used the AHP to clarify their one preference structure and evaluate a larger number of alternative courses of action. The judgments of the task force were reached in a number of group sessions, which provided the vehicle for open discussion among the members on assumptions, information, and preferences leading to the identification and resolution of a number of conflicts.

Although other procedures, such as conjoint analysis, can be and have been used to assess the relative importance of management's objectives [29], conjoint analysis, to date, has not been used on problems such as the resource allocation problem of the firm. For this class of problem, the AHP is more appropriate given the type of output it generates and its track record in allocating the transportation resources of the Sudan [52], electricity to industry in case of shortage [56], and research funds of the electric power research institute [55].

Both AHP and conjoint analysis can be used in a number of evaluative areas, and two such comparative studies are currently being conducted by the author with respect to the determination of the relative importance of objectives and consumer and management evaluation of new products.

Multivariable and Segment Response Models

The analytical hierarchy process has been found, in the few cases in which it has been applied, to be a useful way of establishing management's preference for allocation of resources among new and existing products, markets, and distribution outlets. This approach can be supplemented for existing products and markets with the more conventional market response models. Market response models are at the core of most management science marketing models. These response models, however, tend to be designed in most cases for a single product, focus on a single marketing variable (for example, level of advertising or price), and assess the total market response to it. From a strategic point of view, response models should be extended to have a more *realistic* coverage.

The Desired Coverage of Strategic Response Models

Strategically relevant response models should cover for each product in the firm's product portfolio the following features.

All Relevant Marketing Variables. Response functions should be generated in response to all relevant marketing variables (defined in terms of specific type of activities, level, and scheduling of effort) and their interactions. This requires one of two research procedures. The first is econometric modeling of the response to the firm marketing variables and the competitive actions. The major obstacle to the implementation of this approach is data availability, which encompasses the relatively simple situation in which data exist or can be generated, and the problem is the collection and organization of the data, as well as the more serious case in which a certain type of data cannot be obtained or certain variables are never present independent of some other variables (as in the case of a food company that, in order to protect its market share, never had a price change without an accompanying increase in advertising or promotional

activities, hence restricting the ability to assess the price sensitivity to its products). The second procedure is an adaptive experimental approach using experimental designs such as Latin square or Greco-Latin square designs to measure the market response to a number of marketing variables.

Some of the more sophisticated market response models do include a number of marketing mix variables and to a limited extent, their interaction and carry-over effects. Yet most of the current econometric response modeling efforts, including most of the new product forecasting models such as DEMON [17] NEWS [9], Tracker [11], Sprinter [65], and the N. W. Ayer model [19], as well as the marketing decision models such as BRANDAID [41, 42], do not include all marketing mix variables and the response by market segments.

Response of Various Market Segments. Given the heterogeneity of all markets, effective control of marketing performance and design of a new marketing strategy require the development of market response data by relevant market segments. The segment response data should encompass, to the extent necessary, response by geographical location, distribution outlets, and any other relevant market groupings.

Projected Response Under Alternative Environmental and Competitive Scenarios. Strategic perspective requires the development of *projected* response functions (including the assessment of market potential). Historical response functions are by themselves of limited interest and their value is in providing one of the bases for projecting the likely response functions. Simple extrapolation of past response, although often very accurate for short-term projections (next-year sales can often be predicted quite accurately by a time series projection), is typically of limited value for long-term projections. This weakness of time series projections is due to the likelihood of changes in the environment, the competitive activities, the consumer needs, problems, expectations, lifestyles, etc. Hence, a critical feature of strategically relevant response functions is the development of response functions conditional on various environmental (including competitive) scenarios.

This requirement also has implications for the analysis of historical response data, which should incorporate, to the extent possible, an analysis of the effect of the various environmental forces (including competitive activities) on the response function.

Multiple Response Functions. The frequent reliance on a single sales response function is not sufficient as input to the strategic decisions of the firm. Response functions should incorporate all the performance measures used by the firm to evaluate the performance of their products and assess their product portfolio. Hence, if a firm uses the Boston Consulting Group

portfolio approach, it should include at least two response functions—market share and product class sales. Given the conceptual advantages of letting management determine the portfolio dimensions (as suggested by the product performance matrix approach), one can envision a situation such as in the case of International Harvester, in which four response functions—product and industry sales, share, and profitability—should be developed.

