

ISSUES CONCERNING THE USE OF AN INTERACTIVE
CORPORATE FINANCIAL MODEL FOR RESOURCE ALLOCATION PLANNING

by

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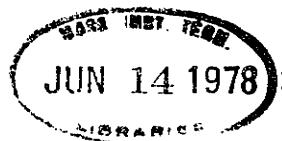
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ABSTRACT

The structure, processes, and information content of corporate strategic planning are examined as the operating context of an interactive decision support system (DSS). A case study is reported where a DSS containing a corporate financial model was developed and implemented by the author for the purpose of resource allocation planning in a newly-established (two years old) corporate planning system. This particular DSS was referred to as a "strategic financial planning system" (SFPS).

Normative and descriptive models are presented which include: the need for strategic planning, the organizational context of planning, the communication of information related to strategic investment opportunities, the contrasts between a mature and a newly-instated planning system, the role of the corporate planner, and the positioning of corporate modeling within the framework of strategic planning.

The inadequacy of capital budgeting techniques as sole criteria for deciding on strategic investments (i.e., allocating resources) is discussed, and arguments are forwarded for the consideration of multidimensional criteria as a basis for resource allocation decisions. Nevertheless, financial information, as a distillation of these other dimensions, is strongly justified. The use of "financials" as input to the SFPS and as the basis for a subsequent "performance congruency test" which links past performance to future projects for the purpose of the evaluation of strategic program proposals is discussed.

The reported failure of many DSS has not been a result of technical issues. Rather, it has been the failure to incorporate organizational processes and managerial relationships into their design and implementation.

Normative considerations for approaching DSS design, implementation, and evaluation are discussed. These are followed by the results of interviews with line managers which conveyed the organizational and informational context in which the SFPS would operate. Managers clearly expressed a desire for increased rationality and the validation of financial information accompanying their three-year plans. It was believed that the SFPS would help to make the resource allocation process more rational and more fair.

Actual use of the SFPS is discussed. Use of the SFPS was rapidly accepted by top management. Its contribution to the collection, aggregation, access, and analysis of strategically important data was perceived as a significant benefit. The analytical and presentational power provided by the system allowed the recognition of performance patterns which had previously been obscured from management's purview.

Short-term evolution of the user-system interaction extended application of the SFPS from financial analysis to the projection of long-term budgets for business units, based on historical trends and relationships. These were to be compared to business unit plans for financial results as a basis for discussions on the strategic content of programs, and as a source of constructive conflict. This was a significant development for a company formerly focused on the short-term, for it created a potential linkage between budgeting and planning which would provide for the true operationalization of longer-range strategic plans. The remaining challenge is to actualize that linkage by establishing long-term budgets derived from the business unit strategic plans themselves. This appears to be forthcoming. The thesis concludes with a discussion of prospective near-term developments in the use of the SFPS.

Thesis Supervisor: J. Morris McInnes

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CHAPTER 1
INTRODUCTION

Background

An important corollary of the increasing complexity of business, changing demands of the general environment, and varying characteristics of served markets is that the strategic planning function, which in the past tended to be highly centralized in the president's office, now must be performed by a number of people throughout the organization. For some organizations, newly confronted with the recognition of the need for improved planning, a pivotal role in this process is that of the Director of Corporate Planning, who, in taking on a newly created task, must not only coordinate the planning efforts of various members of the organization who span hierarchical levels within the organizational structure, but perhaps more importantly, must sell the ideas of formalized planning to the president of the company who may, at the outset, continue to entertain some doubts about the utility of the additional overhead. A chief concern of the Corporate Planner quickly becomes one of demonstrated contribution to enhancing the company's perception about its status in the markets it serves and improving the effectiveness with which the firm carries out programs which have

strategic impact and cross divisional lines.

One such firm for whom this scenario is very real has been growing at more than 15% per year for over a decade in terms of sales, profits, and people. Its products, which are technologically advanced, are sold to users in various industries such as health care, chemicals, and electronics. As sales volume passed the \$50 million level an organization change was effected to shift the concern for profitability in each market from the president to individual divisional managers appointed with the responsibility for profits and growth in their respective markets. This move was based on a formal segmentation of served markets and the recognition that the company was comprised of several different businesses, though more than one of these might be selling the same product. Business distinctness and profit center responsibility was thus established along customer need and application rather than product line.

Restructuring organizational responsibilities in this fashion freed up the president's time and allowed him to reorient his time horizon and initiate the corporation's breakaway from the accustomed short-term focus to longer-term planning. To aid the process of individual business unit planning as well as to provide corporate management with a portfolio view of operations (an analysis of the combined effects of the various business segments on the corporate

whole), the position of Director of Corporate Planning was established.

Motivation For the Thesis

The author has worked with the newly instated Director of Planning of this company (hereinafter called Q-3 Corporation to preserve the firm's anonymity) in developing and implementing a computer-based interactive "strategic financial planning system" (SFPS) -- in effect, an interactive corporate financial model. The model is an accounting type in that the inputs determine the outputs which are based on definitions rather than approximate formulas. They are primarily in the form of accounting identities portraying both past performance and projected financial results. The model is a representation of both the divisional (or planning unit) components of the enterprise, and the total firm. The SFPS consists of the model, appropriate data bases, the capability to input and retrieve data, analyze each unit, perform consolidations, and generate reports, and the capacity to accomodate any number of user-generated alternate scenario assumptions. It was created for use in assessing divisional strategies and providing supportive analysis for decisions concerning the allocation of corporate financial resources.

This thesis addresses various issues of corporate planning and the development and use of such a system within that context. A salient objective for the development of the SFPS was its use as a catalyst in the negotiation process between top management and divisional management, a process by which corporate management assures that action plans, which have been devised by individual divisional managers for their respective divisions, are consistent with overall corporate strategy and objectives, and that they contribute appropriately to the profitability and return on investment established for the divisions and for the corporation as a whole. This dialectic process constitutes the top level control over the allocation and use of corporate resources. For a rapidly growing company, newly initiated to a formal planning system, the SFPS is also part of the educational process since, as a managerial congruency test, the SFPS is used to check that divisional strategies are also consistent with divisional objectives, given their respective market position and competitive status. Each and every strategy entails degrees of investment, returns, and risks; each strategy has its own pattern (rising or falling) of performance attributes, for example the ratios of return on investment or earnings to sales. Because these patterns vary from one strategy to another the financial projections associated with each planning unit's action plans should be

measured against its own financial "template", linking proposed performance to the historical track record and current market niche. This is the process of testing for managerial or performance congruency.

There are actually two roles for the SFPS. The first is as a catalyst in the corporate-divisional strategy negotiations process. The second is its use as an evaluation tool for resource allocation decisions. There is actually a recurring sequence of applications here since the former process of negotiation takes place before the alternative programs are evaluated and choices for allocating resources made. These decisions represent the last stage of the firm's continuous planning process. Since an important function of corporate planning is to support this strategic evaluation, we see that the investment decision process, which stems from the earlier negotiations, is an integral aspect of the task of corporate planning. An understanding of planning as a total system is critical to understanding the resource allocation process and the role of the SFPS as a catalyst and as a decision support tool.

A Brief Perspective on Planning

The purpose of corporate planning is to be a management tool in the strategic decision-making process of a company.

It is a process essentially aimed at maintaining a viable match between the organization and the environment, assisting the firm to adapt to environmental opportunities and threats (the adaptation aspect) (1), identify and assess relevant options, and provide for an effective selection of a balanced mixture of products and markets which preserves survivability even when confronted with vigorous competitive action (the integration aspect) (1).

Corporate Planning is also the process of consolidating and improving the firm's competitive position in the market by reallocating resources from less to more profitable business ventures. In the pursuit of this end, firms change the composition of the current product mix by adding new product-markets, expanding existing ones, or divesting from old ones. The strategy of the firm is implemented through the allocation of resources.

These resource allocation decisions are key to the success of the firm in pursuing its strategy. An important function of the planning process is to ensure that the firm selects good investments (which could include maintenance of a particular product-market as well as development of new ones) to further its strategic long-range objectives and that these receive an appropriate commitment of funding over an appropriate period of time. Obviously, there are multi-period implications (frequently several years) involved in

such allocations and these must be considered in any resource allocation planning effort. Focus beyond the present budgeting period becomes essential in order to ensure that strategic programs requiring additional support in future years (e.g., negative cash flows for the first three years with the expectation of future large positive returns) don't get chocked off in future periods because of myopic planning for provisions in the present resource allocation period. A corporate financial model is an aid in assimilating the future cash flow implications of a variety of long-term strategic programs. But by itself it is not enough to evaluate strategic investment decisions.

Much of the recent literature surveying investment decisions has concentrated on the use of discounted cash flow as a decision-making criterion (sometimes as the sole criterion) for capital resource allocations. This is an oversimplified view. Discounting, which measures the time value of money, is a project appraisal technique that implicitly assumes the project is an entity in itself, whereas it is vital that the organization ensures that its investment policy presents a coherent whole. Carter (35) has addressed this issue from the point of view of a portfolio of financial investments. He describes an interactive computer system which aids the manager in screening multiple investment opportunities. But coherency from a

strategic viewpoint includes the non-financial, non-quantifiable aspects of investment programs as well.

Coherent investment decisions are ideally achieved through undertaking strategic investment studies and using the capital (yearly) budget as a coordinating and control mechanism for implementation. Maintaining control of the linkage between strategic programs requiring long-term (for example 3 years in the case of Q-3 Corporation) allocation of resources and the yearly budget can accomplish this. The key point to be made here is that the strategic program or set of action plans as the focus of resource allocation embodies more than just financial dimensions. These other dimensions (such as industry structure, market opportunities and product-market rationale) in effect comprise the content of strategic planning, a subject not often addressed in the literature on strategic planning systems where structure and process are often the foci of attention. The financial component of these strategic programs as input to the SFPS should support, not dominate their content and should be used as a tool for managerial congruency, for evaluating the financial implications of market maintenance and penetration strategies, and for supporting the appraisal of resource allocation planning rather than as the sole criterion for decisions of strategic import.

A third purpose of planning is to provide a framework

for an orderly evaluation and choice of alternatives by divisional as well as corporate management in such a way that a direction can be established which reflects the firm's own internal strengths and weaknesses. The integration aspect of corporate planning is to facilitate the "narrowing down" (36) of strategic options in such a way that a basis can be provided for achieving an efficient and effective course of operation. Integration is concerned with achieving a strategic (long-range) direction which attempts as much as possible to build on the firm's strengths while recognizing and improving to the extent possible, its weaknesses. A dominant aspect of the integration process is the development of action plans (strategic programs) for achieving specific objectives. Taken together, the integration and adaptation purposes of planning have significant implications for the resource allocation process in that it affects the balance between a strategic posture which insures that the company can adapt to changing and growing markets with new and different products (market penetration and expansion) and a long-range plan which provides for the firm's adapting its existing product lines to a changing market (market maintenance).

A fourth purpose of corporate planning is to provide for more effective managerial learning, so that the management team of a company can systematically increase its strategic

decision-making capabilities over time. Q-3 Corporation, comprised of several growth businesses, is undergoing the establishment of a new, relatively unfamiliar formal planning system. The learning aspect is effected by corporate planning in two ways.

First, the introduction of a format for developing and discussing a plan provides an opportunity for a manager to think through his strategic setting in a manner considerably more explicit and systematic than before. This process of going through a situational analysis and communicating the results to others provides a valuable learning experience.

Potentially an even more important aspect of learning is planning's role as a self-improving system. By stating a strategy and creating a set of action plans to carry it out a basis is provided for monitoring that progress both posteriorly (during implementation) and prospectively. Ex-ante analysis is aided by the use of the interactive strategic-financial planning system. Thus the financial component of strategic programs, in addition to its use for resource allocation planning, helps make the corporate planning system self-correcting; the performance congruency test helps detect gross errors in strategy design or associated projections. Moreover, the learning process helps facilitate the normalization of strategic management (long-range planning) within the company. This represents a

potential move towards increased rationality and objectivity and a move away from management based on misconceptions about market behavior and competitive status.

Structure of The Thesis

Following a discussion in Chapter 2 of the process and structure of corporate planning, including normative models and a description of Q-3's system, the content of planning, particularly as it supports resource allocation at the corporate level is addressed in Chapter 3 with Q-3 Corporation as an illustration.

The foregoing provides a perspective of the organizational context in which the corporate financial model for Q-3 was instituted. An understanding of this context provides a better comprehension of the constraints it imposes on the approach to a particular modeling effort. This choice of approach particularly involves the selection from many alternatives of the specific design in terms of type and structure of the model, just what it is devised to accomplish, as well as what it will not do, and who will use it. These are serious considerations in a period where both managers and modelers have learned from the past (and often costly) mistakes of others (2,3,4,5) and are now trending towards the integration of information systems used in

planning into the organizational structure of planning (6,7). The relationship between corporate models and corporate planning is the subject of Chapter 4.

Together, Chapters 2, 3, and 4 establish an understanding of the corporate planning process as a critical perspective for resource allocation planning. The use of a corporate financial model as a tool to aid the analysis of the corporate portfolio, an integral part of the planning process, is also discussed.

The introduction of what could be called a decision support system into that context is next considered in Chapter 5. A corporate model is really a subset of decision support systems (DSS) typically used for planning purposes. Briefly, a DSS as described by Gorry and Scott Morton (8) and classified by Alter (37), is a system, usually implemented with computer technology, usually interactive, which is used to support a particular class of managerial decisions (not necessarily related to corporate planning). That class is more easily defined by exclusion: it does not include the routine or operational decisions, typically structured, which are traditionally covered by standard data processing and information system applications, such as payroll and order entry. Rather it refers to decision problems whose solution method cannot be prespecified in an algorithmic fashion. These problems are inevitably concerned with anticipating

the future and judging alternative actions in the present in the light of their projected consequences. Managerial judgement must be incorporated throughout the decision process. The DSS thus supports but does not replace the manager in the decision process.

The key user of the strategic-financial planning system at Q-3 was the Director of Corporate Planning who recognized that he had no real decision authority but rather considered himself as a decision facilitator, a communicator of information, with judgement added, to the Operating Committee and President -- the real centers of resource allocation decision making authority in the company. These ultimate decision makers did not interact with the SFPS. So strictly speaking, the SFPS was not used in its literal sense as a DSS for resource planning and negotiation, but was nevertheless designed for that purpose in order to assure its potency as an evaluation tool. Accordingly, consideration of non-technical issues were taken into account since Hall (2) noted that "many of the planning models which have been developed have not been implemented or are used only on infrequent occasions", while Hammond (3) observed that "few applications result in benefits anywhere near potential and may result in virtually no benefits ... (The reason is) seldom inadequate technical tools or technically inadequate models." Moreover, Keen (9) emphasizes that "successful (DSS) systems are

invariably ones in which process considerations were included in implementation; that is, the user's decision process, the process of interaction of user and system, and the wider organizational processes within which the system is embedded." Accordingly, Chapters 2, 3, and 4 are devoted to such issues.

Rice (10), in an attempt to understand the cause for the failure (non-use) of the DSS which he implemented, developed a framework for approaching the non-technical issues of DSS design and implementation. His analysis with regard to the establishment of objectives for the interactive SFPS, the criteria for evaluation of results, as well as measuring the success of the system are borrowed in part as a basis for considering the non-technical issues which all too often have been the bane of successful implementation and use of these kinds of management decision support systems. This discussion is covered in Chapter 5.

One of the functions of the strategic-financial planning system was to serve as a catalyst during corporate divisional strategy negotiations. In reflecting the impact of strategic action plans in financial terms, the quality of the financial input would be a critical factor in determining the quality of the financial implications drawn from divisional programs. Moreover, this was the first time that divisional managers were negotiating plans which carried beyond the previous short-term focus of one year or less. Their involvement in

planning was new and their expectations about the use of an interactive model which, in the hands of corporate management, was analyzing the historical and future performance of their division, testing the financial ramifications of their managerial decisions, and potentially influencing their share of corporate resources, were unknown. At the outset there was no way of really knowing what either their perceptions of planning were or how they perceived their responsibility for providing input data to the SFPS. Given these unknowns about roles, responsibilities, and quality of information, a series of questions were devised to elicit from various managers, who were involved with devising future-oriented plans, their view of the entire corporate process of formalized planning. A discussion of these interviews is presented in Chapter 6.

The timing of this project was such that the author did not have sufficient opportunity to witness, study, and evaluate the full use of the corporate financial model within the planning process. One application to which the author was witness was during the initial stages of implementation. At this time the corporate planning department was preparing for strategy sessions with the company's foreign subsidiaries. Neither future strategic programs nor their financial components (i.e., projections of sales, costs, expenses, required investment, etc.) were yet available, but historical data were. These were input to the SFPS in order

to generate an historical analysis as a basis for initial strategic discussion and negotiation. A description of the system and its observed use is the subject of Chapter 7.

Finally, in Chapter 8, the discussion is drawn together, results are summarized, and conclusions are drawn.

CHAPTER 2

THE PLANNING PROCESS AND ITS STRUCTURE

In this chapter we address a number of issues concerning corporate planning since that is the context in which the SFPS operates. An organizational perspective is valuable, indeed necessary, when undertaking a decision-support system project.

Planning Defined

Strategic planning is a systematic process for guiding the development of an enterprise towards its future. The planning process is the context within which key managerial decisions are made and where resource allocation planning operates. Planning provides the information and conceptual framework for the intelligent allocation of corporate resources. These decisions are strategic because their effects are relatively longer lasting and irreversible compared with those made in regard to the operational aspects of an enterprise. Corporate planning should be thought of in a comprehensive and integrated sense as a system which includes all the strategic administrative activities of an organization. Strategic administrative systems in organizations comprise a group of formal systems which

include strategic planning, management control, management accounting, a management information system and a management incentive/compensation system. Malm (11) extends this view to include the informal socio-administrative processes within the organization. A key notion is that these descriptors as systems really represent processes which overlap, interact, and to a large extent are only conceptually separable.

The corporate planning process has three important characteristics: first it is concerned with the development of integrated plans for the total enterprise, not simply planning for a particular function or division; second it emphasizes long-term strategic considerations as opposed to short-term "operational" ones. (A distinction is made between extended budgets and forecasts, which often assume little change in the status quo, and "strategy", which typically implies a reappraisal of the enterprise's businesses in relation to their environments). Third, it envisages the establishment of formal procedures for strategic planning which, though at first may exist in parallel with the short-term budgeting operation, should ultimately incorporate the budgeting process into its activity in order to assure that managers perform those actions which reflect the strategic plans developed for their particular business or function.

Purpose of Planning

The purpose of planning is to evaluate major business opportunities and to provide an early warning system for external (as well as internal) threats to the well-being of the organization. We might call this anticipatory survival. Additionally, corporate planning should balance the firm's posture with regard to these opportunities and threats by mobilizing its strengths while at the same time recognizing, accomodating, and striving to reduce or eliminate its weaknesses. In the absence of such processes there are no rules to guide the search for new opportunities, nor are there effective tools for recognizing significant opportunities. Without the benefit of a periodic strategic appraisal the firm would have no indication whether or not its overall resource allocation pattern (i.e., a balance of internal development, diversification, cash flows, etc.) was efficient. It would also lack an internal ability to anticipate change, especially where the impact of such change crossed divisional lines. The risk of managers acting at cross-purposes would be increased.

For example, before the inception of corporate planning, Q-3 Corporation was involved in an effort to complete the development of a new product slated for one of the firm's market segments. All of the company's markets were

characterized by high growth (15 - 40% per annum) and continuous technological innovation. Market share maintenance and improvement was contingent on at least remaining technically competitive. Consequently research and development was a strategically important activity as was the timing involved in bringing a new product into the market. This particular project represented a relatively large commitment of funds, but was focused on a single market and with a limited amount of scientific-engineering manpower resources, progress was constrained by the number of people assigned to work on the development project.

The first year of formal planning segmented the firm's concept of its lines of business, differentiating and then reintegrating the company's various markets in terms of competitive status and product-market niches. As one of the benefits of institutionalized planning, the formal situation analysis revealed that this particular product being developed, under the direction of one market-division manager, had broader applicability and greater strategic significance in other market segments than previously realized. As a result of the introduction of planning, the firm's managers recognized that they had overlooked an outstanding opportunity, close at hand, unperceived because of an earlier lack of strategic appraisal. They now responded by increasing the number of scientific personnel

involved in the development effort, thereby markedly accelerating progress towards the project's completion.

As a further attestation to the potential benefit of planning we might consider how the performance of companies using corporate planning compare with those which do not. Studies (12,13) indicate that companies which utilize formal corporate planning with emphasis laid on the regular review of strategy, significantly out-perform companies that use informal planning methods. One finding was that companies with corporate planning performed around 30-40% better in terms of earnings per share, earning on common equity, and earnings on total capital employed. This superior performance was not, of course, proof of the benefits of corporate planning, so the study examined the extent to which performance had improved after corporate planning had been introduced. The improvements were impressive: sales grew by 38%, earnings per share grew by 64%, and the share prices increased by 56%, relative to performance before the inception of planning. The evidence therefore strongly suggests that corporate planning can lead to significant improvements in performance.

In the case of Q-3 Corporation a growing recognition that continued rapid growth and development of new product-markets was creating new problems for the organization led them to undertake an organizational change program which

included the creation of market segment profit centers, the initiation of corporate planning, and the establishment of the position of Director of Corporate Planning. First was the noticeable limitation of informal communication which had for so long been the fulcrum of top management decision making. The CEO could no longer be expected to assimilate all the scope and detail of timely information pertaining to the various lines of business in which the company now found itself engaged. Secondly, the need to remove himself from the day-to-day operations of the organization in order to contemplate longer-term strategies led to the CEO delegating profit responsibilities to several line managers.

These same former marketing managers had previously been concerned only with sales revenues and short-term performance, not bottom-line results or strategic decision-making. Establishment of divisional profit centers, organized according to product-customer applications, was linked to the increasing realization that what might have been an appropriate operating strategy and plan for a particular product in a particular market was not applicable to the same product in a different market (application). The need for differentiated product strategies was complicated by the fact that all divisions share common manufacturing facilities -- thus the increasing recognition for coordination at the corporate level.

