
by

Bryan A. Lukas
California State University, San Marcos

G. Tomas M. Hult
Florida State University

Mark N. Frolick
The University of Memphis

Executive Summary
To sustain growth, a firm must continually redefine current products as well as introduce new ones in advance of a market need. By generating and implementing new product ideas faster than its competition, a firm is likely to increase its current market share or even establish a new market. The question, then, is not whether a company should innovate, but how to reduce innovation cycle time. This study illustrates the importance of improving and shortening the new product development process. The companies responding to the study indicate that 41 percent of the sales growth expected over the next five years will come from new products introduced during that period. Not surprisingly, companies expect to increase the number of their new product introductions over the same time period. By the turn of the millennium, the number of new products commercialized is expected to increase by nearly 40 percent. This study is centered around the idea generation and project management processes that facilitate and inhibit innovation. The study is divided into three components: (1) an assessment of current new product development practices in 194 U.S. companies; (2) the detection of recurring problems in new product development cycles, and (3) the discussion of key factors that reduce new product development cycle time. Our findings indicate that 40 percent of the companies surveyed lack a structured innovation process. This lack of formal procedure for managing new product development reflects management’s fear of what is still often considered as a soft, intangible, and creative process. However, the number of new products introduced to the market is increasing as is the necessity for formal management structures to coordinate the new product implementations. According to responses to the survey and in-depth interviews conducted in the study, the companies most likely to succeed in reducing the development and introduction time of new products will:

✓ Implement formalized idea generation and project management processes,
CTR in the New Product Development Process

- Allocate process responsibility for the idea generation and project management processes,
- Provide a clear definition of the scope of the new products that management wants to develop and the type of innovation it seeks,
- Provide vigorous leadership and active management support in all project coordination issues,
- Establish consistent prioritization of new product development projects across all organizational units involved, and
- Match project management structures with types of innovations.

This study represents an investigation into an area where little systematic research is available and only management folklore abounds. While some of the observations and recommendations may lead to disagreement and debate, managers with a stake in new product development will hopefully find them helpful.

Introduction

In a global economy, the continuous development and introduction of new products becomes a crucial factor for the growth of individual companies and the economy as a whole. According to Peter Drucker (1954), a company’s first and most important task is to stay in business, and it cannot do so without a continuous flow of new and innovative products. The dimensionality of this task is illustrated by the following findings. An estimated 32 percent of the products sold today by the companies surveyed will have disappeared from the market 10 years from now. At the same time, 38 percent of the products that will be sold in the next decade are as yet unknown to these companies.

The necessity of new products also depends on the behavior patterns of consumers. Due to rises in educational levels, increased leisure time, and availability of credit, consumers’ wants and preferences are constantly changing. Thus, the most important task of marketing management is to detect and interpret early indications of changes in consumer purchasing behavior to meet changing values and dispositions with new products.

Unfortunately, unsatisfactory product performance, consumer indifference, group habits, and even the total cultural and economic context cause a large number of new products to fail. In fact, respondents to a survey used for this research indicated that 35 percent of their new products failed in the first year on the market. However, an unsuccessful company considering itself a victim of these circumstances is committing inefficiency and long cycle times in the area of new product development can be reduced by improving knowledge and management of the new product development process.
an error because the true problem is in fact insufficient insight and extensive product development cycles. The reason for the differences in success rates of individual companies lies in the organization’s ability to understand consumers and the care exercised to plan and implement new products (Scheuing 1974, Schumann, et al. 1994). Therefore, inefficiency and long cycle times in the area of new product development can be reduced by improving knowledge and management of the new product development process.

Acknowledging the new product development challenge, a national survey was conducted in 194 U.S. companies representing a broad range of industrial categories (Lukas 1996). These companies reported at the business unit level on their “best practices” in reducing the idea generation and project management time of new product development. The responding business units averaged $50 million in sales per year and employed an average of 267 employees.

