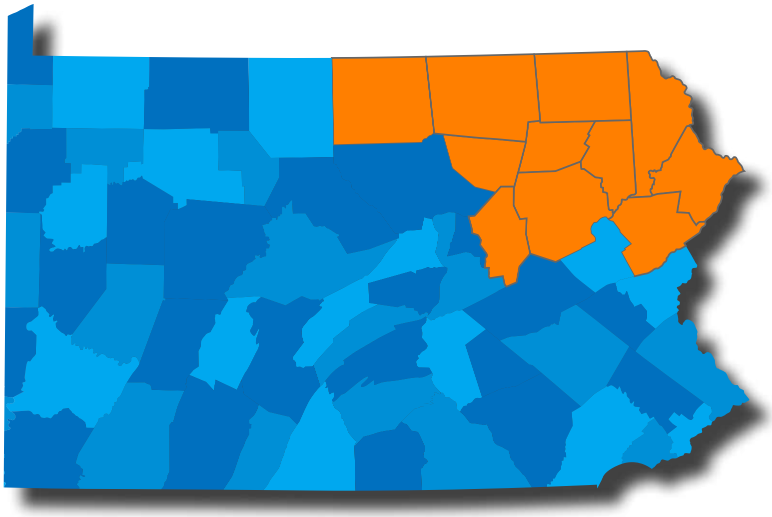

Regional Barriers to Manufacturing Growth

A 2010 to 2014 Trend Analysis

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Each year, the Fors Marsh Group, a Virginia-based applied research firm, conducts comprehensive surveys and interviews of small and mid-market manufacturers to determine their greatest strategic challenges for the year ahead. During this process, participating companies are asked to identify and discuss the top three barriers to their continued growth. Survey results are then analyzed by the U.S. Department of Commerce and relayed to organizations that specialize in providing support to manufacturers so that their services can be more closely aligned with industry needs. Data is provided at the national, statewide and individual region levels.

NEPIRC – the Northeastern Pennsylvania Industrial Resource Center – recently completed a trend analysis of northeastern and northern tier manufacturer survey results from calendar years 2010, 2012 and 2014. Over 200 company responses were reviewed as part of this effort. Conclusions drawn from the analysis are summarized in this document.

Maintaining Continuous Improvement Efforts Remains Top Priority

Across all three years analyzed, 72% of companies – a level that greatly exceeded that of any other shared challenge – placed the upkeep and expansion of their continuous improvement, or Lean Manufacturing, initiatives among their top priorities.

Concerns about the long-term sustainment of Lean Manufacturing systems, and the integration of new practices into existing systems, peaked in 2012, when nearly four out of five companies cited it as a challenge. The good news, however, is that while Lean Manufacturing techniques were viewed as ways to reduce production costs in 2010 and, to a lesser but still notable extent, in 2012, manufacturer focus shifted to the productivity improvement benefits of Lean Manufacturing as orders began to increase in late-2013 and throughout 2014.

Now, many manufacturers view continuous improvement as a proven way to bolster productivity, reduce lead times and become profitable over shorter production runs and, therefore, as a way to grow their business rather than simply cut costs. As case in point, the majority of NEPIRC clients that pursued Lean Manufacturing initiatives during 2014 reported not only cost savings, but increased revenue and new job creation as well. Thus, the storyline relative to Lean Manufacturing is that while it remains a high priority to regional manufacturers, it's being pursued not only for its beneficial impacts on production costs, but also for its ability to empower manufacturers to expand output without extensive capital investments, which then stabilizes and grows manufacturer employment.

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Identifying Growth Opportunities: A Persistent Challenge for Mid-Sized Manufacturers

While the frequency of most business challenge options varied considerably across the survey periods – with some oscillating by as many as 15 percentage points between high and low – the challenge of identifying growth opportunities for existing product lines remained at a stable, and alarmingly high, level across that timeframe. Overall, slightly more than one-half of participating companies placed this challenge among their top three. In each year reviewed, it was the clear number two finisher. This fact is worrisome in its own right, but perhaps of even greater concern is the number of repeat survey participants – or companies that took part in the study in two or more years – that continued to report the identification of growth opportunities as an obstacle. NEPIRC's multi-year survey analysis proved that while small and mid-sized manufacturers frequently accomplished revenue growth as a result of isolated top-line-focused efforts, they eventually found themselves once again challenged in this area because they failed to incorporate effective business growth practices into their company DNA. Their "shot in the arm" efforts may have yielded temporary benefits, but the panacea soon wore off.