A third emerging problem for Q-3 was an evolutionary change of features taking place in some of their traditional markets. Lacking an objective situational analysis which, as will be discussed, is a critical step in strategic planning, the former market managers failed to perceive alterations in the basis for effective competition. Their earlier concerns were chiefly focused on making the current period's sales budget. Strategic appraisal was not perceived to be a component of their performance evaluation. Indeed, it was not, in fact. As an example, one significant change in the market competitive factors was the loss of significance of the technical leadership which had earlier been responsible for the company's dominance in its traditional markets. The reason for this change was the diffusion of the company's proprietary knowledge.

After two decades of commercialization the firm's production and engineering capabilities had become more commonly available to their competitors than the company had realized. Moreover, the technical support to customers which had formerly been a vital factor in Q-3's market leadership was becoming less significant. Their old as well as new customer base had become more sophisticated and technically cognizant over time.

As a result of this technological diffusion a new strong basis for effective competition had become product

maintenance support (frequent sales-customer contact), an activity which the company had never fully developed. As one member of the management team who had been with Q-3 since its founding said, "We never even imagined a general sales force supporting more than one particular market. We always thought that customer requirements were too specialized; and now specialization among sales personnel is no longer a strong selling point. But we have to change as our markets change if we want to maintain our successful record. As a response to our belated recognition of these market changes, when we restructured our organization and established divisional profit centers, we removed the operational responsibility of meeting the sales budget from the divisional manager. The position of sales manager was created so that divisional managers would have the freedom to spend more time on future-oriented planning and business strategy."

The creation of a new management structure within the organization had significant implications for not only the need for planning but for the process of planning, once initiated. Bower (14) has examined the structural context as an influence on the process of resource allocation, while Chandler (15) has examined the process by which structure itself is developed. Almost all reorganizations are initiated when unsatisfactory performance of the product-

market sub-units is determined to be a result of imperfections in the organization. Chandler's study suggests that most companies moved to a product-market divisional form of organization after the diversification of their product line imposed intolerable strains on a functional organization.

Q-3 Corporation is a case in point. Their reorganization however, was carried out before any adverse affects from market changes were impacted on their financial statements. Shortly after this organizational change their former strategy consultant was hired as the Director of Corporate Planning. His mission was to implement a planning system and manage the process of planning. This author, in setting up the interactive corporate financial model to aid in the resource allocation process, had opportunity to learn of the firm's initial attempts at long range planning. Discussions of these observations and managerial interviews are located throughout this thesis. Process descriptions follow the presentation of conceptual models and organizational frameworks for planning. Content description appears in Chapter 3.

A Conceptual Model

We stated in the introduction that the purpose of

corporate planning is to be a management tool in the strategic decision-making process of a company. One way to view this is with the aid of Figure 1 where a conceptual model for strategic planning is depicted. As a decision making process, corporate planning in a global sense lends itself to the problem solving steps described by Simon (16).

The first phase which corresponds to the step Simon identified as Intelligence is the scanning of the environment (17) and the perception of a decision need, opportunity, or threat; basically, defining the problem. Perception of need is a major issue in strategic decision-making. A method which fails to provide for the choice between continuing concern with the operating problem as against attention to the strategic, leaves a key part of the problem to intuition and judgment, forfeiting a more rational perspective and basis for action.

Except for those firms which operate in very stable markets with products having extremely long life cycles, the whole organization has to engage in the process of finding, structuring, and exploiting new investment potentialities. There are strong incentives for business firms to push their existing capabilities towards uncovering potential investment opportunities that enable them to cope with unexpected environmental changes, or surprising actions taken by competitors. Firms that do not give enough attention to

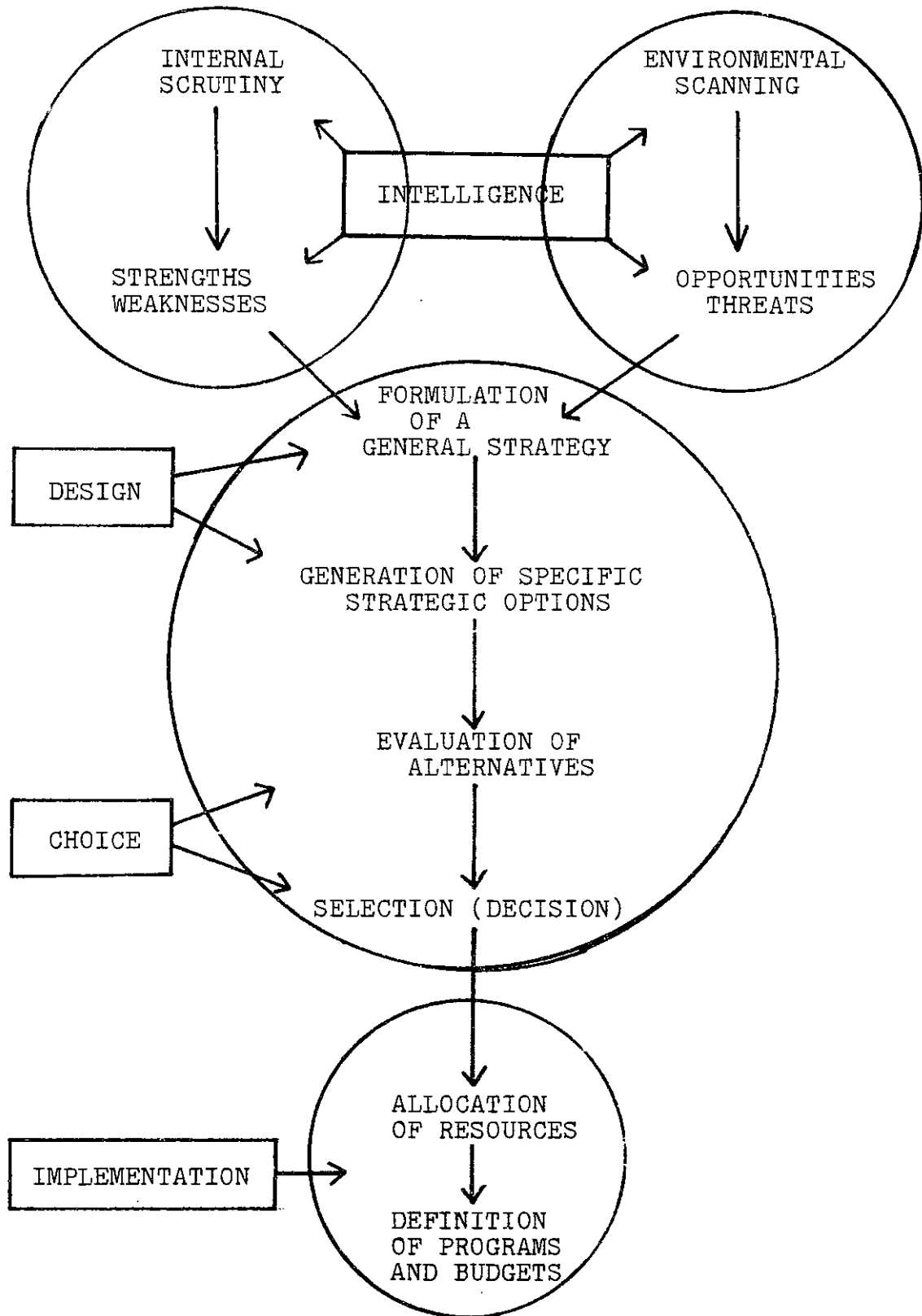


Figure 1. A CONCEPTUAL MODEL FOR STRATEGIC PLANNING

maintaining and exploring a portfolio of strategic options may lag behind competitors and eventually lose the struggle for market share or survivability in the market.

Step 1 is accompanied by an internal scrutiny which identifies and evaluates the company's strengths and weaknesses, particularly as they relate to the firm's present strategic posture in its respective markets. Identification of one's market position in terms of growth opportunities and competitive status is crucial. This includes the definition of business segments (i.e., product-market segments or strategic business units) as well as an analysis of past performance. These product-market segments are at the core of the process because the ultimate design of strategic programs which incorporate the allocation of resources are based on these business definitions. Planning for resource allocation will to a large extent depend on the profitability of each of these product-market segments or lines of business.

Planning for the future starts with an intimate and realistic understanding of existing markets, divisions, products, margins, profits, return on investment, cash flow, technical capabilities, as well as skills and capacities of personnel. Basic to consideration of a strategy for the company (as well as individual strategies for individual divisions) in the future is a clear recognition of what the trends have been, for instance in comparison with other firms

in similar markets, and how well the organization is doing today. The results of such a review will reveal what Rogers (18) has called "distinctive competence" and will enable the firm to relate its capabilities for strategic survival, maintenance and growth to its needs for continued adaptation to the external environment.

Information such as this is a prerequisite for entering the second stage of planning, the phase of strategy formulation. Following Simon's paradigm, it is referred to as Design. The purpose of the strategy formulation stage is the establishment of a general strategy as well as the generation of specific strategic options. Here, as indicated earlier in Chapter 1, capital budgeting theory provides incomplete support for basing investment decisions and allocating resources. We are describing a method which provides for regular Intelligence activity and for diagnosis of the need for strategic action, whereas capital budgeting theory is deficient in providing alternatives from which to choose. That theory requires that all options be known during the evaluation of these alternatives but in reality all such activity proceeds under conditions which Ansoff (19) refers to as "partial ignorance."

Under conditions of partial ignorance a firm is confronted with two problems. The first is how to conduct an active search for attractive opportunities. This is not

specifically the subject to be covered in this thesis but has been considered in detail by Aguilar (17). The second problem is to allocate the firm's limited resources among those opportunities which have been uncovered and have been communicated to the decision maker(s). This latter problem is one of organizational communication, and discussion is deferred until later.

Program evaluation using capital budgeting techniques runs into theoretical as well as practical difficulties. On the theoretical level we must consider that long-term profitability over the lifetime of a project/program (as reflected in the present period by an investment's net present value and internal rate of return) is not the only criterion or purposive objective by which a firm operates. Multiple social, ethical, technological, and other non-tractable objectives are equally significant. As Cyert and March (20) have pointed out, the objectives of a firm are in reality a negotiated consensus of objectives of the influential participants. Capital budgeting alone is not equipped to handle this multiplicity of objectives or the problem of conflict among them.

On the practical level, capital budgeting by itself does not address the characteristic nature of future cash

flows -- their uncertainty.* Nor, as Bower (14) points out can capital budgeting techniques reflect the type of project (such as a new business venture, new product, cost reduction, sales expansion, or market maintenance-type investment) being considered. He found that the accuracy of projections varied considerably depending on the type of investment and the experience of the manager forwarding the proposal. Furthermore, the cash flow projections presented by the proponent of an investment project generally are based on a typical opportunity in a product-market area rather than a specific potential investment. Moreover, synergistic effects between new investments or a new investment and on-going activities are frequently difficult to convert to dollar terms.

Clearly, the evaluation of alternatives as a prelude to resource allocation planning requires a greater dimensionality than that which can be described purely in financial terms. This is hardly to ignore the informational content of financial variables but merely to place their value and the value of an interactive strategic-financial planning system in proper perspective. We postpone further discussions of this issue until Chapter 3.

* Hax and Wiig (69) discuss the use of expected net present value, a Monte Carlo approach to probabilistic profiling of NPV, and utility theory as a means of formally incorporating uncertainty into investment projects.

The third step in our conceptual model of strategic decision making is what Simon calls Choice -- namely the selection(s) for investment and allocation of resources from among the perceived alternatives.

Two issues underlie this step which appears schematized in Figure 1. First is the issue of how alternative strategic options are perceived and communicated to top management for consideration. Second is the decision process by which the decision maker himself goes through in finalizing the choice for the allocation of resources. These two issues are interrelated in that the first affects the second. They are influenced by structure and communication within an organization and governed by behavioral aspects of corporate planning. Models of corporate planning which fail to consider these factors are incomplete, yet to do them full justice here would divert from the focus of the use of a corporate financial model within the context of corporate planning. Instead we shall address communication and behavior in a cursory fashion following completion of the conceptual model, noting that this relatively superficial approach merely looks at the tip of an organizational iceberg.

The arrival at a choice is an extremely unstructured process. Information supporting strategic decisions is in multidimensional form since the problem is multidimensional.

Integration of these attributes into a final selection cannot follow step-by-step rules but can be simplified by the ability to discern the consolidated effects of various investment factors under consideration on one critical dimension - financial indices - when choosing a set of investments. Financials are an effective dimension for distilling large amounts of strategic planning data. The contention is that as an aid to the overall process an interactive SFPS which reveals the timing and magnitude of cash flows and returns on investment for individual market segments as well as their interactive combined effects is an invaluable tool for decision making. This is especially so when there appears a discrepancy between chosen objectives for the firm and the net consolidation of individual business units. In that case an iterative process can be initiated whereby alternate scenarios which depart from the base case can easily be evaluated. Evaluation and choice do not necessarily retain a one-way sequential relationship, but may be strengthened by iterations.

Investment choices are effected through the allocation of resources. These resource allocation decisions are consequently expressed in the firm's strategic programs or action plans and the capital and operating budgets. Ideally, the budgets as the operational control element of the enterprise are the main tangible outputs of the planning

process. They should reflect the strategic thinking and information gathering which preceded their generation.

Efforts undertaken by various departments to meet their strategically prepared budgets represent the final step in the conceptual model -- implementation. Bower has studied the organization process by which resource allocation decisions get implemented. Dissecting the transmission of investment proposals upwards to top management and the subsequent flow of approved resources downward, he found that the approval and subsequent implementation of many investment proposals was to a large extent dependent on the ability of a manager to push his project through the system -- bargaining and persuasion played a critical role in success. Projects which ranked highest by capital budgeting criteria, such as net present value and internal rate of return, were not necessarily implemented. His findings are a further detriment to the role of formal capital budgeting techniques as a single tool in resolving the resource allocation decision problem.

As we saw for Q-3 Corporation, the steps of strategic planning cannot be centrally constrained -- they must also be carried out by the line managers running the company's various businesses. This is true if for no other reason that the information necessary to make resource allocation decisions resides in managers at lower levels of the

organization closer to the served markets. These very same managers are best equipped to provide corporate management with a set of available investment opportunities and their associated cash flows as well as other strategic dimensions (see Chapter 3). They are also the ones to manage the implementation process. In short, the commitment of a corporation to a market and products and the process of expressing that commitment in the allocation of resources are inseparable. Top management should therefore consider the planning/investment decision as an entire process rather than a series of individually considered financial investment plans. Moreover, because these corporate planning activities are continuing processes, the evaluation of planning and investment should not be separated from the evaluation of implementation through routine management activity, i.e., management control. In other words the role of the budget as a coordinating mechanism for earlier resource allocation decisions takes on strategic significance. For Q-3 Corporation this will become a significant issue since the budgeting process is not yet formally tied to the planning process. For a newly instated corporate planning system this is quite understandable, but as we have seen with Q-3, their markets are dynamic and growing and their need to operate strategically will not soon diminish. This issue of planning-budgeting linkage will

be covered in more detail in a subsequent section of this chapter.

Communication

Resource allocation is part of a complex system that involves organizational relationships as well as planning structure and processes, communication, and behavior.

Top management cannot select market-related investments directly. They must take account of the limits on their choice of resource allocation imposed by a number of factors and conditions. Some of these are identified as follows:

- The divisionalized structure with market expertise residing at lower organizational levels -- The need to break down the organizational structure in order to gain the advantage of a bottom-up supply of information leads to the problem of reintegration. The sum of all the parts may not equal the potential whole because the manager closest to his particular market does not always see all the variables involved in his problem, especially if they lie beyond the horizon defined by his job. Reintegration requires the consideration of interactions which transcend divisional demarcations. Considering that

structure might also constrain the definition and shape of proposals, there remains the problem of where information pertaining to such interactive and/or synergistic effects will be obtained. Q-3 has resolved this problem to a considerable extent by placing heavy emphasis on person-to-person and person-to-group strategy discussions and negotiations. By keeping the level of people contact high, circular feedback from division to division and interaction between division and corporate is also kept at an effective level.

- The completeness of the set of opportunities communicated from divisions to top management -- This particular constraint on the perspective of the resource allocation decision maker is especially noteworthy for organizations which practice zero-based budgeting. For these firms, decision packages may get wittled down during the journey upward from functional groups through divisional management to corporate-level management; the ranking process may discard packages on the way up. As a result, top management perceives only a subset of that which was originally conveyed upward. And what was conveyed may have been only a subset of what was perceived at the divisional level. For example:

- Managerial attitudes about risk may differ between the divisional and corporate level. Investments too risky for an individual division may not be so from the corporate perspective where there is a wider range of opportunities and market activities to balance the risk. Top management may face the problem of ignorance about risky programs which divisional managers perceive but feel too risk averse to act upon or communicate to them. Interestingly enough, at Q-3 Corporation divisional managers see as part of the responsibility of their job, the duty to inform top management of all potential investments, independent of their risk. It is as if each manager perceived himself as an agent of the corporation - divisional risk yields to the desired pursuits of top management. Planning becomes the medium through which the company sanctions the risk of individual divisions.
- The nature of submitted proposals will be influenced by the extent of commitment to which managers will be held or believe themselves to be held to their projected courses of action and forecasts of outcomes. Clearly, unless the issue concerning the linkage of commitment to plans is clear and accepted, highly uncertain programs are unlikely to

find themselves within top management's ken.

- There is a need to assure that information is congruent with top management's needs for those companies which make centralized corporate resource allocation decisions. Unless the information fits the interests of the resource allocation decision maker(s), its acquisition has little consequence. This problem is diminished in time through the learning effect of corporate planning and can be mitigated earlier by the appropriate design of a format for communicating planning information of investment and strategic relevance. Although striving for congruence per se will not guarantee the quality of the information obtained, it will help to ensure that the efforts of lower level managers are at least made use of in the decision making process.
- An additional issue is that of moving information to appropriate decision-making points within the organization. This factor is considered further within the discussion of planning system frameworks and the role of the corporate planner later in this chapter.
- One should of course be wary that efforts to diminish these problematic factors and to improve

the communication process do not, in a zero-sum sense, detract from attention to just what information should be provided. Mention already has been made of the value of financial components of divisional plans for market maintenance, penetration, and development, and its role in supporting other dimensions of information having strategic import. Again, Q-3's approach to planning content is covered in Chapter 3.

- Despite the best of intentions, political and related forces can distort the channels through which information is being relayed. Consideration of this last issue is taken up in the following brief section on organizational behavior and strategic decision-making.

Each of these eight factors is rightfully an issue for exploration in itself. The purpose here is not so much to dwell on them as to indicate their active presence so that we may remain aware of their functioning and limitations of capital budgeting theory. Some of these aspects of communication as a role in resource allocation were discussed with several division managers at Q-3. Their views are presented in Chapter 6.

Behavioral Process Model

Planning systems are not inert mechanical structures. They represent the inter-relationships of people oriented toward the process of setting objectives, establishing specific goals, devising strategic programs designed to achieve agreed upon targets, and implementing these in an effort to realize the earlier established objectives. We must keep in mind that the efficacy of these processes are to a large extent controlled by the behavioral aspects of the participating members of the organization. In presenting prescriptive models of corporate planning it is all too easy to forget the true nature of planning's real foundation - the managers themselves.

A central contention is that an organization is not inherently "rational" and that its course as reflected in part by the resource allocation process is determined to a considerable extent by an interplay of conflicting forces.

Allison (21) has defined three categories of process models for strategic decision making which categorize the resource allocation process: the rational actor model, the organizational process model, and the bureaucratic politics model.

The rational actor model is one of maximization behavior and rational choice. A rational actor specifies goals and

objectives, generates alternatives, defines consequences of the alternatives, and chooses the alternative giving the highest utility. This is consistent with the theory of capital budgeting but ignores limitations on people's information handling ability and the intuitive cognitive style of many managers. It also fails to consider the aforementioned constraints on the communication process. Taken together these shortcomings limit the model's relevance. There is value, however, in striving to achieve the rational actor condition even if it may never be attainable.

The organizational process model recognizes the organization as a coalition of participants with diverse interests and goals. Sub-groups are held together by a series of bargains, agreements, and payoffs which establish organizational goals, subject to continuous renegotiation. Inherent limitations on cognition lead to the fractionalization of planning with the associated problem of reintegration. There is a limited search for alternatives (dominated by rules of thumb), uncertainty is avoided, and rather than insisting on settling on an optimal solution, a satisfactory solution is accepted -- a process labeled "satisficing" by Simon (22). Drawing from our earlier discussions, this second model seems to offer a far more realistic view of the planning process in most organizations.

The third model, the bureaucratic politics model reflects the observations of Bower that the resource allocation process relies to a large extent on personal style, advocacy, and bargaining power.

Given the tendency towards limited search, bounded rationality, and sub-optimization as being normal aspects of planning we can see that the need for the orchestration of planning cannot be understated. Detecting and resolving inter-group conflict and striving to push political factionism and empire building towards rationality is an important role of the corporate planning group. Only under such relatively coordinated planning conditions with concomitant relevant input data can a corporate financial model be made effective for use in resource allocation planning.

We now move from a consideration of organizational process issues to a discussion of planning system structure and process within an organizational context. The purpose of the next section is to probe corporate planning in more detail and to better establish a perspective for the use of an interactive strategic-financial planning system. The content of this portion of the current chapter is largely drawn from different authors' views concerning strategic planning.

Organizational Context of Planning

Several authors have proposed various conceptual frameworks for the managerial processes involved in the comprehensive strategic planning system. A reasonable conceptual scheme contains, as Lorange points out, the three necessary elements of a planning system: stages, organizational levels, and information/communication (an emphasis of recognition that these managerial processes involve people.) While the specific suggestions differ as to what the components of such a system should be, there seems to be general agreement that the structure of the planning task falls along a continuous spectrum from strategic focus to tactical focus. As we shall see, the nature of this decision orientation has significant implications for the design and implementation of the model used to support these managerial tasks.

Ackoff's (24) discussions on planning help clarify why the future-orientation of resource allocation plays such a critical role: he states, "Planning is the design of a desired future and the process of bringing it about." He mentions three points which also indicate the nature of planning and which distinguishes planning from other decision making. (1) Planning is anticipatory decision-making; (2) planning is required when the desired future

state includes a system of interdependent decisions (thus the need for a portfolio approach and an indication of the complexity of the process which, is made more manageable by the use of a corporate financial model; (3) Planning is producing one or more desired future states or predicting the non-desired states. (The predictive aspects of planning, associated with environmental scanning, would typically precede the use of the SFPS). Ackoff categorizes planning into strategic planning (longer impact, broader in scope, and ends-oriented) and tactical planning (shorter impact, narrower in scope, and means-oriented) but stresses that these differences remain more a matter of degree than kind.