Of these response functions the most complex is the profit function,¹⁰ since it requires not only a revenue projection (under alternative scenarios) but also cost projections. Cost projections are often based on historical data and subjective adjustments. The unstable inflationary pressures and increased turbulences in the supply of resources (the energy shortage and dramatic price increases, raw material shortages, etc.) involve a heavy dependence on international political/economic considerations in determining both availability and price of critical resources. More attention should, therefore, be given to cost projections and many of the marketing research tools can and should be utilized to project the availability and cost of necessary materials and operation.

Explicit Examination of Multiproduct Interdependence. Market response functions, not unlike most marketing modeling, focus on individual product performance, ignoring to a large extent multiple product interdependencies. An explicit examination of this interdependency is essential for an accurate portfolio analysis and also serves as a basis for product line decisions. Of special interest in this context is cannibalization analysis and its use as an offensive or defensive strategy.

Multiple Brand Models. To the extent that data are available, developing market response functions for the firm and its major competitors and examining their interrelationships can provide greater insights into the market behavior.

Methodology of Response Modeling

The discussion so far has focused on the required content of strategically relevant market response models. Methodologically one can use a number of modeling approaches. The most common ones are econometric, stochastic, simulation, and a hybrid of these.

¹⁰Insights into profitability and its determinants can be gained from analysis of the PIMS data base. In addition to analysis of the profitability of the specific business versus other relevant business, the PIMS project has generated a number of general findings (their "Laws of the Marketplace") that explain 80% of the observed variance in operating results (across different businesses). These nine regularities (Schoeffler, undated) are summarized in Figure 5.

Econometric response models are the most frequently used approaches. Despite their conceptual attractiveness—"their implied world view," according to Parsons and Schultz [49]—and their ability to handle marketing decision variables (in linear and nonlinear forms and with carry-over and feedback effects) and appropriate testing procedures, most of the econometric response models are single-equation models with nonvarying parameter structures. Single equation models are quite naive since they assume a unidirectional flow of influence. Hence, the major development to watch for (which is of particular importance in the design of strategically oriented response models) is that of multiple-equation models. Lambin [39], Beckwith [10], and Clarke [18], for example, used multiple-equation models to estimate simultaneously market share relationships. Similarly, one should watch for the development of time-varying parameter structure, which allows for changes in the coefficients of the marketing variables and environmental forces. Such changes might be quite critical in long-term response models, which are more appropriate as inputs to the strategic decisions of the firm. A number of procedures for dealing with time-varying parameters have been proposed and implemented and are discussed by Parsons and Schultz [49].

Stochastic response models [e.g., 44], which do not incorporate marketing decision variables, are of limited value. There have been a few attempts to overcome this shortcoming [e.g., 43], but most practical applications of stochastic models have not used them as response functions.

Simulations have been used to model sales response processes for the last 20 years. The early work of Balderston and Hoggatt [7] was further expanded in the late sixties [e.g., 5, 31]. More recently simulations have been widely used to forecast the likely performance of new products in studies based on conjoint analysis [29, 77].

Hybrid approaches integrate the three approaches—econometric, stochastic and simulation—to the modeling of response functions into a research system. Such a hybrid system is most appropriate as input to strategic marketing decisions and has to be modeled for each situation separately to capitalize on the available data, precise modeling requirements, management-unique information needs, and management style.

Encouraging Developments

Recent years have witnessed a number of encouraging developments:

1. The use of log linear models to allocate resources among the various components of the marketing mix. Carroll, Green, and DeSarbo [16] have illustrated that if data are available on the various marketing variables and product/business performance, the regression coefficients of the log model measure accurately the market response to these variables and hence offer the optimal allocation rule among the

