

THE PLANNING AND MARKETING LIFE CYCLE

Patterson F.G., Jr.

George Mason University, Fairfax, VA, USA

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Summary

In this paper we examine classical and fundamental processes of business planning and marketing. As a result we define a five-phase process model for planning and marketing and we examine the relationship of planning and marketing to both the acquisition cycle and the research, development, test, and evaluation cycle. We construct a product life cycle—an abstraction that is a familiar part of marketing in general and product management in particular—and note its relationship to the acquisition life cycle. We describe ISO 14000—the international standard that specifically addresses environmental management systems—and its relationship to ISO 9000, as part of an overall strategy to provide competitive advantage to organizations that choose to make the investment. We characterize strategic planning as a system activity that focuses on the interface between planning and marketing and research, development, test, and evaluation (RDT&E), providing strategic direction to the organization. A five-phase strategic planning life cycle is constructed from basic principles of organizational leadership and is discussed in the context of organizational mission, goals, approach, plans, and metrics. In conclusion, life cycles are essential tools of management, which are necessary to provide a system level view of vital, organic, business processes. These tools can be used not only to estimate cost and schedule through the partitioning of resources, but also to predict likely outcomes by which a manager can understand current events and circumstances. Life cycles are a fundamental element of systems engineering.

1. Introduction

In this paper we examine life cycles designed for planning and marketing, founded on classical definitions. We treat planning and marketing as a unified process, based on the observations of Drucker and Sage that the activities share a common focus on results and on a common strategic alliance with the RDT&E and acquisition processes (see

Figure 2). We also focus on strategic planning as a separate activity because of its high-level focus, its reliance on all three organizational life cycles for information, and for critique and interpretation of strategic decisions. Quality management is approached in the paper as contributing to marketability, hence to strategic goals. This topic is treated in greater detail in *Life Cycles for System Acquisition*.

2. Planning and Marketing

Kast and Rosenzweig describe planning as the systematic, continuous process of making decisions about the taking of risks; calculated on the basis of forecasts of future internal and external market conditions. Planning is modeled in several dimensions:

- repetitiveness, for which they visualize a continuum from single event to continuous;
- organizational level;
- scope, ranging from a functionally oriented activity to a total organizational endeavor; and
- distance in time into the future.

The model yields an eight-step approach to business planning:

1. Appraise the future political, economic, competitive, or other environment.
2. Visualize the desired role of the organization in this environment.
3. Perceive the needs and requirements of the clientele.
4. Determine changes in the needs and requirements of other interested groups: stockholders, employees, suppliers, and others.
5. Provide a system of communication and information flow whereby organizational members can participate in the planning process.
6. Develop broad goals and plans, which will direct the efforts of the total organization.
7. Translate this broad planning into functional efforts on a more detailed basis for research, design and development, production, distribution, and service.
8. Develop more detailed planning and control of resource utilization within each of these functional areas—always related to the overall planning effort.

We may identify basic phases in the planning and marketing process and organize the eight steps into twelve activities within the familiar framework of the generic three-phase D–D–D life cycle model:

1. *Definition*
 - assessment of the market
 - perception of demand
 - the strategic response to the market in the light of organizational goals
 - the articulation of market demand into product requirements
2. *Development*
 - providing a system of communication
 - promoting the flow of information

- research
 - design and development
 - production
3. *Deployment*
- distribution
 - service
 - planning in greater detail

Effective planning requires careful external market analysis. This is a principal reason that we treat planning and marketing as a separate and distinct life cycle. While an organization has a uniquely informed perspective on its own capabilities, goals, and interests, a free market does not respect individual organizations. Demand is an unbiased market force. Thus, an organization—especially its leadership—must perform exceptionally to provide a unique response to market demand. The first three steps of Kast and Rosenzweig’s approach address assessment of the market, perception of demand, the strategic response of the organization to the market in the light of its own goals, and the articulation of market demand into product requirements. Together with other similarly inspired activities, such as product prototyping, user testing, and test marketing, we refer to these steps collectively as the external market analysis phase.

There is also what may be called the internal market. This is the collection of interests within the organization and its support environment, such as the stockholders, employees (individuals, formal groups, and informal groups), suppliers and other creditors, governmental authorities, and other special interests. The responsiveness of the organization depends on a collection of internal market requirements that must be satisfied to assure the success of the organization. By providing a system of communication, promoting the flow of information, and encouraging broad intraorganizational participation in goal development and planning, total quality efforts, such as Total Quality Management (TQM) and Six Sigma connect internal and external requirements in a manner designed to promote growth in all areas of the internal marketplace, the goal of which is the creation of high quality products that satisfy requirements in the external marketplace. Steps four and five of Kast and Rosenzweig’s approach address these issues.

After having decided on the destination, the organization must plan its journey. Goals must be formulated into functional efforts. Referring to steps six, seven, and eight, these efforts include research, design and development, production, distribution, and service. Again the internal organization must be consulted to develop more detailed planning and control of resource utilization within each functional area. Kast and Rosenzweig believe that providing organizational members with a voice in the planning process—resulting in a sense of individual, personal ownership of the plans—serves to integrate the organization.

