

Raising the Bar at Alexandria Industries



The QRM Center is a university-industry partnership dedicated to improving manufacturing competitiveness through research and implementation of lead time reduction principles.

QRM at Alexandria Industries Drives Growth, Increases Market Share, Raises Industry Standards

by Kathleen Watson

Making the transition to Quick Response Manufacturing (QRM) from traditional manufacturing philosophies and practices doesn't come easily. Just ask Tom Schabel, CEO of Alexandria Industries.



Tom Schabel, CEO

"Are there challenges to implementing QRM? Absolutely," Schabel says. "So many QRM concepts are contrary to traditional manufacturing."

But the rewards become evident, and they've all been measurable for Alexandria: reduced lead times, consistent on-time deliveries, improved quality, expanded product lines and market share, targeted

acquisitions — and best of all, highly satisfied customers. "If we strayed from our QRM philosophy, our customers would be more than a little upset with us," Schabel says.

Continuous improvement has been continuous goal

The Alexandria Extrusion of a decade ago had been in constant pursuit of continuous improvement. "We'd always used continuous-improvement tools, but we saw only incremental change," Schabel says. "Our CFO got a brochure about QRM, so he decided to see what it was all about. After attending the basic two-day seminar, he said, 'Hey, I think we might have something here.'"

That brief introduction gave rise to internal discussions about QRM's focus on lead-time reduction and a review of Alexandria's on-time delivery metrics. Schabel realized that of the improvement techniques used to that point, none had much influence on delivery time. Members of Alexandria's executive management team signed up for the next QRM training event.

Orienting executives was a good first step, but it was only the beginning. The company purchased several copies



Company Profile

Founded 1966
Headquarters: Alexandria, MN
Production facilities in
Minnesota, Indiana, Texas
600 employees
ISO 9001:2008 Certified

Products and Services

Aluminum Extrusion
Finishing
Molding
Welding
Precision Machining
Assembly
Heat Sinks

Markets Served

Marine and Recreation
Medical
Electronics
Firearms
LED Lighting
Solar and Renewables
Signs

www.alexandriaindustries.com

of QRM founder Rajan Suri's seminal book on the subject — *Quick Response Manufacturing: A Companywide Approach to Reducing Lead Times* — and senior leadership formed a study group.

Other book-study groups followed. Business Integration Coordinator Jeff Cypher, who was instrumental in the QRM transition, says, "We'd go through the book and look at each other and laugh.

"If we strayed from our QRM philosophy, our customers would be more than a little upset with us,"

—Tom Schabel

We were doing the exact opposite of what QRM recommended.” Gradually, everyone in the company, whether directly involved in a QRM-based transition or not, got at least an overview of what QRM was as well as how and why it worked. Those who would be involved in integrating QRM into their work area participated in more in-depth training.

Since 2002, nearly 300 Alexandria employees have spent time in book-study groups or completed some form of QRM orientation, either in-house or at standard QRM Center-conducted events. And it continues. “The key is to develop a mindset that supports QRM,” Schabel says, so those involved can provide critical input about the changes that will be made and the goals they create for themselves as a team and as individuals.

Steering Committee guides QRM launch

Thirty-five year Alexandria veteran Al Fyhrie has taken the lead in the company’s QRM journey. His training and experience in machine tool technology, CNC applications, quality control, manufacturing, sales, estimating, customer service, and product engineering and design make him the perfect QRM champion.

Fyhrie was a member of the Steering Committee that oversaw the QRM launch. Representatives from multiple functions — manufacturing, engineering, manufacturing support, quality, HR, customer service and the CFO — completed the group.

“Because all of our previous process-improvement efforts were carried out in production, we picked the office for our first QRM project,” Fyhrie says. “It seemed to be disconnected from other operations, and it was taking 10–12 days to process a new order.”

It also seemed logical, as the office is the entry point for new business; it’s where price quotations originate and orders undergo final engineering review.

The Q-ROC — Quick Response Office Cell — collocated people and brought together all functions relating to order entry. It included a staff member from customer service,

estimating, drafting, engineering, and production control. The self-guided team defined the Q-ROC’s scope and desired outcomes. All were cross-trained for the ultimate in flexibility and efficiency; any member was expected to be able to respond at any time to any customer’s question.

