First National Survey of Next Generation Manufacturing Identifies What Maine Firms Must Do to Survive Global Competition

Study provides new tool for manufacturers to assess strategic priorities

Augusta, ME – The Maine Manufacturing Extension Partnership (Maine MEP) today announced the results of the first national survey of manufacturers to identify how well they are positioned to thrive based on world-class manufacturing practices, hailing the findings as valuable to both state policymakers and Maine companies.

Based on an in-depth national survey of more than 2,500 manufacturers, including firms in Maine, the study identifies six crucial strategies necessary for world-class manufacturing success. The most unique aspect of the ground-breaking study, however, is the evaluation instrument utilized in the study. It provided participating manufacturers with a detailed assessment of how their management practices compare to global industry leaders and can evaluate whether individual firms are implementing the procedures and strategies that will enable them to survive the current economic downturn and succeed in the coming decade.

"This ground-breaking report provides an amazingly detailed assessment of what Maine manufacturers must do to achieve world-class manufacturing standards. Participating in the survey helped my company identify key priorities and illustrate where our implementation fell short of our goals," said Bruce Pulkkinen, president of Windham Millworks.

Maine manufacturers that participated in the study received a free customized benchmarking report comparing their progress to the overall state and national results. Each confidential benchmarking report was prepared by the respected research and strategic consulting firm, the MPI Group.

Commissioned by Manufacturing Extension Partnership (MEP) centers across the country, including Maine MEP, and the American Small Manufacturing Coalition, the study offers the most detailed description yet of what it takes for American manufacturers to compete in the global economy. The study was designed as the first step in a long-term effort to help U.S. manufacturers survive the recession and renew America's manufacturing leadership over the next decade.

"This report provides a gap analysis between where American manufacturers are today and what must be done to transform America's manufacturing base for success in the coming decade. In reviewing the results for Maine firms, for instance, it becomes clear that too many manufacturers are relying of customer loyalty, rather than investing in new product development to meet future customer needs. The benchmarks outlined in this report can provide a clear roadmap to help manufacturers identify the strategic priorities that will enable them to out-perform their competition," said Rosemary Presnar, Maine MEP operations manager.

The study itself is only the first step in Maine MEP's efforts to assist local manufacturers. Although the national study is complete, local manufacturers can take advantage of the evaluation instrument and work with Maine MEP project managers to conduct an assessment of their company's strategic policies, investments and performance.

The report brings an urgent message to Maine policymakers, Presnar noted. Maine's economic recovery depends on the ability of its manufacturers to maintain profitability in the face of fierce competition. Manufacturing remains one of the state's largest industries in terms of gross state product, accounting for nearly 13 percent of state GDP. The challenge to government leaders and state policymakers is not to give up on manufacturing but to support the transformation of the state's manufacturing sector into a faster, more flexible industry sectors capable of outperforming its non-world-class peers.

The Keys to Next Generation Manufacturing Success

Next Generation Manufacturing (NGM) refers to a framework of strategies that will drive manufacturing growth in the 21st century. Developed by leading manufacturers, industry thought leaders and the MEP centers, Next Generation Manufacturing reflects the best practices and performance strategies of world class companies. To remain competitive, manufacturers in Maine and across the country need to achieve world-class performance in at least some of these key areas. The study identifies six essential strategies:

- ***Customer-focused innovation:*** Deliver new and better customer solutions at a faster pace than the competition.

- ***Advanced talent management:*** Secure a competitive performance advantage by having superior systems in place to recruit, hire, develop and retain talent.

- ***Systemic continuous improvement:*** Record annual productivity and quality gains that exceed the competition through a companywide commitment to continuous improvement.

- ***Extended enterprise management:*** Leverage a flexible network of supply chains and partnerships to provide competitive advantages of speed, cost and quality.

- ***Sustainable product and process development:*** Design and implement waste and energy-use reductions at a level that provides superior cost performance and recognizable customer value.

- ***Global engagement:*** Secure business advantages through people, partnerships and systems capable of engaging global markets, talent and resources.

The survey administered to the initial 2500 companies nationwide employed 63 questions to drill down and measure each firm's progress, or lack of progress, in implementing strategies in these six essential areas.

