PRODUCT DEVELOPMENT
Best Practices Report

EXPERT INTERVIEW with Preston Smith:
Faster, Better, Cheaper Not Always The Best Policy

In 1991, when Preston Smith and Donald Reinertsen published their best-selling book, *Developing Products in Half the Time,* thinking about cycle-time reduction as a key strategic lever was just starting to hit center stage. That was the period Tom Peters dubbed the "Nanosecond Nineties" in his then-popular video, *Speed Is Life: Get Fast Or Go Broke.* Times have changed, says Smith. And in the process too many executives responsible for product development decisions have bought into a misguided notion that cycle-time reduction is, by itself, a universal panacea. As the authors prepare to launch a new edition of their book (published by Van Nostrand Reinhold and available in bookstores later this month), we caught up with Smith to ask him about what's changed:

BPR: Despite the title of your book, you raise some cautions about the relentless, unthinking pursuit of better, quicker, cheaper. What are those cautions?

PS: *"When the original edition appeared in 1991, few managers were thinking of rapid development as a competitive weapon. Now, most managers seem to believe that time compression is always to be pursued, along with quality and low cost. But time to market is not a universal solution to product success. Instead, it is a set of tools that have both their value and their cost. Every manager and developer should be aware of the tools but apply them only when their benefits exceed their costs. The final measure is profit, not speed. For each development project, the blend of speed, quality, and cost will be different. Unbridled pursuit of speed and product proliferation will drive you into the poorhouse, as we have seen with much of the Japanese consumer electronics industry."*

BPR: Who needs to read your book these days?

PS: *"Anyone who is involved with the development of new products. This is not an engineering, a marketing, or a manufacturing book, but it involves elements of all three. Most companies will find that the biggest opportunities for improvement lie at the interfaces of these functions. Because we have seen the best adoption of these techniques in companies that train everyone who touches a new product, we have arranged with the publisher to offer the book at attractive discounts to companies that buy it in quantity.*

"I have great difficulty listing in a few words the industries to which the book applies, because it fits most industries, from mature ones, such as food packaging and consumer durables, to high tech ones, including aerospace, computers, and medical devices. The only limitation is that there should be some science or engineering in the product itself, although insurance companies have used it for their 'products.'

"The real question is not whether the industry or market segment is a fast or a slow one, but rather how quick your company is relative to its competitors in meeting customer needs. Chrysler is beating its competitors in a very established, high-inertia industry by using time to market effectively."

BPR: What is strikingly new in the new edition?

PS: *"Nothing is strikingly new; the original formula has proved to be remarkably durable. The 'New Rules' that now appears in the book's title refers not to new rules in the book, but instead to new rules in the marketplace that have made time compression a more valuable and sophisticated competitive weapon.*

"Although the skeleton remains the same, the treatment of each of the fifteen chapters has matured and broadened considerably, and there are plenty of new tools. For example, our experience since the first edition has convinced us that the economic tools (cost of delay) in Chapter 2 are the very foundation of rapid product development, so these tools are more thoroughly integrated into the other chapters. And Chapter 2 is now much more useful, with information on keeping the economic model simple, and how to expand it in certain circumstances, such as long-life products and interacting products. The chapter also shows how

to do a 'sanity' check on the model.

"Chapter 4 (incremental innovation) in the new edition gives equal treatment to both the pros and cons of innovating incrementally, so readers can apply this tool wisely. Chapter 5, on product specifications, is now far more customer-focused and includes better guidance on quality function deployment. Chapter 7 has valuable new information on motivating development teams, Chapter 8 expands on dispersed work groups and virtual co-location, Chapter 9 shows how to design fast processes and integrate technology tools (for example, computer-aided design) , and Chapter 12 provides a comprehensive approach for managing project risk. Readers will find about 50 percent new material in every chapter, while maintaining the complete book at its original length, for ease of use.

"Besides increased emphasis on the cost of delay as the foundation, you will notice stronger attention to synergy in combining the tools. Product development has become more demanding since 1991, so using a few isolated tools no longer provides sufficient competitive advantage. We have also provided more material on software development, which in many ways is quite similar to hardware development, although many programmers would emphasize more the differences with hardware development. Because the book in many cases has become a dog-eared reference for developers, both the table of contents and the index are now more comprehensive, and icons in the margins direct readers to key points."

