

About the Newsletter....
The AMGI Newsletter is published periodically and will focus on practical content in the areas of Strategic Trends, Business Transformation, Collaborative Product Development, Managing Change and Enterprise Management Systems. We will use our extensive international connections in industry, consulting, academia, Universities and professional association (SCPD, IMechE, IEEE, ASME, SME, CAMC) etc as well as our own consulting experience to keep you abreast of Strategic

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Collaborative Product Development Trends & Analysis

Web-Based Product Development: Seeking a Competitive Advantage

(This article on Web Based Product Development was first published in the SCPD November 2001 Newsletter By Scott J. Edgett and Dave Erlandson of Sopheon Company an international provider of software and services to life science and technology companies)

Challenges within the Product Development Processes

Introduction

The product development process, from concept to launch, is especially complex, with numerous potential pitfalls. Resulting new products are usually only successful if each stage in the process has been followed, with necessary tasks completed and thorough research undertaken at every step.

In a three-part article, we'll examine the new product development process, the common causes of new product failures and steps to increase your success. Part one will focus on challenges facing new product development processes. Part two will review what separates products that are successful from those that are not. In part three, we will examine use of web-based technologies to improve success rates by automating successful NPD processes.

Common causes of new product failures include inadequate market competitive analyses, poor internal communication and weak product definitions. These weaknesses can lead to mismatches with customer expectations, technical or production problems, product defects, higher than anticipated costs, or mistimed market launch.

NPD processes must be completed as rapidly as possible since business competitiveness is shortening most product life cycles. A new product rarely has a life of five to ten years. Products compete for the same customers, or are superseded by superior products. Improving speed-to-market places substantial pressure on NPD managers.

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Web-Based Product Development: Seeking a Competitive Advantage (Cont'd)

However, the rewards are great for companies that launch winners. On average, products not sold five years ago now account for a staggering 50 percent of company sales. A study of 203 representative US product launches shows a return of 96.9 percent on investments in successful new products, with an average payback period of 2.49 years, and an average market share of 47.3 percent in identified target markets.

The New Product Battlefield

The advent of the Internet and globalization opens up world markets to many companies. Any company has to compete with domestic and foreign players, wherever it chooses to operate.

In addition, market conditions are never constant. All areas of technology are developing rapidly, and customer needs, wants and preferences change regularly.

Change is a staple for companies that design and manufacture consumer technology goods, like mobile phones. The technology behind mobile communication devices is changing so quickly that only weeks after the most technologically advanced phone has reached retail shelves, it is unfashionable, with consumers looking for the next product iteration.

Unfortunately, in the quest for development speed, many companies have been cutting corners and omitting critical activities. Other organizations have embraced speed-to-market, but have been smart in doing so. Smart

companies have worked hard to streamline processes or remove activities that do not produce value. They have also created decision gates that operate in NPD time vs. calendar time.

The Project Management Challenge

Too often, cutting-edge companies seek success by having multiple teams working on multiple new products or versions of new products simultaneously. For example, Dr. Robert G. Cooper notes in *Winning at New Products*, "as product version number 1 is hitting the market, its replacement, product version number 2 is already in development, and product version number 3 is waiting in the wings for a go-to-development decision."

Smart processes raise the odds of maintaining healthy product portfolios and providing for sustainable competitive advantage, but they also increase process complexity. It is more difficult for managers in charge of business strategy to keep track of everything under development.

Reducing the time to get a new product to market must not result in improper project management. New products stand a better chance of making it to market and succeeding when they get there if well-defined new product development processes are in place. Decisions are then factually based, and plenty of homework has been conducted.

Typical Problems within a NPD Process

1. Unstable product development processes.

2. Difficulties in managing multiple projects.
3. Difficulty co-ordinating efforts among global work teams.
4. The continual need for efficiency gains within NPD processes.
5. Inconsistent process measurement.
6. The inability to deliver timely information on portfolio analyses to executives.
7. A lack of sharing and/or information reuse.
8. Constant turnover and/or training of new NPD personnel.
9. Lack of productivity due to document preparation for gate meetings.

At present, product successes are inconsistent. The failure rate for new products is high, resulting in many wasted company resources. Studies report that only 59 percent of new products launched are successful, and about 46 percent of the resources invested in the development and launch of new products is squandered on products that never make it to market or fail when they do.

Some companies, however, enjoy success rates of nearly 80 percent, while bringing the same number of new products to market as less successful companies. Top performers generate nearly 50 percent of the overall sales and profits from new product offerings over a five-year period. These companies spend only 20 percent of their new product development resources on losers. Part two will review what separates products that win in the marketplace from those that do not.