Sobering Findings

- A serious gap exists between the strategies that Maine and U.S. manufacturers believe are critical to their future success and their actual progress in implementing those strategies. Currently, only a fraction of Maine manufacturers are at or near world-class in any of the six NGM strategies.

- Small and midsize manufacturers are less likely than larger firms to be at or near world-class status in each of the NGM strategies. One-third of respondents nationwide with

less than $10 million in revenue were not at or near world-class in any strategy, compared to just 14% of manufacturers with more than $100 million in revenue.

- Measurement systems are inadequately deployed. Even in one of the most fundamental and easiest-to-measure areas – process improvement – 46% of respondents across the country and 45% of respondents in Maine had no measurement system or only ad hoc measurement systems.

- Effective partnerships with employees, suppliers and regional support organizations are the exception rather than the norm. Nationwide, a majority of respondents (56%) engage less than half of their employees in improvement initiatives, falling far short of industry best practices that require company-wide participation. In Maine the results were essentially identical.

- Across the nation approximately 40% of companies fail to reach or approach world-class status in the ability of their supply chains to respond to unexpected customer demand for existing products. In part this is due to the failure of companies to implement supply-chain measurement systems. Fully 70% of Maine firms said that they have no measurement system or only ad hoc measurement systems in place to review the return from supply chain management and collaboration.

- Energy efficiency remains a weak link. Less than five percent of New England firms are at or near world-class status in terms of annual reduction of energy consumption per unit of product output.

- Only 28% of respondents nationwide and an even small proportion of Maine firms (20%) believe global engagement is highly important, despite a near-term future in which markets, talent, competitors and partner opportunities are growing faster outside the U.S. than within its borders.

New England's Strength: Advanced Manufacturing

The survey data reveal a sobering picture of the challenges facing American manufacturers. But the report highlights an important distinction that characterizes New England manufacturers. New England possesses a robust advanced manufacturing cluster that distinguishes itself from manufacturers nationwide in some very notable ways.

- New England manufacturers devote more resources to new product development and R&D than their counterparts nationwide.
    - 23.8% of New England manufacturers invest more than ten percent of sales in new product development versus 14.6% of firms nationwide.

    - 48.9% of New England manufacturers dedicate more than five percent of their workforce to new product development versus 34.6% of firms nationwide.

- New England manufacturers launch significantly more new products annually than their counterparts nationally (23.5% of New England manufacturers launch more than ten percent of their total SKUs annually versus 15.7% nationally.)

- New England manufacturers derive a significantly larger percentage of annual sales from new products than their counterparts nationally (33.7% of New England manufacturers derive at least one-quarter of their annual sales from products introduced in the last three years versus 24.8% of manufacturers nationally.)

- New England manufacturers derive significantly more value-added per employee than their counterparts nationwide, with 34.9% of New England respondents reporting that they receive more than $125,000 per employee versus 28.0% nationwide achieving that level of value-added.

These findings confirm the results of another recent study on manufacturing conducted by Deloitte Consulting LLP for the New England Council, which found that New England enjoys a strong cluster of advanced manufacturers whose productivity improvements have been transformational. That report, *Reexamining Advanced Manufacturing in a Networked World: Prospects for a Resurgence in New England*, noted that "advanced manufacturing has reversed the decline associated with traditional manufacturing in New England by developing a talent-rich network of advanced manufacturers with skilled workforces capable of creating complex product solutions.

"While the growth of advanced manufacturing has been less robust in Maine than in other New England states, our proximity to this regional network of talent, research expertise and potential collaborators highlights an opportunity for innovative companies in Maine," said Maine MEP Operations Director Rosemary Presnar. "Maine MEP plans to use the results of the survey to review our own performance based training programs and sharpen the delivery of our technical assistance services. We have collaborated with New England based MEP centers in the past and will continue to do so to bring quality solutions to Maine's manufacturers." "

"But the stubborn fact remains that many firms in Maine and across the country still have a ways to go to attain Next

Maine Manufacturing Snapshot

Manufacturing makes a vital contribution to Maine's economy, contributing the largest percentage to the state's gross domestic product (GDP) and ranking third in terms of employment for all non-government industries in the state.