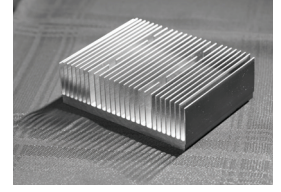
It took just two weeks to see a noticeable difference; quoting and processing new orders had been reduced from 10–12 days to an average of 3–5 days. After a month had passed, extrusion-only orders were taking just 1–2 days, with a consistent 3–5 days for value-added parts.



Chamber clamp assembly made up of multiple machined aluminum extrusions used on athletic wheelchair



Dog-training dummy made from foam-molded body and plastic-injection-molded component



Aluminum machined heat sink used in a power-supply module for the telecommunications industry

Results

Here are the effects of setting up the Q-ROC, establishing cells and putting QRM in motion in the extrusion department, and implementing POLCA:

- Reduced quotation lead times from 30 days to 4 days
- Reduced average quote-to-acknowledgement throughput time from 12 days to 3–5 days
- Increased Q-ROC capacity:
 - 2002: \$2.6 million per individual
 - 2012: \$4.2 million per individual
- Reduced extrusion lead time from 6 weeks to 5 days
- Reduced average value-added throughput time from 35 days to 18 days
- Reduced minimum batch sizes by 25–45%
- Changed stocking programs; reduced inventory / WIP by 30%
- Increased floor space utilization:
 - 2002: \$274 / sq ft
 - 2012: \$434 / sq ft
- Reduced internal management costs: scheduling, material handling, inventory control
- Developed ability to target previously unreachable markets/customers

Broader QRM implementations follow

Building on the experience and success of Q-ROC members, the focus moved to the extrusion department, with the Q-ROC team providing vital guidance regarding scope and desired outcomes.

“We linked the extrusion department — the lifeblood of our business — to the Q-ROC,” Schabel says. The QRM principle of establishing cells that would be what Fyhrie calls “one-stop shops for customers” began to take hold.

“We considered the QRM Focused Target Market Segment (FTMS) guide for the first cell, and we were able to reduce our lead times from four to six weeks to five days.” —Al Fyhrie

The manufacturing floor was next, which meant moving equipment and people to create multiple cells. “We considered the QRM Focused Target Market Segment (FTMS) guide for the first cell,” Fyhrie says, “and we were able to reduce our lead times from 4–6 weeks to five days.”

The next step — implementing POLCA, a material-control pull system that involves color-coded cards and routes work into cells based on their available capacity — probably has been the most challenging element of the overall QRM process. “We engaged UW-Madison students who were studying engineering and manufacturing and were working with the QRM Center,” Fyhrie says. They determined scope and goals and then helped explain the process, educate workers, design cells, create the loop patterns on which the

concept is based, and measure the results.

Results testimony to employee commitment and QRM’s effectiveness

The Alexandria Industries story is nothing short of phenomenal. QRM was introduced in 2002, and it took time to convene book-study groups and get folks oriented and on board. “It doesn’t happen overnight,” Fyhrie confirms.

Reflecting on across-the-board reductions, Schabel says, “Die

changes used to take 10 minutes. Now we’re like an Indy pit crew; any change that takes as long as two minutes requires some kind of action.”

Schabel also notes that the extrusion production line, with an equipment investment of \$6–10 million, runs at only 75–80 percent of capacity. This nontraditional practice supports the QRM tenet of strategically creating spare capacity as a means to ensure flexibility and avoid bottlenecks.

Because the cells take responsibility for quality in a QRM environment, the company even eliminated the Quality Control Department — at the QC manager’s suggestion. “You don’t need me anymore,” he said. He was pleased to transition to sales, and what better preparation for that role than to fully understand and have witnessed



Al Fyhrie, Q-ROC Manager

firsthand the positive effects of implementing QRM throughout an organization.

QRM now integral to all business decisions

Schabel points out that QRM is not just about eliminating waste and making continuous improvements. Implementing QRM enables companies to grow and increase market share.

Alexandria has acquired or developed new operations to complement and build on its core metal extrusion business. Between 2007 and 2012 it added precision machining, finishing, heat sinks, plastic injection and foam molding, and welding, operations that make

Awards and Recognition

- Minnesota Quality Award Recipient
- ISO 9001:2008 Certification
- Supplier Certification Program
- OSHA MINStar Safety Certified



Jason Bachmann (left) and Todd Carlson serve as key champions of Alexandria Industries' POLCA system.

up seven divisions in three locales: Minnesota, Indiana and Texas. Alexandria Extrusion became Alexandria Industries in 2012 to reflect its growth and expanded scope. Schabel says that each acquisition has been like starting over: "We can't make assumptions that everyone at the new facility is going to jump on board with QRM. We have to educate and train enough people to generate the organizational commitment to implement it."

