



# The High Powered Product Engine

New Product Development Challenges for the 21<sup>st</sup> Century

By John Steidl, Client Solutions

As the race to respond to global market demands increases, corporate America is feeling the pressure to perfect the product development process. Development portfolios have become more complex and executives are scrambling to manage projects and keep them on track. There is little room for error in this fast-paced environment.

Let's take for example an executive at a top automotive supplier who recently discovered a critical challenge with the ability to determine the market value or future potential of the products in development. Upon receiving a customer's innovative new product idea, the executive began to consider the impact this product would have on a very competitive automotive parts market. Instinct told him that this was a huge opportunity for his company; however, he could not put a dollar figure on the product's future value or determine the risk involved with its development. He also worried what one more project would do to an already overflowing development portfolio. He wondered if he should go ahead with the project, putting a further drain on resources that were already stretched beyond limits. Or should resources be pulled off of other projects, and if so, which ones?

Corporate executives around the globe are increasingly finding themselves in similar situations. They have little idea of how many projects are underway within their companies, how long they have been in development, or what their financial payoffs might be. It is not surprising that as product designs become increasingly complex and time-to-market windows shrink, the traditional product development approach becomes less effective. Indeed, a primary reason companies miss revenue targets is due to new products that are either not delivered quickly enough to capitalize on market demands or do not effectively meet customer needs.

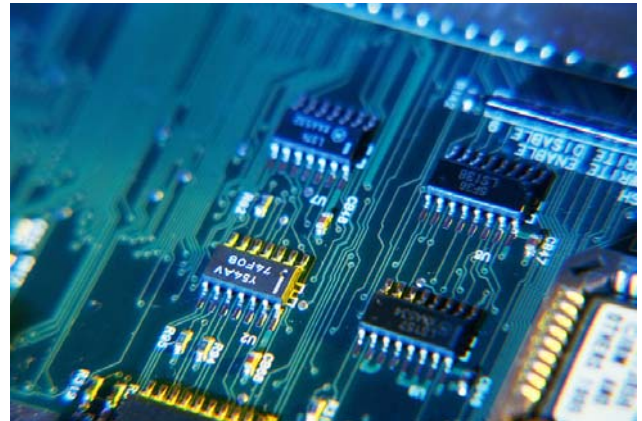
## A Changing Market

As the Internet has changed the way the world does business, it has also affected product development activities. For example, the traditional housing of engineers in one central location is becoming less common; many of today's corporations handle product development globally. And the need for fast response to market demands has never been

greater. Stan Davis and Christopher Meyer, in their book *Blur*, accurately noted, "This need for Speed of Response in today's business environment puts a premium on systems that can operate in 'real time.'"

Unfortunately, the need for speed does not always materialize into the ability to successfully meet demands for a fast response time. According to a survey by The Conference Board, a business membership and research organization based in New York, fewer than half of the companies surveyed were able to convert their speed effort into higher revenues and better customer retention.

## An Uncertain Process



Traditional approaches to project management assume that new developments can be scheduled and staffed with precision. But because development contains an element of creativity (i.e. uncertainty), it is difficult to identify how much a project will cost, how long it will take, and how many people need to be involved. Furthermore, once a project is started, changes invariably occur making it difficult to set expectations and measure results.

Another significant cause of uncertainty in the development process is the lack of uniformity with both projects and resources. Projects that are not uniform cannot help predict the behavior or outcomes of each other so the results are difficult to measure. Additionally, the success and cost-effectiveness of a project ultimately depends upon the skill level of the individuals working on it. One team of five engineers may accomplish in one year what it would take another team two or three years to complete.

An organization with a large number of development projects in the works across several product lines will often find little commonality beyond the functional expertise required for each. Since the types of projects vary widely, it is challenging to develop process and portfolio measures to monitor what is happening. This is further compounded by a lack of resource homogeneity, particularly as different projects compete for the same human capital. Frequent changes to the portfolio will cause a need for review and rescheduling. However, when this is not done sufficiently often, management of such a large number of projects can be difficult if not impossible.

A lack of early feedback and *intelligence* that enables management to respond quickly to changes can have a devastating effect on a company's competitive positioning. Take an elevator building company that launched a program to design a set of doors for their new line of elevators. In the validation phase, they learned their competition had released a new set of doors superior to their own and at half the price. The project continued unchanged for a time before being modified to produce a competitive set of doors. By this point, however, it was too late and a new project had to be launched in order to *leapfrog* the competition.