Ansoff, in his book on corporate strategy (19), takes an analytical approach to strategic decisions with emphasis on product mix and diversification. He also mentions three decisions classes which can be converted to a planning hierarchy; these are: strategic decisions, administrative decisions, and operating decisions. In a later paper (25) he breaks down managerial activities into (a) societal management which is concerned with the firm's non-commercial environment, (b) entrepreneurial management which concerns itself with creating the profit potential for the firm, e.g. it incorporates the generation, evaluation, and choice of strategic alternatives, (given market constraints), and the portfolio balancing of alternatives and (c) competitive

management which is involved with operational-related decisions. Ansoff's taxonomy contends that strategic decisions impose operating requirements and the administrative structure (which links and balances the three managerial activities) must provide the climate of meeting these requirements -- structure follows strategy. Thus we have one approach to the idea of organizational hierarchy.

Anthony's analysis breaks the managerial process down into three relatively distinct sub-sets (26). He defines the taxonomy of planning as consisting of strategic planning, management control and operational control. He states (26, pg. 16):

"Strategic planning is the process of deciding on the objectives of the organization, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources."

For Anthony, management control is the process concerned with the acquisition of resources and their effective and efficient use for the accomplishment of objectives. Finally Anthony considers operational control as the process centering on specific tasks, such that they may be implemented effectively and efficiently. Although not clearly stated in Anthony's work, these three managerial processes can be

conceptually overlaid on to the organizational hierarchy so that strategic planning covers top management and operational control covers the functional managers in production, sales, etc. Management control would be predominantly carried out by divisional management. The interfacing between strategic planning and management control can best be seen with the breakdown of management control provided by Anthony and Dearden (27) in their book on Management Control Systems.

The authors stress that management control is a process carried on within the framework established by strategic planning, i.e. policies prescribed by corporate management constrain managerial choice of objectives and goals at the divisional level. They list six elements included in the management control process in the order in which they occur: (1) environmental scanning and analysis (divisional level); (2) business planning; (3) programming; (4) budgeting, (5) reporting operating results; (6) analysis of performance. The degree of financial detail increases in the direction from step (1) to step (6). Development of action plans or programs intended to implement the strategy developed in the business planning step takes place during the programming phase. It is the predicted outcome of these plans, expressed in financial terms, which are discussed and evaluated for consonance with corporate strategies and portfolio balance of the corporation as a whole. We note that this model of

planning is not consistent with our earlier discussion that strategic planning is meaningless unless the entire organization is involved with the process -- especially line managers in various business units.

A final conceptual framework, one which when implemented transforms into a working, formal planning system which ties the foregoing notions together, is that delineated by Lorange and Vancil (28,29). Their taxonomy of strategic planning is one such complete context in which corporate financial models can be understood. Lorange (30) lays the groundwork with the following quote on the purpose of the strategic planning system:

"One of the major roles of the strategic planning system is to provide a dual set of strategies: a corporate portfolio strategy which delineates the role of each business within the portfolio in terms of funds availability and constraints, areas of growth, areas that might receive excessive capital resources, and so on; and a set of business strategies which attempt to operationalize success within each business in accordance with each business-intended role in the corporate portfolio. This division of labor calls for a "top-down" corporate input to facilitate the arrival at a given portfolio strategy balance, manifested above all in terms of the pattern of the resource allocations to the various divisions. It also calls for a "bottom-up" divisional input for the development of business plans, drawing on the specialized skills and insights of those executives closest to a particular business scene.

The top-down inputs have two major functions; as a vehicle for reorienting the portfolio balance, through such actions as constraining the divisions uses of funds, and corporate acquisitions and/or divestitures; and for interacting with the divisions in order to develop desired direction in divisional strategies, through discussion, review, and approval of divisional plans."

In effect, this is an elaboration on the dynamics portrayed by Anthony's earlier framework. But Vancil and Lorange go further, extending the scheme to weave together the entire strategic administrative system of an organization. (See Figures 2, 3, 4, 5). They are concerned with the relationship between the design of planning procedures and the management structure of an organization. Their proposed taxonomy is a two-dimensional three-by-three matrix based on two assertions. First there is a three-level hierarchy of organizational management; corporate, which performs environmental scanning, portfolio planning, corporate analysis, and develops corporate strategy; divisional, which conducts business planning, emphasizing the launching of new products and maintenance of established ones (development, penetration, or maintenance strategies) and the development of competitive programs for sales, distribution, R&D, etc.; and functional, where department managers develop specific action programs to implement the plan of their division. The second dimension of the matrix

VANCIL -LORANGE MODEL

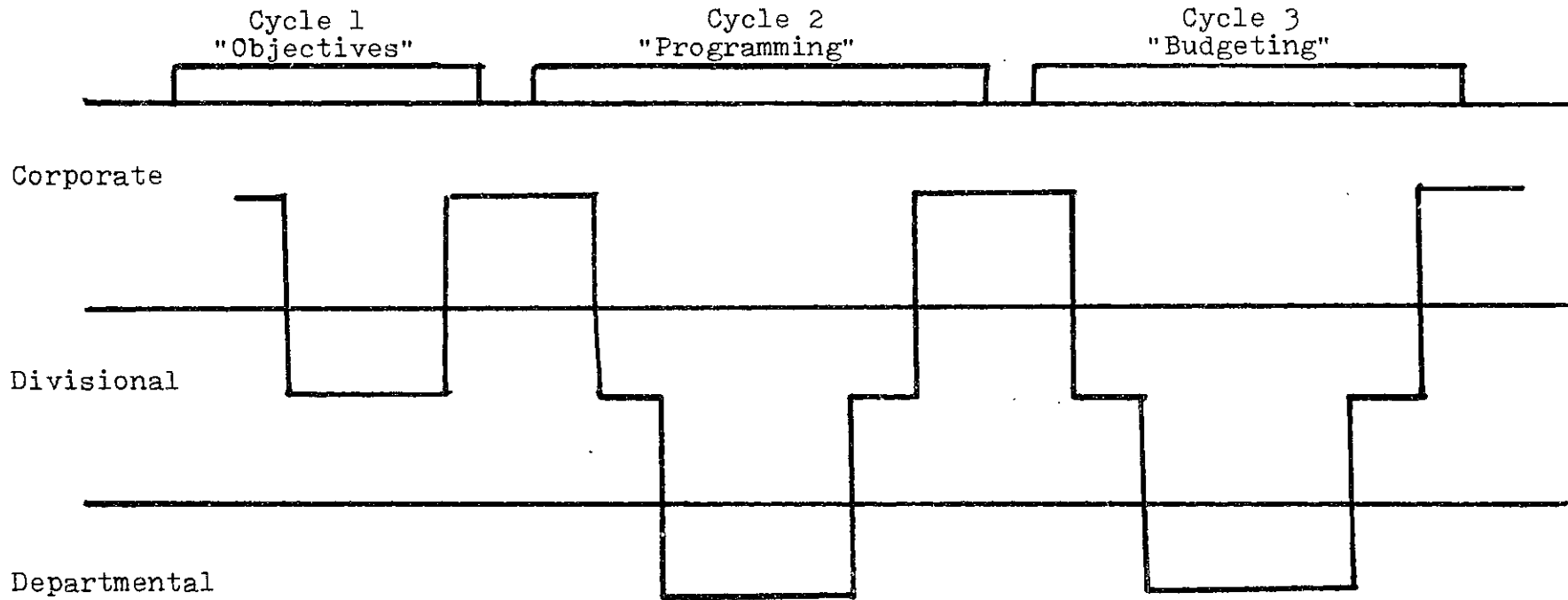


Figure 2.

Source: Adapted from Richard F. Vancil and Peter Lorange, "Strategic Planning in Diversified Companies", Harvard Business Review, Jan.-Feb. 1975, p. 84.

VANCIL-LORANGE MODEL
Objectives Cycle

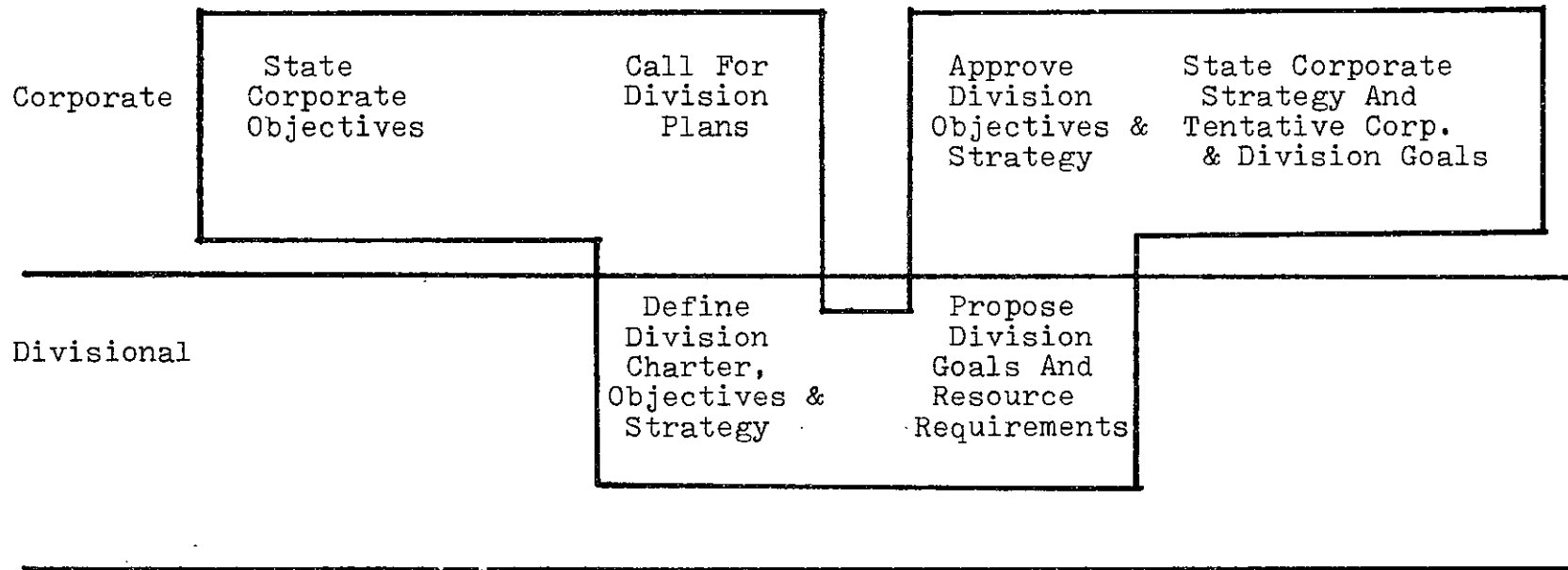
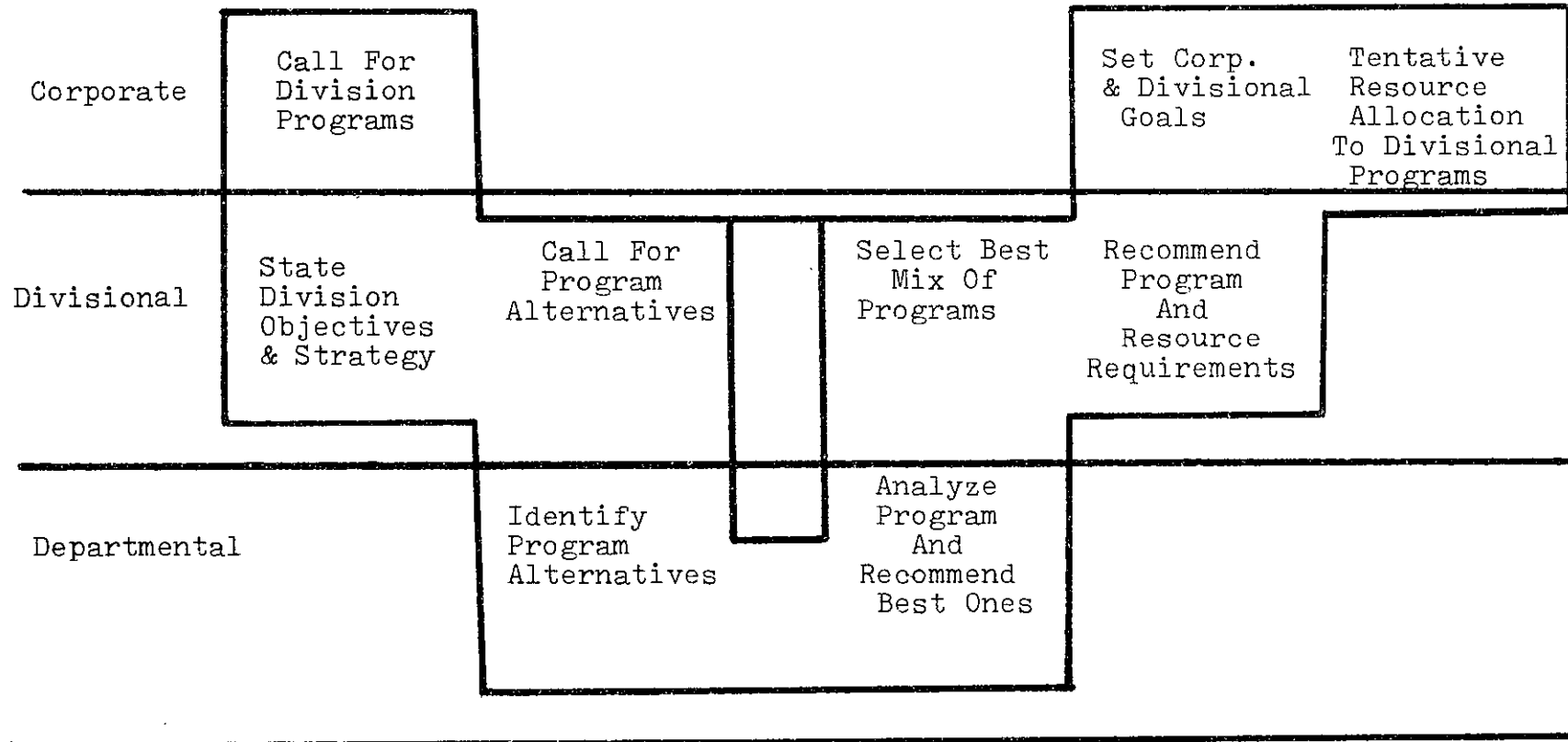


Figure 3.

Departmental

Source: Adapted From Richard F. Vancil and Peter Lorange, "Strategic Planning in Diversified Companies", Harvard Business Review, Jan.-Feb. 1975, p. 84.

VANCIL-LORANGE MODEL
Programming Cycle



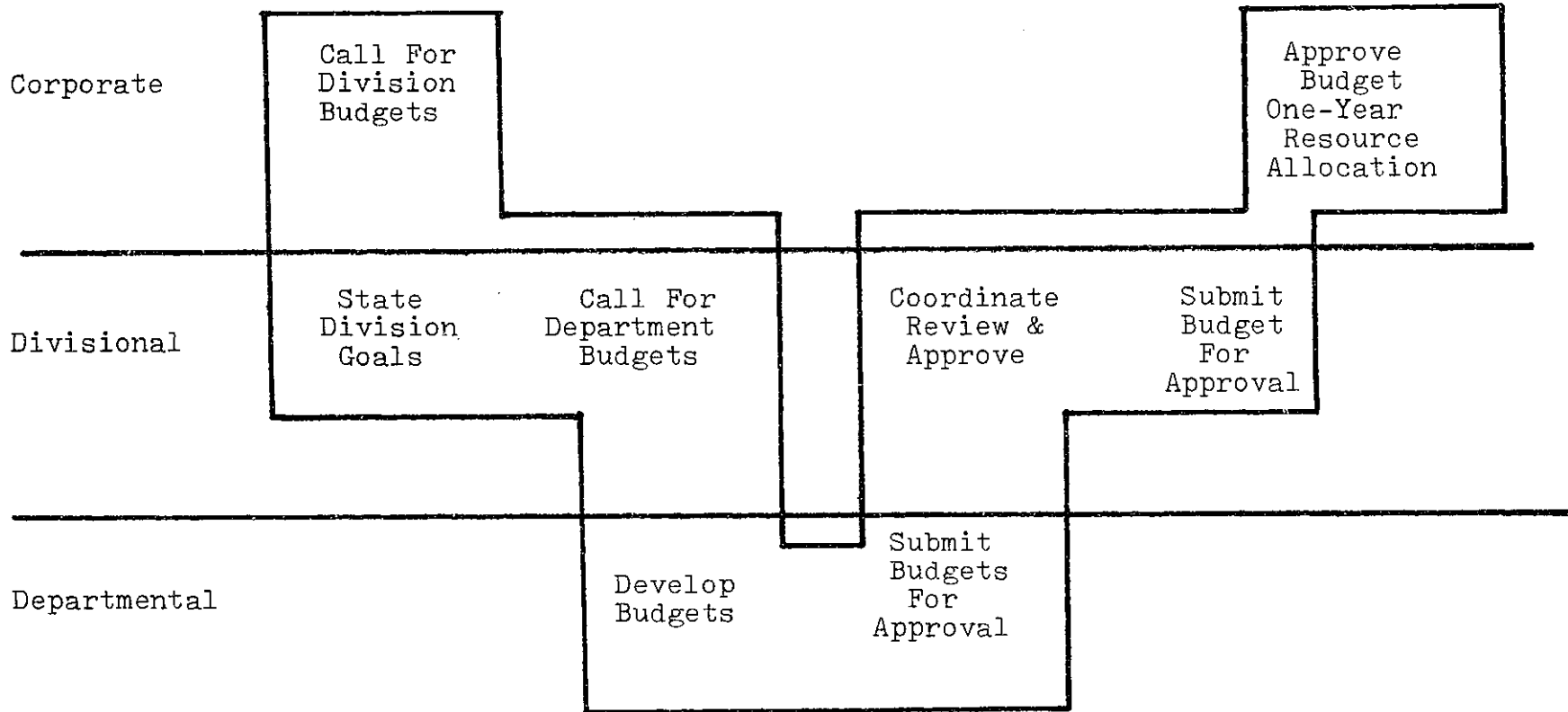
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Figure 4.

Source: Adapted from Richard F. Vancil and Peter Lorange, "Strategic Planning in Diversified Companies", Harvard Business Review, Jan.-Feb. 1975, p. 84.

VANCIL-LORANGE MODEL
Budget Cycle

5



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Figure 5.

Source: Adapted from Richard F. Vancil and Peter Lorange, "Strategic Planning in Diversified Companies", Harvard Business Review, Jan.-Feb. 1975, p. 84.

is the stages or cycles of the planning process. These are objective setting, strategic programming or long-range planning (the development of specific action plans), and budgeting. Completing this staged process are environmental scanning at the front end of the planning process and monitoring (feedback) which follows the budgeting step.

The stages are time-phased steps whose purpose is to provide a vehicle for transforming the strategic options of each organizational level into a budget for the entire organization. The budget is a reflection of the following year's implementation of the "narrowed-down" strategic options. It is the next current portion of the strategic programs.

There are several important characteristics of the process: First, it is based on an orderly pattern of interaction among the organization units. Secondly, it is based on reaching commitment corporate-wide on a gradual narrowing of the company's direction from amongst all the feasible options by going through the three planning stages. The first culminates with agreement on operational objectives, the second by agreement on the strategic action plans, and the third cycle by agreement on the budgets.

The cells in the matrix are linked by the scheduling of planning activities, the communication of information, and the review and performance measurement process. Strategic

direction is achieved by a narrowing down process which develops an operational plan out of the strategy. As planning proceeds from one level in the organization down to the next, the goals of the higher level become the objectives to be operationalized of the lower one. It is important to note that this step-by-step process which spells out the nature of the communication and decision patterns among the diverse set of managers in a divisionalized corporation, is interactive and iterative in its nature in that a lot is typically going back and forth among the participants in the process, through meetings, reviews, discussions, and negotiations. McInnes (31) points out that Tocher's concern of "off-line control" and resultant sub-optimality is mitigated (but by no means solved in practice) by the iterative aspect of the Vancil-Lorange framework.

It is during the second cycle, the strategic programming stage, where corporate and divisional management interact to assess the congruence of divisional action plans with the corporate objectives that had earlier been passed down. Market maintenance and business development strategies as reflected in the action programs must be evaluated for the balance of corporate maintenance and development efforts. The amount to be spent in each division (business) should be approved at the corporate level, determined in the context of other opportunities available in existing or new

businesses (70). Again, especially for a newly introduced formal planning system, the importance of this "strategic control" process cannot be over-emphasized. It is here that a corporate financial model can play a significant negotiation-catalyzing role.

One way it can do this is by checking the congruency of the financial story with the proposed strategic program. Given a certain historical performance, market growth, and competitive status, financial information should reflect expected patterns; for example, in terms of cash flows and return on investment. Additionally, top management (via the corporate planner) can project historical divisional trends and compare these with divisional management's financial projections to better understand the strategic content of any differences between these two forecasts.

Of course, as discussed earlier, the second application of the SFPS comes after the first round of divisional negotiations. At the conclusion of this stage the SFPS is used to perform the corporate analysis by rolling up the contributions (in financial terms) of each division or planning unit to the entire corporation. Assessment of whether or not they match corporate financial goals can be done quickly. Rapid consolidation and evaluation permits faster divisional feedback and timely reiteration.

Situational Design at Q-3 Corporation

It is important to emphasize that the Vancil-Lorange model is particularly applicable to a mature planning system in a diversified company. Q-3 is trending in this direction but, having only begun the process of formal planning, and only having recently moved toward business segmentation, is not yet there. Although serving diversified markets for a number of years, the company has only recently recognized market distinctiveness in a formal manner. This it has done by 1) creating divisional profit centers along market lines -- these were previously revenue centers, 2) initiating planning with an in-depth situational analysis including historical performance for each division, and 3) approaching each such market with an individually devised strategy. Now, in the second year of corporate planning, these efforts have been extended to the company's twenty or so foreign subsidiaries. Each country is considered individually in relation to the particular circumstances and characteristics surrounding its domestic markets and operations. For the purposes of planning each subsidiary is considered a business planning unit as are the various U.S. market divisions. Through a substantial communication process which stresses the interaction of people, not the delivery of reports, strategies are first developed at the divisional level and

subsequently conveyed to top management during each planning unit's strategy session with corporate managers.