In addition to the survey, 18 in-depth interviews were conducted. Averaging one hour in duration, the interviews were centered around the innovation processes associated with successful and unsuccessful new product introductions. In order to tap the full spectrum of problems and

---

**Figure 1: Typology of New Product Introductions**

```
<table>
<thead>
<tr>
<th>Market</th>
<th>New to the Market</th>
<th>Not New to the Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>New to the Firm</td>
<td>New-to-the-World Products (12%)</td>
<td>Me-Too-Products (19%)</td>
</tr>
<tr>
<td>Not New to the Firm</td>
<td>Line Extensions (35%)</td>
<td>Product Modifications (34%)</td>
</tr>
</tbody>
</table>
```
opportunities related to innovation cycle
time, both decision making and executing
members of new product development
projects were interviewed. The
interviewees were asked to describe their
role in recent projects and how their
experiences represented or differed from
the way their organization usually conducted
new-product activities.
The outline of this paper is as follows. First,
the challenges facing new product
development are discussed. Next, the
opportunities in the idea generation process
are highlighted and recommendations for
cycle time improvement are developed.
After identifying opportunities for
improvement in the project management
process, alternative avenues in the time
effective management of new product
projects are explored. The paper ends with
a discussion of newly emerging forms of
project management and a summary of
recommendations.

The New Product Development
Challenge
The managers surveyed in the study indicate
that 12 percent of their new products
introduced are *new-to-the-world
products*—new products that create an
entirely new market. Another 19 percent
are *me-too products*—new products that
allow a company to enter an established
market for the first time. An estimated 35
percent are *line extensions*—new products
that supplement a company’s established
product lines, and 34 percent are *product
modifications*—products that are
modifications of existing products. Figure 1
summarizes the new product development
estimates. The survey reveals that
companies expect to increase the number of
these new product introductions by nearly
40 percent between 1995 and 2000. Not
surprisingly, 41 percent of the sales growth
expected over the next five years is believed
to come from new products introduced
during that period.

A number of factors support the trend
toward an increasing number of new
product developments and introductions.
Increasingly frequent changes in consumer
purchasing behavior, emerging global
markets, and technological developments
are some of the reasons for the expected
increase in new products. On the other
hand, higher consumer expectations
worldwide, more government regulations,
and tougher environmental standards will
lengthen new product development time in
the next decade.
The best practices identified in this survey
are outlined below on the basis of the
format adopted by the consulting company
Booz, Allen, & Hamilton, Inc. (Booz, Allen,
and Hamilton 1982):

v A formal new product development
process is used by 60 percent of the
companies. These companies have
launched more new products
successfully than those who do not have a formal process in place. The formal new product development process includes an idea generation process—creating new product ideas, and a project management process—transforming new product ideas into successful new products. In most cases, the idea generation process is less formalized than the project management process.

- The number of ideas considered for every successful new product introduced is increasing—from an average of 10 ideas between 1985 and 1990 to 13 ideas between 1990 and 1995 for each successful new product.

- A fairly equal number of ideas were generated from competitor, customer, and internal sources available to the companies surveyed. However, within each source there were significant differences—observing the competition, soliciting suggestions from customers, and research and development were by far the preferred idea generation sources. Analyzing the competition’s products, customer complaints, and suppliers’ suggestions were far less favored. Overall, the least utilized idea sources were complaints from customers followed by personnel hired from the competition.

- Experience in introducing new products enables companies to improve new product performance. Since 1985, with each doubling of the number of new products introduced, the cost and time of each introduction declined by 15 percent. The percent of total new product expenditures allocated to new products that are ultimately successful has increased since 1985. The survey results indicate that expenditures on successful new products increased from slightly more than 45 percent in 1985 to nearly 54 percent in 1995. The probable cause being that the increased number of new ideas generated and evaluated in the early stages of new product development, combined with an increasingly formalized new product development procedure, enable companies to identify new product “winners” early in the development process.