- various marketing variables. When applied to pharmaceutical products the model was further improved when assessed separately for each medical specialty, allowing for allocation of resources among the market mix variables *and* market segments. A more general solution to the problem has been obtained by Bultez and Schultz [14].
2. The developments of flexible segmentation [69] and componential segmentation [26, 27], which emphasize the need to consider the market segmentation decision jointly with the positioning decision; that is, the selection of the "best" target segment for a given product positioning (and product features) or alternatively the selection of the best positioning (and product features) for reaching a segment selected a priori.
 3. The use of optimization procedures to select the best product features and target market segments either in the context of Green's POSSE model [51] or in the more conventional context of market segmentation analysis [27].
 4. The developments of methodology appropriate for hybrid research methods. Random coefficient regression [8, 64] is one such development, whereas market simulators such as SIMPLAN [78] incorporate sales and share forecasting models with econometric policy simulation models.
 5. The increased use of marketing experimentation in the marketplace and in particular in simulated test markets.
 6. Recent extensions of the concept of positioning from a narrow focus on product positioning to a broader scope of "corporate positioning." This extension [72] has been prompted by the increased importance of stakeholders other than consumers (such as government, media, and consumer advocates). In this context one of the primary responsibilities of top management is the selection of a desired corporate position for its various stakeholders and the employment of marketing strategies (at the corporate level) to implement and achieve the desired corporate positioning. Such an overall corporate positioning should also provide the guidelines for individual product positioning, since incongruent positioning might lead to dysfunctional results.
 7. The increased attention to the development of strategically oriented marketing information systems that incorporate various data bases with appropriate modeling efforts.
 8. The development of comprehensive models that integrate analysis of historical data with subjective management judgment, field experimentation, tracking, and adaptive controls. BRANDAID [41, 42] is an excellent example for such modeling effort for the brand manager level of decisions. Missing, however, are similar modeling efforts for the strategic decisions of the firm.
 9. Increased methodological sophistication resulting in the development of more realistic econometric market response models, which can

1. Investment intensity generally produces a negative impact on percentage measures of profitability or net cash flow.
2. The higher the value added per employee, the higher the profitability.
3. The business's share of its served market (both absolute and relative to its three largest competitors) has a positive impact on profits and net cash flow.
4. Growth is generally favorable to dollar measures of profit, indifferent to percentage measures of profit, and negative to all measures of net cash flow.
5. Customer's evaluation of the product/service as compared to that of competitors has a generally favorable impact on all measures of financial performance.
6. New product introduction, R&D, and marketing efforts generally produce a positive effect on performance if that business has strong market position.
7. For business in mature and stable markets, vertical integration (that is, make rather than buy) generally impacts favorably on performance.
8. The rate of cost increases has complex impacts on profit and cash flow depending on how the business is positioned to pass along the increase to its customers and/or to absorb the high costs internally.
9. Changes of any of the above factors have frequently opposite effects to that of the factor itself.

Figure 5. Illustrative substantive strategic findings (based on PIMS data).
Source: Schloeffler [57, pp. 3-4].

- include, for example, nonlinear effects, carry-over effects, interactions, and time-varying parameter structures.
10. The development of generalizable substantive findings on the nature of market response measures and their determinants. Most notable of these efforts are the findings of the PIMS program. Figure 5 summarizes some of these key findings. The potential of the PIMS data in this respect is enormous and is most likely to add markedly to our understanding of the strategic determinants of corporate performance.

Implementation Issues

The design of marketing oriented strategic planning models is relatively straightforward. It is based on our current understanding of marketing concepts and methods, the nature of strategic planning, and the idiosyncratic characteristics of the firm and its management. The difficulties arise not so much in the design of these models but in their implementation. It is essential, therefore, to plan an implementation program. Such a program can be viewed as a special case of the general procedures a firm should follow in the implementation of any modeling efforts. (For a discussion of the general problems of the procedures for implementation of decision models, see Schultz and Henry [61]). The implementation of strategic marketing models does not raise new types of implementation factors. It does, however, add some complexities to three key aspects of the implementation program.

1. The design of a comprehensive marketing research program and associated marketing (and other relevant) information system that would

provide on an ongoing basis the needed information to the various strategic decisions.

Such an information system should provide the ongoing environmental monitoring function discussed in Figure 1 as well as the information for the situation analysis and marketing performance evaluations and the portfolio of the firm and its key competitors. The information system should include not only the collection of data but its evaluation (with respect to its reliability, accuracy, and pertinence), analysis, storage, and dissemination. For a discussion of marketing information systems for strategic planning, see Montgomery and Weinberg [46].

