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Four Questions, Four Answers for Small and Medium Manufacturers

Introduction to 2008 IndustryWeek SMM series offers key insights, strategies into continued viability of this vital manufacturing sector

Wednesday, December 19, 2007

By David Blanchard

Small and medium manufacturers (SMMs) based in the United States play a vital role in producing goods that are consumed worldwide. In fact, 97% of all exporting manufacturers in the U.S. have fewer than 500 employees. And yet, too often these SMM have been overlooked -- by their billion-dollar customers, by their government and even by each other. Time, then, for a new strategy that would more directly address the needs of the SMMs.

"Small and medium manufacturers account for 40 percent of U.S. production value, and their successes and failures can have a substantial impact on America's economy," says John Engler, president and CEO of the National Association of Manufacturers (NAM). "Manufacturers must collaborate closely with new domestic and overseas partners to survive and thrive in the global supply chain. In today's economy, small and medium manufacturers are more than just suppliers. They are helping to create the new technologies, products, services and business models that are vital for success, both here and abroad. By connecting with outside resources -- customers, government, academia -- small and medium manufacturers can swiftly expand their core competencies and gain economies of scale," he says.

A new report, "Forging New Partnerships: How to Thrive in Today's Global Value Chain," offers insights and strategies for small and medium manufacturers to optimize opportunities and minimize risks in today's global value chain in four key areas: harnessing innovation; building a skilled workforce; exporting and overseas growth; and financing. The report, which includes research and data based on the [IndustryWeek/Manufacturing Performance Institute Census of Manufacturers](#), is co-sponsored by the NAM; its research and education arm, The Manufacturing Institute; and RSM McGladrey, Inc. The report is available at www.nam.org/supplychain.

Throughout 2008, **IW** will run a continuing series of articles exploring in further depth the best practices of SMMs and how they're making a real difference in their factories and their global supply chains.

"Traditional supply chains are morphing under the pressure of a globalizing economy," observes Thomas G. Murphy, executive vice president of RSM McGladrey, Inc. "Manufacturers adhering to old supply-chain rules are putting their businesses in jeopardy by not adapting to new rules. Large companies are handing off much of their innovation to small and medium companies that in the past merely built to specifications. The new global manufacturing supply chain is a whole new frontier.

This increased responsibility for firms comes with increased risk that is intensified by the unprecedented movement of goods around the world."

On the occasion of the report's release, **IndustryWeek** posed a series of questions to the authors to gain additional insight into the challenges confronting SMMs. Their remarks are below.

IndustryWeek: *Many small and medium manufacturers (SMMs) feel that government doesn't understand their problems, and that the only solution government is likely to come up with is "raise taxes," while meanwhile low-cost countries continue to undercut them on pricing. So why should manufacturers put any faith in government coming to their rescue? Can you recommend any strategies for these companies, especially those in slow-growth industries, to secure the funding and financing they might need to remain competitive?*

Bill Cannis, president, The Manufacturing Institute: State and Federal governments won't rescue an SMM but they are a resource that has proven its value over and over to SMMs who have sought out strategic advice in innovation, exporting, technology and other business challenges. There are millions of dollars of assistance available at your fingertips.

It's now common for suppliers to assume complete design responsibility for their materials that are incorporated into an end product such as an airplane, car or appliance. This presents challenges to SMMs, and many are ill-equipped for this shift in the value chain. More than 60% of small manufacturers lack a defined new product development and introduction process. In most companies, ownership of innovation is distributed throughout the organization, but in SMMs, this function is typically managed by a single senior executive or business owner.

Many SMMs are trying to get closer to customers for product development, with just 56% reporting some integration with suppliers compared with 72% of large companies. If an SMM sees the need to transform its operations so it can succeed, where will it turn?

If the company wants to identify export markets abroad -- even if that means just Canada or Mexico -- then the U.S. Foreign & Commercial Service was established to help companies with this process, plugging into U.S. Embassy resources abroad. The U.S. Export-Import Bank has as a priority the financing of exports from smaller companies. Similarly, the NIST Manufacturing Extension Partnership (MEP), a part of the U.S. Commerce Department, can show SMMs how to identify and harness the technology and new processes like lean that they need to cut costs and compete more effectively.