- Every company surveyed formally measures their new product performance. The most commonly employed success criteria are profit contribution and sales volume achieved by the new product. Return on investment as a measurement criterion is only used slightly more than one-third of the time.

- The success rate of new products introduced to the market has increased over the last decade. In the period from 1985 to 1990, 53 percent
of all commercialized new products were successful; in other words, these products met company specific performance and strategic criteria. Between 1990 to 1995, the same companies achieved a 65 percent success rate.

Several conclusions can be drawn from the findings. More companies are considering more ideas for every new product commercialized and are decreasing the portion of resources allocated to commercially unsuccessful new products. Additionally, more companies are converting the innovation process into a formalized procedure that can be managed separately as an idea generation and project management process, thereby reducing the development time of successful new products and increasing the rate of successful market introductions. However, 40 percent of the companies surveyed lack a formal innovation process. This lack of formal procedure for managing new product development reflects management’s fear of what is still often considered as a soft, intangible, and creative process (Deschamps 1995).

New product managers are thus faced with the challenge of better understanding the management of innovation as a formal and structured process—the kind of process that facilitates short innovation cycles. To that end, and based on the findings from the survey and in-depth interviews, implications for the formalization of the innovation process are detailed in the following sections.

Generating New Product Ideas More Efficiently

The new product development process in a corporation can be separated into two sub-processes: (1) an idea generation process—creating new product ideas, and (2) a project management process—transforming new product ideas into successful new products. However, the majority of the surveyed companies with a formalized new product development process tend to focus more on project management than idea generation. This study first addresses the process of generating new ideas. The management of the process involved with sensing and creating new product ideas is not fundamentally different from many other management processes. Accordingly, the idea generation process can be described and mapped. Based on the survey findings and in-depth interviews, the idea generation process can be structured in three steps:

1. Envisioning the preferred area of growth.
2. Managing the flow of new ideas.
3. Validating new ideas as projects.

Envisioning the Preferred Area of Growth

The idea generation process should begin with creating a vision of the company’s preferred area of growth. This vision should be as concrete as possible. It should lead to an explicit set of strategic priorities defining the scope of the new products that management wants to develop and the types
of innovations it seeks. Jean-Philippe Deschamps, Vice President of Arthur D. Little, Inc. in Europe, finds that answering the following four questions is a useful way to generate and structure such a vision (Deschamps 1995):

- What should our corporation stand for?
- What kind of products are we going to offer?
- What kind of customers are we going to serve?
- What should our products mean to our customers?

Seldom will the CEO alone be able to address all four questions adequately. Only the most insightful leaders who have a dynamic sense of their company possess the kind of vision encompassed by the four questions.

As a team, however, the top management group can develop a shared vision better than anyone senior manager could articulate. Several meetings may be required before all four questions are answered. Alternatively, a vision task force could be established, drawing managers from all parts of the organization. Deschamps (1995) found that many Japanese companies admit task force members based on their tenure and age. Managers who are not going to be with the company within the vision’s time span are excluded.

The development of a vision should lead to an explicit set of strategic new product priorities and lead times. The strategic priorities and lead times should be as clear as possible. A strategic priority may be, for example, “By the end of next year we want to enter the office personal computer industry (scope of the new product) by providing same-day replacement (type of innovation) of malfunctioning personal computers.”

Managing the Flow of New Ideas
The idea generation process involves collecting and developing new ideas, screening the ideas, and ranking the ideas for investment. The survey results from the present study indicate that this process is seldom structured, except within research and development (R&D).

In their book, Revolutionizing Product Development: Quantum Leaps in Speed, Efficiency, and Quality, Wheelwright and Clark (1992) advocate what they call the “development funnel.” The authors suggest that an idea funnel should be created by structuring and managing the idea generation process. Management must understand the sequence of activities that lead to the time efficient generation of new product ideas as well as allocate the responsibilities for managing the activities. Two mechanisms are suggested by the consulting firm Arthur D. Little as useful for structuring and managing the idea flow (Deschamps 1995):

- Innovation Councils to organize and manage the idea generation process on an ongoing basis.
- Venture Teams to search for and develop ideas outside the direct scope of existing business units.