Public Press – Collaborative Product Development

The Technology Productivity Puzzle

The following article should be of interest to those product developers and Engineers who have questions about technology's role in organizational productivity. The assumption that the former always increases the latter is challenged. This writer's opinion is, in part, supported by work at McKinsey, referenced below. If you have an opinion about the subject, and would like to share it, please drop me a note. If you have information sources which may elucidate technology's role in organizational productivity, I'd appreciate learning what they are so I can share them with members. This is an important topic, and one which creates considerable conversation within the IT and NPD functions.

The basic promise of technology is more efficiency and greater productivity. However, links between more technology and more productivity have historically been weak. As the 1990s progressed, we were told that had changed. Technology had reached critical mass within organizations, the reasoning went. We were finally seeing a surge in technology-fueled productivity. A recent McKinsey report differs.

The report entitled, "U.S. Productivity Growth 1995-2000, states that, "Contrary to popular belief, our research shows that IT was only one of many factors causing the post-1995 productivity growth jump." According to Bill Lewis, director of the McKinsey Global Institute, "There was a big jump in capital spending on IT and a big jump in productivity in the (American) economy as a whole at the end of the 1990s. But the actual correlation between the two is very weak."

The question becomes: if technology is not driving productivity, then what good is it? For a long time we have been sold a technology-driven world of efficiency and leisure. Back in the 1950s, we were promised a 3-day week. But the facts show that we are working longer hours than ever. We were promised the "paperless office." But we have never produced more paper, and it's rising every year.

Thomas Landauer, in his 1995 book 'The trouble with computers,' pointed out that computers had not contributed nearly as much to labor productivity as had been hoped, and that the efficiency of computer applications had been poor.

During the period between 1973 and 1993, American productivity growth was half that of the period 1950 to 1973. While the oil crisis of the 1970s adversely impacted productivity, the period 1973-93 saw a huge investment in technology. Morgan Stanley's Stephen Roach wrote a paper in 1997 entitled "The boom for whom: revisiting America's technology paradox." Roach pointed out that between 1990 and 1996 alone, \$1.1 trillion was invested in IT hardware. However, he noted that much spending was a process of running to stand still. "Sixty percent of annual corporate IT budgets," he wrote, "go toward replacement of outdated equipment and increasingly frequent product replacement."

Tid Bits -- Project Risk Tip

Typically today, a company has a stages-and-gates development process, and the first stage requires that the team identifies and documents the project's risks. Because this is a required deliverable, it happens, and the risks are discussed at the first project review. However, this is as far as it goes, and the risks wait like a time bomb in the project file. The development process doesn't call for analyzing the risks, prioritizing them, or taking action against them.

All of the benefit of project risk management stems from these later steps, which seldom occur. Worse, when the identified but unmanaged risks start happening later in the project, it is embarrassing to the team and management to see that they had identified this risk but then done nothing to prevent or prepare for it. It would have been better to not have even identified the risks initially than to set themselves up for this embarrassment. So, don't get caught in this middle ground. Either ignore project risk management altogether or complete the risk management process, even if only for a few of your largest risks.

Deep Six for 6 Sigma....

A program that encourages slow and steady growth is good "for fixing problems, not for innovation," says one observer.

Stephen Taub, CFO.com -- May 18, 2004

The relevance of Six Sigma, the corporate efficiency program made famous by General Electric, is being questioned by none other than one of its creators.

Jay Desai, who helped implement Six Sigma at the conglomerate, said in a recent Reuters story that when companies must demonstrate change through new products every couple of quarters, companies need to move beyond the 20-year-old method in order to compete. "Six Sigma does not create innovation," he told the wire service.

Reuters noted that some of the largest companies still swear by the program. In a statement, Caterpillar chairman and chief executive officer Jim Owens said that "virtually all" company employees are involved with the program and that Caterpillar boasts 2,700 trained Six Sigma "black belts."

And Joan Abraham, a manager for the Six Sigma Academy, told the wire service that the training academy has seen "an expansion to mid-size companies, small companies and even private companies."

Reuters pointed out, however, that the program encourages slow and steady growth while investors want top-line growth fueled by new products.

"If Lucent applies Six Sigma, they die," said Desai, referring to the telecom giant trying to revive itself after racking up \$30 billion in losses and suffering through an accounting scandal. "Six Sigma is not a solution for new products or a breakthrough strategy," added Desai, who currently runs the Institute of Global Competitiveness, a management think tank.

"We've looked at Six Sigma," said Lynn Mercer, Lucent's vice president of quality, according to Reuters. "It would be an excellent tool set, but it's too narrow a focus and rigid to allow some of the innovation, where some of the creativity occurs."

And Michael Hammer, founder of management education firm Hammer and Co., insisted in the story that Six Sigma's focus on the bottom line is its biggest drawback. "Six Sigma will get you to parity, but not ahead of your competition," he told the wire service. "It's for fixing problems, not for innovation."

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