- *Minimum changes*. Changes are often essential, but they "have dysfunctional impact if they are perceived as unnecessary, based on convenience, or have the effect of a surprise."

- *Unified project team*. This means that team members feel like a team, have a sense of belonging, work with a clear structure, and try to create a unified team image around the firm.

- *Better product and market definition*. This is the part of the mission statement that clarifies the market being addressed and the specific output needed from the project.

A subset of managers was asked about how organizational factors correlate with success. Here they cited three major areas:

- *Cross-functional cooperation*, especially the involvement of marketing with R&D and engineering, and information sharing between engineering departments.

- Having a *professional project*, stimulating and challenging, and with high visibility and top management support.

- The giving of *recognition* to project accomplishments, as they occur.

Rooting Out the Causes of Inefficient Product Creation, Michael S. Rosenberg and Bruce McK. Thompson, *Prism* (Second Quarter 1993), pp. 97–111

This article from an A.D. Little publication yields conclusions from a review of the firm's consulting assignments with various firms. They began their analysis with the common conviction that business is under pressure to reduce time-to-market, increase customer satisfaction, reduce manufacturing costs, and increase the efficiency of the technical development process.

They first sought the causes of each of these problems, individually. As the causes were often common and overlapping among the four major problem areas, they worked them into one common set—some of which are organizational, some process, some human resource, and some physical resources. The article shows which of the total set of twenty-four root causes relate to each of the four major problem areas, generally, but they recommend that any firm's managers should seek to find the ones they have and then work to improve them accordingly.

First we will see the twenty-four factors and then the process to apply them in a firm's situation.

1. Organizational causes

- Misaligned "unwritten rules of the game."

- Complex/ineffective management structure, such as with too many review committees or tendency to send tough decisions upwards.

- Awkward engineering organization.

- Unclear roles and responsibilities.

- Ineffective program management.

- Misdirected evaluation and reward system.

- Poor cross-functional communications.

2. Process causes

- Ineffective milestone structure/discipline. Waiting means process stretching, but going ahead often leads to rework. Customer may be omitted.

- Excessive hand-offs, poorly coordinated.

- Incomplete specification process, early and during development.

- Poor project screening mechanism, to reduce the number of active projects and thus engineering work-span.

- Ineffective process of understanding customer wants and needs—the market requirements, product definitions, attributes vs costs—especially latent needs.

- Unclear product strategy formulation process. Markets, products, timing.

- Poor trade-off analysis, or managerial leadership to pull it off. Quality-function-deployment.

- Lack of early manufacturing involvement that is truly cross-functional.

3. Human resource causes

- Lack of urgency, teams are too relaxed.

- Poor team-building skills, without which teams flounder.

- "Not invented here" syndrome, especially toward upstream sources.

- Lack of cross-functional understanding and respect.

4. Physical resources causes

- Excessive vertical integration, leading to missed outsourcing opportunities.

- "Sunk" investment, reluctance to abandon projects.

- Poor links to suppliers.

- Poor MIS planning and support, e.g., for computer-aided manufacturing.

- Inadequate tools, especially testing equipment.

The process for using this list of twenty-four root causes is to study a unit's new product system, its symptoms and its performance. This requires a task force, interviews of key people, working up a shared vision by the people on the task force, setting up of performance measures for the new product process, and assuring that clear new product strategy (corporate, higher-unit direction) is in place.

Second, the task force applies the performance measures, dissects and tracks the projects, and then does the root-cause analysis to find the causes of project problems that exist.

Third, the task force then needs to "identify improvement opportunities, set priorities for resource allocation, mobilize improvement teams, [and] quantify improvement potential." In short, one must *manage* the new product process just as one manages any other important process.

Commentary: Strategic Execution Process for Launching New Products, Stephen M. Verba, *Journal of Product and Brand Management* (1993, vol. 2, no. 2), pp. 18–32 (GPL)

Marketing new products and services in the information and high technology industries requires updated approaches, different from those developed primarily for mass-marketed packaged goods. This article theorizes such a system, based upon a new model of product consumption and adoption. It posits a new set of "rules of engagement" (ROE) to improve the odds of success.

The traditional ROE is built around a market paradigm of survival of the fittest; success of a new product is judged on the basis of short-term return. The proposed ROE would call for survival of the prolific; the spawning of even more adoptable offspring of the original one—line extensions, repositionings, relaunches, spin-offs, etc. This approach attempts to nurture a product family and category synergy, rather than focusing on single isolated products, confined to single categories.

The organizational approach under the traditional ROE is built around SBUs, which often promotes narrow product-based efforts with a staff of unique and narrow specialists. Under the proposed ROE, core competencies involve the collective learning in the organization, notably how to organize various production skills and integrate multiple streams of technologies. This would promote synergies and a reservoir of shared talent rather than isolation and autonomy among SBUs. Understandably, such a paradigm shift would be difficult because it affects the whole corporate culture.

As an example, the audiotext industry followed the traditional ROE, whereas the videotext category (characterized by Compuserve) has evolved under the new ROE. Synergies between related products have been exploited by bundling them.

The proposed ROE therefore calls for a different new product development process. It would be less logical and sequential, less concerned with principles about what happens when a new product or service is launched. Whereas the traditional approach is dominated by an obsession with empiricism, seeking always to establish new and better numbers via projectable data to feed the business case, the new paradigm places far greater emphasis on understanding, meaning, and communication, generating numbers as late as possible. The new process would have four unfolding phases.

Phase I, category structure design, replaces traditional concept development. The structure of the relevant category is examined so as to define the category the way consumers, not the trade, define it. As wide a set of data sources as possible is used, including various types of qualitative market research techniques (discussed briefly in the later part of the article). The search is for underlying structures that drive demand.

Phase II, prototype testing cycle, replaces the traditional concept test. There is a series of prototype tests, emphasizing early, rapid, and sustained proto-