Since Q-3's planning experience is new there are differences from the Vancil-Lorange model. In another paper (33) these authors have prescribed some situational design factors for planning systems, stressing that newly initiated systems have different requirements from a more mature planning system. Figure 6, taken from their article, characterizes some of these differences, many of which apply to the start-up situation at Q-3.

Objective Setting

At Q-3 communication of strategic objectives from the corporate level is not explicit and the objective setting process is largely bottom-up. For a new system of formal strategy development this is important because by restricting top-down impositions, corporate management allows the system to provide them with a good understanding of the strategic nature of the markets with which the company is engaged. It also serves to enhance the divisional manager's sense of running his own business and encourages broad strategic thinking at the divisional level. The initial drawback is that the line managers are very confused as to what is expected of them. Ironically, this is not a new

SYSTEMS DESIGN ISSUES IN THE PLANNING PROCESS

| Systems Design Issue | Situational Settings | | |
|--------------------------------------|----------------------|---------------------|------------------------|
| | Homogeneous Firm | Diversified Firm | |
| | | New Planning System | Mature Planning System |
| 1. Communication of Goals | Explicit | Not Explicit | Explicit |
| 2. Goal-Setting Process | Top-Down | Bottom-Up | "Negotiated" |
| 3. Environmental Scanning | Statistical | Statistical | Strategic |
| 4. Executives' Focus | Financial | Financial | Strategic |
| 5. Role of the Planner | Catalyst and Analyst | Catalyst | Catalyst and Analyst |
| 6. Linkage of Planning and Budgeting | Tight | Loose | Tight |
| 7. Nature of Feedbacks and Revisions | Much | Little | Some |

Figure 6.

Source: Adapted from Exhibit 3 of; Peter Lorange and Richard Vancil, "What Kind of Strategic Planning System Do You Need?" Sloan Working Paper, 1976.

situation because the company has not favored a management-by-objectives approach to managerial activity. The reason for this is that the environments in which the company operates are so dynamic that the internal environment also changes rapidly. A basic tenet of MBO is the establishment of agreed-upon specific objectives. Since these are ever-changing it is felt that an MBO managerial style would be unrealistic. It would be futile to establish quantifiable objectives that change too swiftly to provide any meaning as a motivator. "Management by the ability to respond to change" is more characteristic for this company even if it is more frustrating to the participants. Interestingly enough, a great deal of that change comes from internal sources such as organizational structure changes, top management decisions to abandon earlier approved goals, and the addition of new high level managers who hold views that differ from views of former managers which, in the form of programs, were in the process of being implemented. An indication of the effect of the lack of strategic guidance is that in business units where planning has not yet been established, one manager believes his objective is to maximize revenues while another believes it to be maintaining large margins even at the expense of sales. Still another professed that he had no idea. This is a dysfunctional condition straining the ability to respond strategically by

adapting to changing needs. There is a need for orchestration and indeed this is a prominent purpose of planning. Once top management learns about its various strategic environments they can establish coordinating guidelines for objectives. This of course is the purposive intent of initiating planning with an in-depth situation analysis. The first year of planning at Q-3 was accordingly devoted to an external/internal scrutiny, to be followed by corporate objectives and expectations for each planning unit. Currently, a number of planning unit managers are still waiting for feedback from the first year's results.

There is a traditional historical corporate goal of 15% per annum growth in sales and profits permeating Q-3's organization. In the past this goal applied uniformly to all market managers. Now these growth targets are being modified on an individual basis to reflect the strategic status of each business planning unit's market niche. The consolidated results, though, still must reflect the historical corporate goals for growth. Here is where the SFPS makes a significant contribution -- by providing a rapid consolidation of projected divisional financial performances top management can more quickly and easily evaluate their acceptance as a whole and respond back to divisional managers. In this way the portfolio point of view is being maintained in the narrowing-down process. Faster feedback to divisional

managers is also furthered.

Financial Orientation

Financial information, though only a portion of planning data content, plays an important role during early stages of planning system development. It is an effective dimension for distilling the large amount of data often associated with a comprehensive business plan. It is of course also the input to the SFPS as well as a basis for the output which is expressed in terms of key financial indices such as year-by-year profitability, growth rates, market share, return on investment, etc. Focus on financial detail helps to insure that divisional managers have thought through the various implications of implementing their programs. It also permits them to select more confidently from among those strategies they may be considering. Moreover, considering the newness of long range thinking for line managers, a financial approach to projections helps divisional and other planning unit (such as foreign subsidiary) managers to lengthen the time horizon of their thinking. In order to make these forecasts they must make their intuitive economic models more explicit. This is a useful activity since both the divisions and top management gain in learning about and understanding the company from

the process. It also provides an objective framework for discussing past performance from which future-oriented strategic planning can depart.

The act of financial evaluation also serves to establish a very important and unusual pattern of comparison for the divisional planning units. Managers of these business units must see themselves measured against alternative uses of funds within the corporation. There is a strong tendency for divisions to regard their business as possessing some absolute value. Such provincialism, valuable in the sense of motivation, can tend to divert management attention from the track of running a profitable business to the task of being in a particular market. One role of the corporate appraisal is to challenge their assumptions and to keep them realistic.

Role of the Corporate Planner

The corporate planner is the key user and proponent of the strategic financial planning system at Q-3 Corporation. It's success, as well as the successful implementation of planning in the large sense within the company, is tied to the ability of the corporate planner to carry out a number of tasks related to the overall management of a corporate planning system. It is therefore fitting that we address a

number of issues pertinent to the unique role of the corporate planner.

There are a number of tasks with which the corporate planner finds himself confronted. One task is to focus on the design and implementation of the strategic planning system and to manage the planning process. Arising immediately are several issues related to the managerial process. There is concern for the need to coordinate the process by orchestrating the diverse set of managers and activities involved. The corporate planner finds himself increasingly having to manage the process of decision making: bringing the right people together around the right questions or problems; stimulating open discussion; insuring that all relevant information surfaces, moves to the appropriate decision makers, and is critically assessed (overcoming the barriers to communication mentioned earlier in the process); managing the ups and downs of prima donnas; reckoning with political forces; and insuring that out of all this human and interpersonal process, a good decision will result. Then there is the preparation of a planning manual, dissemination of a planning calendar, setting up strategy sessions, etc.

Another task, particularly taxing for a small planning department such as at Q-3, is to be involved in analyzing the substantive issues that are brought up through the

planning process. Again, there are a number of aspects involved. One involves providing a background of assumptions for treating such factors as interest rates, currency-exchange rates, inflation rates, and so on. A second is the planner's role in the corporate-divisional strategy negotiations: checking for the feasibility of divisional action plans, asking strategically probing questions, and using the SFPS for "performance congruency" checks (consistency of the financial implications with the market niche and strategic plans). A third function is to provide a corporate analysis on the consolidation of business planning unit programs, checking among other things to see that corporate financial goals are being met.

Throughout these continuing efforts the corporate planner is also dealing with a number of organizational factors. First there is the CEO who must be brought into involvement with the planning process and who must "buy" the entire idea of planning. Support by the CEO provides the planner with a critically needed power base. Then there are the line managers whose familiarity with short term decision making and intuitive cognitive style may create resistance to planning -- by the very people who need to carry it out the most. The corporate planner must also incorporate other staff and/or functional groups such as manufacturing, finance, research and development, and marketing, into the process.

Finally there is the organizational structure itself which offers additional challenge and potential resistance to being managed with facilitation. For example, Q-3 Corporation, despite its recent trend toward decentralization, is structured with a matrix management system. Conflicts arise between divisional profit center managers and the functional (or resource) managers with whom they must interact. These conflicts concern not just short-run resource allocation (e.g. whose product is favored through the factory, or which promotion gets expedited by the newly-created semi-pooled sales force) but strategy as well (e.g. resolving disparate opinions on costs in order to determine profitability of a particular product mix, receiving R&D time and facilities for new product development). Functional managers favor strategies that utilize existing skills whereas market-segment profit center managers are tied to their served markets and usually push for fast response on new products, new promotional strategies, and various other changes. The corporate planner at Q-3 is faced with the need to establish a strong sense of mutual support in the way of "team building". His efforts have been delayed by the old line political forces who liked the way decisions were made before the advent of corporate planning and now see the potential erosion of control -- the Vice President of marketing formerly set the course for each

market segment and functional resources complied accordingly. This top-down process is changing. The trend toward negotiated settlement of resource utilization by incorporating functional managers into the planning process has met with some resistance from high-level executives. The new corporate planner in implementing a new management system must be careful about interfering with vital old-line relationships. Patience and education, as well as demonstration to the CEO of the efficacy of planning will establish a more appropriate mode of team-building for Q-3 organization.

One way that planning was partly sold to the CEO was with the aid of the SFPS. There had been a deliberate effort to introduce the planning process in stages so as to keep things relatively simple without overwhelming organizational management. The first year of planning at Q-3 focused on domestic planning units with an in-depth situational analysis; the second year extended the activity to foreign planning segments since non-domestic sales accounted for a significant portion of sales and profits. These planning units were established along geographical lines, equating to subsidiaries in specific countries for the most part. Before commencing strategy sessions with some of these foreign subsidiaries the president of Q-3 expressed a desire to be able to look at the historical performance of one particular geographical area. Knowing that the standard

data processing department reports were inadequate for satisfying his need (a common problem in many organizations) he approached the corporate planner to see what might be done. The very first output from the newly implemented SFPS was the answer to his question. Design of the corporate financial model had established a format for data input, forcing the aggregation of data from various distributed data structures. A key aspect (and benefit) to the implementation of a corporate planning system is the establishment of a reporting format. In this case, it was the format for financial reporting of strategic programs which indirectly, through the computer-based corporate financial model, provided the output which demonstrated one of the attributes of corporate planning to the CEO.

Establishment of solid support by the CEO provides organizational status for the corporate planner which can have significant value in conveying to division managers the importance of formal strategic planning. His corporate task is to do a better job of resource allocation among the divisions, and one way to do that is to assist the division managers in their efforts at strategic programming. Planning impetus at the division level can be furthered by establishing a simple, relevant format which helps make explicit former intuitive knowledge, asking probing strategic questions, and emphasizing a person-to-person interactive

contact. One thing is clear -- the role of the planner is not to develop plans but to facilitate their construction by line management. The planning system itself cannot dictate either the contents of the plans or the level of organizational commitment to using them as a basis for setting corporate strategy. The corporate planner is not a decision maker but a decision facilitator. He has no real authority. Consequently, securing relevance for planning in the decision-making process may relate considerably to the planner's interpersonal competence.

The corporate planner however, is in a position to ask, "Is the overall company anything more than simply the sum of the individual divisions?" This question goes beyond use of the SFPS for assessing the consolidation of financial projections against corporate financial goals. To answer the question the planner should address the ways in which the overall organization could use its combined capabilities to pursue opportunities beyond those which the divisions might undertake individually. Another potential role for the corporate planner becomes one of identifying synergy. As a catalyst which keeps the planning system operating the planner can help the planning activity itself contribute to these factors which transcend divisional demarcations:

- the determination of the particular strengths and weakness which are revealed by the overall pattern of organizational activities,
- the identification of those areas of opportunity which seem particularly attractive and appropriate given the above,
- outlining the implications for the current portfolio of operations of major trends and potential threats which are currently perceptible.

Given this role and that of performing the corporate analysis, the planner, though not a decision-maker, is led into the role of contributing to the substantive issues of corporate planning.

Lorange (34) has anticipated the kind of resistance with which this dual role, that of managing the planning process and at the same time engaging in its content, might be met. Line executives will be likely to resist the notion that staff executives have an influence on strategic choices, given that staff will not be as close as line to the market segments. This is especially so when the planner is new to the company and lacks the relevant line background. During interviews with line managers at Q-3 this sentiment was vividly expressed. A discussion of line's view of the normative and actual role and function of the planning staff is deferred to Chapter 6. Also included for contrast is the

planning department's view of the same.

Resistance was also seen to be forthcoming as a result of line management's perception of the planning staff, through its role in modifying the planning system, to be "setting the rules of the game" while also "being a player in the game." Changes in the planning system (within the planner's control) can affect the firm's strategic direction, thus the connection. A consequence of this situation is that the planner may lose his task effectiveness by losing the cooperation of the line managers.

Given the difficulty of combining the two potentially conflicting roles of the corporate planner, Lorange proposes the assignment of the two tasks explicitly to two different persons or offices. This solution is unsuitable to Q-3 or for any new planning system with a small planning staff. The first problem is that separation would require additional personnel, impractical for a department still trying to "earn its stripes." Secondly, integration of management efforts at planning with analysis of their resulting action plans is a key to success of planning. To separate these activities before they were well established could prove dysfunctional to the entire planning effort. Moreover, at least in the case of Q-3, the substantive influence of the corporate planner in the area of resource allocation (in effect, the role of advocacy) prevented the

company from continuing the strategic error of strangulation of one of its divisions. As a consequence of his corporate perspective, the planner was able to display the context (not finalize a decision) in which the large contribution potential of this relatively small division could be seen. It was the relatively new process of market segmentation and individual strategizing, followed by reconsolidation (the business portfolio perspective) that provided the insight. The planner's dual role and influence in the resource allocation process was responsible for redressing the firm's earlier strategic mistake (oversight?).

As a closing note on this topic, the indefinite process by which the corporate planner establishes a power base is recognized. The support of the CEO is one factor, but at Q-3, during the initial period of implementation (considered to be 3 years by the planner, the company is now in year 2) support of very influential functional managers is also required. Matrix management, where profit centers cut across these functional lines, is deeply embedded in the company's management philosophy.

One such critical support would be that of the Vice President of Finance. At present there is a conflict which affects the future status of the SFPS. Financial analysis is an integral part of corporate strategic planning, not only for its reflection of non-financial strategic investment

dimensions, but because profitability analysis can play a crucial role in determining the appropriation of resources to strategic programs. To separate the strategic-financial planning system from the corporate planner would be highly dysfunctional. Yet the financial V.P. of Q-3 wanted to control all financial-related planning and was an advocate for removing the system from the planning department. However, financial planning as a bona-fide process outside the context of the strategic planning system does not yet exist at Q-3 Corporation. Interestingly enough, its inception has been delayed by the failure of the budgeting process (not yet linked to corporate planning) to close on an acceptable target. Without a front end planning system there was insufficient time and interaction to narrow down the yearly plan to a suitable budget. Budgeting ran over the calendar year-end and monopolized the attention of the corporate finance department. By default, or until the conflict can be resolved, the SFPS remained with the corporate planner.

Linkage of Planning and Budgeting

The chronological steps in the Vancil-Lorange framework represent an orderly and gradual process of commitment to certain strategic alternatives. When a set of strategic programs have been decided upon there will more than likely

be a need to commit resources for a period of several years into the future. Without providing for the necessary assets and other expenditures the programs cannot be implemented. As a concluding phase of the planning process the budget should reflect the next year's segment of the allocations to the investment programs. Frequently traditional resource allocation for capital expenditures are made on a year-to-year basis through the budget. There is a problem when these procedures are not modified to reflect the resource allocation decisions arrived at through the planning process; the role of the budget should be a fine tuning device for the longer-term commitments to strategic programs and as a base against which to measure progress towards the strategic goals, not as devices to frustrate the progress of investment programs.

"Given that the budgets are merely reflections of the already approved strategic programs, the importance of the budget preparation and approval becomes less significant as a resource allocation tool. Many companies who do not have formal objectives-setting and strategic program development will make use of the budgeting process as a resource allocation device, with heavy emphasis on project investment appropriation procedures. Unfortunately, some companies continue with these practices the same way even after the objectives-setting and programming phases have been installed. The result often will be conflict situations between the carrying out of an approved strategic program and rejection of a specific project investment proposal which

will be necessary for the program but which does not satisfy some budget hurdle rate.

The purpose of the budget should be seen to be primarily one of integrating the various activities of the company; an action program that will serve as a base for progress measurement." (1)

Since budgets have a short-term orientation associated with them, there is an emphasis of commitment within their formulation. Through a linkage with the planning system the budget serves as a medium for achieving commitment to and providing a monitoring device for strategic programs. But in this new role it is desirable to install non-financial measures as milestones to reflect the non-financial dimensional goals associated with strategic investment programs such as market share or new product development progress.

For new planning systems this is too much to achieve in the first few years. First there is a great deal to be learned in making the objectives-setting and programming stages orderly and effective. Without these neatly in place there would be doubt as to the strategic components of the budget. Secondly, the budget is typically prepared under the auspices of the controller with whom the corporate planner must establish an amiable relationship. The effective blending of these organizational staff functions will require strong interpersonal capability on the part of the planner

as well as political influence. Without line authority these take time to develop. Thirdly, there is time required to educate the organization as to the strategic significance of linking the budget to the planning system. Fourthly, the implication of imposing a control function through the budget on strategic programs, which by their nature are flexible, uncertain, and therefore not fixed, will meet with resistance by line management on whom commitment will be imposed.

Time will be required to gain the idea of commitment to strategic programs via the budget from the line managers who will be implementing the programs. They will feel uncertain as to their own strategic programming capabilities. This in turn may affect the nature of proposed programs communicated to top management. In the end, patience may be the limiting resource in linking budgeting to planning.

The foregoing discussion is closely drawn from the situation at Q-3 Corporation. The planning and budgeting functions are currently separate, but the design for the implementation of the corporate planning process calls for a facilitated budget preparation for the third year, drawing from the output of the planning system in the current second year. (This implies an expanded role (budget linkage) for the SFPS, now in its first year). Gaining the support of the CEO for the budget's role in planning should

be the first and essential step in achieving this end. The subject of commitment to strategic plans was addressed during the managerial interviews (Chapter 6). Issues raised included what type of incentive scheme would achieve motivation to make strategic decisions with long-term effects and to be committed to them. Currently there is no such overt long-term motivator built into the reward system. Focus remains short-term -- an ideal opportunity for utilizing a budgeting linkage to strategic programming as a strategic control device, but it is too much for too few people to accomplish in too short a time.

CHAPTER 3

THE CONTENT OF PLANNING

All of the issues covered in this thesis have some influence on the use and role of the "strategic financial planning system." It would therefore be an unbalanced distortion to focus only on the financial aspects of resource allocation planning even though the SFPS communicates with the user via financial-accounting-based input and output. One reason for this view is that the financial component of the format for planning information is really a partial distillation of other considerations, reflected in quantitative form. Another is that without these other dimensions of planning content the financial aspects would be reduced to mere pro forma income statements and balance sheets, and other selected financial indices, devoid of strategic content. A third reason is that financial performance is related to marketplace strategy and these strategies have more complex meaning and relationships than those which numbers alone can reveal. A fourth is that over-reliance on financial logic can obscure important weaknesses in managers' strategic business planning. These considerations are reflected in the weighting given at Q-3 Corporation to financial aspects of resource allocation planning. The user of the SFPS at Q-3 weights the emphasis of this financial-based system 20%

relative to other decision variables which receive an emphasis of 80%. Given the range of information which these other strategic factors encompass, this weighting seems appropriate. It is even more so when one considers that the feeling of the corporate planner at Q-3 Corporation is that "what is important now is not so much the plans themselves but the fact that we are planning, and beginning to think strategically."

The Corporate Planner's Role

As we saw in Chapter 2 the planning system guides the managers at the divisional and functional level to establish goals, develop action programs, and make decisions which are not only better for them but also congruent with the overall objectives of the corporation.

Besides helping lower level managers to plan more effectively, the planning system should also provide information required by corporate level managers to make their strategic investment decisions. The upward transfer of information is essential because as the size of the firm increases, and as markets continue their dynamic growth, the ability of corporate level managers to remain intimately familiar with the firm's product-market segments diminishes. Most of the information required to make resource allocation

decisions comes from the divisional and functional managers.

When making investment evaluations and selections, a manager uses a set of variables to differentiate among the proposed investment programs he is considering. Preferences for programs (or projects) depend on the evaluation of the investment along each of these dimensions. This task is clearly made easier if information is presented to the investment decision maker in terms of these variables. The corporate planner plays a pivotal role in evaluating and screening these programs, both individually and for their consolidated effects. He also is a vital link in passing on to top management an assessment of their relative strengths and weaknesses. We stated in the previous chapter that one of the tasks of the corporate planner was to develop a format for the explicit communication of information from each division which would support resource allocation decisions. This information should describe

- market and competitive situation
- historical performance
- future action plans (strategic programs)

The planner is in a position to assure that the transfer of information falls along the dimensions relevant to the resource allocation decision--this derives from his role in developing the communication format.

Dimensions of Information

Lorange (38) suggests that there are three general sets of variables that might affect dimensions of strategic investment information:

- the purpose of the organizational unit
- the characteristics of the organization and its businesses
- the style and values of the managers

In his study, Lorange (38) looked at the third group of variables (i.e., management style and values) and found that they did not affect the investment evaluation process across firms in any systematic manner. He therefore concluded that "little attention should be paid to human behavior situational factors compared to other types of situational factors." Anand (39) looked at the effects of the second group of variables (i.e., characteristics of the organization and its businesses) and found that they do affect the dimensions used by corporate managers for investment evaluation. In carrying out the study, he controlled for the purpose of the organization unit (the first set of variables) by looking only at the corporate level of manufacturing firms. Anand maintained that corporate

management objectives and investment decision problems from firm to firm have a greater similarity than those from business to business. By focusing on the corporate level, the specific purpose of a particular business was no longer considered to be an independent variable.

Anand (39) was interested in the total number of dimensions used by corporate level managers in assessing investment proposals, as well as their type. He broke the dimensions into two types: "internal" and "external." "External" dimensions dealt with factors in the firm's external environment upon which the firm had little or no control. These would include such things as consumer tastes, supplier constraints, competitive actions, government regulations, the economic milieu, and so on. "Internal" dimensions were meant to include factors more or less directly affected by actions of the firm. These were dichotomized into "business" variables and "financial" variables. "Financial" variables included such factors as cash flows, return on investment, reported income, etc., whereas "business" variables were more closely linked to business strategy, for example product quality, production strength, and market share.