Such an information system, which is comprehensive in scope, requires inputs from various organizational units (for example, cost data and production schedules), is continuous in nature, likely to be expensive, difficult to implement, and politically sensitive. Yet having such continuous information is a critical component of any strategic planning system and should be integrated with the firm's control function.

2. The development and implementation of an organizational design and climate that would facilitate the implementation of marketing oriented strategic plans. Despite the growing interest in organization design and the increasing number of studies on this topic [24, 37], little is known about the organizational characteristics that are most conducive to the implementation of strategic planning models.

Organizational arrangements are often a major obstacle for the implementation of marketing oriented strategic planning. Consider, for example, the case in which an organization has both a V.P. for planning and a V.P. of marketing. If conflicts between the two arise, it is quite likely that the long-range strategic plan will not be marketing oriented. Similarly, if in a decentralized organization the divisions have strong planning units with no corporate planning department, it is likely that there will be no corporate level planning and that most efforts will be conducted by individual divisions, with little coordination among them.

An organizational design conducive to marketing oriented strategic planning should be planned with specific tasks, structure (and in particular incentive system), technology, and personnel consistent with the corporate idiosyncratic characteristics and the specific planning requirements. Since no single organizational design can fit all firms, no specific organizational solutions are presented, but two suggestions are offered for consideration: (a) there should be a combined corporate marketing/planning function;¹¹

¹¹If such an organizational arrangement is selected, the innovative V.P. position, which was suggested elsewhere [75] as one of the organizational solutions to the need to stimulate creative product/market development, can report to the senior V.P. in charge of planning and marketing.

(b) marketing research should report to corporate planning, since corporate planning is more likely than marketing (if the functions are separated) to allocate the research efforts to the areas of greatest potential for the firm's future.

Organizing a strategic planning system that is marketing oriented, encompasses all levels of operations, is acceptable by management, is consistent with the planning concepts discussed earlier, and is well integrated in the overall operations of the firm is not an easy task. It requires explicit design efforts and cannot be assumed to "happen" with the reorganization into the now popular strategic business unit structure.

3. Related to the organizational design issue is the critical question how to attract management attention to the strategic issues facing the firm. Despite lip service to the need for long-range strategic planning, the top executives in many firms are overly occupied with tactical day-to-day decisions, ignoring or paying too little attention to the strategic issues facing the firm. A possible solution to this problem is the design of a high-level organizational position (V.P. or even executive V.P.) for strategic planning. A complementary solution is to allocate a certain percentage of top management time (for example, a day a month, or ideally a day a week) for strategic planning.

Directions for Future Developments

Marketing oriented strategic planning models and concepts present a point of view concerning the role of an explicit research-based modeling approach in strategic corporate planning. Whether one adopts the specific models suggested here or other models is immaterial, as long as an effort is made to formalize the strategic planning process, design it following a marketing orientation, and fit it to the idiosyncratic characteristics of the firm.

The premise of this chapter is that a formal marketing approach to strategic corporate planning increases the likelihood of making the "right" decisions (that is, decisions that are at least consistent with management's objectives). The implementation of these or similar models however, requires answers to a number of key questions. Specifying these questions could help summarize some of the key dimensions of these models and suggest directions for future research.

No attempt is made to develop an exhaustive research agenda. Rather, the selected research areas are those viewed as relevant to practical management question and a conceptual or methodological challenge. These research areas are organized along the major components of the strategic marketing planning model (Figure 1) and include the following.¹²

¹²These needed developments were first identified in the context of product planning and discussed by Wind [10].

Determining the Relevant Objectives

How to Determine Corporate Objectives and Criteria. The identification of relevant objectives and criteria at all levels of management (for example, corporate, the strategic business unit, the product line, and individual product level) is essential for the determination of the boundaries for the product/market decisions of the firm and of the dimensions of the product/market portfolio, as well as of the criteria for evaluating alternative strategies. Yet there are a number of unanswered questions concerning how to identify the relevant product/market boundaries, what levels of abstraction to employ, how to identify and resolve conflicting objectives among the relevant management team, how to change objectives in response to changes in environmental conditions, etc. These and similar questions suggest the need to study the perceptions and preferences of corporate management. In fact, most of the research approaches used in consumer studies can be employed in the study of corporate executives.

