DESIGN NEWS
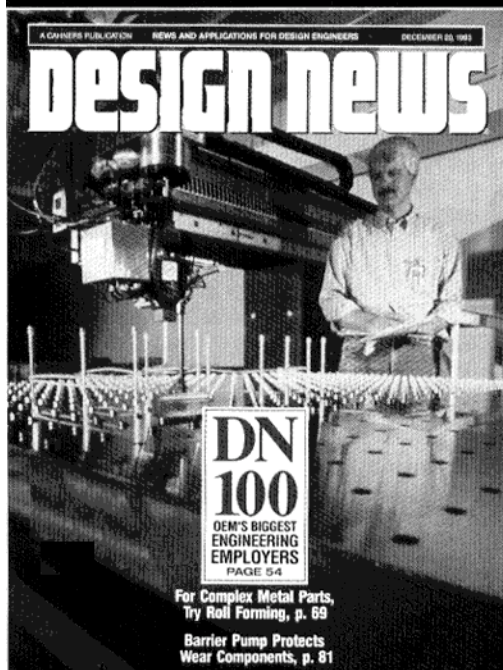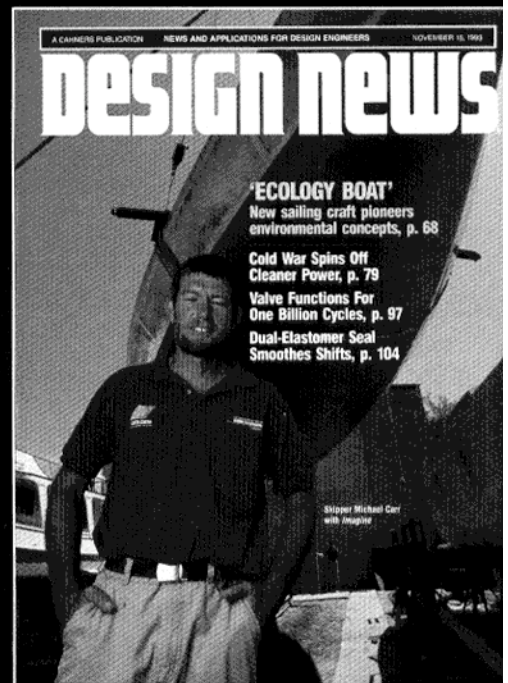

How metrics cut
time-to-market

Using QFD to
Develop Your Product

QFD: Applying
'The 80-20 Rule'

How metrics cut time-to-market

Which companies are on their way to next-generation processes for reducing time-to-market? You'll know them by the tools they use.

In the hardware design world, look for practitioners of concurrent engineering, design for manufacturability, quality function deployment and Taguchi methods. Also, look for software developers that utilize joint application development and computer-aided software engineering tools. Such product development techniques are already at work in many companies.

Measuring progress. This future rapid product development environment, called "Second-Generation Concurrent Engineering," or CE II, will further attempt to reduce development cycle time. Now companies will embrace improved decision making for product selection, market and competitive intelligence, modular design, reuse, prototyping, design-for-testing, and new performance-reward systems. Predictive metrics will facilitate decisions, promote further cycle-time improvements, and reward performance.

A new development project always follows the same basic flow: definition, planning/-approval, development, and launch. The planning/approval and launch phases have abundant metrics. Someone always determines development cost and duration, target product cost, and headcount. Engineering change notices, service calls, warranty costs, and customer feedback during launch all serve as ongoing reminders of the product design's quality.

However, metrics obtained during the launch phase can only help future improve-

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ments. Once the product is in that phase, any action becomes reactive. Few metrics exist for the definition and development stages, the two phases over which people responsible for new products lose sleep.

Forward-looking, planning-phase metrics in a CE II environment will force definition of a product and a development resource budget to fit within a "known zone," which, in the company's prior experience, results in predictably successful products. Deviations may be made, but knowingly. Definition metrics will also focus on the process of capturing customer requirements and accurately defining product specifications. Global competitive quality pressures have reduced average manufacturing process variation to ±3%. Therefore, a 15% variation in predictability is a realistic performance goal for the product development process.

Development-phase metrics. Here, metrics will record process activities, such as the number of design reviews performed, of components reused, and the design's reuse factor. Scientific staffing methods will determine appropriate team size and staffing disciplines, based on estimated project size and complexity.

These changes in product development measurement techniques represent a complete overhaul in process measurement and control. However, "proactive metrics" will soon provide action on today's projects-in-process. Traditional measurement orientations have centered on the product and not on the process. Now, proactive CE II metrics must provide balance between process and product measurement. ∎

> **The wave of the future is 'proactive' metrics.**