In all, from a sample of 13 firms, Anand found 61 differentiated attributes which were used for investment evaluation. They were summarized into the following groups:

- project profitability
- present and future size of market
- competitive situation in the market
- strength of the product in the market
- other market strengths of the firm
- production strength of the firm
- track record of the manager and/or business
- management knowledge of the business and competence in it
- program risk
- government control in the business
- miscellaneous (firm's image, strategic import of project)

He found that the number of these dimensions which were used increased as the level of uncertainty associated with the environment in which the firm operated increased.* Another finding was that the use of "external" variables decreased as the amount of planning which preceded the resource allocation phase increased.

* Elements of risk include not only the external factors such as uncertainties in projecting the environment and uncertainties in competitive reactions but "internal" factors as well, such as uncertainties in estimating results and the uncertainty in the internal response capability, i.e., the ability of managers to adjust to external changes.

There are of course, other critical factors some of which are difficult to pinpoint. For example, Taylor and Sparkes (40) point out the need to consider "consequential" effects:

- what further investment opportunities will or could arise as a result of investing in a particular proposal?
- what impact will an investment have on resource planning and cost structure in the longer term?

New products may give rise to secondary expansion and/or have a synergistic effect on the production and marketing capabilities for existing products. At the same time they may generate a long-term demand for additional market maintenance resources. These consequential effects are incentive enough for looking at strategic programs (rather than individual projects) with a long-term view. Consideration of strategic investments precludes the use of the traditional one-year capital budget as a decision tool for resource allocation planning because its time horizon is too short to accommodate the nature of these decisions. It also tends to focus on single, isolated projects. Empirical support lies in Anand's (39) finding that it was impossible to separate the evaluation of specific investment projects

from broader programs of which they were a part.

As opposed to the profitability dimension (e.g., net present value, payback period, return on sales, cash contribution) of investments there are also the financial policies and conditions of the firm to take into account:

- financial structure -- influential factors could be debt capacity and cash availability, as well as the cost of capital
- financial reporting -- despite the attractiveness of investments and the availability of funds, there may be a limit to how much investment the CEO is willing to undertake, given their effects on the income statement reported to shareholders and the short-term reported profitability goals of the company.*

It was earlier suggested that it was vital for the organization to assure that its investment policy was coherent. One aspects of coherence is the product (or market) life cycle. There are four differentiable stages of

* This particular dimension was a major influential factor at Q-3. The company faced many attractive investment opportunities which they were unwilling to undertake because of the expenditure impact on the bottom line in the near-term.

the product life cycle and associated general investment strategies:

- embryonic or development -- investment is concentrated in new products and technologies.
- growth -- programs are oriented toward expansion and variety extension. Entry is more difficult.
- maturity -- investment is focused on asset replacement, rationalization, and cost-saving projects.
- aging or decline -- disinvestment and closure is the common strategy

An important trend in recent thinking about corporate strategy is the suggestion that businesses at different stages of development require different organizational structures, different management systems, and different styles of leadership. Arthur D. Little (Figure 7) has characterized the variations in management functions required by different stages of the product-market life cycle. Their characterization suggests that the managerial dimension is influential on resource allocation in a manner depending on the type of investment program under consideration and the sponsoring manager's style and capability. This expands upon the management knowledge dimension found by Anand (39) and the individual's bargaining power observed by Bower (14).

| <u>Management Activity or Function</u> | <u>Embryonic Industry</u> | <u>Growth Industry</u> | <u>Mature Industry</u> | <u>Aging Industry</u> |
|--|---|---|--|--|
| Managerial Role | Entrepreneur | Sophisticated market manager | Critical administrator | "Opportunistic milker" |
| Planning Time Frame | Long enough to draw tentative life cycle (10) | Long-range investment payout (7) | Intermediate (3) | Short-range (1) |
| Planning Content | By product/customer | By product and program | By product/market/function | By plant |
| Planning Style | Flexible | Less flexible | Fixed | Fixed |
| Organization Structure | Free-form or task force | Semi-permanent task force, product or market division | Business division plus task force for renewal | Pared-down division |
| Managerial Compensation | High variable/low fixed, fluctuating with performance | Balanced variable and fixed, individual and group rewards | Low variable-high fixed group rewards | Fixed only |
| Policies | Few | More | Many | Many |
| Procedures | None | Few | Many | Many |
| Communication System | Informal/tailor-made | Formal/tailor-made | Formal/uniform | Little or none, by direction |
| Managerial Style | Participation | Leadership | Guidance/loyalty | Loyalty |
| Content of Reporting System | Qualitative, marketing, unwritten | Qualitative and quantitative, early warning system, all functions | Quantitative, written, production oriented | Numerical, oriented to written balance sheet |
| Measures Used | Few fixed | Multiple/adjustable | Multiple/adjustable | Few/fixed |
| Frequency of Measuring | Often | Relatively often | Traditionally periodic | Less often |
| Detail of Measurement | Less | More | Great | Less |
| Corporate Departmental Emphasis | Market research; new product development | Operations research; organization development | Value analysis Data processing Taxes and insurance | Purchasing |

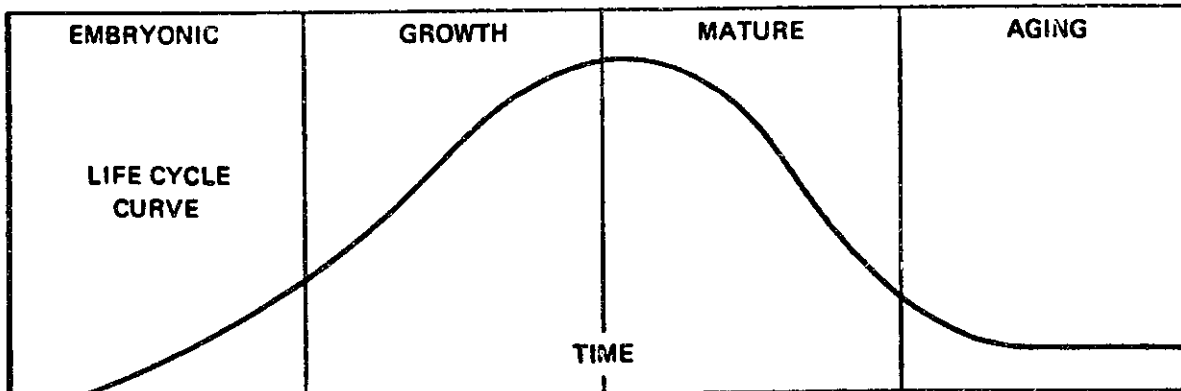


Figure 7. Management Characteristics By Stage of Market Maturity
 Excerpted from Arthur D. Little, Inc. (41)

A Portfolio Approach to Integration

It is easy for a manager to feel overwhelmed by the number and scope of strategic dimensions which are of import when making resource allocation decisions. A number of approaches have been made to integrate these factors into a set of fewer, more manageable dimensions. As one example, the SFPS, relatively speaking, operates on a single dimension -- financial -- which, by itself, is relatively devoid of strategic content. It does however, present the net effect of interaction of many of the multiple factors by reflecting their overall effect on, for example, profitability. A discussion of financial indices is deferred to the end of this chapter.

One common method of reducing the multidimensionality of business line strategy into operational terms is to specify it in a two dimensional classification matrix form (42). The overall attractiveness of a business is measured by the projected market growth, and its competitive strength (a surrogate for internal strength) by its market share. Originally designed for use at the business or divisional level to appraise a mix of products and their attractiveness, the method can be extended to the corporate level to provide a "portfolio management" approach to resource allocation (43).

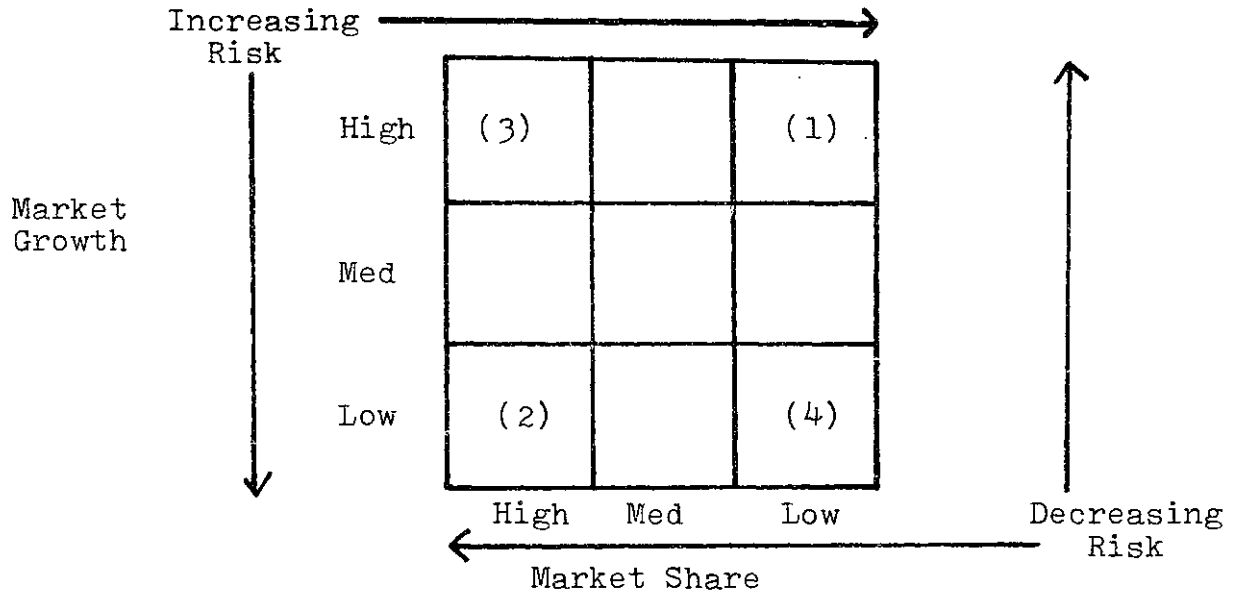


Figure 8. Business Line Strategic Posture Matrix

Valuable insights can emerge from this kind of analysis. For example, it seems sensible to have a range of businesses at different stages of development, as follows (40):

- (1) There should be some new projects (businesses) offering good profit opportunities with high risk, and hungry for cash
- (2) To support these new businesses the company will need a number of solid well-established businesses in mature markets, which are making good profits, face little risk and produce a good cash flow.

- (3) There should be businesses that are fighting to hold a dominant position in growth markets, and will provide the sound basis for company growth in the future.
- (4) Finally, there will inevitably be other businesses that are due for 'retirement', because the total market has declined, the products have become uncompetitive, or the risks for some reason are unacceptable.

It is important to note that defining a business's competitive position by the single dimension of market share reduces the true complexity of the competitive aspect. Competitive strength is truly a multi-criteria issue embracing, for example, technology, breadth of product line, market share, market movement, distribution networks, people, and special market relationships. Similarly, business attractiveness is a mixture of size, pricing, rate of product purchase, profitability, technology, structure of competition, vulnerability, growth, and other structural forces, as well as various social, environmental, legal, and human factors.

The General Electric Company incorporates these considerations (40,43,44) into a version of the BCG matrix with the axes redefined as in Figure 9. They refer to this

chart as the "Business Screen."

| | | <u>Industry Attractiveness</u> | | |
|--------------------|------|--------------------------------|--------|--------|
| | | High | Med | Low |
| Business Strengths | High | Green | Green | Yellow |
| | Med | Green | Yellow | Red |
| | Low | Yellow | Red | Red |

Figure 9. Multidimensional Portfolio Assessment--
GE's Business Screen

Businesses in the 'green' category are given the highest priority for investment. These include the following:

- Businesses with high market shares or the possibility of achieving market dominance in growing industries.
- Businesses in areas the corporation regards as its present or future 'prime territory.'
- Ventures offering very high earnings or cash returns

in the near term.

Businesses in the 'yellow' area are often stable or declining, and the policy is to be very selective when making further investments in them. Businesses in the 'red' area are those management is worried about either because of undue risks, poor earnings, etc. The guideline for these lines of business is to reduce investments and possibly to sell off the assets or the whole business.

Lorange (45) adds a third dimension to the two-dimensional matrix which is a measure of how well the total portfolio of business projects or line strategies fit together. He proposes that the following factors be used to measure the consolidation dimension:

- shape of cash flow -- the timing aspects of returns
- size of cash flow -- balance should be managed
- risk of cash flow -- these too should be balanced
- covariance of cash flows -- the less the better
- production synergy effects -- economies of scale
- marketing synergy effects -- optimal use of the sales force
- R&D synergy effects -- utilize internal capabilities
- substitution opportunity -- a measurement of the ease and risk of a shift in emphasis in the business portfolio

Additional dimensions can be added to the plane of the matrix which convey financial and historical performance information. For example, a business's position in the matrix can be depicted by a circle whose area is proportional to sales or earnings. An arrow or group of arrows can reveal where that business had been in earlier periods. The area of the circle can be colored red, yellow or green in the GE sense to reflect the current strategy proposed by the division. The point is that a great deal of strategic information can be conveyed on the matrix surface. Of course the reasoning behind the particular positioning of a business should be supported by data and written explanations.

Ansoff (19) suggests that the portfolio be evaluated by three ratings: short-term, long-term, and flexibility objectives. Flexibility refers to the extent of customer concentration, product-market diversification, number of independent technologies underlying the firm's posture, R&D strengths, and so on. These ratings are truly a mixed bag. Each contributes to a different aspect of the firm's performance; each is measured by a different yardstick; and an increase in one usually involves a decrease in the others. There is no obvious way in which they can be combined to produce a single figure of merit. Even financial

projections as a distillation of these are mere approximations to the true interactive effects. Nor can financial dimensions easily be traded off (35). Of the 61 investment attributes enumerated by Anand, few firms utilized more than a dozen. But the list presented here is certainly robust enough to accomodate most situational settings. No algorithm exists for tying the dimensions together, nor is one likely to; however, it is the responsibility of the planning system at least to mobilize the relevant data from each division and have that information transferred to top management. Only at the corporate level can the consolidated effect of all dimensions be observed. It is this perspective which enables a judgment of the degree of fit among all divisional plans. It also provides an assessment of where the firm has been and where it is capable of going.

Planning Content of Q-3 Corporation

The format for communicating information at Q-3 was designed to enable the positioning of each planning unit (division of the company, including foreign subsidiaries) within a version of the earlier described matrices. Again, the two dimensions utilized, Industry Maturity and the business's Strategic Competitive Postion, are an integration

of many market, production, and management factors. Figure 10 portrays this approach.

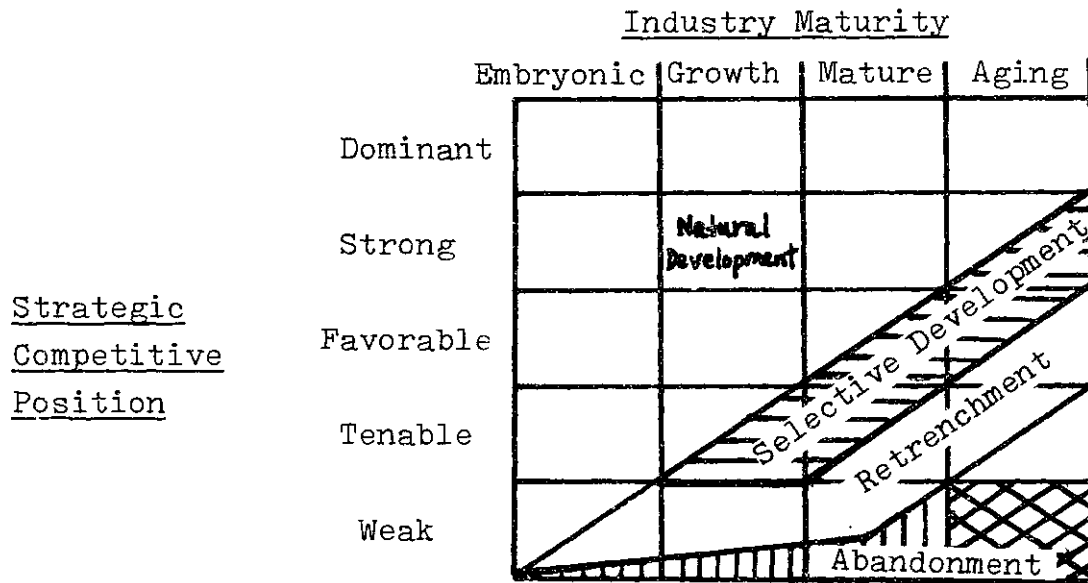


Figure 10. Portfolio Assessment of Strategic Options

With the matrix as a framework, the appropriate "natural" strategies can be identified for each combination of maturity and competitive position. Strategies selected this way are the "first cut" at unit strategy determination. Subsequent refinement leads to final strategy determination. There are times when a division is not always free to choose a natural strategy. It may find it precluded by internal tradeoffs or external competitive moves. When the corporation's long-term

objectives conflict with full exploitation of a planning unit's market advantage or when the company cannot appropriately fund all of its prime opportunities (see footnote, p. 93), a unit may be assigned a strategy which, though "unnatural" for its maturity and competitive position, is nevertheless appropriate for the corporate good.

As stated in Chapter 1 strategies appropriate for each general position in the matrix have an associated expected financial behavior. Financial projections accompanying each unit's strategic plans are evaluated for their conformity with these templates. Any significant deviation is an alert to identifying the specific cause for the difference.

The position of each planning unit within the matrix is by no means given. In general, the maturity of the industry or market in which the business is involved must be identified.* One way to do this is to evaluate the industry's characteristics along a number of dimensions. For example, the growth rate of an embryonic stage is accelerating, during the growth stage it is faster than GNP, and for the mature phase is equal to or slower than GNP, perhaps cyclical. Similarly, the number of participants is increasing rapidly in the embryonic stage of development but stable

* This is a one-to-one mapping since businesses, as planning units, are defined in a narrow sense, preferably as independent of other planning units as possible. In this way they can be considered (ideally) individually.

during maturity, and declining during aging. Information is requested of planning units along these dimensions for the purpose of identifying industry maturity:

- growth rate
- industry potential
- extent of product lines
- number of participants
- market share distribution
- customer loyalty
- ease of entry
- technology

An identifiable behavior can be associated with each phase of the market cycle for each of these factors. The list is by no means exhaustive but sufficient to effect a reasonable identification of the stage of development of the particular industry or market. Ordinarily, a single stage of development can be identified for planning purposes.

In order to establish the planning unit's competitive position (i.e., strength in the market) information along a number of dimensions is requested. These can be grouped into market, production, and management factors. The latter group (management factors) in addition to including items covered in the last section of this chapter, is also applied

at the corporate level since it includes such considerations as:

Corporate Management Factors

- can the company take significant risk because of overall strength
- does the managerial system support the taking of risk
- can the management and organization respond quickly to the external environment

The market related group of factors include such indices as

Market-related Factors

- market share
- market share growth
- distribution of market share among competitors
- protection of market share (e.g., patents)
- price leadership
- customer concentration
- company (or product line) image
- relative attractiveness of the business to competitors (i.e., what is their emphasis on the particular industry)

The production group of factors include dimensions such as

Production-related Factors

- cost structure relative to competition
- sufficient volume to justify optimal distribution system
- industry capacities
- alternative uses for production facilities
- technology

These decisions can be used to classify the planning unit's competitive strategic position. As a guide, the following typology is illustrative.

Classification of Competitive Strategic Positions

- | | |
|----------|--|
| Dominant | <ul style="list-style-type: none">● Controls behavior of other competitors (performance and/or strategy).● Has wide choice of strategic options (both 'natural' and selected). |
| Strong | <ul style="list-style-type: none">● Able to take independent stance or action without endangering long-term position.● Able to maintain long-term position regardless of competitor's actions |

- Favorable
- Has a strength which is exploitable in particular strategies
 - Has a more than average opportunity to improve position
- Tenable
- Sufficiently satisfactory performance to warrant continuation in business
 - Has a less than average opportunity to improve position
- Weak
- Currently unsatisfactory performance but opportunity exists for improvement
 - May have most of characteristics of better position but obvious shortcoming
 - Inherently short-term condition; must change
- Non-Viable
- Currently unsatisfactory performance without opportunity for improvement

Differentiating one position from another is not necessarily straight-forward. They do form a continuum and there are uncertainties to deal with. But once established and positioned in the matrix the requirements for investment become clearer. The overall process of strategic resource allocation planning also becomes somewhat easier.

Identification of a planning unit's industry maturity and strategic competitive position is not the whole of information which is communicated from the business level to corporate level. There is also an action plan (strategic program) analysis which includes

- Key assumptions about the economy, industry, market, and outside influences
- Anticipated future industry maturity
- Future business strategies in view of the market situation
- Specific program to accomplish the strategies with key target dates and a cost/benefit supportive analysis
- Major issues to be resolved by the planning unit as well as the corporation
- Identification of sensitive indicators
- Emphases to be placed on functional level units
- Interdivisional factors related to action plans
- Acquisition plans and their characterization
- 'Blue Sky' investment possibilities

Supporting the action plan and matrix positioning information are financial indices which describe both past performance along financial dimensions and future projected performance

(three year horizon). This is the data which is incorporated into the SFPS. Accompanying these "financials" is a performance analysis which reports:

- Past performance versus past strategies
- Future expected performance versus current/future strategy.

Finally, there is a judgmental risk analysis which identifies the planning unit manager's perception of the relative level of risk of a number of elemental factors which have strategic import. As will be pointed out in the next chapter, few companies use a probabilistic, quantitative approach to risk analysis. The risk analysis chart is presented in Figure 11. The past predictability of performance (i.e., risk) of each business unit is a convenient cross-check on the logic of each business unit's intended strategies and results. As such, it provides an additional performance congruency test complementing the financial performance congruency test.

Certain risks are associated with any particular industry or market; for example rapid technological advances by competitors represent risk, and fashions are riskier than the retail food chain industry. The embryonic stage is riskier than the mature stage of development if market share

is low. Also, certain strategies are more predictable, and therefore less risky, than other strategies. Past performance and the level of expected future performance also give clues as to risk.

The individual planning unit manager and the corporation are both interested in the individual diverse risks, and the corporation is interested in the balance of risk. The risk analysis chart is found to be a useful means of aggregating the various elements and degrees of risk.