The Innovation Council should be chaired by a member of the senior management group who has marketing or engineering
expertise in new product development. Members of the council should be managers representing all key functions of the company. Due to the nature of new product development, the council members should be chosen based on their demonstrated entrepreneurship and innovative spirit.

The role of the Innovation Council is twofold: 1) setting and monitoring an innovation policy and process, including proposing remedies to remove innovation obstacles and monitoring the innovation effectiveness; and 2) managing the idea flow, including defining the scope and focus of proactive idea searches, as well as organizing and managing specific idea generation exercises. Overall, the Innovation Council is responsible for the idea generation process.

Venture Teams are smaller, multi-functional groups consisting of the best and most promising managers of a company. The team members should be chosen based on their previous successful experience in new product development. Deschamps (1995) reports that Venture Team members are typically removed from all management responsibilities and report directly to senior management.

The role of the Venture Teams is also twofold: 1) conducting expeditionary innovation activities that fall outside the direct scope of existing business units and that are likely to result in breakthrough ideas, and 2) setting up the organizational and operational infrastructure necessary to implement breakthrough ideas. Overall, the Venture Teams are responsible for highly innovative new product opportunities (Deschamps, 1995).

Validating New Ideas as Projects
After the new ideas have been generated, they should be validated from technical, economic, and time-to-market perspectives. If the validation process is positive, senior management should designate the idea as a real product development project, officially programming it in the company’s product or project plan.

The validation process can face several problems. A validation may not be comprehensive, resulting in marketing and R&D resources being diverted to what are perceived as more important projects. Also, validation may be delayed due to special interest groups in the corporation.

One way to structure and speed up the validation process is the adoption of the Innovation Council and Venture Teams described in the paragraphs above. Both the Innovation Council and Venture Teams create a sense of urgency and integrate traditionally separated validation mechanisms such as market research, financial analysis, or technical feasibility. If
equipped with its own budget, the Innovation Council may also bypass conflicts over the resources necessary for the validation mechanisms. Even if the resources are not available internally, then the Innovation Council should have the authority to outsource part of the validation process (Deschamps 1995). Overall, the three steps described above ensure continuity in managing the generation of new product ideas. By establishing an Innovation Council and Venture Teams, the concept of process ownership (i.e., responsibility) is applied to the idea generation process. The allocation of process ownership represents the first step toward a shorter innovation cycle.

The next step in the new product development process is the coordination of project management activities. The survey findings indicate that this second stage is better understood than the idea generation stage. Accordingly, the coordination of new product projects has been subject to various formalization efforts. In the following sections, the coordination structures involved in project management are explored.

Types of Coordination Structures in New Product Development

Olson, Walker, and Ruekert (1995) define coordination structures as “the formal design of roles and administrative mechanisms to control and integrate product development activities and resource flows.” These structures include bureaucratic directives and individual liaisons, as well as task forces, matrix structures, and the newly-emerging design teams and design centers. All companies surveyed use more than one type of new product coordination structure and half of them tie the structure chosen to product-specific requirements. The most-preferred form of coordination structure is the task force structure—26 percent of all companies surveyed used either temporary or permanent task force structures in their new product development.

Under the task force coordination structure, task force members represent various organizational units, thus creating a cross-functional team. Often lacking formal authority over the members, the task force leader coordinates the task force through individual liaisons. However, senior management retains the authority to govern such task forces by assigning tasks, imposing directives, and mediating disagreements among members (Gersick and Davis-Sacks 1990; Olson, Walker, and Ruekert 1995).