While the solution to achieving consistent and predictable revenue growth may be elusive to many manufacturers, it should be noted that companies that invested in strategic planning, sales training, and market opportunity research projects, some with NEPIRC or Ben Franklin Technology Partners assistance, had a much lower level of recurring challenges in this area than companies that did not pursue such tactics.

Product Innovation and Development Worry Nearly 50% of All Companies

Concerns over product innovation and new product development (NPD) rose steadily over the 2010-2014 time horizon, as competing in commoditized product markets continued to impinge upon profit margins. Recent reductions in Department of Defense (DoD) spending could account for a portion of the increase as well as DoD contractors sought ways to accelerate their entry into other industry supply chains or consumer markets. Companies, particularly those that classify themselves as "job shops" that manufacture products according to buyer-defined specifications, expressed significant worries over how to effectively and accurately evaluate new product ideas to separate "winners" from "losers" before investing in costly engineering, development and prototyping. Others indicated that they have problems locating new technologies that are integral to the development of a product that they have already conceptualized.

In contrast to the trend observed relative to identifying growth opportunities, however, multi-year participants rarely cited innovation or NPD as a challenge area in more than one year. While not expressly proven by the survey process, the lack of repeat citation of this worry by many companies would suggest that they have perhaps "cracked the code" and identified successful ways to generate new product ideas, pursue appropriate research, locate new technologies and assess the applicability of those technologies to their businesses. Tools such as Technology Scouting, Innovation Engineering, Lean NPD and Technology Driven Market Intelligence – offered locally and through leading universities – often prove helpful in addressing these types of worries.

Concerns About Employee Attraction and Retention Rose Sharply and Remain High

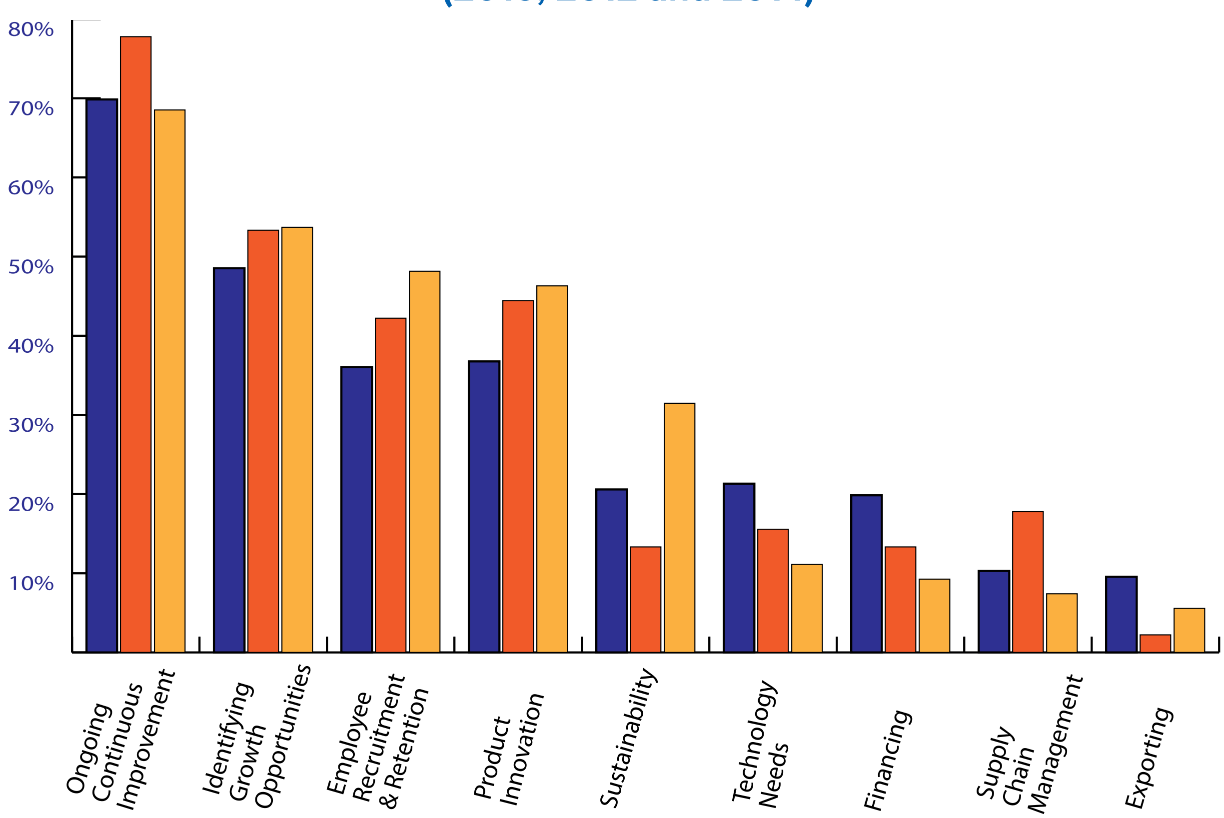
Of all concerns, those relating to employee attraction and retention increased the most dramatically over the past four years. In 2010, slightly more than one in three manufacturers expressed concerns about attracting a qualified workforce. By the end of 2014, that number had risen to nearly one-half. As more baby-boomers approach retirement, this concern is likely to become even more widespread and, based upon its trajectory, will surpass all other manufacturer challenges well before 2020. Like concerns over identifying growth opportunities, this issue had a high repeat rate, indicating that manufacturers are struggling to identify tactics that are effective against it. Innovative practices such as youth apprenticeships, employee reward programs for successful co-worker recruitment and partnering with community colleges for courses conducted in the workplace seem to be somewhat effective at stemming the workforce crisis in manufacturing. Other manufacturers are turning to social media, visa sponsorships and high-tech company recruiting fairs to attract the next generation of workers.

