

Speeding Time To Market

Concurrent Product Development Offers Competitive Edge

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It has become increasingly evident that the competitive advantage in new product development is having a framework in place that can bring new ideas to market faster than the competition.

It is no longer the case that "time is money"—it is *more valuable* than money. And to make the most of time, it is necessary that Cycle time reduction is dependent on *quantitative measurement* of processes. This means old-fashioned "over the wall" development processes--successive "hand-offs" of projects between functional groups--are inadequate in today's fast-paced, high technology product development environment.

The walls between the disciplines have broken down in favor of a team approach to product development, with each manager and stakeholder cooperating from the earliest stages of the project to ensure high quality, low cost and timely delivery. In short to stay *current*, you must become *concurrent*.

These realizations have led to a number of new tools, techniques, and buzzwords over the past few years: "QFD," "Concurrent Engineering," "Teaming," "Reengineering," to name just a few.

Practiced in isolation, no single one of these approaches can ensure cycle time reduction and product success. It is necessary to address the entire scope of the product development process to create an integrated, measurable, and realistic process that moves beyond theory, into the reality of an organization.

To successfully implement Concurrent Engineering there are eight areas to consider: Driving Forces for Speed, Baseline Change With Metrics, Structured Concurrent Development Processes, Selecting Products Effectively, Creating Concurrent Product Development Teams, Defining Products, Reviewing Designs, and Creating Replicable Environments.

Concurrent Engineering is defined as a systematic team-driven approach to define, develop, produce, test, service, and document the rapid development of new products.

The Driving Forces for Concurrent Product Development resulted from new knowledge in the 1980s which showed that many companies were making new product development decisions that ignored several important competitive factors such as the rapid decrease in product life-cycles, increase in global competition, and the consolidation of less competitive companies.

A number of studies showed that roughly half of all new product development investments resulted in products that failed. It became clear that time-to-market is more financially important than all other considerations in launching successful new products for most companies.

To win the race to the marketplace, researchers learned that a full complement of cross-functional resources must be working within the first 15-25 percent of a project to consistently achieve successful new products. Better data on the true costs of engineering change orders has subsequently reinforced these findings.

Most management teams have little disagreement about the importance of new products. Disagreements lie in the different views about company strengths and weaknesses and where responsibility should be vested in directing and implementing improvement.

Improvement programs are most effective when they begin with a consensus among the employees and senior management, based on a factual analysis of the "performance baseline." The Baseline is a set of Metrics and Measures that define the current performance of product development activities. The number



of different measures necessary to initially characterize performance is often surprising. In the long run, ongoing metrics should consist of a balanced set of process and product metrics and measures, applied early and often to critical product development activities.

The new product pipeline consisting of generating ideas, turning them into the right concepts, proving feasibility, and funding the best products from the right feasible concepts are business-critical issues. Every company hopes to have 40-70% of its revenues from products that were developed and launched within the past three years. The rate and way companies process ideas through their “idea factory” distinguishes them in the marketplace. It is not only necessary to develop approved products rapidly, but companies must initially get the right ideas into the pipeline at an ever increasing rate. Two “Company Filters” have proven effective in Selecting Products Effectively. The filters focus on product goals, financial results, risk, time management, responsibilities, required reviews, trade-off analyses, and decision making metrics.

Picking the project

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No new product development program should be undertaken without a Structured Development Process consisting of phases and milestones to guide the process.

Effective product development processes must balance the needs of creative people with the realities of time and profit management. Since the 1980s Phase-Review processes (sometimes known as stage-gate) have been gaining acceptance. They define discrete and identifiable development stages or phases, typically five to seven in number. Results produced at each phase must be sufficient to move the project to the next decision point.

The product development process should facilitate Concurrent Engineering and be robust enough to readily adapt to projects with higher research content, platform-based products, and derivative or incremental products. The process model has to support all new product development needs, all the time.

Building the Team

Implicit in Concurrent Product Development is the early formation of Core Teams defined as those members whose involvement is critical to the achievement of the product specifications and business plan.

Timing of team staffing is crucial to success. Full Team staffing should be achieved about 20-40 percent of the way through the project. If a “Contract” is properly made with management, so that teams are empowered and authorized, then teams can achieve results individuals cannot achieve working alone.

It is important to note, when the results of the product development launch meet or exceed the “terms of the contract”, it is then time to practice “recognition” and possibly financial rewards.

Lessons Learned



Several studies have shown that the major reason for poor product results is due to the poor Product Definition of product requirements. It does not matter whether the company is: (a) an R&D company, where the company creates markets, or (b) a customer driven company which meets customer needs. Poor product definition is the most frequent cause of bad outcomes.

Studies of best practices for product definition from leading companies have resulted in a prioritized list of factors which, if applied correctly, will positively influence product outcomes. This information helps to organize teams to carry out successful product planning and definition and to remain focused throughout the development effort.

A Phase-Review process that includes a variety of peer Design Reviews held at points that can influence the design process is a key technique.

Specifically, aim design reviews at reducing risk, improving the management of knowledge, and minimizing or eliminating defects in the product and process design.

Examples of design reviews at best-practice companies plus lessons learned from Department of Defense programs will help define the purpose, scope, style, and frequency of effective design reviews for any project.

Finally, experience in creating Replicable Environments has resulted in a proven implementation program that sets quantitatively baselines, assesses strengths and weaknesses, and identifies key improvement opportunities.

Such a base enables a groundwork for rapid design of new processes and pilot programs, and can be used to spread the model across all projects and throughout the enterprise.

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