Since the present study indicates that task forces are the preferred form of new product coordination, a series of in-depth interviews was conducted with task force leaders and members in order to identify cycle time problems and opportunities related to this “best practice” in new product coordination. A summary of the results are presented below.

General Problems and Opportunities for Improvement in Task Force Structures
A common problem in task force coordination is the lack of senior management leadership. Many task force leaders and members feel that the new products they coordinate are insufficiently specified by senior management. In these instances, the task forces are left to develop the new products on their own and implement them simultaneously.

Last minute changes to new products by senior management are problematic. In most instances, these changes appear minor to senior management. However, a seemingly small last minute change to a new product often requires the task force to realign a complete product implementation cycle.

Another identified problem among task forces is the prioritization of new products. In nearly every case studied, an inconsistent prioritization of the same new product was found across the different functional areas and departments involved in its implementation. Those departments identified as “bottlenecks” in the new product development process had lower priorities assigned to the new product project than did the other departments involved.

The motivation for implementing a new product in a timely manner varies among the task force members. Many innovative companies have adopted a very competitive corporate culture regarding their industry competitors. However, this competitive spirit may vary across departments. Since the task force members are departmental representatives, different departmental perspectives on launch times are represented on a single task force.

Another issue discussed by most interviewees was a lack of evaluation procedures for task force members. Generally, task force members are assigned to task force leaders. However, task force leaders cannot hold the members accountable for their efforts. Because task force participation reduces the time available for their regular work activities, many task force members regard task force participation as extra work and detrimental to their performance in their “home” department.

Interviewees indicated that task force leaders find themselves competing against each other for the same company resources. In many cases, several task force leaders need support from one particular department, often at the same time. However, each task force leader is responsible for a different product. As a result, task force leaders are forced to maneuver against one another when seeking departmental support and company resources.

In many cases, task force leaders and members find that the scheduled lead times for launching a new product are too short. Those companies which are becoming more responsive to competitors, and less proactive, are especially imposing increasingly tighter launch schedules on their task forces. In
turn, the task forces make product quality trade-offs in order to meet the time-to-market pressures.

The interviewees indicated that major obstacles prohibiting the efficient implementation of a new product are identified too late. This problem results from a lack of interdepartmental communication which constrains the involved departments in sharing their expertise and concerns ahead of time with the task force leader.

A careful evaluation of the interviews shows that in some cases not enough market research or financial analysis is conducted prior to the establishment of task forces. Generally, only very basic market research is utilized, with most research undertaken parallel to the establishment of task forces. If task forces are under a tight launch schedule, financial success of the new product is assessed only after considerable resources have been invested by the task forces.

Overall, the evidence suggests that task forces often lack some of the following coordination attributes: 1) clear policy guidelines regarding both new product cycle time objectives and development procedures, 2) vigorous leadership, 3) active management support, 4) consistent prioritization of the projects across all organizational units involved, and 5) performance evaluations for task force members. Next, several recommendations for the improvement of task force structures are discussed, followed by an outline of alternative coordination structures for shorter new product development cycles.

Integrating the findings from the survey and in-depth interviews, four important recommendations can be made that will help organizations improve their task force management process. These include: develop new product policies, be a leader, keep in touch, and prioritize consistently. They are discussed below.

Develop New Product Policies

Recommendation: Company-wide new product policies covering both product objectives and development procedures should be developed by top management. These procedures should be revised regularly to reflect any changes in the organization that impact its new product development efforts. Managers, task force leaders, and task force members should be informed about all policy elements that influence the effectiveness of their activities.
Within companies, individual perceptions vary concerning the types of products the companies are trying to develop, the procedures designed to accomplish these objectives, and the way in which particular individuals can best contribute to the success of the new product development. Additionally, since new product objectives and development procedures change over time, individual perceptions may become inaccurate (Pessemier 1975). Thus, companies should keep new product policies updated and articulate them in a fashion that creates understanding and consensus among the various participants in the new product process.

