

BRIDGING the Manufacturing Gap

BY THOMAS WAILGUM

One of the state's critical economic engines is facing a widening gap between the best practices it needs to compete globally and the practices NH companies actually employ.

That industry would be manufacturing. And the gap between needs and wants is distressing because manufacturing is the state's largest (and shrinking) industry, and because we've heard about the need for change before. Innovate more, reduce energy consumption, use lean manufacturing to improve efficiency, and engage more in the global marketplace.

The 2009 Next Generation Manufacturing Study surveyed 2,500 U.S. manufacturers,

including 74 NH companies, on six critical strategies required for world-class manufacturing success: customer-focused innovation, advanced talent management, systemic continuous improvement, supply chain management, sustainable practices and global engagement. It found that only a fraction of manufacturers in NH and New England—as well as the United States—perform near world-class levels.

"Manufacturing is the number one industry sector in the state and really serves as the anchor for our economy," says Roy Duddy, director of NH's Division of Economic Development. "The ongoing health and prosperity of the manufacturing sector is our top priority."

While NH and the nation have a ways to go to keep manufacturing competitive globally, companies in NH and New England did measure higher than national companies in some areas, such as investment in research and development.

The report by the American Small Manufacturers Coalition, an association of Manufacturing Extension Partnership (MEP) centers, defines world-class manufacturers as those who implement best practices at higher rates than others and who outperform their competitors on a range of operational and financial metrics.

Contrast that with the survey results:

- In NH, 45 percent report engaging less than half their employees in improvement

where they stand in their organizations and where they stand nationally in terms of world-class manufacturing strategy," he says.

What the Results Mean

For state economic administrators, like Duddy, the results offer a "blueprint and action plan" for enabling greater improvement and innovation in manufacturing. "Now that we've identified some areas for improvement, it's incumbent upon us as a state to provide the resources and expertise necessary to affect positive change," Duddy says.

Manufacturing executives also see the results as a call to action. But they claim limited resources can make it challenging to reach world-class levels. Many, though, are working hard to improve and remain competitive. "It was a good confirmation of what my gut was telling me and what I've known," says Mark Godfrey, chairman of Felton Brush in Londonderry, "but some of those world-class areas are pretty high bars."

Felton Brush is a case study of an old-line manufacturer, with roots dating back to 1852. Within the past 10 years it introduced innovative products for its customers, just as the survey results highlight in the "customer-focused innovation" area.

"We've broadened and reinvented ourselves so now we're much more an engineering design service company that also happens to manufacture technical assemblies, which brushes are still a part of," Godfrey says. That's important, since a key message of the survey is innovate or die as competition from abroad creates pressure for high value, low cost goods.

But, says Godfrey, companies must prioritize. While the report identifies global engagement as a key strategy, Godfrey is part of the 65 percent of NH manufacturers that felt it was not as important. "That'd be a 'nice to have,'" he says. "That could be an opportunity, but I'm not sure the return on investment is what we need right now. I think investing in some of the other areas is going to get us a bigger return."

Other manufacturers disagree. David Metzemaekers is director of operations at Scott Electronics in Salem, a contract manufacturer in the medical, homeland security, semiconductor and industrial markets. The 24-year-old family-run business employs about 80 people in NH and also maintains a facility in Mexico that employs about 50. He says the Mexico facility is a key advantage, as the survey notes, by helping to create a strong and agile global supply chain network.

There are other strategies manufacturers agree are valuable, though they admit those are challenging to achieve. Going green is

World-Class Manufacturing Benchmarks

Measurement	Nationwide	New England
More than 5% of workforce devoted to new product development	34.6%	48.9%
Percent of annual sales from new products	24.8%	33.7%
Have some form of regular monitoring/review of the effectiveness of supply chain management by CEO and senior staff	24.4%	28.2%
Has increased sales outside the U.S. by more than 25 percent in the last three years	25.0%	23.0%
Has a majority of employees engaged in improvement processes	65.0%	52.0%
More than 98 percent of orders are on time and best quality	33.0%	30.0%
Annual energy reductions per unit of more than 10 percent	37.0%	24.0%
Source: Next Generation Manufacturing Study, 2009; American Small Manufacturers Coalition (an association of Manufacturing Extension Partnership centers and partners)		

one. Waste not, want not does not seem high on the priority list at a number of New England companies as many have shown less progress than their national counterparts in terms of reducing energy consumption per unit of product output, notes the report.

The report defines attaining top status as reducing energy use per unit by more than 10 percent, a measurement only 24 percent of New England manufacturers reach versus 37 percent of national manufacturers. And only 30 percent of New England manufacturers cut their use of non-recycled materials by more than 10 percent, compared to 48 percent nationally.

Graphicast in Jaffrey is among those striving to be both energy efficient and greener. "We make everything out of the same material, zinc alloy, and it's 100 percent recyclable," says Val Zanchuk, company president. "There's really no waste associated with our product, whether we recycle it here or our end-user does after some period of time, when [the product] our component is in wears out." In addition, Zanchuk says his company has undertaken many cost-cutting and cost-sharing activities with Public Service of NH, "improving our lighting and buying high-efficiency compressors," for example.

Work to Be Done

Even with NH's successes, the survey shows that NH manufacturers still have a lot to do to attain world-class levels of performance. Scott Electronics, for instance, is putting company resources behind "systemic continuous improvement" in its operations. Scott Metzemaekers, quality manager, says they are moving forward with lean manu-

initiatives. Best practices require company-wide participation.

- More than 45 percent of NH firms say they have no measurement system or only ad hoc systems to review the effectiveness of supply chain management policies.

- In NH, only 35 percent of manufacturers say they believe global engagement is highly important even though markets, competitors and talent are growing faster outside the U.S. than on American soil.