Risk

| Element | Low | Medium | High |
|-----------------------------------|-----|--------|------|
| Industry or Market | | | |
| Maturity | | | |
| Competitive Position | | | |
| Strategy | | | |
| Assumptions | | | |
| Past Performance of Business Unit | | | |
| Past Performance of Management | | | |
| Level of Future Performance | | | |
| Overall Risk | | | |

Figure 11. Risk Analysis Chart

The Financial Component of Planning - Input to the SFPS

The finance literature says that the goal of top management is (and should be) to maximize market value of the firm. Frequently this objective must be balanced against other social, political, ethical, and managerial goals. Although we have downplayed the role of net present value as a singular criterion when considering broad strategic investment programs there remains strong justification for placing an emphasis on financial-related information. Among these are

- profitability (a responsiveness to the shareholders of the organization as well as the desire for continued employment of the firm's employees)
- need of the corporation for current earnings as well as future earnings
- need to fund investments from cash flows, the capital markets, or both
- the financial dimension can reflect the net effects of many interacting dimensions in quantitative form
- financial indicators can be used as a performance congruency test to evaluate strategic program proposals

Clearly, most of these factors are operating simultaneously. We have already indicated, for example, that one role of the SFPS is to consolidate all divisional plans in financial terms to determine whether the profitability and growth goals of the entire corporation are being met. In contrast to its supportive function in the performance congruency test, this application of the SFPS is relatively straightforward. We shall then discuss the format for financial reporting which is used at Q-3 Corporation. This input format lends itself to the test for performance congruency.

Strategy choice for a business planning unit (commonly called a strategic business unit) is obviously not a sheer preference or opportunity exploitation. Each strategy, natural or selected, entails degrees of investment, returns, and risk, and each has its own pattern of performance attributes. These will vary depending on the industry maturity and strategic competitive position. A financial "template" can be used to measure the strategy by linking its salient performance characteristics to its position in the matrix and to the planning unit's historical performance along the same dimensions. The major emphasis is on future-oriented performance.

What are these indicators? First it must be pointed out that for a financial analysis in a new planning system

to be effective as a communicating and learning tool for corporate-divisional strategy interaction it must be kept simple -- but robust. Financial data from business planning units are classified into three groups covering several years of history, one year of budget and three years of projections. They are input to the SFPS in the following form:

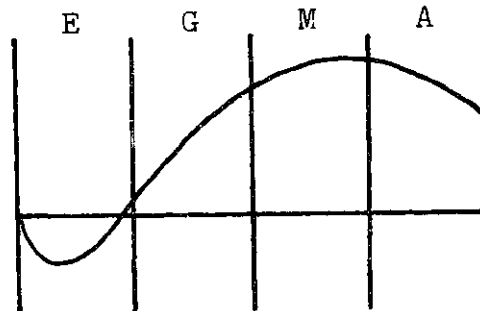
- Market information -- industry sales and unit sales from which market share and growth rates can be determined
- Investment information -- levels of receivables, inventories, liabilities and assets required to support sales and carry out strategic programs
- Expense information -- patterns of expenditures including cost of goods sold, sales and marketing, research and development, etc., and non-cash expenses such as depreciation and amortization.

From the information patterns of profits, cash flows, changes in working capital and fixed assets; net cash flow to the corporation, and return on investment can be determined. Consolidation of all such data bases, taking into account inter-unit eliminations, provides an evaluation of the total impact of all business plans on the

corporate whole.

The financial templates used for performance congruency testing are generally normalized in the form of ratios to sales. These form normative patterns across stages of industry maturity. Depending on a planning unit's competitive position and various internal/external factors, its pattern, calculated by the SFPS, will conform to or depart from the general trends. Large deviations are a signal for in-depth investigation. A sample of these patterns with descriptions follows:

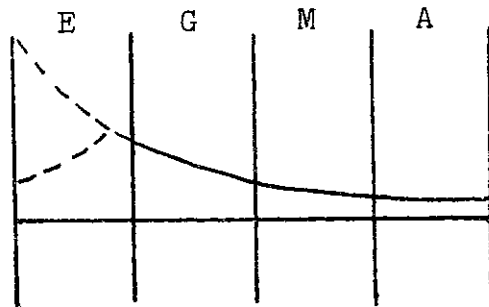
Profit After Taxes/Sales



When a business begins to sell a new product, it is most often attempting to establish a market rather than to generate earnings. Thus, even after the initial major capital investment is made, losses may be incurred. In the growth phase the ratio should be positive but profits will

not yet be maximized, since market share will still be emphasized. The ratio will reach its highest level in the mature phase as markets stabilize and cost controls are stressed. In the aging phase the ratio is likely to decline as demand lessens and prices fall.

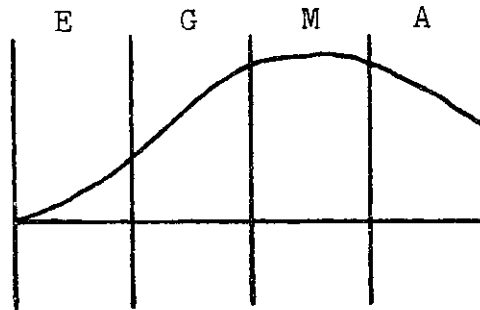
Cost of Goods Sold/Sales



In the early embryonic stage this ratio may show an irregular pattern until production methods and procedures have been established. Once the major investment has been made (late in the embryonic stage), the ratio should stabilize. It then will begin to decline and continue to decline through the growth stage as economies of scale are realized. By the mature phase, the benefits of economies of scale will have been exhausted, but the adoption of more efficient operating procedures can cause some further decline. Finally, the ratio should level off at the aging

phase, because the most efficient utilization of capital and labor will have been achieved.

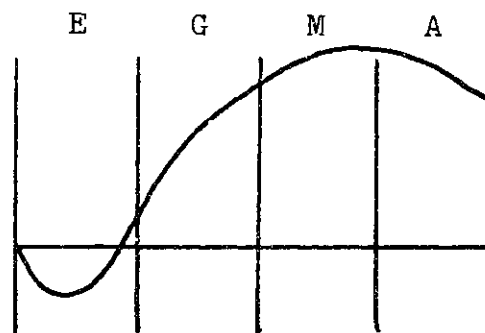
Net Assets (Actual)



Substantial amounts of capital are generally required in the embryonic phase for organizational and product development. An additional investment in facilities and equipment is required if the product is to go into volume production. As these expenditures occur, year-to-year increases in net assets may vary widely and this will be reflected in an erratic pattern although the general trend will be one of rapid increases in net assets. The growth phase demands still more capital for expanding production capabilities and the markets for the firm's products. In the late growth stage the trend of net assets increases should moderate, indicating a slowdown in sales growth and a peaking of investment in capacity. During the mature stage, sales

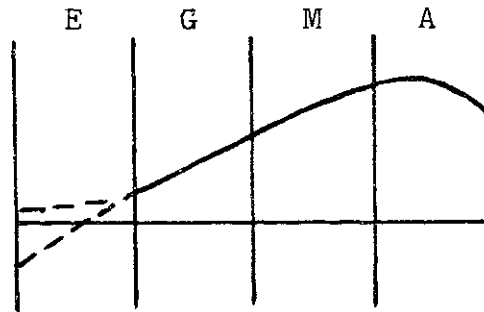
will tend to stabilize and the net assets may start to decline. Net assets will decline in the aging phase as generally only those investments are made which will sustain the capability of the business. The financial criteria for investment will be geared to the rate of perceived decline.

Return on Net Assets



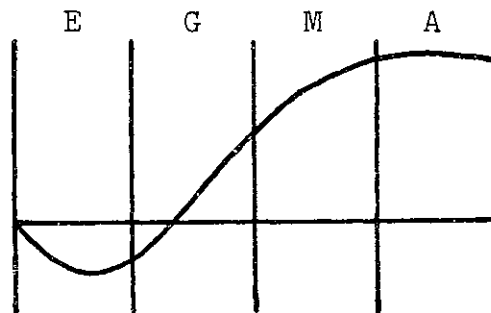
RONA may be low or negative in the embryonic phase as resources are invested in market and product development. RONA will tend to rise in the growth phase and achieve high levels in the mature phase as investment falls off and operations become more efficient. Market share is a key factor in determining the level of RONA (46,47). Depending on the characteristics of the industry RONA may remain high in the aging phase for a while as net assets fall and operating margins remain high, but will tend to fall later as sales volume and margins decline.

Operating Cash Flow/Sales



Operating cash flow will be low or negative in the embryonic phase because earnings are low or negative. In the later phases it will first tend to increase and then to decline reflecting trends in earnings and changes in the magnitude of depreciation expense.

Net Cash Flow to Corporation/Sales



Because an investment is being made in the growth of the company, the cash available to the corporation is likely to be negative during the embryonic stage. No trend may be discernible, as the timing on investment returns is uncertain. In the growth phase, the cash available to the corporation per \$ of sales should increase but may still be negative. It should continue to rise in the mature phase and will be positive, indicating that growth has slowed to a point at which the corporation is no longer required to fund a net investment. Cash flow will tend to decline in the aging phase, as margins decline and depreciation diminishes.

A particular problem for Q-3 Corporation in managing its resource allocation program is that most of its businesses are clustered in the growth phase (some in the embryonic phase) of their respective markets. This might ordinarily cause some problems in terms of net corporate cash flow but because of the company's past and present dominance and associated strong market shares it has been a price leader and has enjoyed profitable margins. Many of the pattern changes depicted by these normative models occur during the growth phase. Thus the opportunity to balance many of the requirements for investment against a mature, stable business generating a steady stream of cash is not as available as in more mature diversified companies. In its place are more

dynamic cash generators which because of their decelerating growth and ultimate entry into the mature phase of the life cycle portray behavior which differs from the 'pure' mature business. A look at the patterns drawn earlier will indicate some of these differences. These conditions make for a dynamic resource allocation planning environment, one that needs to be managed closely. The planning system needs to maintain a time-horizon of at least three years in order to pick up the pending phases of transition (for both growth and embryonic businesses) and altering financial-related trends.

It should be clear that a myopic focus on a one-year budget as a means of resource allocation planning will be drastically inadequate. Strategic programs on the other hand can at least consider and incorporate the impact of favorable and unfavorable changes as the market evolves from the embryonic stage, through growth, to maturity.

CHAPTER 4

CORPORATE MODELS IN THE ORGANIZATIONAL CONTEXT

Contrary to what the term may imply, a corporate financial model does not necessarily model the entire organization. In fact, of 2,000 firms surveyed by Naylor and Schualand (48) only three are cited as having successfully integrated the financial, marketing, and production activities into a truly integrated corporate simulation model. The reason more firms haven't done so is that large integrated models are complex, inflexible, and overwhelm the user (4,49,57).

In contrast, Dow Chemical (58) used a macro model to test sensitivity of operating results and credibility of the company profit plan with a great deal of success because the users understood it -- they were involved in the design, the model was simple, and it was flexible. The nature of planning is dealing with risk and uncertainty -- a flexible, small-structure model allows the user to keep up with a dynamically changing environment.

A model is basically a description of those aspects of the system or managerial process of concern which are considered essential. Most models are financial in their structure (48,49). This is not surprising since Anthony states (50) that, "with rare exception, the management

control system is built around a financial structure. Money is the only common denominator by means of which the heterogeneous elements of input (materials), resources (labor), and output (products) can be combined and compared."

As Lorange and Rockart (51) describe, a suite of different models could be applied to each of the cells of the matrix in the Lorange-Vancil framework, (see Figure 2, Chapter 2) but the key factor for successful use of the model is that it must ensure user confidence and faith and must be consistent with that part of the planning process where it is being used. This means that the model must recognize that process by containing a high degree of congruency with the decision making tasks involved. Attestation to this basic requirement is further presented by: Grinyer (52) who states that the model should be embedded in the planning process, the nature and organization of which should be reflected in the structure of the model. Inputs should be from the existing planning base, i.e., models should conform not only to the organizational context but to the process and data structure as well; Kingston (53), who distinguishes different financial logic structures for different planning applications; Naylor (54) who warns that the model structure should take into consideration management's attitude toward quantitative tools, and claims, on the basis of his surveys of 2,000 corporations, that the design of the planning

system for the organization should be set in place before any consideration is given to the modeling system, and that the integration of modeling into the planning process is the most difficult part of modeling.

Hammond (3) describes the factors of the organizational setting (both controllable and non-controllable) which promote success of model utilization and advises managers to assure the model's consistency with their particular cognitive approach to tasks by taking an active role in the model's design and implementation. Hayes and Nolan (4) present the interesting observation of the importance that the model matches the manager's own understanding of the reality that exists, independent of what that reality truly is. Carleton and Downes '55) state that disregard for the user's limitations has been the Waterloo of many modeling efforts, and Hall (2) indicates one reason for failure as being a tendency to develop normative, assertive models rather than a supportive model. He identifies other reasons as being erroneous assumptions on the part of modelers about the nature of planning, and inadequate consideration of the role a model is expected to perform in the planning process.

The nature of the decision making process is captured in a framework by Lorange and Rockart (5) and Gorry and Scott Morton (8) who relate the cognitive decision making process to both the degree of structure and the information

requirements of the problem at hand. Briefly, the degree of detail in information increases, as does the degree of specificity of the model requirements (as well as the size of the data base), as one moves in the Vancil-Lorange planning taxonomy from objective setting to budgeting (narrowing down) or in the Anthony framework from strategic planning to operational control.

From this Gorry and Scott Morton derive a matrix to guide the tailoring of specific information support systems to the general characteristics of the decisions contained within each element of the matrix.

Lorange and Rockart extend the Gorry and Scott Morton framework specifically in relation to planning models. They conclude that, because of the different nature of the planning and decision making task in different cycles of planning and at different levels of an organizational hierarchy, it does not make sense to expect a single planning model to be used by an organization, but rather to expect a range of models tailored to specific aspects of the planning process.

Thus optimization models are more frequently encountered in the functional area of planning such as production while simulation models abound elsewhere.* The

* There is though at least one account of an optimization planning model. It is used in conjunction with a corporate simulation model in a large diversified organization (32).

surveys of Gershefski (56) and Naylor and Schauland (48) found less than 5% of model users had an optimization model. Reasons for this relatively low level of usage have been ascribed to the relative complexity of optimization models which prevent managers from understanding them, and their inflexibility, thus their inability to conform to changing objective functions which are difficult to define in most corporate planning circumstances anyway (5). A real problem is that optimization models have unidimensional objective functions which are very unrealistic in a world of multiple, interacting objectives.

In a similar fashion, these models surveyors found that the relative complexity of probabalistic models tended to make deterministic-simulation models more popular to the ratio of 9 to 1. Managers could better comprehend a string of case studies than a single run couched in terms of standard deviations. Thus risk was dealt with subjectively by most of the users and was excluded from the model structure itself.

We see that successful models are supportive rather than assertive, complementing management by dealing with the complexity of the planning process, leaving management to deal with uncertainty and the resolution of goal conflict. Hall (2) has argued rightly that planning is a political process which involves qualitative, multiple objectives that have not been reflected in the models built to date. He feels they should be explicitly recognized in the models

themselves. Grinyer and Wooler (49) disagree. They contend that qualitative objectives change over time and are best excluded from the models, left to be resolved by the manager(s) involved. Qualitative objectives do, however, determine the alternative scenarios tested by the model, and the model should show the impacts on various goals of each alternative. This helps management to resolve conflicts. Carter (35) discusses an example of multiple financial objective tradeoffs.

In the general organization context there seems to be a compromise between the need and desire to have tailor-made specialized models for each of the managerial processes, perhaps even each manager, and the desire not to isolate the effects of individual decisions on the total system. Specialized models thus raise the spectre (6,60) that the total enterprise is truncated and fails to be reintegrated, achieving sub-optimality as a result. Two other problems potentially arise: one is that truncation of the corporate whole as one process of simplification may make the model a poor representation of reality and thus mislead the decision maker (62), and another is that separate models may cause the planning process to become a diffuse exercise of individual preferences and will severely limit top management's ability to control the organization (6). In this regard, McInnes (60,61) has researched one company who optimizes at the local

level and then aggregates to simulate the effect of local decisions on the total corporate system. Still, the planners are aware of the potential sub-optimality of their analysis due to the interactive effects which cannot be perceived at the local level. Potential discrepancies from "ideality" are handled on the basis of intuition, experience and assumed effects on the full system model.

Campbell (6) claims that the trend towards custom models "reduces the utility of a model as a linkage in the planning process. The planning process can only work if there is free communication between the participants. Without the mechanical aid of the model to structure the flow of information across and between levels in the organization, organizational techniques must be employed to unify the planning process." McInnes (60) also worries that with increasing size the flow of entrepreneurial investment information to those in the organization with authority over the allocation of resources may be stifled, and references Carter (35) who proposes a computer-based interactive system aimed at solving this type of problem.

Indeed, this is the crux of this paper -- the use of a corporate financial model to aid in the information flow and negotiation process in the establishment of divisional action programs and the allocation of corporate funds -- "strategic control." The modeling effort the author is

engaged in is the first such computer-based approach to planning the company has taken. As usage evolves and models begin to proliferate downwards into the divisional level, there may veritably be a trend towards Campbell's claim of top management's limited ability to control the organization. On the other hand the need to reduce sub-optimality and maintain a balanced corporate portfolio for cash flows, return on assets, and risk, and the need to maintain a division-corporate tension by challenging divisional action programs with performance congruency tests (see Chapter 3) may assure the continued use of a corporate financial model to facilitate the strategic control process. The use of such a model for that purpose has numerous benefits.

The literature abounds with ways in which models aid in the planning and control process. Attention will be restricted to those benefits which would relate to strategic control, especially in a newly-formalized planning system.

- For a phase of the strategic planning process when multiple divisions (or functional units for that matter) are interacting, the model provides a documentation and precise definition of the assumptions and rules upon which plans are being developed. Because the model requires structured input, uses a structured process and has structured

output, it imparts visible form to a potentially ambiguous area of planning, aiding the elimination of misconstructions. This helps standardize a format for strategic development among all participants. The standardized reporting greatly facilitates the positioning of divisions within the corporate portfolio and the consolidation of plans across all business units. Moreover, it encourages the collection and maintenance of a planning data base, helping to identify the specific data required and the form in which it is most useful.

- Because of the financial model's numerical explicitness and precisely defined logic of the process, it helps provide a communication and negotiation mechanism, in fact it can serve as the linkage between divisional and corporate management when negotiating strategies as described in Chapter 2 of this thesis. In this context the model can deal with complex interactions involving large quantities of data (relative to what could be handled manually -- at this level in the planning system the data should be aggregated), and can show the effect of various divisional goals on the enterprise, thus facilitating adjustments, coordination, adaptation, and integration.

- A major benefit is the opportunity to test various alternative plans, assumptions, scenarios, and possibilities that would otherwise be too unwieldy or take too long to evaluate if carried out by hand. The flexibility and versatility which management gains is extremely valuable. First, the number of planning views that can be taken is increased. Secondly, alternative divisional strategies can be evaluated for portfolio fit and corporate acceptance before preparing detailed budgets at the divisional level, thus reducing the number of iterative cycles required while also saving time as a result. The frequency of the planning cycle could likely be increased from yearly to quarterly; in fact there is one account (63) of a cycle reduction of from 3 months to 10 days.
- Use of a model could in fact assist in determining feasible corporate goals (53). It could also provide a monitoring and early warning function for strategic control, thus acting as an audit of the planning process.
- From an analytical viewpoint, the model output does not contain human calculating errors.

A corporate financial model can also serve strategic

control in ways which contribute to the improvement of planning in an organization:

- It can serve a catalytic role bringing together diverse elements, represented by managers (people) and aid in the creation of a new comprehensive product (the corporate portfolio). Hence we are talking about the processes in which the model aids an innovation that might otherwise take place with difficulty, or perhaps not at all.
- The model can aid in developing an agenda for considering the future which can be shaped to educate the managers into developing action plans congruent with divisional and corporate goals. In this way the model complements one function of the corporate planning process itself -- education.
- Serving as an aid to strategic design experimentation, alternate action plans designed to carry out a certain strategy can be tested for their effects on cash flows, profitability, ROI, etc. If these results do not conform with expectations (from both the divisional and corporate view) new strategies which call for different action programs can be evaluated.
- The model itself can be a focus or basis for

planning review since the model contains an explicit descriptive structure representing the present efforts of the planning system. Thus the history of the financial model is, in effect, an historical reflection of management's views on planning.

Periodically reviewing the state of modeling support to strategic control is one approach to maintaining a program appropriate to contemporary needs.

- The model, as judged by its present utility, is an indicator of the effectiveness of management's design and approach to strategic control. If the use of the model in its current structure fails to achieve management's goals, if there is a gap between outcomes and expectations (looking at the corporate whole), then this may be an indication of a need to reappraise the means (i.e., the strategic control system as contained in the form of the model) toward the enterprise's ends. An updating approach seems a method for managing the changes which have rendered the old ways ineffective. Thus the model is a focus for the improvement of strategic control and as such, can be maintained as an up to date concept of where the corporation is and where it is going.

The foregoing benefits, all of which serve as an aid to

management, rather than replacing management in any way, may seem overly optimistic. But clearly, taken together, they indicate that much can be gained by using a corporate financial model in that linkage between planning and control, herein called strategic control.

CHAPTER 5

THE SFPS AS A DSS: SOME NORMATIVE CONSIDERATIONS

By this stage in the development of the thesis the resource allocation problem and its organizational setting have been laid out. The foremost objectives for the SFPS were stated to be (1) as a catalyst in corporate-divisional strategy negotiations; (2) as a means of analyzing the historical performance of each planning unit and tying that performance, through a congruency test, to proposed strategic programs; and (3) the ability to perform a corporate consolidation of individual business units. Together these applications were intended to aid the process of resource allocations planning.

We recognized that the SFPS was, in effect, a subset of the generic class of computer systems called decision support systems (DSS). In the use of the SFPS at Q-3 Corporation there is at least one distinguishing characteristic: decision-making managers typically have hands-on contact with or direct control of a DSS, whereas in the case of Q-3 the corporate planner as user of the SFPS was indeed an intermediary between the system and the resource allocation decision making body in the company. Nevertheless, the process of evaluating alternative plans, reviewing profitability and cash flow implications of these

various programs and scenarios, and observing their effects on the corporate whole was deemed reasonably independent of whether the corporate planner or the CEO was performing the interaction with the system. In other words, considering the purpose at hand, the SFPS --its design and objectives -- would not have differed significantly had it been in the hands of the true decision makers. Consequently the SFPS can be viewed as a DSS.