**Be a Leader**

*Recommendation:* Management should provide specific new product goals and visible leadership to the task force leaders and participants. The task force leaders must know to whom they are responsible concerning the project.

Apart from top management’s consistent dissemination of new product policies, vigorous and visible leadership plays an important role in new product development (Pessemier 1975). Interviewees commented at length that a lack of leadership at the business unit level resulted in confusion and reduced efficiency. In those business units where task force leaders received unambiguous goals and support from their managers, interviewees indicated that projects were carried out with enthusiasm, bureaucracy was minimized, and a strong sense of common purpose existed among the multiple organizational units contributing to the implementation of the new product. Duerr (1986) reports a case in which a business unit launched its new product development team with a ceremony, presided over by the principle executive of the business unit. Thus, management was visually committed—and the message to the task force was: “I am committed to developing the new product, the company is committed. We are putting money in the project, we are watching.”

**Keeping in Touch**

*Recommendation:* Management immediately responsible for task forces should stay personally informed about the status of new product projects. Managers should take an active hand in making sure that task force projects are being fully supported by the responsible organizational units.

In order to guide and evaluate a task force’s progress, management must keep in touch personally with the status of present and prospective task force activities (Pessemier 1975). This commitment requires significant amounts of time and energy. Interviewees in the study indicated that periodic progress reviews should be conducted with the task forces and the organizational elements that
contribute to the launching success of the new product project.

**Prioritize Consistently**

*Recommendation:* Prioritization assigned to new product projects should be consistent across all organizational units involved and correspond to the company resources available. The priority assignments should be endorsed visibly by top management and communicated directly to every department. This way, all organizational units are aware of, and committed to, the appropriate priority levels.

Perhaps most importantly, senior management must see that consistent priorities are set, that decisions facilitating these priorities are made, and that the necessary resources are provided. In a substantial number of interviews, a consistent prioritization of new product development projects across all organizational elements involved was identified as paramount to each project’s success and timely implementation. Indeed, whether new product projects involved departments from the same business unit or multiple business units, a consistent prioritization of the projects was the exception in the study. This difference in prioritization often led to various levels of commitment among the task force members and the departments they represented. By basing prioritization on sound market analyses, communicating the decision to every task force leader, and making sure that available resources match the assigned priority level, management can avoid new product development delays.

Task forces are very useful for coordinating new product projects in a time efficient manner. However, corporations can organize project coordination in numerous ways. In the following section, alternative forms of project management coordination are discussed.

**Newly Emerging Forms of Project Management**

The 20th century is the age of innovation. A constant commitment to flexibility is an essential part of being successful, and more importantly, to business survival. Today, task force management has established itself as a useful and commonly used new product coordination tool. Nevertheless, alternative forms of new product coordination have emerged as organizations have searched to shorten the cycle time of their product development processes. Among the organizations surveyed, 25 percent employ matrix teams, 24 percent utilize design teams, and 13 percent have established design centers. In the following, these forms of project management are described (Olson, Walker, and Ruekert 1995).

**Matrix teams.** Similar to task forces, matrix teams bring together a group of functional specialists to coordinate a new product development project. However, unlike task forces that maintain the primacy of the functional department structure, matrix structures coordinate activities by product and by function. Hence, a dual authority structure is created under which matrix
members are responsible to a new product manager and a functional manager. The structural attributes of a matrix structure require that matrix members report to both managers frequently and the decision-making process remains centralized with the managers. For example, a market researcher can be assigned to a new product development team and is responsible to both the product manager and the market research manager.

**Design teams.** Similar to task forces and matrix teams, design teams also assemble a group of functional specialists. However, unlike the other two coordination structures, design teams are more self-governing and have greater authority in choosing their own leader, establishing their own operating procedures, and solving team issues by group consensus (self-directed teams). For example, upon request of design team members, a market researcher may be temporarily relieved from the company’s market research department to help solve research problems in the design team.