Those manufacturers that took part in the survey received a detailed assessment of how their management practices stacked up to competing global manufacturers. It was "eye opening" for many, says Zenagui Brahim, the director of NH MEP. "It gave them an idea of

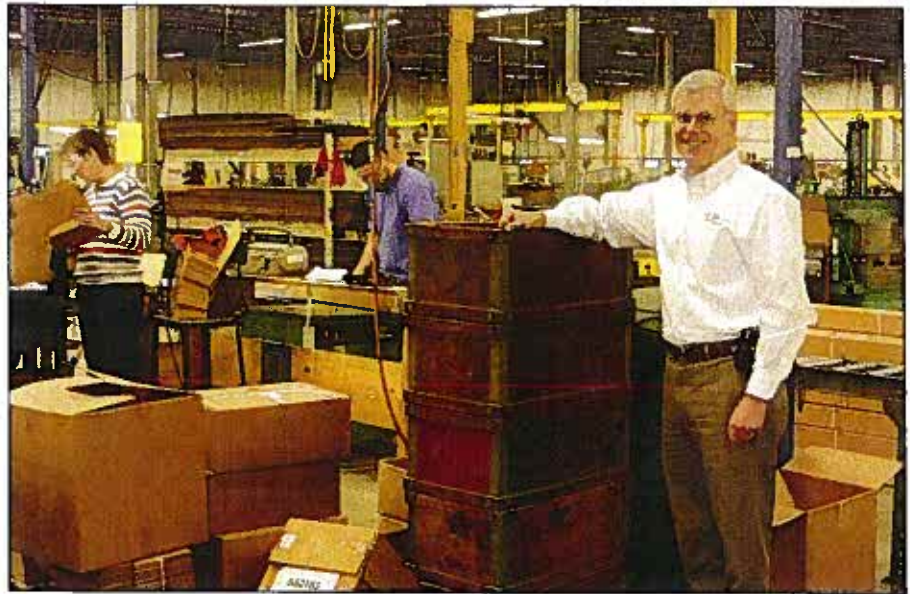
facturing initiatives and training employees on new techniques to improve their process and efficiency. "That is probably one of our weaknesses," Scott says, "but we've tried to address it this year and are moving forward implementing it."

Of course, the global recession has had a profound effect on companies of all sizes. Investing in new initiatives can be a tough proposition, say NH business executives. "[Lean manufacturing initiatives] are one of those things you know you need to do, but one of the hardest things to commit to," says David Metzemaekers.

Scott Electronics is hiring to fill new process and manufacturing improvement roles. He adds, "Nobody wants to add overhead until you realize that that overhead then filters down and produces 'X' amount of efficiency, and ultimately everybody improves as a result of that added position or two." He notes the changes Scott Electronics has already made helped the company achieve one of the best months in its history at the close of 2009.

Another critical area of the survey results pertained to employees or what MEP calls "advanced talent management." What that means is the ability to gain a competitive advantage by having systems in place to recruit, hire, develop and retain talent.

Godfrey and others expressed concern about the low numbers of highly skilled talent entering the manufacturing industry. He



Mark Godfrey, chairman of Felton Brush in Londonderry

adds that manufacturing still suffers from an "image problem."

DRED's Duddy says he's aware of that problem. "The vision of a manufacturing environment as being dirty and unappealing is extremely outdated, but unfortunately, it still exists in some circles," he says. "As a state, we need to build better linkages between high school and college career counselors and the manufacturing sector so that the real mod-

ernized vision of manufacturing can be seen. With the aging demographic in manufacturing, there needs to be that next generation of job-ready workers to fill the void."

State Support

Manufacturing remains NH's largest industry in terms of gross state product, accounting for 13 percent of NH's GDP. "The challenge to policymakers is not to give up

Manufacturing in NH at a Glance

NH Population	1.3 million
Total Jobs	648,900
Manufacturing Jobs	77,600
Average annual manufacturing salary	\$55,453
Average annual NH wage	\$42,444

Source: U.S. Bureau of Labor Statistics, U.S. Census, NH Manufacturing Extension Partnership, Deloitte Consulting, LLC analysis, June 2009

on manufacturing, but to support the transformation of the state's manufacturing sector into a faster, more flexible industry capable of outperforming their non-world-class peers," according to the MEP report.

President Barack Obama's February visit to Nashua to talk up job creation included a stop at ARC Energy in Nashua. While in NH, the president proposed a \$30 billion small business lending fund to help encourage growth and hiring in small- and medium-sized businesses. Godfrey claims that some banks "shut off the spigot for small companies" in terms of loans. "We had a tough time renewing our line of credit last year," he says. "In the past, it was an afterthought."

But it's not only money from banks that

manufacturers long for. What they really want is an expanded research and development tax credit. "Every new product we make for a customer is an R&D product," says Zanchuk. "We have to develop new procedures and new process tools and write programs. That's all R&D. And those tax credits really help companies like us recover some of those costs and give us a boost in the growth of our business." He adds that additional help could come from the federal government if a permanent tax credit could be established.

The survey offers NH manufacturers an extensive To Do list, but Duddy says the state must also do its part. The state must support local manufacturers through education, job training, access to R&D grant funds and assistance through partners such as the Manufacturing Extension Partnership, the NH High Tech Council, the Software Association of New Hampshire and the New Hampshire Machining Association, he says. DRED is already assessing the creation of a manufacturing Web portal that will link local manufacturers with their supply chains, according to Duddy.

That's welcome news to NH manufacturers who are all too familiar with the challenges they face. "If you're not a company on the leading edge of developing lean techniques or continuous improvement initiatives, you're not going to be in this business for long," says Scott Metzemaekers. "OEMs [original equipment manufacturers] and customers are not going to stay with a supply chain that doesn't have forward-thinking management and staff beneath them." ■