As evidence of that commitment, Schabel notes that despite the global recession that began in 2008, Alexandria Industries had a good year. "We captured market share when we really needed it," he says. "We were

"You are the only supplier that we have where it is apparent that response time is embedded into the company culture."

—Alexandria Industries Customer

financially stable, and we offered short lead times."

He stresses that you can't underestimate the impact of the lead-time factor in competing for new business. "QRM gives us the opportunity to sell differently," he says. "We don't have to sell solely on price. We continue to use QRM to identify markets that tend to be enticed by short lead times." He points out that Alexandria's customers can offer their customers shorter lead times, multiplying successes and cementing relationships.

In fact, one customer relies on an Alexandria's Monday-morning delivery to provide parts for the week's orders. "He runs his warehouse to almost nothing by Friday night," Schabel says, "and our truck shows up bright and early on Monday with stock for the week's production."

Lead-time reduction is what Schabel calls the "guiding factor" in any hiring or purchasing decision. It is a philosophy that is deeply engrained in the Alexandria Industries culture. "There's a difference between liking QRM and being driven by it," he says.

Ambitious goals dot the horizon

Looking ahead five years, Schabel wants to see full implementation of QRM throughout every Alexandria Industries facility. "We want each of them to operate with QRM and POLCA rather than just a few departments doing a great job," he says. He adds optimistically, "If your people are smart, educated about QRM and committed enough, they will work through the challenges. It's a continuing education process."

Convincing Alexandria's own suppliers to get on board with QRM has not gone smoothly. "It's easy for them to look at our success with QRM and say, 'That might not work here,'" Fhyrie says. "The journey has to be embraced by top management, and some organizations have a hierarchy that is less open to change."

It's not hard to see where the Alexandria Industries brand statement comes from: "We are the people who make it happen. We turn possibility into product faster and better than anyone. Through relentless research, unconventional thinking and dynamic services, we are setting new industry standards for everyone else to follow." QRM has been a beacon, helping light the way.

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Annual event keeps Alexandria Industries customers in the loop

Because Quick Response Manufacturing principles and practices are so ingrained at Alexandria Industries, and because they stray from what are considered traditional manufacturing methods – and because the company prides itself on providing its customers with incomparable service – CEO Tom Schabel invites them to an annual customer leadership conference.

“We used to host individual leadership seminars at each customer’s site, but when they come together at a central location such as the Twin Cities, we can cover a lot more and make it even more worthwhile,” he says.

Industry experts present information on key topics that are top-of-mind concerns for customers: factors that influence the cost of aluminum; the global economy; challenges today’s manufacturers face; and the implementation of Quick Response

Manufacturing. A panel covers issues that are critical to the success of Alexandria’s customers.

Guest speakers discuss leadership and other matters of shared customer interest, and company representatives present what’s new or different about Alexandria Industries and how customers can benefit.

Participants are invited to travel north to Alexandria, Minn., on the second day for facility tours and updates on operations, best practices, new equipment, and ongoing improvements related to lead times.

The overall event promotes understanding of what makes Alexandria Industries different and highlights ways the company supports its customers in their efforts to be more competitive in their own markets.

**“You have changed our expectations of our extruders
and have turned our supply chain right side up.”
–Alexandria Industries Customer**

Center for Quick Response Manufacturing (QRM)

Established in 1993, the Center for Quick Response Manufacturing at the University of Wisconsin-Madison is a partnership between industry, faculty and students dedicated to the development and implementation of lead time reduction principles.

For almost two decades, the QRM Center has helped more than 200 companies of varying sizes from a wide array of industries reduce lead times in all aspects of their operations and become more competitive in the global marketplace. The Center can point to an impressive track record, with several member companies realizing lead time reductions exceeding 80%, cost reductions of up to 30%, and on-time delivery improvements of over 99%.

For more information, check www.qrmcenter.org, join our QRM LinkedIn group or contact us directly at 608-262-4709



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