To the question, "What are decision support systems?", Alter (37) offers the following answer:

Business computer applications can be stereo-typed into two categories: electronic data processing (EDP) systems and decision support systems (DSS). The main difference between DSS and EDP systems is related to their basic purposes. EDP systems are designed to automate or expedite transaction processing, record keeping, and business reporting; DSSs are designed to aid in decision making and decision implementation. While most DSSs are used to facilitate management planning or staff activities, EDP systems emphasize intrinsically clerical activities. Whereas the general orientation of EDP systems is toward mechanical efficiency, that of DSSs is more toward the overall effectiveness of individuals or organizations. The manner of usage is also quite different. Unlike the EDP user, who typically receives reports on a periodic basis, the DSS user often initiates each instance of system use, either directly or through a staff intermediary.

Alter goes on to distinguish seven distinct types of DSS based on the degree to which the system's outputs could directly determine the decision. This is related to a spectrum of generic operations which can be performed by decision support systems; the operations extend along a single dimension ranging from extremely data oriented (retrieving a single item of information) to extremely model oriented (estimating the consequences of, and making, decisions). Donovan and Madnick (64), on the other hand, dichotomize DSS into two classes: institutional DSS which deal with decisions of a recurring nature, and ad hoc DSS which deal with specific problems that are not anticipated or recurring.

Independent of these classifications, there are some normative frameworks which apply to the design and evaluation of any decision support system. Following through on the observations in Chapter 1 that successful DSS systems are invariably ones in which process issues (i.e., beyond the technical) are considered, the purpose of this chapter is not to review the DSS literature but to report on these normative models, placing particular emphasis on a basis for evaluating the use of the DSS. With this as a backup Chapter 7 looks at the actual use of the SFPS. Chapter 7 includes an evaluation of the SFPS.

Several authors have proposed models for the change

process which characterizes the design and implementation of decision support systems. Among these are Kolb and Frohman (65), Urban (66), Keen and Scott Morton (67), and Rice (10). Four general stages of activity are commonly recognized; they are listed here in sequential fashion with a discussion of each:

(1) pre-design or scouting phase - This is an exploratory, information gathering phase. The information gathered serves as a basis for constructing a model of the process which is appropriate to the context of the decision being supported. A second benefit of scouting is that it provides the necessary information for developing a workable set of expectations and a basis for evaluation of the DSS. It includes monitoring and describing the current decision process (in the case of Q-3, strategic resource allocation decisions were based on short-term horizons only, in effect they did not previously exist), defining 'normative' models (for example the planning format for financials), comparing the descriptive and normative models, and selecting areas for decision support. We have attempted to cover these issues in the preceding chapters. Rice (10) has elaborated on the scouting process and presents a framework for approaching this information-gathering context appraisal process. Three aspects of the organizational situation are

of concern:

- the external environment (the economy, industry, etc.)

the purpose of scouting the firm's environment is to gain an appreciation for the complexity of decision making in the situation, and an understanding of what factors in the environment drive or constrain the operations and results. Areas of focus are the character of products or services and the served markets, structure of the industry, the firm's microeconomics, the effects of the economy on the firm, and other general external influences such as governmental regulation.

- the organization itself: its objectives, its structure, and its processes -

This is the environment in which a DSS operates. Knowledge of the firm's objectives is an indication of the relevance and leverage of the DSS impact. The formal as well as informal structures will influence the effect the DSS has on not only the user, but on other areas and functions of the organization as well. One has to know the territory of the user. Decisions made in the firm (especially resource allocations) eventually translate into actions or results in one or more other parts of the enterprise. Clearly, the issue of information,

and where it resides hierarchically relative to the DSS, also lies within the structural context.

Scouting is also concerned with the decision process and associated dynamics such as those of politics, management control, and corporate planning. (A large part of the earlier chapters was devoted to addressing these factors, both directly and indirectly).

- the key people who will be involved in the DSS: their roles, their relationships, and any particular characteristics -

It is important to identify who is in what role and how these individuals relate within the organization structure and process. (Recall the conflict over control of the SFPS between the planner and the V.P. of Finance). Role models include the decision maker, the system user (these may not be the same person, as at Q-3), the analyst, designer, DSS builder, and system maintainer. Identification of these personnel are important because, for example, position in the firm's hierarchy will determine, to some extent, both loyalties and responsibilities, which in turn will influence the place of the DSS in the individual's frame of reference. Additionally, it is helpful to understand the individual's perception or description of the decision problem.

Moreover, it is important to know the manager's strategy with respect to the interposition of the DSS in the decision process: advocacy, commitment, support, neutrality, even possibly opposition.

(2) design phase - this stage encompasses details of the DSS and addresses such questions as

- What do we want the DSS to accomplish?
- How will we recognize when the system has met its design objectives?
- What are the steps required to meet the design aims?

During this phase objectives are operationalized while assuring that the design is based on usage. Keen and Scott Morton (67) cover "designing" (as opposed to "the design") in ample detail and this information will not be repeated here. One key point, however, is that from the user's point of view, the software interface is "the system". Accordingly, the designer must deal with at least the following considerations:

- communicability - the system must be genuinely conversational.
- robustness - the DSS should check for mistakes and

be reliable.

- ease of control - operation of the system must be transferable from the designer to the user.
- data management - considering the efforts of getting the right data to the right place, the DSS should make it relatively easy to position the data and to manipulate it (but not to alter it, at least not without the knowledge of the manager providing the data).

(3) implementation phase - this stage deals with integrating the system into the decision process. Implementation itself is a process, a change process, one that is influenced by behavioral as well as technological factors. What determines the quality of the outcome is the designer's ability to identify the key constraints in the situation, to then match the formal technology to those constraints, and to work with the people to whom they apply. This is a complex process and very few rules can confidently be applied. The subject of implementation success and failure is admirably covered by Hall (2), Hammond (3), Boulden (5), Campbell (6), and Keen and Scott Morton (67). Many of the notions were listed in Chapter 4.

(4) Evaluation phase - evaluation criteria should be matched to the objectives for the system. At the highest level, the objective of a DSS is always the improvement of the outcomes of decision making; but the problem with this type of objective is that it may be difficult to trace any improved outcomes back to the DSS. It also ignores any improvement in organizational processes which indirectly result from the use of the DSS (such as facilitation of the corporate-divisional negotiation process). Evaluation can be made meaningful only by formalizing before the system is even designed a "contract" which includes some definition for success: for example the identification of "key indicators" or variables that are agreed can be used as a surrogate for "better decision-making" (67). The scouting phase, by modeling the decision context and helping to identify expectations for the system also helps to suggest possible objectives for inclusion in the 'contract' which can be specifically tailored to a particular situation. Rice (10) has identified a number of potential objectives:

- improved results in a particular area - operations may be carried out at lower cost
- improved decision making process - by automating portions of the decision process, the DSS can improve the manager's information processing

capability. Moreover, a reduction in time spent calculating results will provide more time in considering alternative scenarios; this can expand the range of strategic options considered and help to provide better anticipatory preparation against potential adverse changes in the environment.

- more efficient decision making - this objective could be expressed as better decisions at the same or lower cost, or good decisions at a lower cost.
- learning - the DSS can help the manager to get a better understanding of the process with which the decision is concerned. (At Q-3 the SFPS brought to focus the difference in financial thinking between the corporate planner and the financial V.P.)
- selling of decisions - the DSS can help "legitimize" decisions
- communication of information - historical performance analysis and performance congruency tests are an example
- translator of information - raw data can be transformed into meaningful information
- consistent decision process - the model assures that the output is generated in the same manner
- information availability - beyond the establishment of a planning format for information communication,

the DSS can provide a means of data storage and retrieval. It also provides a more accessible source of higher quality data for other purposes.

It is, of course, not necessary that all of these be established as design objectives for a particular DSS but they do serve as a basis for translating information gathered during the scouting phase into expectations for the outcome of the decision support system.

Huymans (68) addresses the question of what level of usage is required for a DSS implementation effort to be considered "successful". He proposes that there are three levels of success: usage by the manager (acceptance), change in the decision process (understanding and implementation), and recurring usage (institutionalization). If we accept the premise that a thorough scouting activity precedes the design of the DSS, that the decision process can be characterized, and that it can be incorporated into the DSS, then this appears to be a suitable means for evaluating the success of a DSS project.

We do note at least one potential problem however, with any approach to evaluation. A DSS is designed to address a relatively unstructured problem (see Chapter 4) with no clear criteria for assessing performance or definition of exactly how the decision is to be supported (especially for the

ad hoc DSS). As a result, the effectiveness of the system largely depends on its evolving usage.

The scouting and design stages themselves can result in a new level of awareness of the decision it is to support -- and sometimes a redefinition of the "real" problem. As stated earlier, learning is a central aspect of DSS development and usage - it may make evaluation extremely difficult in that there may be no 'final' system; the DSS dynamically evolves and becomes more effective as the users adjust to or exploit it (67).

It is in this spirit that the use of the SFPS at Q-3 Corporation is discussed and evaluated in Chapter 7.

CHAPTER 6

INTERVIEWS WITH MANAGERS

The purpose of this chapter is to discuss briefly the results of interviews with several business planning unit and division managers (some divisions were comprised of two or three planning units). In the last chapter we stressed the need to undertake a predesign study for a DSS. This scouting phase (conducted through these interviews) served as a basis for comprehending the larger organizational context in which the SFPS would operate. It also provided some information for developing expectations for the implementation of the SFPS as well as a perspective for evaluating the system. Furthermore, it was desired to explore how some of the issues discussed in this thesis, such as commitment to strategic plans, communication of investment possibilities, the role of the planning staff, and the planning process itself, were perceived by the line managers at Q-3 Corporation. Of particular interest was their view of the role of the SFPS since it was their data input which would directly influence the effectiveness of that system.

Corporate planning as a dynamic system was evolving rapidly at Q-3 Corporation. The first year of implementation (the year preceding the SFPS project) involved an emphasis on a formal situation analysis, including the identification

of market segments, business planning units, and an historic performance review broken down by served markets. This analysis provided focus and direction and served to communicate and provide to the CEO a more complete understanding of the company's contemporary markets. There was some consideration and development of future action plans (strategic programs) including associated financial projections, but this activity did not progress far beyond the formative stages in the first year. It did, however, signify a breakaway from the accustomed short-term consideration of only one, perhaps two, quarters of future sales and expenditures.

Interviews were conducted near the beginning of the second year of formal planning before any divisional planning data had yet been received by the planning department; managers had just begun working for the first time, comprehensively, on their strategic programs. Not only was the planning process new, but the responsibility of managing a divisional profit center (rather than a marketing revenue center as before) was also fairly new, having been in effect for only one year. Consequently, managerial views represent impressions based on a brief experience with formal planning.

The discussion is presented in five sections, chosen for their relevance to issues of interest in this thesis: reflections on the first year's planning activity, including

generally perceived benefits and problems to be resolved, the communication of information pertinent to investment opportunities, the need for some form of commitment to plans, the role of the planning staff, and the use of the SFPS as a tool for financial analysis.

1. Reflections on Planning -- One issue discussed was the way managerial thinking and activities had changed with the introduction to planning. There was a general agreement that before corporate planning had begun managers had not really asked themselves what events were taking place in and shaping their markets. Strong emphasis was placed on marketing the products they had; in some cases a careful look at a particular market would have revealed that this kind of "strategy" was losing the company market share -- products different from those they had been selling had become more appropriate to fulfilling the needs of customers. Customers had become continually more sophisticated. Lack of cohesive plans resulted in some new markets being started but then ignored. Focus centered on meeting the next quarter's sales. These sales objectives were the current period's portion of the earlier derived one year budget -- longer time horizons had not been considered. Connected to this near-sightedness was the lack of awareness of what other functions, such as centralized production, were doing or planning to do.

The first year of corporate planning was found to be extremely helpful for business unit managers. It organized an approach which provided a more explicit, more rational view of their markets. Planning "forced" them to take time in a structured way to understand their businesses. This it accomplished by making them take a hard, "honest" look at where they were, what they were going to do and how they were going to do it, and how much it was going to cost. Another perceived benefit was that planning helped these managers both to recognize opportunities which they had overlooked and to re-establish a more, appropriate set of priorities. The planning staff was seen as having fulfilled a strongly felt need -- a means for disciplined, more structured thinking about the company's embryonic, rapid growth, and slowing growth markets. Multidimensional criteria (see Chapter 3) were considered explicitly for the first time. Interestingly enough, the planning group was also perceived as a source of pressure to set aside time for planning. The defacto existence of a planning department within the organization, supported by the CEO, was a major factor in establishing planning as a regular part of operational management activities.

The CEO, through his involvement in the first year's situation analysis, gave indication of what weight would be given to different factors for different planning units.

Some managers were left with a clear sense of direction; others were still uncertain. A large part of the problem was the failure of the feedback system from corporate to business unit managers to operate effectively.

The planning system framework developed in Chapter 2 emphasized the importance of the iterative process in planning. Corporate feedback to divisional management is necessary in order that divisional plans be revised to reflect corporate goals and expectations. It is also an important mechanism for enabling division managers to incorporate synergistic effects and opportunities that come out of the planning process and are perceived only from the corporate perspective. In a newly instated planning system the feedback process takes time to implement. Corporate management needs time to assimilate the large amount of information compiled during the first situational analysis. The development of corporate objectives and strategy, which stems from an analysis of business segment data, requires additional time. In a planning process start-up one should expect delays of this sort. Frustrations expressed by planning units managers were due in part to their expectations of a timely corporate response and their not being informed of what was to happen next, and when.

The interviews also revealed other "complaints" about the first year experience. Many of these involved the lack

of guidelines: corporate objectives were not made clear -- managers did not know what markets (development-oriented) were of interest to the company, and at least one manager expressed confusion as to how to trade-off social responsibility for profitability, for example. As we discussed in Chapter 2, there is a limit to what guidelines corporate management can offer. The purpose of the first year of planning is to understand the businesses the company is in. Issuing guidelines for planning may be dysfunctional -- initially there is probably insufficient knowledge to do so. It would have been more useful in the case of Q-3 to have designed an educational seminar about the planning process in general and the reason behind the lack of useful guidelines.

Most other criticisms of the initial corporate planning efforts were directed at scheduling problems: There was no sense yet of continuity; managers were confused about their roles and the timing for receiving and delivering information. For example, plans required foreign inputs (50% on average of a business unit's sales were outside the U.S.) but U.S. managers did not know when these were due in from abroad or whether for sure they would even arrive. These matters must have been considered to be the responsibility of the planning group, for no manager seemed to be taking it upon himself to expedite the process.

In summary, the idea of planning was well received and held the participation of all planning unit managers. There was a unanimous desire to reduce misconceptions about market behavior and competitive status, and to move toward increased rationality. Managers enjoyed seeing the company take progressive action towards improving their capabilities for developing and implementing longer range plans. First year benefits were already obvious -- not only was information becoming more structured and realistic, but new previously unseen opportunities had surfaced. Shortcomings in the planning system were seen to be a result largely of the lack of scheduling information, and information feedback including corporate objectives and the objectives of certain functional groups such as production which were deemed necessary for coordination. A desire for better continuity and coordination of all organizational elements was clear. Planning as a managerial practice appeared to have been accepted by line managers, as well as by the CEO.

2. Communication -- Several questions were directed to the inquiry of how corporate management would be made aware of possible investment opportunities at the divisional level. A concern was whether or not the planning system as a whole, and the communication format in particular, would act as a filter. In what way would the corporation be made cognizant

of the perceived set of investment opportunities, not only the selected opportunities? Related to this issue was risk. If risky opportunities were available, would line management consider the planning process-system as an opportunity to receive sanction for risky ventures, or as a sharing of the risk by the corporation? In other words, what effect would a particular manager's risk profile, being more exposed than the corporation as a whole, have on his reported set of potential strategic programs. The answer to these questions have major implications for the company's resource allocation planning.

To begin with, planning unit managers saw planning as having established a medium for an up-to-date appraisal and reporting of investment opportunities. Formerly, these were rarely requested, chiefly because corporate direction setting was far more centralized before the divisionalization of the corporate structure. (Even with this corporate restructuring, the process of decentralization was an emerging one, and in fact, as noted in an earlier chapter, former corporate decision makers (such as the Vice-President of Marketing) maintain considerable influence. Divisional managers possess far less autonomy than do their counterparts in highly diversified firms.) Since corporate planning represented to them a move towards rationality, they expected that the formal investment communication process would be

an opportunity to receive a fairer share of resources for making attractive investments. Earlier allocations of funds were perceived to have been based on tradition, political influence, and bargaining power. It was hoped that a more formal approach, including better financial data and analysis, would introduce more logic into resource allocation decisions.

In answer to the above questions, each manager, without exception, equated his role with the obligation of transmitting to corporate management all available investment opportunities, including those of a "blue sky" quality. The planning process-system was seen as a vehicle for receiving sanction for risky ventures (if the plans describing these were accepted), at least more so than before. No manager believed his risk profile to be any different from that of the corporation, as long as top management was made aware of the risks associated with potentially high return projects. Corporate approval of a program was equated to risk sanctioning.

A final observation, one that favored very low, if any, resistance to the implementation and recurring usage of the SFPS, was the feeling (and hope) that planning would provide the opportunity to validate information; not only that submitted by the various planning units, but from the company's cost system as well. The managers interviewed

disfavored the gamesmanship that accompanied the budgeting process; there typically was a tendency, they said, to promise high market shares in order to receive a commitment of funds and an inflated budget. They welcomed the examination of future projections. They wanted to see inflated numbers challenged. It was believed that the use of realistic numbers for the longer range commitment of funds would benefit all concerned. Thus, the idea of the SFPS was well received, for it offered a constructive conflict of challenge, and a movement towards better planning data in general. It was also hoped that it might catalyze the availability of better information from other management information systems within the company (see last section of this chapter).

3. Commitment to Plans -- Managers are accustomed to control systems which are predicated on commitment to the yearly budget. The budget, a one-year plan, is the familiar basis for judging a manager's performance and for awarding or holding back bonuses or other types of rewards according to the variance between the budget and actual achievement. Extending this concept to a three-year plan in order to achieve managerial commitment to strategic programs is not straight-forward. First, there is a greater degree of uncertainty as one considers longer time horizons. This

inherent uncertainty requires that longer range plans be kept flexible in order to accommodate changing or unforeseen events. Thus, specific goals may not be capable, or desirable, of being adhered to. The increased uncertainty also makes it more difficult to evaluate a manager in quantitative terms which, judged from the present, typically have a larger degree of variability in future years than in the forthcoming year (budgeted year). Secondly, there is the problem of insuring that long-range plans are being implemented, recognizing that strategic expenditures made with the future in mind impact the profit and loss statement in the current period. There is a conflict between short-term and long-term commitment.

These issues were posed to line managers at Q-3 Corporation to see how that company was addressing the problem of conflicting short-term, long-term interests. One question asked whether a reward system, based on variances between projected results and actual performance over a three-year period, was formally operational or perceived to be operational. One respondent replied that there was no way to draw a conclusion, while another felt the matter was irrelevant -- short-term performance is all the company had ever believed in and he didn't expect a change. A third manager believed such a system is always in place in that one builds credibility and respect by "doing what one says, and saying what is realistic." He added that in view of the

inherent need to keep strategic plans flexible, a quantitative basis for comparison should be complemented or replaced by the use of milestones (such as market share, or a certain degree of product quality) with at least yearly reviews. Still another manager believed that the explicit nature of a three-year plan is in and of itself a commitment. In short, the emphasis of commitment at Q-3 was formally on short-term performance and not yet on the long term. A strategic monitoring system was not yet in place, nor was there any indication that one soon would be. Individual managers had their own approach to dealing with long-term commitment. The company will need to formalize this aspect of "strategic control" in order to assure the appropriate implementation of the three-year plans. When asked how this might be achieved, several managers suggested that the formal presentation and approval of plans would create an atmosphere of expectations to implement the plan and to achieve the "promised" results. Each manager could then work out his or her own balance between short-term and long-term conflicts of interest, as long as goals were met.

4. Role of the Planner -- The same set of questions regarding the role of the planning staff was raised with both the Director of Corporate Planning and the various business unit managers. There was strong agreement that the planning

staff should:

- set the format for information communication
- help predict future conditions in order to make rational resource commitments in the present
- clarify objectives and policies
- communicate and coordinate planning activities
- integrate functional unit decisions such as marketing and production to achieve corporate consistency, e.g., "team building"
- accumulate better knowledge about the company's markets
- facilitate the making of plans, but not devise them or manage their implementation
- perform a corporate analysis
- remain neutral (no advocacy), but be active as an advisor, indicating what information was important.

The proper positioning of the SFPS was thought to be in the planning group since it was agreed that the corporate analysis was the proper way to integrate all business unit plans. Also, since the group's role was to be neutral, the Corporate Planner would be in the fairest position to receive data input and validate it for realism, consistency, and accuracy. As long as divisional data could not be

doctored by the planning group, divisional management was glad to support the Corporate Planner's efforts to increase the sophistication of analysis. Each manager believed that an effort towards rationality would be in the best interests of all. They saw the format for the input of financial data (see Chapter 3) and its use in the "strategic financial planning system" as a move in the right direction.

5. Financials and the Use of the SFPS -- Every manager complained about the difficulty of utilizing information support currently available. Data was available but very confusing. Profit margins on the same product would appear as different values on two different reports. No less than one dozen reports prepared by the EDP department had to be accessed to determine what a particular planning unit's sales for the preceeding year had amounted to. These reports had evolved independently of managerial users' input! Consequently, line managers looked very favorably on the use of a computer tool for planning that was divorced from the EDP department and built specifically for use in planning. They knew that the accustomed EDP approach with its voluminous report outputs would not be responsive to the needs of planning and would therefore not be as effective. The idea of linking quantitative data, in particular the financial historical performance and future projections, to

strategic action plans, was favorably received. Managers were striving for more relevant and accurate information. The use of a performance congruency test, despite its implications for "strategic control" was accepted since it furthered that cause. Given the time and the resources, they would develop and put their own interactive division model to extensive use.

Another outcome of the interviews on this topic was that the establishment of an explicit format for reporting information aggravated the inadequacy of data availability. The format of financial information requests forced the gathering of relevant data from a multiplicity of EDP reports which often contained conflicting data. This led to a study of the inadequacies of the current, seemingly ineffective cost system. Interview feedback like this was significant in that it pointed out the information context in which the SFPS would operate. Since the SFPS would contain aggregated data compiled from numerous EDP reports, it would be a storehouse of high level information useful for historical and future-oriented reference. It was also likely to acquire a certain degree of related use; the information could support certain market analyses and would lend itself to the development of long-range budgeting. Thus the SFPS might serve an additional use as a link between strategic programs and the one-year budget.

