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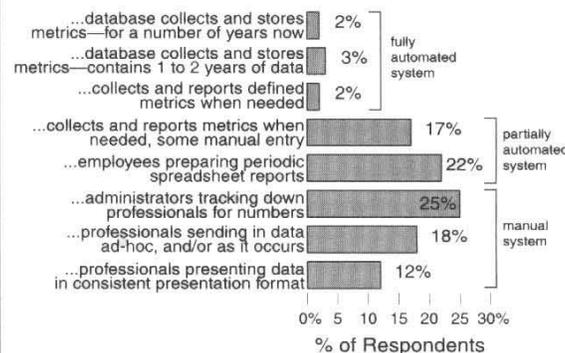
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New Study Reveals How To Improve Product Development Metrics

Despite the time, effort, and money engineering managers expend creating product development metrics, it seems they're not getting the "biggest bang for their buck." In fact, a leading product development authority, Bradford L. Goldense, president, Goldense Group, Inc. (Cambridge, Mass.; 617-876-6776), dismisses the current state of new product development

Product Development Metrics Remains a Predominantly Manual Systemsee page 1



(Source: 1998 Product Development Metrics Survey)



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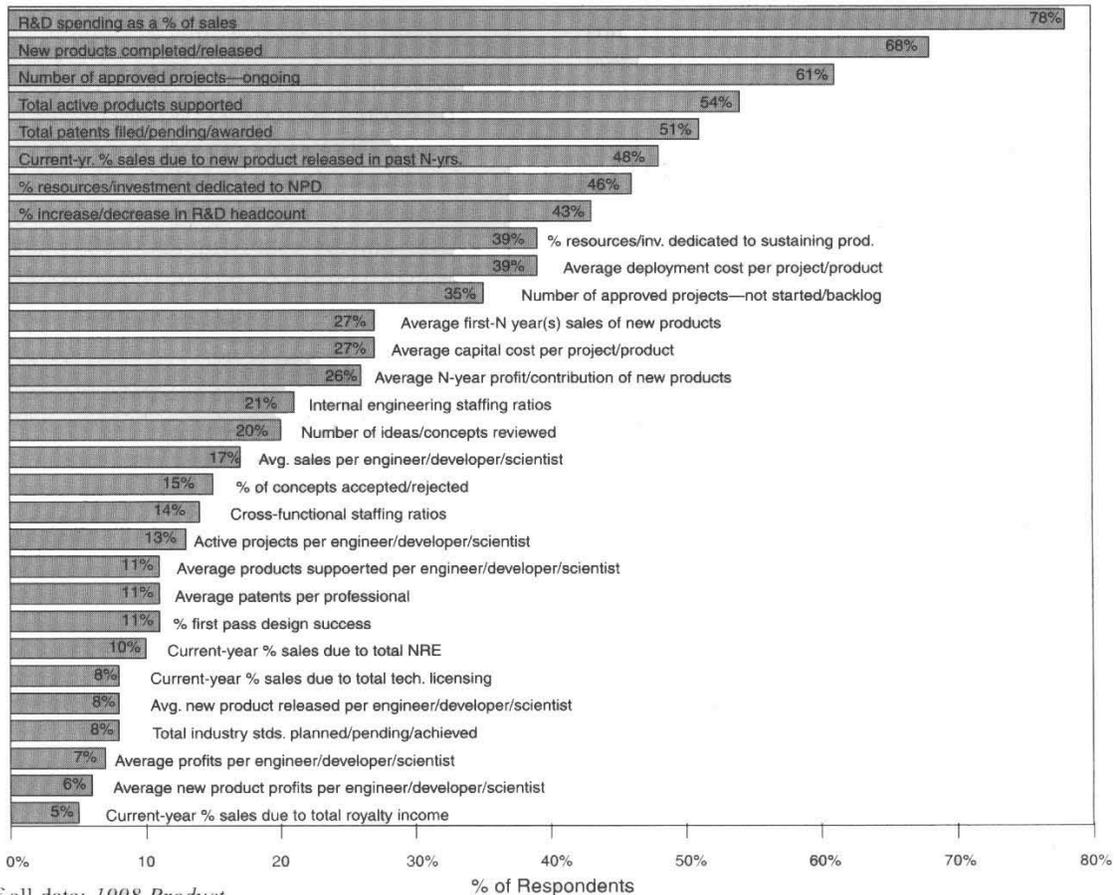
metrics applications as being “relatively immature in the types [of metrics] employed. The same can be said for the quantity and volume of metrics tracked, and form and manner in which they are collected and monitored.”

New survey findings should sound an alarm for engineering management. Goldense concludes in the *1998 Product Development Metrics Survey*, a research project he conducted

in affiliation with The Management Roundtable (Lexington, Mass.; www.ManagementRoundtable.com) “Product development metrics have an insular quality, with little direct tie between what gets measured and larger business concerns.” As an example, he observes—industry still generally measures cost rather than profit/contribution. As an example, he cites R&D expense vs. an R&D investment.

The approach remains largely reactive, “even at the strategic level,” he notes. “Once the strategic decision is made to approve a product/project for development, the tracking metrics are tactical and infrequent. There remains a great deal of uncertainty regarding the outcome until well

Figure 1. Product Development Metrics Focus Primarily on Project Measurements, Less on Profitability



(Source of all data: *1998 Product Development Metrics Survey*)



after product launch," he charges.

Metrics systems are still in a developmental stage. In most companies, Goldense explains, "metrics are not centralized, or tied together in a coherent system and at a sufficiently high level in the organization."