Planning and marketing has important interfaces with both RDT&E and the acquisition processes, as well as with strategic planning. Figure 1 shows a planning and marketing waterfall model with links to each. In the definition phase, planning and marketing need answers to many questions about the market with respect to the composition, behavior,

and needs of its potential customer base. The activities in the RDT&E life cycle, which include market research, provide answers proactively, interactively, or reactively, according to the needs of the planning and marketing process. In the proactive case, RDT&E may discover or create opportunities and provide concepts for new products, improvements to existing products, or revival and redesign of products that are in the last stages of their product life cycle (see Figure 4). In the interactive case and the reactive case, RDT&E acts to answer questions about market share and market potential. The interactive and reactive cases differ according to the position of products in the market. For example, a sudden loss of market share for any number of possible reasons, including competitive pressure, product failure, or new legislation, would trigger a reactive response from RDT&E. The interactive case represents business as usual, with the initiative coming from the planning and marketing function. In the development phase, the planning and marketing process is engaged in learning about products—how they work and how potential customers may use them to satisfy their own requirements.

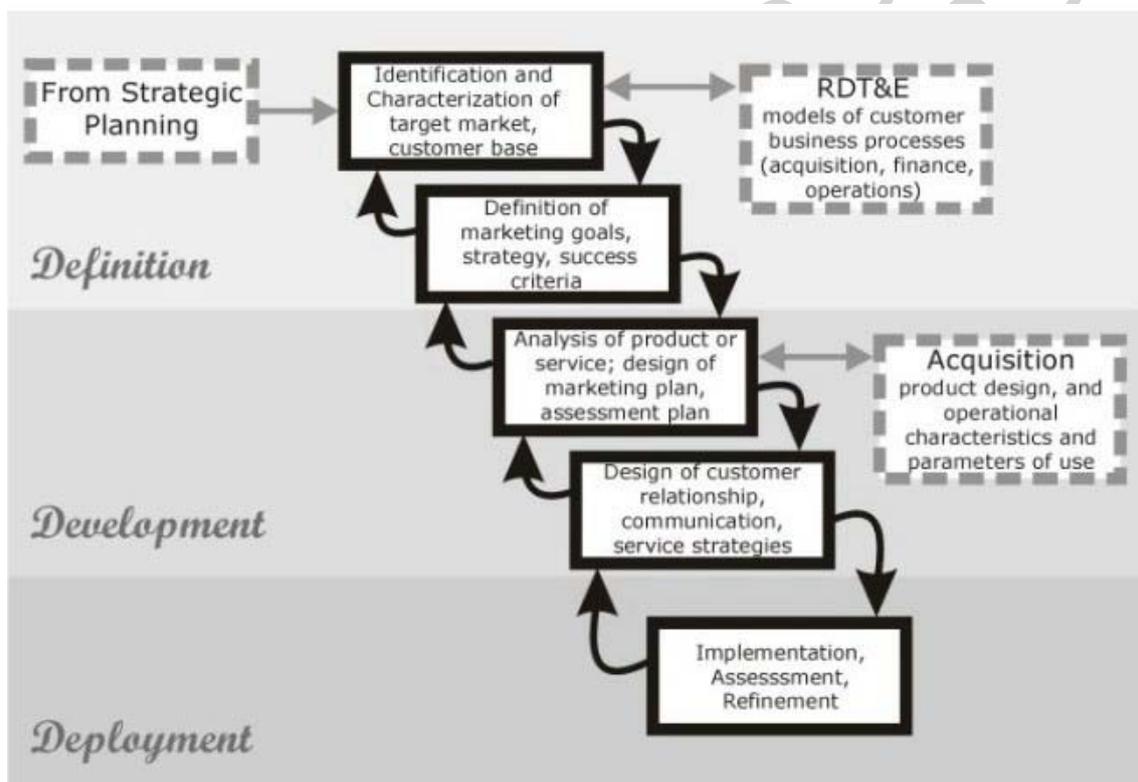


Figure 1. A planning and marketing waterfall model with links to the RDT&E and acquisition processes

Blake and Mouton define a process for achieving an objective that may be vague initially and that may change over time with refinement. Given this statement of a goal, planning may proceed, leading to an action step. The action step enables the fact-finding or feedback stage that is critical to a goal oriented management program, because it provides “steering data.” Three qualitative measures may be evaluated as well:

- progress toward the goal
- adequacy of planning

- quality or effectiveness of any given action step.

These measures may be quantified using a linear scale measurement system or some similar heuristic. Experience and feedback using a prototype in the context of the RDT&E process is extremely useful for evaluating both products and processes for eventual deployment. Mistakes corrected in the RDT&E cycle are much less costly than those detected in the marketplace. In this light, RDT&E may be seen as part of the overall definition phase for the organization's strategic planning process.

A natural way to link the acquisition cycle with planning and marketing is "design to cost." The basic idea of design to cost is that, through the analysis of design, tradeoffs of functionality for affordability, and allocation of cost goals to the work breakdown structure, and through dedication and discipline on the part of management, cost goals can be built into a design-to-cost plan, and the plan can be carried out successfully. Marketing studies that provide projections of sales, selling prices, and sales life cycle, allow such cost goals to be set intelligently.

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Biographical Sketch

F.G. Patterson Jr. received a B.A. degree from Rhodes College, two M.S. degrees from the University of Memphis, a Sc.M. degree from Brown University, and a Ph.D. degree from George Mason University: the most recent in 1996. He has been a faculty member at several universities, in departments of computer science and systems engineering; has worked as a systems engineer in the aerospace industry, and has worked for the National Aeronautics and Space Administration (NASA). His experience includes extensive assignments on large, complex systems undertaken by the Federal Aviation Administration and by NASA. His interests include systems engineering and systems management, especially the areas of process improvement, software reuse, and new paradigms for rapid system design.