

News Release ...

Rajan Suri and Quick Response Manufacturing Theory Recognized by International Award from Society of Manufacturing Engineers

Rajan Suri, professor of Industrial Engineering at the University of Wisconsin and director of the Center for Quick Response Manufacturing, has been named winner of the 2006 Albert M. Sargent Progress Award by the Society of Manufacturing Engineers (SME).

This prestigious award recognizes technical accomplishments in the field of manufacturing processes, methods and systems. Suri was honored for his creation and implementation of Quick Response Manufacturing (QRM) philosophy, a comprehensive lead-time and cost reduction strategy that aligns the entire enterprise to respond rapidly to customer needs. The key principles of QRM are laid out in Suri's book, *Quick Response Manufacturing: A Company-wide Approach to Reducing Lead Times*, and have been spread to industry for over a decade through the Center for Quick Response Manufacturing.

QRM is the right approach for meeting high customization, high customer expectations

"Perhaps the most impressive characteristic of QRM is how it addresses the current pressures for business in this age of increased complexity, consumer demands and expectations," says Chuck Gates, president of RenewAire, a Madison, Wis., manufacturer of energy-recovery ventilation systems for residential and commercial markets. "We had tried all the conventional 'efficiency' methods to no avail," Gates explains, "but simply by applying QRM relentlessly throughout our organization, we were able to break our logjam, increase capacity, and deliver quality products to customers in a timely manner."

After two years of implementing QRM, lead time for residential units dropped from 10 days to just two days at RenewAire, while lead time for commercial units was cut from 25 days to eight days. The short response times that resulted from QRM improvements spurred overall revenue growth of 47 percent, and almost no extra space was needed to accommodate this increase.

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Gates says he was surprised to see conventional efficiency measures improve as well, even though they were no longer a focus at RenewAire. For example, the residential team's labor efficiency improved by 22 percent.

At Trek Bicycle Corp. in Waterloo, Wis., director of continuous improvement Jeff Amundson says, "All modern manufacturing theories talk about the importance of speed, but none do the talk justice the way Dr. Suri's QRM does." Amundson says he has discovered that regardless of which improvement approach he uses,

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"I always find myself validating it against what I have learned from QRM. I find Dr. Suri's work to be foundational for a profound understanding of manufacturing systems."

QRM focuses on saving time, but saves dollars as well

Examples of QRM's influence in manufacturing organizations demonstrate not only a saving of time, but of dollars as well. Labor typically accounts for 10 percent of the cost of production, with material at 50 percent and overhead the remaining 40 percent. Suri's empirical work with industry has proved that long response times add to both material and overhead costs.

With QRM, rework and waste drop, and quality rises, resulting in a reduction of material costs. Activities such



Prof. Rajan Suri accepts the Albert M. Sargent Progress Award for 2006 from SME President Willy Geary at the March ceremony in Los Angeles.

as forecasting, expediting, managing work-in-process and warehousing finished goods — all elements of overhead — also are reduced or eliminated. The combined saving in material and overhead generated by QRM — often 20 percent or more — easily counteracts the labor-cost advantage of lower-wage countries.

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—Paul Ericksen, Deere & Co.

QRM is key strategy with international giants

P&H Mining in Milwaukee, an international giant that makes surface mining equipment, had plans to apply QRM in a new machining cell. An investment of \$1.8 million was expected to yield a cost saving of \$4 million. The actual investment turned out to be just \$1.5 million, and it produced savings of approximately \$6 million.

QRM prompted another leading international firm, Deere & Co., to take a new look at its operations. The principles in Suri's book led Paul Ericksen to look differently at Deere's supply chain dynamics — especially the total acquisition cost of purchased parts. In his role as enterprise supplier development process lead for Deere, Ericksen worked with his colleagues to create a new QRM-based supply management metric: Manufacturing Critical-path Time, or MCT.

Ericksen explains that MCT is "extremely valuable" in understanding supplier potential, and it has led Deere to influence — and assist — key suppliers in adopting QRM in their factories. Grateful for the fresh perspective, manufacturing veteran Ericksen observes, "In 29 years in industry, I rarely have run across people with Dr. Suri's blend of academic prowess and hands-on understanding of manufacturing."

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—Francisco Tubino,
South American Manufacturing Consultant

Smaller manufacturers also reap QRM benefits

At the other end of the spectrum, Park Industries of St. Cloud, Minn., a manufacturer of stone-cutting equipment, used QRM to reduce the lead time for customized machinery from six weeks to two weeks, at the same time cutting the number of labor hours per machine by nearly 50 percent. Five years into the transition to QRM, company president Tom Schlough says, "The impact on our company has been dramatic. QRM has worked beautifully for us, and we continue to apply the principles and train new people to use them."

Others laud the positive effects QRM has had on their organizations.

"Nothing has come close to the results we have achieved with QRM."

—Mike Emmerichs, Pacific Steel Casting Co.

"In my 18 years here we have tried many things," says production control manager Mike Emmerichs of Pacific Steel Casting Co., Berkeley, Calif. "Nothing has come close to the results we have achieved with QRM."

Tom Schabel, president of Alexandria Extrusion Company in Alexandria, Minn., says, "A new customer recently told me that QRM was a factor in why our company was selected as a supplier."

South American manufacturing consultant Francisco Tubino adds, "Quick Response Manufacturing has been widely spread in my continent. It has made an outstanding impression in every single lecture or presentation I have had the opportunity to conduct. There are many available tools out there today, but few are as applicable or as theoretically sound as QRM."

QRM truly is changing the face of manufacturing

Summing it up, Greg Renfro, vice president of manufacturing and sourcing for international firm National Oilwell Varco, which has multiple QRM success stories in its U.S.-based and overseas operations, proclaims, "QRM will change the face of manufacturing as we know it."

Indeed, before Suri's work in QRM, there was no comprehensive approach to lead-time reduction for manufacturing enterprises. Lean practices have been popular and widely applied, but their use has been most effective with high-volume production in companies that have the benefit of relatively stable, predictable demand. QRM successfully addresses the challenges of today's mass customization manufacturing environment.

In 1993, Suri founded the Center for Quick Response Manufacturing at the University of Wisconsin and established a partnership between industry leaders and university faculty, making possible the transition of QRM from theory to application and practice. Companies that belong to the QRM Center have the opportunity not only to remain on the cutting edge of manufacturing, but to expand the horizons and applications of QRM to areas such as product development and office operations as well as to biotechnology and health care.

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QRM opens door to heightened competitiveness, profitability and success

Today's manufacturing climate of customization, lower volumes of specialized products, and greater variability in demand requires a new approach. Suri's QRM gives those who subscribe to its principles and practices an opportunity to please customers and gain market share by producing highly customized products, often in small quantities and needed within a short response time. By mastering techniques that not only reduce lead times but cut costs and improve quality, companies are proving that QRM is key to their competitiveness, contributing to their overall profitability and success.

Suri joins an exclusive roster of past recipients of the Albert M. Sargent Progress Award, including Dr. Genichi Taguchi, who is internationally known for his work in industrial quality and robust design, and Dr. Ranga Komanduri, past director of the Design and Manufacturing Division at the National Science Foundation.