How Explicit Should Management Objectives and Criteria Be? A number of approaches such as conjoint analysis and the AHP have been used successfully to explicate the relative importance of various criteria. Given the political/negotiative environment of many firms, there might be situations where not knowing the explicit criteria is preferable. What are these conditions, and how would lack of explicit criteria affect the "quality" of management decisions?

Marketing Audit

A relatively neglected concept is that of the marketing audit. The audit is a comprehensive periodic assessment of the firm's market environment, objectives, strategies, organization, and systems for the purpose of assessing the effectiveness and efficiency of the firm's marketing strategies, practices, and procedures [38]. This audit incorporates most of the components of the first four phases of the marketing planning model (Figure 1). The design and implementation of the marketing audit requires, however, the resolution of a number of key conceptual and methodological issues, including the following:

How to Design and Implement a Monitoring System and Forecasting Model(s) of Changes in Environmental Conditions and Firm Performance. Many current marketing information systems offer disjointed environmental information. Little effort is given to the development of a systematic scanning system of the relevant environment (consumption, competitive, technological, legal, economic, and so forth). Similarly, little attention has been given to the ongoing monitoring of the firm's performance (for example, situation analysis). Furthermore, most of the monitoring systems do not include *projections of trends or cross-impact analyses*. User oriented

MIS should therefore be designed that incorporate advances in information dissemination technology (for example, on-line information systems) and forecasting methods (especially environmental forecasting techniques). In addition, greater attention should be given to (a) the development of new data collection analysis and dissemination methods and (b) the explicit implementation and modification of existing *methods*, adjusting them to the needs imposed by continuous monitoring of *changes* in relevant environmental forces and in the firm's performance.

How to Adopt the Various Static Research Approaches and Analytical Models to the Dynamic Nature of the Market. Given that marketing decisions should be based on likely *future* behavior of consumers and other relevant stakeholders, it is necessary to develop *dynamic models* that offer management forecasts conditional on alternative marketing strategies under alternative environmental conditions.

How Often Should Marketing Studies Be Conducted? Given the rapidly changing environment, marketing studies for the generation and evaluation of alternatives should be scheduled to ensure accurate capturing of changes in consumers' attitudes and behavior and market and environmental conditions.

Design of Marketing Strategy

Following the inputs from the marketing audit, the major managerial task is the generation and evaluation of marketing strategies. This area, despite the widespread attention it has received in the marketing management literature, still requires the resolution of a number of conceptual and methodological issues, including the following.

How to Encourage the Generation of Truly Innovative and Creative Strategy Alternatives. The generation of new product ideas has received a considerable amount of attention in the marketing and R&D literature. Yet little attention has been given to the systematic generation of creative marketing and corporate strategies.

How to Design and Implement Resource Allocation Models Among Products, Markets, and Marketing Programs. The analytical hierarchy process was found to be a useful procedure for allocating resources within the product/market/distribution portfolio of one firm. Can it be applied to other firms, and what are the organization and research implications of such an approach? How consistent are the results obtained by AHP with those of other allocation models?

How to Integrate Marketing Decisions (and Orientation), with Other Business Functions—Finance, R & D, Production, Personnel, Procurement, Legal and Top Management. What are the implications of the need for such integration for organizational design and the research and modeling activities of the firm? Successful development and implementation of strategic planning models calls for close links between marketing and the other business functions. Ways to achieve such links should be explained and the strategic planning models developed, utilizing inputs from all relevant functions and aimed at satisfying the diverse needs of multiple organizational users.

How to Schedule (Allocate Resources Over Time) the Various Corporate and Marketing Strategies of the Firm. Scheduling is often viewed as a tactical decision. Yet strategic planning requires careful scheduling of resource allocation and activities over time.

What Procedures Can Be Developed for the Translation of Research Findings (Such as Consumer Perception of and Preference for Various Product Attributes) into Physical (and Imagery) Product Attributes and Marketing Strategies? Multidimensional psychophysics and conjoint analysis studies (with actual product prototypes) have been used successfully in a few cases. Yet greater attention should be given to the translation problem: how best to execute the planning corporate strategies.