The net conclusion drawn from these interviews regarding the implementation of the SFPS was that the idea and use of a corporate financial model was regarded as a beneficial advance in the company's direction of planning. Line management supported its role and were seen as being cooperative, perhaps even eager, to supply useful information. The SFPS was, in effect, seen as furthering the drive towards rationality, and as such was readily accepted. In the next chapter we discuss the initial use of the SFPS.

CHAPTER 7

USE OF THE "STRATEGIC FINANCIAL PLANNING SYSTEM"

Discussion of Actual Use

Throughout this thesis a number of planning, organizational, and analytical issues have been raised and discussed concerning the foremost objectives for the SFPS. These were stated to be:

- (1) a means of analyzing the historical performance of each planning unit.
- (2) using the historical financial analysis as a catalyst for corporate-divisional strategy negotiations about future plans and expected performance.
- (3) tying the historical performance, through a congruency test, to proposed strategic programs. The performance congruency test was also a check of the financial component of proposed action programs against financial "templates" (see Chapter 3). These templates represented normative patterns prescriptive of expected behavior for a planning unit following a "normal" strategy appropriate for its position in the Industry Maturity-Strategic Competitive Position matrix (Figure 10).

- (4) the ability to perform a corporate consolidation of all individual business planning units

We now discuss the actual use of the SFPS at Q-3 Corporation and the initial efforts to achieve these objectives.

The SFPS was designed so that each planning unit would have its individual data bases on file. This allowed for consolidations by groups as well as for the entire corporation. For example, all European planning units could be combined as a geographical group, or all geographical units serving the same generic market could be consolidated to form market divisions. In this way contributions to the corporation could be evaluated by market sector or geographical location.

As usage of the system commenced and continued it became clear that the earlier set of objectives for the SFPS was going to be expanded upon. The enhanced ability to perform analyses in what was once dispersed data but which was now aggregated in one file had remarkable effects on the perceived capabilities of the system. It is generally agreed in the literature on corporate modeling that in order to gain and maintain a high level of management support, a fairly rapid pay-off from the investment in model-building should be secured. During the first week of trial use that

opportunity became available. As was indicated in an earlier chapter, the inception of planning, as well as the subsequent procedures of planning, follow an orderly progression. One of the first stages post-initiation is an historical analysis which reveals where a particular business planning unit has been in the past, and what trends have been established and are likely to continue. The first stated objective for the SFPS was in recognition of the chronological context of the historical performance analysis. Consequently, system start-up was first focused on the creation of historical data files. Also influencing initial trial use was the fact that the Corporate Planner would soon be conducting situation analyses with Far Eastern planning units which had not been completely included in the first year of the company's planning activities.

The relevance of these upcoming Asian business sessions to the initiation of the SFPS was that characteristics of foreign subsidiaries (presently treated as business planning units) were incorporated very early into the financial model even though they represented additional complexities relative to domestic planning units. (The financial model depicting domestic planning units was a core model around which additional relations pertaining to foreign business units had to be incorporated. One might expect a priori to start with the core model and make additions once that model was

operational. But the timing of the system start-up required the "reversed" approach, i.e., securing the operation of the more complex model first.) These characteristics included various exchange rate variables and their interactions with accounts, and known patterns of inter-unit transactions which had to be eliminated when converting to U.S. dollars because they were not relevant to the corporate contribution.

As a way of briefing before the Planner's departure, the CEO asked the Director of Planning if some form of performance record for the subsidiaries he was visiting were available for his perusal. Ordinarily, information other than accounting records would not be available, and typically, this information could not be found in a single location. However, historical information from these subsidiaries had been requested and received for the purpose of SFPS data file creation. It was in the form of accounts such as sales to trade (i.e., consumers), sales to other corporate entities, expenses, receivables, payables, fixed assets, and so on. This was consistent with the format for financial information reporting. The SFPS could generate reports (designed by the author with the Director of Corporate Planning) which showed input values and calculated results such as net income, cash flows, year-by-year growth in sales and profits, and return on investment. These could be printed in native currency or U.S. dollars (for contributions to the Corporation) according

to the wish of the user.

The analytical and presentational power provided by the system allowed the recognition of performance patterns of the foreign subsidiaries which had previously been obscured from management's purview. For example, in one foreign market there was a clearly discernible adverse trend - profitability as measured by return on sales had declined over the last several years. Further examination of this, aided by information contained in one of the report printouts, raised significant questions about transfer pricing policies and their effect on the implementation of business and market penetration strategies in foreign markets; whether, for example, the transfer pricing should be tailored to the strategies in each market.

A key point is that the SFPS gained acceptance quickly, largely because of its funnel-like aggregation of relevant planning data. It had helped to bring together information which was not readily available anywhere else in the organization.

The preceding events took place in January; corporate-wide strategy discussions were to commence in June, and consolidations for the corporate analysis would follow shortly after that. This scheduling prevented the author from witnessing the full use of the SFPS, particularly the operationalization of the objectives involving its use as a

catalyst for strategy negotiations, as a tool for the financial performance congruency test, and for carrying out the corporate consolidation of plans. However, during the period spanning the months between the initial implementation of the system (January) and the corporate-divisional strategy negotiations (June), several developments relating to the interaction of the SFPS with planning and the organization did take place.

The user of the SFPS was the corporate planning department staff, especially one of the two supporting staff members reporting to the Director of Planning. As familiarity with the system's operation increased, the capacity of the SFPS to perform a more extensive evaluation of financial projections than had originally been intended became quite attractive. This is not surprising since the interaction of a computer and its user frequently enlarges the user's perceived scope of objectives and capabilities to fulfill those objectives. What once took hours to carry out could now be completed in minutes. This increased availability of time permits the manager or user to explore more scenarios than before and provides the opportunity to assimilate the meaning of observed effects from changes in ones assumptions. The sensitivity of the output to changes in the input can be determined. A range of scenarios can be tested until the user is satisfied with a resolution of the

"problem."

As historical reports were being generated, interest was expressed by the users to explore financial projections of their own; these would be based on historical trends (e.g., curve fitting or regression analysis), or relationships existing in the current year's budgets of the planning units. The planning group wished to examine how particular business units and the company as a whole might appear in financial terms (e.g., sales, profits, investment) in future years if existing trends or relationships were to be maintained. In fact they saw these projections, based on history rather than future - oriented plans, as an ex-ante expectation (or base case) of what might be received from business planning unit managers later in the year when the three year strategic programs were delivered to the group and presented to the corporate staff. Projections made using the SFPS would have no strategic content per se; however, they would represent expected results in the absence of changes in operating "strategies" or market behavior. They made sense because the company had been experiencing a regular pattern of growth for the past decade. Extending this performance for three years was consistent with that historical trend. These projections would serve as an additional performance congruency test. The first test, discussed in some detail in Chapter 3, contrasted future financial performance indicated by planning

unit managers against expectations drawn from financial "templates" which expressed normative patterns of financial behavior given a "normal" strategy for a particular business unit's positioning in the matrix of Figure 10. (These "normal" strategies were described in Q-3 Corporation's Planning Manual and are not covered in this thesis). This second test, it was believed, would help identify any departures from accustomed trends. Differences between future financial performance prescribed by business managers and those projected by the SFPS would be an additional basis for discussing the strategic content of the three year action plan. In effect, the SFPS would become a source of constructive conflict.

From a system operating point of view, projecting results on the SFPS was quite simple. The corporate model was an accounting type -- driven by sales, the inputs determined the outputs. Variables were linked by definition rather than regression or other approximate formulae. By choosing a particular growth rate in sales and assuming, as a first approximation, that expenses and investment (inventories, receivables, fixed assets -- some of these were allocated) would grow accordingly, results for any number of future years could be obtained. Of course, known conditions might prevent certain accounts from growing commensurately with sales (such as an economic order quantity or other relationship for

inventories, for example), and these definitions for future relationships could be easily included when projecting future results based on sales growth. (The SFPS, during a single projection, could accept up to twenty assumptions redefining relationships in the basic corporate financial model). A valuable contribution of the SFPS was the ease and speed of conducting projections. This provided an opportunity to consider projected growth for each planning unit separately. Formerly, it would have been too time-consuming to have considered more than the corporation as a whole and, perhaps, a few planning units with relatively large sales growth and or contribution. When projections for a particular planning unit were completed, they were stored in a file separate from the historical data. It was important to distinguish between fact and non-fact, and between the planning group's assumptions and those reflecting the actual divisional plans.

It was also very important to gain credibility for the numbers projected by the SFPS, even if they were built on explicit assumptions. A key consideration was that first the SFPS output based on historical information had to match the known results (profits, return on investment) which were firmly established in the company's books and financial reports. This involved more than a debugging operation. Analyses based on historical data had to be approved and accepted by the financial department. Without this stamp of

approval future projections would have no credibility -- and little value.

In order to achieve a match between historical accounts of record and output generated by the SFPS, additional details have to be incorporated into the financial model. This began to introduce a basic conflict of principles. Data structures used for planning purposes are typically aggregated rather than detailed. This is because the inherent focus of planning is on the future where there are too many uncertainties to make dealing with minor details realistic. Another reason is that the scope of considerations and pertinent data is wide, rather than narrow; detailed information is superfluous. Furthermore, the required (and expected) accuracy for planning is much lower than that needed for accounting procedures. Yet in order to gain operating acceptance within the organization a greater degree of accounting detail was required. Planning data had to identify absolutely with accepted accounting records. To accomplish this task, new variables (accounts) were created in the financial model. The new accounts represented the aggregation of numerous minor bookkeeping accounts. Failure to aggregate in this fashion would have rendered the complexity of the system too unwieldy to be of effective use in an interactive mode. The SFPS had to be kept interactive to remain of service as a DSS. If results were delayed by hours because of extended

data entry or a batch operation, the user would become impatient, grow weary, and fail to exploit the advantageous characteristic of an interactive system -- the capability to explore the implications as they come to mind of results that derive from "what if" types of questions. Loss of the immediate nature of system feedback and user response seemed likely to eliminate the utility, even the very purpose, of the SFPS. A successful compromise between maintaining the system in its desired form and satisfying the acceptance criteria of the very influential Vice President of Finance was achieved through this aggregation of detailed minor accounts.

Ironically, this modification established the SFPS as an enabling link between strategic programs issuing from the corporate planning system and the one-year budget emerging from the controller's department. In effect, the SFPS now had the capability and capacity to project future budgets. Although not planned at the outset, this was an underlying goal which ultimately needed to be realized. Without a link to the budgetary control system, strategic programs stood the risk of hovering untethered to managerial action -- they might fail to get fully implemented. Short-term interests would continue to over-ride those of a long-term nature. With the acceptance of the idea (which came shortly after the establishment of SFPS credibility) of longer term budgets

(i.e., pro-forma budgets), a real linkage was achieved between planning and budgeting. The budget would reflect the current year's portion of the three-year action plan. This did not represent a bypassing of the traditional budgeting process but a move towards coordination of the two managerial processes -- planning and budgeting. First round future projections (before planning unit data input) would, in effect comprise a rough budget, assuming that all accounts were tied to sales as defined in the model. As before, if these relationships departed from the model definition in a definitive manner, then they could be modified accordingly for each business planning unit. Of course inputs from business unit managers would over-ride these projections, but only if, after negotiations, their figures were accepted by top management.

Near-Term Prospective Use of the SFPS

The research project concluded in May while historical data were being consolidated by lines of business and by geographical location for an analysis of contributions to the corporation. This historical corporation appraisal was a necessary predecessor to the future - oriented analysis of the same kind to be performed in a few months time. By linking the two (a cognitive process of the Corporate

Planner) dynamic (year-to-year) patterns might be observed. These patterns could help indicate where corporate management should best place its "bets."

Research on the SFPS project came to a close before the cycle of negotiations between corporate and divisional managers had commenced. Consequently, these sessions, including the performance congruency tests, were not witnessed and cannot be presented here. A strong interest was expressed in utilizing the SFPS in an on-going, on-line mode during corporate-divisional discussions. It was felt that the ability to evaluate the impact of "compromises" or alternative assumptions on-the-spot would aid in the resolution of conflicts and help bring the strategy sessions to a comprehensible and acceptable conclusion.

The Corporate Planner at Q-3 Corporation places strong emphasis on the need for sound, explicit information, which is a foundation for effective learning, communication, and planning. Line managers share his desire for increased rationality in planning activities. These conditions at Q-3 create a receptive atmosphere for computer-based decision support in strategic planning such as can be provided by the "strategic financial planning system." The use of the SFPS for linking managerial plans, information, and analysis during the corporate-divisional strategy sessions would represent a unique contribution of decision support systems

to the corporate strategic planning process.

Evaluation

In Chapter 5 we noted that decision support systems are designed to address relatively unstructured problems (such as resource allocation planning), and that as a result, the effectiveness of the system is difficult to assess. It was suggested that perhaps the best way to evaluate the SFPS was in terms of the level and evolution of its usage. The levels of success range from acceptance, through implementation, to institutionalization. In this chapter the processes of acceptance and implementation were discussed. That these took paths unexpected in the beginning judging from the basis of the foremost objectives for the SFPS does not seem to matter to the success of the system. What is more important is that usage has been evolving and the SFPS is making a noticeable contribution to managerial activities.

Institutionalization of the SFPS (i.e., the continued use of the SFPS for financial program evaluation, strategy negotiations, corporate analysis, and linkage of planning and budgeting) may or may not be forthcoming. (We have discussed the conflict over user rights between the Corporate Planner and the Vice President of Finance in an earlier chapter). If and when it does, it may well be in a form

different from that originally anticipated as described in this thesis. User and system evolve together; there is rarely a "final" system. Such is the nature of that type of DSS which we have called a "strategic financial planning system."

CHAPTER 8

SUMMARY AND CONCLUSIONS

Summary

This thesis has addressed various issues concerning corporate planning: its structure, processes, and information content were seen as a context in which an interactive decision support system, used for resource allocation planning can operate. Strategies of the firm cannot be implemented without the allocation of resources.

Normative and descriptive models were presented which included the need for and the organizational context of strategic planning, the role of the Corporate Planner, contrasts between a mature and newly - instated planning system, and the positioning of corporate modeling within the framework of strategic planning. A literature survey of corporate modeling was conducted. One key finding was that planning is not a homogenous process, and the modeling effort must take into account variables which constrain the particular design and application of the DSS within the various stages and levels of corporate planning. Another important issue is that even though the nature of planning is dealing with uncertainty, few corporate models based on probabalistic profiles are successfully implemented -- they

don't conform to the cognitive processes of most managers. This suggests that decision support systems must support the managerial decision process, not change it, or replace it.

The particular system described in the thesis was developed and implemented by the author for the purpose of resource allocation planning in a newly-established (two years old) corporate planning system; it was called a "strategic financial planning system" (SFPS). It was designed to operate as a catalytic and analytic tool incorporating the financial component of three-year strategic action plans prepared by business planning unit managers. (For the most part, divisional profit center managers). The analytical aspect was drawn from the capability of the system to provide computational results (for each planning unit as well as the corporation as a whole) for financial indices of interest such as operating income, cash flow, return on investment, and year-to-year growth (or decline) in these as well as a number of other strategic financial indicators. The SFPS could also respond to the query "what if" with the impact on results of various assumptions about changes in inputs. The catalytic aspect of the system derived from its potential use in furthering corporate - divisional strategy negotiations, about future plans and expected performance, towards a comprehensible and acceptable conclusion.

These managerial discussions are part of a comprehensive

strategic planning system. Their purpose is to assure that action plans (three-year strategic programs) which have been devised by individual business unit managers for their respective market divisions are consistent with overall corporate strategy and objectives and that they contribute appropriately to the profitability and return on investment established for the divisions and for the corporation as a whole. The SFPS was to be an enabling mechanism tying historical performance through a congruency test to proposed strategic programs. The performance congruency test was a check of the financial component of proposed action programs against financial "templates" representing normative patterns prescriptive of expected behavior. These patterns apply to planning units following a "normal" strategy appropriate for its position in a two-dimensional matrix. The matrix reflects the industry (or market) maturity (e.g., embryonic, growth, mature, aging) and the strategic competitive position of the business planning unit.

Use of the matrix is a recognition of the inadequacy of capital budgeting techniques as sole criteria for basing decisions on resource allocations to business units.

Multidimensional criteria must be considered, and the Market Maturity - Strategic Competitive Position matrix allows the capability to reduce the multidimensional complexity of market strategy variables for each business planning unit to

a more easily understood yet comprehensive level. Information which helps to establish the strategic profile for each unit is provided by managers during the first (necessary) stage of the inception of strategic planning -- the situation analysis. Financial information as a distillation of this multiplicity of criteria is also obtained from the situation analysis. These "financials" were used as input to the SFPS and as the basis for the subsequent performance congruency test which links past performance to future projects for the purpose of the evaluation of strategic program proposals. They were also the basis for consolidating all business unit plans into the total corporation.

The company researched in this thesis had only recently begun the systematic process of strategic planning. Managerial attitudes about its introduction and on-going activity, and especially about the insertion of a decision support system into that process were unknown. An issue presented in the thesis is the need to perform a scouting analysis of the organization before designing and introducing a decision support system such as the SFPS. The reported failure of many DSS has not been a result of technical issues. Rather, it has been the failure to incorporate organizational processes, managerial relationships, and other human factors, into their design and implementation. Normative considerations for approaching DSS design,

implementation, and evaluation were consequently discussed to provide a framework for exploring the organizational and informational context in which the SFPS would operate.

Interviews were conducted with business unit managers, the suppliers of information to the SFPS, and the Corporate Planner who, through his staff, was the direct user of the SFPS. These interviews clearly revealed that management in the organization desired to move towards increased rationality. The Corporate Planner was viewed in the role of helping to carry this out by forcing an explicit appraisal of market status in each business unit, by establishing a format for communicating information, by coordinating planning activities, and by validating information contained in business plans. All desired to see a reduction in gamesmanship. The proper positioning of the SFPS was seen to be in the planning group -- since the planning group's role was to be neutral, the Corporate Planner would be in the fairest position to receive data input and check it for realism, consistency, and accuracy.

Use of the SFPS was rapidly accepted by top management. Increasing the detail of information output to demonstrate its agreement with known accounting results was a key step to the establishment of the system's credibility. The contribution of the SFPS to the collection, aggregation, access, and analysis of strategically important data was

perceived as a significant benefit. The analytical and presentational power provided by the system allowed the recognition of performance patterns which had previously been obscured from management's purview. Short-term evolution of the user-system interaction-extended application of the SFPS beyond the initial analytic and catalytic objectives. First, the system was used as a computational means of determining expected performance; projections based on historical trends or the current year's budget (e.g., marketing expense relative to sales) and explicit assumptions for sales growth were prepared by the planning staff as an additional device (congruency test) for evaluating the strategic content of business unit plans which would be received later in the year. These projections would serve as a source of discussion and constructive conflict. Secondly, the addition of accounting detail to the corporate financial model and the desire to use the SFPS for projecting future performance led to its initial adoption for the preparation of long-term budgets derived from business unit strategic plans. This was a significant development for a company formerly focused on the short-term, for it provided the essential linkage between budgeting and planning which provides for the true operationalization of long-range strategic plans.

The research project ended while historical consolidations by business line and geographical location

were being carried out. These were being used to evaluate the contributions of various groups to the corporation as a whole. Strategic sessions for review of the three-year plans were to take place shortly afterward. Since the research project had ended, these sessions could not be witnessed and the full use of the SFPS could not be evaluated.

Conclusions

Strategic planning is a comprehensive and complex system. Its success depends on the planning system becoming an integral part of the management process. If it is something separate, if it is a mere addition to the activities of the corporation, then it will fail.

The start-up of a formal planning process within an organization is laden with confusion about managerial roles, lines of authority, allegiances, and the interface between the planning system and the management system. This is particularly so for a company, such as the one researched, which has recently undergone an organizational restructuring, away from centralization towards decentralization. Like a stretched rubber band, there remains some tension for restoration to the original condition. It can take the form of former politically influential managers refusing to

delegate or relinquish decision making authority, or the failure of planning to produce noticeable benefits, with the result that earlier, potentially less effective, management systems predominate.

Decision Support Systems, such as the SFPS, can help to provide benefits which contribute to the success of planning. A necessity of good planning is the segmentation of the enterprise into strategic business units. (Not necessarily in a structural sense but in a planning/analytical sense). This allows the tailoring of individual plans and strategies to particular markets. Associated with this differentiation is the generation of additional, new information. Systems such as the SFPS can assimilate such data and provide tailor-made analyses which allow the consideration of a multiplicity of scenarios about individual planning units. The recognition of patterns of performance, previously unseen, are likely to result. The ability to reintegrate these multiple plans into the corporate portfolio is another provision of such systems. Planning for the allocation of resources is consequently aided by the capability to view the impact of a decision for one business unit's resources on the corporate whole.

But as we have seen, DSS are not fixed systems. They evolve, as do their users and the interaction of the two, and the effectiveness of the system largely depends on its

evolving usage. This evolution can sometimes redefine the "real" problem, and/or bring the user-system capability closer to the problem's solution.

One large potential problem that is associated with strategic planning is the following: What will happen if the plans for the business units have no influence on the allocation of resources, and if managerial performance is not checked against plans and acknowledged by a reward system? In this case, line management will infer that top management is interested only in receiving proposals for performance in the future, without intending to accept the proposals and to commit the corporation to their implementation. If a corporate planning system requires the preparation of division plans under these conditions then line management will perceive the planning efforts as a paper exercise. Effective planning will not be achieved unless top management demand for planning is matched by top management commitment to resource allocations and performance evaluation under the influence of the plans.

Evolution of the SFPS in only several months of operation has brought that system closer to helping the organization to address this problem. Initial objectives for the SFPS were for it to serve predominantly as an analytical tool, and as a negotiation-catalyzing device, to support the resource allocation decision process. These objectives

address the first half of the challenge. Recent acceptance of longer-term budgeting, with the aid of the SFPS, as a reflection of strategic programs is a sign of resolving the second half of the challenge -- obtaining commitment to plans. Budgets serve as an effective coordinating and management control and incentive mechanism. A remaining challenge will be to retain the strategic content of plans within the budget and not to have the long-range budgeting process degenerate to the mere projection of strategy-free performance objectives.

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