**Aligning the Portfolio**

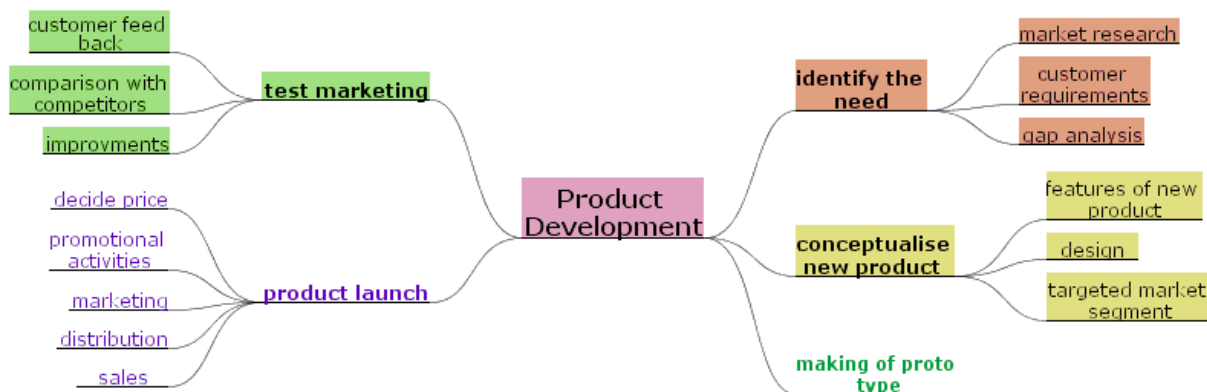
While not all projects can be winners, the overall portfolio return must be maximized. Constant vigilance and regular portfolio analysis is a necessity to meet strategic objectives and achieve a future value consistent with corporate goals; however, lack of alignment with strategic direction is a much more common problem than most companies realize.

This was the case with the tier one automotive supplier developing an innovative strategy for market leadership in integrated high-end dashboards. The company possessed much, if not all, of the subsystem expertise and the new strategy was well-aligned to the evolving automotive OEM's desire to reduce suppliers. A portfolio analysis revealed, however, that two of the three largest active development projects were not aligned to the new strategy. How did this happen? Fundamentally, this was the result of inadequate senior oversight of key portfolio decisions and the management processes that led to those decisions.

**The Response System: Too Little, Too Late**

Management often seeks feedback close to the end of the product development cycle when problems are readily apparent but difficult to repair. The response is usually to move resources from other projects to fix the problem, creating cost overruns and further portfolio instability. The problem time and time again is that management responds too late into the process, making attempts to fix the problems difficult and expensive.

A chemical company that develops high performance mixtures used in industrial photolithography provides another example. During qualification for a major electronics account, they discovered that their product was unable to meet a 90-day shelf life specification. Although the chemical company mounted a monumental last-ditch effort to resolve the problem and save the account, it was revealed that the cause of the problem occurred early in the development (it related to testing and qualification of an organic raw material used in the mixture. The qualification process step had been omitted in



order to accelerate time-to-market.) Since the problem was not identified in an earlier phase review, disaster had resulted. The problem was solved six months later, but by then the chemical company had lost prime vendor status.

## Toward a High-Powered Product Engine

What is the answer to uncertainty and unpredictability in the product development process? How can a typical company achieve the speed and responsiveness necessary to consistently introduce the right products, on time, on budget and at target cost?

Begin by standardizing the development process to make it more robust and stable. Most companies have made significant strides to improve project management, but many still treat development as a group of unique projects with limited process discipline. Stability and predictability require a standardized process.



Make this disciplined process collaborative and cross-functional by bringing in the relevant players at the point they can make the greatest impact. This includes everything from

marketing involvement in key product and feature decisions, to manufacturing involvement in design for manufacturability reviews, to clear rules around component sourcing for new products. Focus especially on decision processes, since the most important cross-functional collaboration tends to revolve around these. Which projects, which features, which trade-offs, which suppliers, how to manage key risks, and when to kill a project are all critical decisions that need to be made cross-functionally. A well-structured collaborative framework becomes even more important in organizations with development resources spread across multiple locations.


Consider customers and suppliers to be extensions of your enterprise when designing a collaborative framework. Understand where they can have an impact, and be sure to include them. This might involve membership in cross-functional teams to address specific issues or decisions.

Measure the right things. It is actually possible to increase the speed and predictability of the process, while simultaneously reducing cost and risk. But you need to measure and manage all of them, or you are likely to find you have improved one at the expense of another.

Establish a permanent, cross-functional management framework to drive continuous improvement in the development process. Set an aggressive goal, such as a 30% reduction in time to market over a one-year period. Analyze the process to identify the key barriers and re-design the process to eliminate them. Once you've hit your initial goal, set a new target and repeat the process.

And continually assess the portfolio. Determine which dimensions are important for portfolio balance and regularly analyze the portfolio from this perspective. Establish strategic, financial, and resource filters and define a project *start* process that ensures these are met for all projects. Make explicit decisions not only about which projects you are going to do, but also which you are *not* going to do.

## The Future Belongs to the Fast

Never before has responsiveness in the development process been such a crucial element of competitiveness. Companies that successfully implement the principles we have outlined here will achieve levels of performance that reflect the difference between market leadership and slow death. 

## About the Author

John A. Steidl is responsible for client solution architecture in Thomas Group's commercial practice. During 15 years with the firm, Mr. Steidl has designed and implemented a wide range of performance enhancing solutions for clients in industries from automotive to consumer electronics to health care. As part of his role in providing expert advice on business process innovation and the deployment of enterprise process management, Mr. Steidl focuses heavily on building multi-stakeholder collaborative frameworks to drive transformational change in complex organizations. Prior to joining Thomas Group, Mr. Steidl held a variety of finance and marketing management positions in the semiconductor industry and holds a Bachelor's of Arts degree from Wesleyan University and a Masters degree in Anthropology from Harvard.