Top 5 Industries in Maine

	% of GDP
1. Manufacturing	12.8%
2. Healthcare & Social Services	12.7%
3. Retail	10.6%
4. Finance & Insurance	8.0%
5. Construction	6.2%

Employment Profile

Maine Population	1.3 million
Total Jobs	703,200
Manufacturing Jobs	59,300
Average annual manufacturing wage	$44,526
Average annual Maine wage	$33,792
Average hourly manufacturing wage	$19.73

Source: U.S. Bureau of Labor Statistics, U.S. Census, Bureau of Economic Analysis, Deloitte Consulting, LLC analysis, June 2009.

Generation Manufacturing status. A majority of firms need to take major steps to improve their performance or risk being left behind by the global competition. Our state's economic future will be determined in very large measure by how Maine's manufacturers respond to this challenge," Presnar concluded.

What Manufacturers are Saying about the Value of the Survey

The ***Next General Manufacturing Study*** was designed to serve two purposes. As the first national survey of world-class manufacturers, it provides valuable data about what America's most successful manufacturers are doing to succeed in a competitive global environment. This overview is important for all those who care about the future of manufacturing in the U.S.

But the survey serves a second equally important function. It was designed to help individual firms participating in the study evaluate their own operations and establish performance benchmarks. It highlights how each firm measures up in comparison to its peers and assesses the progress, or lack of progress, a firm has made in implementing the key benchmarks of each strategy required to achieve next generation manufacturing success.

Manufacturers who participated in the survey were quick to acclaim its value. But it's not too late for other manufacturers to seize the opportunity and utilize the assessment tool and survey findings. Project managers from the Maine MEP can assist manufacturers in performing a similar assessment. Building on those findings, MEP project managers can help firms implement the Next Generation Manufacturing strategies that can transform the way firms operate.

For more information, on how to establish appropriate benchmarks, implement NGM strategies and measure the results, contact the Maine MEP office in Augusta.

Here are some of the comments offered by New England manufacturers who participated in the survey:

> *"This ground-breaking report provides an amazingly detailed assessment of what Maine manufacturers must do to achieve world-class manufacturing standards. Participating in the survey helped my firm identify key priorities and illustrate where our implementation fell short of our goals."*
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> **Bruce Pulkkinen**
> **President, Windham Millworks, Windham, ME**

> *"The NGM survey was a must-do for manufacturers. Just filling out the survey was a learning experience. It challenged management to think outside the box and look at manufacturing from different perspectives. As general manager of a small manufacturer in western Maine that distributes products throughout the United States and 38 foreign countries, I appreciated the wealth of information that this survey generated for our company. It's helping us identify changes that we look forward to implementing."*
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> **LoLisa Windover**
> **General Manager, Winderosa Gasket, Dixfield, ME**

> *"As a contract manufacturer of electronic equipment in homeland security, medical, defense, semiconductor and other industries, this survey provided pertinent information that will help us benchmark some areas in our company that we may need to improve to*

stay competitive. It has also been helpful for us to see the areas in our business where we are leaders in the industry. This allows us to market our company around our strengths, while we focus on improving our weaknesses. We have never filled out or been involved in a survey so extensive and detailed that really focused on benchmarking many different industries in the manufacturing arena. It has been a useful tool that we will use for reference and hope to be involved in any future follow-up Next Generation studies."

David Metzemaekers
Director of Operations, Scott Electronics, Inc., Salem, NH

"The NGMS not only provides a great benchmark for manufacturing across the nation but it also allows a company to compare itself against other local manufacturers. It can be used as a tool to put together an improvement plan that spans all functions of a company and helps it better compete in today's global environment."

Mark Godfrey
Chairman, Felton Brush, Inc., Londonderry, NH

"The NGMS is probably the most exhaustive and detailed study of the U.S. manufacturing base ever conducted. In today's climate of globalization and the threat of lost manufacturing jobs, it's important to know where the U.S. stands as a player in the international market. The study was also illustrative for Graphicast, as it highlighted where we stand compared to the over 1,000 companies that responded to the study. This information gives us a clear path to follow to achieve world class status in technology and service."

Val Zanchuk
President, Graphicast, Jaffrey, NH

For a copy of the full report, *Next Generation Manufacturing Study: Overview and Findings*, please visit the Maine MEP Web site at www.mainemep.org.