"Rather than possessing one automated, coherent system for measuring product development, industry has allowed a whole range of dissimilar, ad hoc systems to emerge at a low level of automation," he declares (see cover illustration).

Product development metrics still follow corporate-level reporting rules. "Product development has not yet found a system of measuring, reporting to and optimized for its natural cycles," he explains. "Rather than reporting on stage/gate milestones, product development is still turning up numbers on a monthly or some sort of calendar cycle."

The survey confirms this belief. "Monthly" is the periodic interval that one-half of the respondents say they report. The next highest (22%) respond "quarterly." None, however, report metrics "continuously."

Engineering management not focusing on

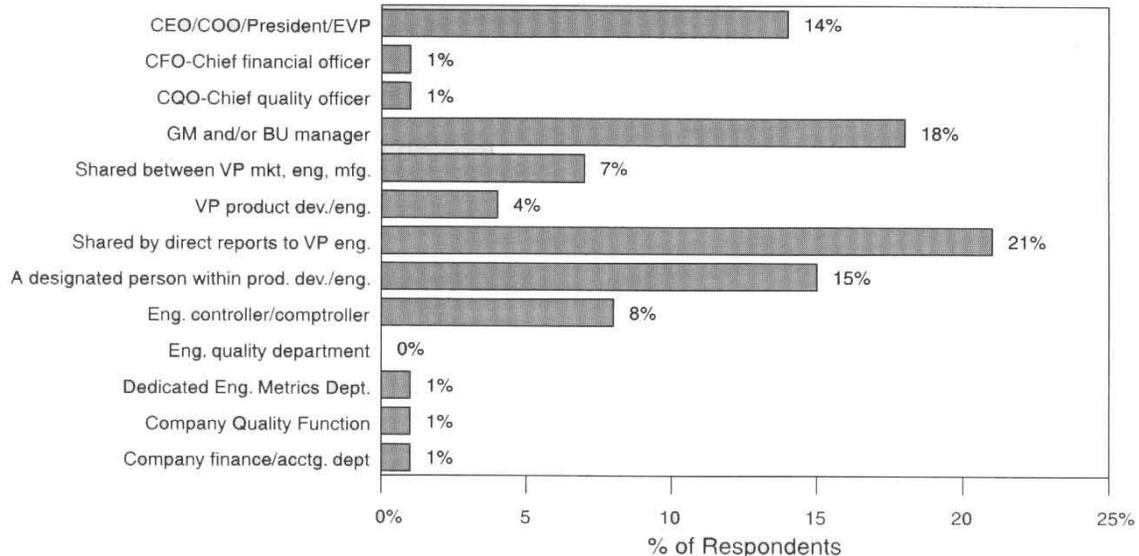
the "business end" of product development. An analysis of the metrics in actual use (see Figure 1, page 12) show the most often used metrics are those that measure projects. "R&D spending as a percentage of sales," "New products completed/released," and "Number of approved projects—ongoing," are the top three metrics in use.

Goldense emphasizes, "Most engineering managers are not establishing a tie between new product development and profitability, as revenues get measured but profits do not." Those in charge of product development must establish a link between metrics and overall strategy, he insists.

Lack of consistency in measurement throughout product development process is very disturbing. Consistent attention to metrics throughout the middle (development-prototype-pilot) phases of product development appears spotty and inconsistent. According to the research:

- **Most project metrics are calculated at the earlier stages of product development.** The metrics in use are primarily calculated during the planning activities (definition approved, development approved), and are not examined again during the development process until product launch.

Figure 2. Engineering Leaders Are Largely Responsible for Product Development Metrics



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“Attention is paid to metrics at the earlier planning stages of the process, but in the middle stages tracking breaks down,” Goldense observes. For example, over two-thirds of those who use the metrics “Target product cost” and “Target product price” calculate them at the definition approved and development approved stages. Yet, only one-third to about one-half of the same respondents track these metrics at any other subsequent phase.

In other metrics, he notes, “we find the opposite result.” As an example, 49% of the respondents track “marketing promotion costs” at product launch, while only 35% look at it in the “definition approved” stage. Continuing the slide, only 26% track it at “design completed” and 28% consider it at “prototype completed” phase.

“This tells us that marketing promotion costs are not integrated into the entire thought process surrounding development projects,” Goldense observes. However, in many companies, they ultimately dwarf other development/launch-related expenses. Which leads to the conclusion that a high degree of sequential product development still exists in many companies.

- **No surprise in metrics that are tracked consistently throughout the process.** “Project schedule/time-to-market,” “Schedule slip rate,” “Target product cost,” “Development cost,” and “Product specification changes” are tracked consistently over time. Each of these metrics is tracked, on average, three times or more during the development cycle.

“These are the metrics one would expect to find as key metrics across phases,” he notes.

Again, the metrics that tie projects into product strategy or profitability fall near the bottom of the list, in both overall use of the metric and in the frequency with which it is tracked during the course of the project. Specifically, the metrics are “Break-even time,” “Total product contribution,” “Lifetime sales volume,” “Time-to-profit,” and “RONA or other asset.”

Responsibility for product development metrics still remains in engineering. “Despite a

great deal of talk about teaming, leadership in the task of measuring new product development falls to a functional group, rather than to the core team leadership,” Goldense observes.

According to the survey findings, the largest percentage of respondents (21%) said the vice president product development/engineering is the “owner” of product development metrics (see Figure 2, page 13). And, typically, a designated person within product development/engineering is the administrator of the metrics for nearly one-half of the organizations in the study.

All of which leads Goldense to conclude: “A concurrent product development mind set has not yet reached near its full level of implementation or effectiveness.” □