**Design centers.** The design center is very similar to the design team. However, the center is a permanent component of a company’s organizational structure, and members are involved in multiple development projects over time. For example, consisting of permanently assigned market researchers and other functional members, a design team may be responsible for implementing a new product in foreign subsidiaries after developing the product and managing the implementation domestically.

**Characteristics of Project Management Coordination Structures**

Taken together, the coordination structures described in this study can be positioned along a continuum ranging from more simple structures (task forces followed by matrix teams) to more complex structures (design teams followed by design centers). Moving along the continuum, higher-level management authority becomes more decentralized and team autonomy increases. According to Olson, Walker, and Ruekert (1995), increased autonomy, lower centralization of authority, and fewer rules and regulations lead to more participative decision making and more consensual conflict resolution processes. Further, control and reward mechanisms tend to be more focused on specific project outcomes. As a result, members of design teams and design centers are more likely to share information across functional boundaries on a frequent and informal basis and are more likely to undertake independent tasks simultaneously rather than sequentially. Companies employing more organic coordination structures such as design teams and design centers have some important advantages in the new product development
process. Barriers between individuals and functional departments can be overcome by participative decision making, consensual conflict resolution, and open communication commonly found in such structures. In turn, an atmosphere is likely to develop where innovative ideas are presented, critiqued, and refined with a minimum of financial risk or social conflict. Moreover, unanticipated problems that arise during the development process can be tackled directly and instantly by those affected.

Conversely, design teams and design centers have some disadvantages. Creating and maintaining autonomous teams consisting of empowered and self-motivated team members who are able to operate independently is likely to decentralize corporate communication and leadership. In turn, informal communication patterns, participative decision making, and consensual conflict resolution are likely to be more time consuming and less efficient than centralized and bureaucratic processes. The question, then, is which coordination structures to choose. Only very recently has this issue been addressed empirically (Olson, Walker, and Ruekert 1995).

Based on the findings from the survey and in-depth interviews, support was found for the following suggestions put forth by Olson, Walker, and Ruekert (1995): If companies are familiar with new product concepts (e.g., product modifications), then less autonomous coordination structures such as task forces and matrix teams should be adopted. However, if companies have little experience with their new product concepts (e.g., new-to-the-world products), then more autonomous coordination structures such as design teams and design centers should be established.

**Checklist for Top Management**

Given the growing importance of new products and their timely development for the survival and growth of corporations, new product development must have top management priority. Though each organization is different and requires a different new product development cycle, some management principles apply to all approaches (Duerr 1986). The survey results, when combined with thoughts expressed by the interviewees, add up to a clear message as to what top management can do to develop successful new products and shorten development cycle times:

- **✓** There should be an overall orchestrator of the innovation process, someone responsible for making the innovation mechanisms work together.
- **✓** Senior management must be committed to structuring and managing the idea generation and project management processes. Commitment must be vocal, meaningful, and continuous.
- **✓** A company’s product policies must be well-conceived and thoroughly disseminated in every business unit. Specific new product goals must be assigned to each new product project.
- **✓** The lines of authority must be clear and centrally-controlled. Innovation and development will flourish most if management keeps personally in touch with the status of new product projects.
CTR in the New Product Development Process

Ideally, innovation processes should be led by Innovation Councils and Venture teams working under senior management’s sponsorship and drawing support from wherever in the company it is needed.

Project priorities must be consistent across all organizational units involved. The priorities must be endorsed by top management and communicated throughout the organization.

An atmosphere that encourages risk taking and rewards entrepreneurship must be in place. Formal incentive programs (monetary or non-monetary) are not required but recognition of good work is. So is the allowance for the failures that are unavoidable in any product development effort.

Given the growing importance of short innovation cycles, the new product development process must be clearly defined and understood. Allocating process ownership and formalizing the steps involved from idea inception to product commercialization are among the most important management responsibilities in reducing new product development cycle time.

References


Wheelwright, S. C. and K. B. Clark, 