BPR: You argue for buying cycle time at the right price; how do I know the right price?

PS: *"You will not get past Chapter 2 without knowing how to make and check these calculations. And if you try to skip this chapter, you will be nudged gently back to it."*

BPR: Aren't the rules fundamentally different for different sectors?

PS: *"Yes and no. Certainly, one's approach to managing risk or surveying customers is quite different when developing an airliner than when doing a computer mouse. Hewlett-Packard's ability to co-locate a development team differs radically from that of a start-up company. This is why we operate at the level of illustrating the advantages and pitfalls of a variety of tools, so each organization can select and modify tools to meet its own needs.*

"But at its roots, this subject gets down to changes in operating styles and human behavior and attitudes, which carry across all sectors and countries. This is why we highlight areas that are likely to require cultural changes, and we provide a whole chapter (Chapter 15) on making these changes. Although we have written the book modularly, so that the reader can easily pick and choose, my own experience is that the topics that often seem most insurmountable for a particular company are precisely the ones that are likely to have the most potential. So I try not to lose sight of these in a particular setting, even though it is easy to dismiss them. These 'growth opportunities' are unique to each company in its journey toward improved product development."

BPR: You're an advocate of disciplined continuous learning from projects and to improve the process. What's the issue here?

PS: *"Precisely because each company is at a different spot, the richest sources for possible improvements in that company come from its own experience. Just as a company will never become a leader by copying its competitors' product offerings, it can never have a leading development process by adopting the 'best practices' of others. A development process that arises from continuous learning will be the most efficient approach for a given company, it will be a competitive advantage that cannot be taken by its competitors, and it will prepare the company to deal better with changes in the competitive environment through the process' built-in flexibility."*

BPR: Doesn't this call for longer-term commitments than most organizations are willing to make in the Nanosecond Nineties?

PS: *"Yes. However, companies that intend to be leaders in the next century— such as Black & Decker, Chrysler, Hewlett-Packard, and Toyota—are making these commitments today. I can see a real difference within my client base of the companies that make these commitments and those that don't; my client list will look different in a few years!"*

BPR: How do you begin to implement a cost-effective, disciplined, value-adding, and non-punitive approach to organizational learning from product development activities?

PS: *"To have any staying power, the program needs to have the leadership and backing of upper management. It will have its cost, simply because any effort put into reviewing and improving the process will have to come out of effort that could be put directly into developing products by the same people. This is essentially an investment in the future, but an investment that I see our better clients making. There is no doubt in my mind that the investment has great long-term financial payback, and management can decide how much they wish to invest.*

"To make the process 'disciplined,' and to help process review become an expected part of doing business, it is important to review every project (above a certain threshold in size). This will also help with the 'non-punitive' aspect, but the key here is to focus the reviews on the

process, not the individuals executing it. A good facilitator during the early reviews can help keep the attention on the process. Companies such as Intel and Microsoft have built a culture that allows people to be quite critical of the process without devaluing the people involved."

BPR: Metrics: what are some common mistakes you see organizations making?

PS*: "Metrics often get connected with benchmarking: companies try to measure themselves against other companies. Product development is so variable—even among projects within a company—that trying to compare between companies is likely to lead to so much noise that the comparison will have little value. And, as I've already suggested, comparing oneself with another's past performance is bound to make one a follower.*

"I suggest looking at two distinct classes of metrics. One is long-term trends that allow a firm to measure its improvement by filtering out the project-to-project variation. Hewlett-Packard's vintage charts (adapted in Figure 1-2 of the new edition of the book) are a perfect example of a metric that HP has been using in a constant format for over a decade to track progress toward a corporate goal.

"The second class is short-term metrics aimed at specific problem areas. In the book, our HP example of such metrics involves how its management monitors model shop queues so that it knows when it needs to add capacity. The mistake often made here is to mix these two classes; then, either definitions of the long-term metrics shift before they can show trends, or the more tactical metrics lose the flexibility they need for day-to-day management corrections."

BPR: If there was one single thing you'd urge product development leaders to keep in mind about metrics, what would it be?

PS: *"Start by being clear about where you want to go and why. As that great corporate strategist, Alice in Wonderland, learned: 'If you don't know where you want to go, any metrics will take you there.'"*