Focus on Manufacturing Sustainability Fluctuates Before Reaching New High

Apprehensions surrounding the pursuit of sustainable (or "green") manufacturing techniques fluctuated greatly between 2010 and 2014 and ended the analysis period at a new high. A level just shy of one-third of all manufacturers placed the topic within their top three business challenges. It should be noted, however, that the definition of "sustainability" seems to have changed slightly during that period – from meaning sustainable processes in 2010 to sustainable products by 2014.

While energy efficiency, prudent natural resource utilization and sound environmental practices remain a priority for today's manufacturers, many companies are also endeavoring to incorporate reuse, recycling and sustainability into their products in order to satisfy their customers or meet societal expectations of good corporate citizenry. It is in this area, however, that they are experiencing significant difficulties. Industry practices and industry environmental standards – such as ISO 14001, which is currently being updated for 2015 – provide manufacturers with road maps for implementing sustainable processes. However, with respect to creating sustainable products, no such blueprints yet exist. Many manufacturers are turning to university-based research facilities to assist them in their sustainable product endeavors, while others are using innovative approaches – such as social media, business competitions and crowdsourcing – to develop green product ideas.

Graph 1 – Regional Manufacturers' Top Business Challenges (2010, 2012 and 2014)



Technology Needs, Financing, Supplier Management and Exporting on the Radar

While not among the top five in reported frequency, topics such as technology needs, financing, supply chain management and exporting surfaced as business concerns to some extent. Overall, concerns over technology and financing decreased during the timeframe studied, as the affordability of new technology and accessibility of private and public financing for businesses both improved during the period. Worries over supply chain management techniques and exporting strategies were inconsistent over the years, but remained at low levels overall. Many companies cited existing regional resources, such as those available through the NEPA Alliance, as helpful in mitigating their exporting concerns and implementing export strategies.

Conclusion

NEPIRC's multi-year analysis of input from over 200 regional small and mid-sized manufacturers regarding their top three barriers to growth proved that while the order may have changed, the top four challenges remained the same and, in fact, are becoming even more prominent. As the related graph indicates, concerns about maintaining and expanding continuous improvement efforts continue to be at the forefront of manufacturers' minds.

At the same time, worries about identifying growth opportunities, innovating new products, and attracting and retaining qualified workers are all on the increase. At the current rate of growth, employee attracting concerns will be atop the list within five years, with product innovation overtaking the second position soon thereafter. Sustainability issues remain the wildcard, up sharply in 2014. In order to continue to thrive in our communities, maintain their robust employee rosters (currently at nearly 10% of total regional employment) and create more family-sustaining jobs, our manufacturers need to tackle these challenges head-on and utilize the many resources available to them – NEPIRC, the NEPA Alliance, our regional Ben Franklin Technology Partnership office, our network of universities and community colleges and others – to develop successful strategies in these business areas.

Biography

Eric Joseph Esoda is the President/CEO of NEPIRC – the Northeastern Pennsylvania Industrial Resource Center – a not-for-profit corporation that provides consultative services specifically to our region's small and mid-market manufacturers. Mr. Esoda is also President of the Pennsylvania Industrial Resource Center Network, a member of the American Small Manufacturer's Coalition Board of Directors and former Manufacturing Champion of the Year Nominee by the U.S. Department of Commerce.

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