In addition, Small Business Innovation Research (SBIR) awards encourage SMMs to profit from technology; the Small Business Technology Transfer Program (STTR) provides funding opportunities for innovation R&D. If you want skilled workers as you expand or to replace Baby Boomers who are retiring, partnering up with your local schools and community colleges is probably the best way to get the pick of the most qualified students, by meeting them long before they enter the job market. State governments provide a wide range of support for manufacturers, including industrial revenue bonds and grant money for worker training. The [Dream It. Do It.](#) manufacturing careers initiative, underway in many cities and states, is a partnership of manufacturers with local technical schools and civic leaders, often funded by significant grants from the state government.

IW: *What type of "green" best practices are SMMs adopting to reduce their energy usage? What*

should they be doing to become more efficient in their processes, products and procedures?

Tom Murphy, executive vice president, RSM McGladrey, Inc: Small and mid-sized manufacturers need to think about efficiency, conservation, and the environment in everything they do. All of these factors are interconnected. If you make your company more efficient, then you are going to be using less inputs. If you use less inputs, there is more left over for the rest of us.

The NAM report found that forward-looking companies are searching for ways to tap into the public's new "green priorities" using the three green principles of reduce, reuse, and recycle. Green among SMMs isn't just about products and markets, but also about innovative processes and philosophies. For instance, Phoenix-based manufacturer, Marlyn Nutraceuticals, designed a plant that incorporated solar panels to heat water, a NASA-developed ceramic-roof coating to protect against excessive heat, and a non-freon air conditioning system.

SMMs looking for assistance going green could tap the Green Suppliers Network, a joint effort of the US Environmental Protection Agency and the NIST Manufacturing Extension Partnership. These agencies work with larger manufacturers to engage suppliers in low-cost technical reviews to identify strategies for improving process lines and using materials more efficiently. For instance, Michigan-based small manufacturer, Metalworks, was able to reduce its water use by more than 16 million gallons a year by utilizing the network's Lean and Clean Advantage program. If all companies made minor adjustments to their energy usage, the result would impact companies and energy in a big way.

IW: *What can SMMs do to attract and retain talent, especially skilled labor who understandably will be looking for the best opportunities and wages?*

Tom Murphy: With the waning workforce, attracting and retaining talent is a top priority for the manufacturing industry. As future employees consider their options, it is important to know that there are many benefits to working at small and mid-sized manufacturing companies. The opportunities can be great -- if not greater -- at a small company due to the ability to make more decisions and a hands-on approach. These companies provide skilled laborers with more independence and the ability to be involved at a higher level.

But this issue of a shrinking workforce needs to be further addressed. According to RSM McGladrey's 2007 Manufacturing and Wholesale Distribution survey, approximately 30% of companies have a shortage of workers across all levels, from entry level to engineers and accountants. One reason is because the industry requires advanced technical and interpersonal skills just to get through the door. Writing, teaming and leadership skills are important assets in today's workforce and the manufacturing industry is no different.

One part of the solution lies in changing the perception of the manufacturing industry. There are common misperceptions that hinder the workforce growth.

Many people think manufacturing is stalling. This is far from the case. State-of-the-art technology has allowed the industry to produce twice as much with half the workforce. But we still need skilled laborers to continue growing and succeeding in a sophisticated environment. Businesses need to have relationships with high schools, technical schools, and colleges to engage potential workers. In addition, participating in job fairs is another way to promote the benefits of the working in the

industry. Another challenge lies in the fact that the aging workforce ends up taking knowledge and skills with them when they retire. We must find a way to harness this knowledge and keep it even after people retire.

IW: *Given their limited resources, what should SMMs concentrate on in terms of technological investments?*

Tom Murphy: Technological investments vary by industry and stage of development. But given the complexity of the global economy, information technology is paramount.

According to data from the RSM McGladrey 2007 Manufacturing and Wholesale Distribution Survey, about two-thirds of SMMs "strongly agree" or "agree" that information technology is increasingly critical. 58% are expanding use of their existing IT systems and 50% believe that more training would help them make better use of existing technologies.

The ability to have information flow at the speed of the internet is critical for SMMs, so any technology that enables quick communications is a good investment. For example, broadband speeds in the United States are substantially slower than what's found overseas -- 1.9 megabits per second in the United States versus 61 megabits per second in South Korea -- putting US manufacturers and all of U.S. business at a connectivity disadvantage. The kicker is that Americans often pay more for slower service.

SMMs can help improve a state or national technology disparity by making their voices heard to elected officials. More immediately, SMMs can improve the infrastructure and the capabilities of systems that do exist by selecting systems, vendors, and applications that best support their needs.

Technology means the ability to innovate and grow business. SMMs should always dedicate resources to this end. In a connected supply-chain environment, SMMs must invest in enabling information technologies that can improve productivity.

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