Design of a Strategic Planning System

One of the most complex and difficult aspects of strategic planning is the design and implementation of a strategic planning process. The design of an effective system that utilizes the relevant marketing concepts and tools still requires the resolution of a number of key conceptual and methodological issues including the following.

How to Assess Operationally the "Cost Versus Value" of the Various Concepts Such as Adaptive Experimentation and Contingency Plans and Research and Management Science Tools (Such as Environmental Monitoring Programs and Forecasting Models) and How to Reconcile Possible Conflicts Between the Desired Approaches and Political Realities in the Firms. The cost versus value of information concept, although widely accepted, has rarely been applied to the strategic planning process and its research and modeling component. Given the frequent pressure to sacrifice strategic (long-term) objectives for tactical (short-term) ones, the explicit evaluation of the cost versus the value of each research and modeling project is of great practical importance. In addition, the process that has to be developed in order to assess the value and cost of various projects offers a

vehicle for better communication among the relevant decision makers and explicit examination of their assumptions and preferences.

How to Determine the Best Mix of Research Approaches to the Generation and Evaluation of Alternatives. Given the diversity of research approaches, it is necessary to determine which mix of approaches is most appropriate under which conditions, and to integrate them in a user oriented marketing information system.

Given that most planning efforts have been undertaken by large consumer and industrial firms, a critical question is, *What changes, if any, are required in the explicit approaches to (and concepts and techniques employed in) strategic product planning of service-oriented firms (versus firms who manufacture products); intermediate marketing organizations (versus manufacturers); nonprofit firms (versus profit oriented firms); small (versus large) firms; and firms involved with multinational (versus domestic) markets?*

Organizing for Strategic Planning

A key ingredient for the effective implementation of strategic planning models is an appropriate organizational design. The strategic planning, marketing, and organizational behavior literature offers few clear-cut guidelines for the development of such organizational designs. Hence, a major area for future research is the design of effective organizations for strategic corporate planning and implementation as well as the testing of the effectiveness of alternative organizational designs. These designs should incorporate the functions of strategic planning, marketing, marketing research, and management information systems; their interrelationships; and their coordination with top management operations.

Concluding Remarks

In recent years we have witnessed two unrelated developments: (a) tremendous interest in strategic planning and (b) increased utilization of tactical marketing models. New product forecasting models based on concept testing, simulated test markets, or actual test market data are, for example, widely used. In the context of specific marketing decisions, marketing practitioners should not be concerned with whether analytical approaches work, but rather with which of the many analytical approaches is better suited for their firm and the specific product/market situation involved. The challenge, however, is in developing and implementing new analytical approaches for the strategic planning decisions.

The basic premise of this chapter has been that both the marketing and strategic planning literature would benefit if marketing scholars and practitioners were to focus more on the development of SBUs and corporate strategic marketing models. As illustrated in this chapter, the design and implementation of strategic marketing models can benefit from a number of concepts and methods. Even though there are still a number of unanswered basic research questions, enough is known to allow for the development and implementation of real-world marketing oriented strategic planning models. Such models require top management recognition that marketing, and in particular marketing research and modeling activities, can offer viable inputs and guidelines for the strategic decisions of the firm. If marketing is to have its deserved impact on corporate decisions, the development of such recognition is essential. It is particularly critical in the more complex management areas, such as international marketing operations and the diversification activities of the firm.

The international marketing area is especially intriguing since it entails a second layer of decisions beyond those that are usually required in domestic marketing operations, that is, the country selection/mode of entry decision. These decisions have traditionally been made on a haphazard basis, such as management's familiarity with the given country, or the initiative of an importer or broker. Yet the high risk and tremendous potential of international operations call for a *systematic*, portfolio driven approach to the country selection and mode of entry decision. The need for more rigorous and advanced modeling and research activities characterizes *all* of the strategic planning activities of the firm that involve decisions that, in the long run, can make the big difference between growth or decline.

The necessary conceptual and methodological developments in this area and the challenge of implementing such procedures when developed make the marketing oriented strategic planning model an exciting and challenging area for research. Progress in this area requires, however, close collaboration between the academic researcher and the industry practitioners who provide the real-world laboratory for developing, testing, and implementing new analytical approaches so necessary for making marketing oriented corporate strategic planning models a reality.

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