



Supply Chain Innovation: Strengthening America's Small Manufacturers

by Bob Bengel, NWIRC President/CEO



On March 18, the White House launched a Supply Chain Innovation Initiative focused on building public-private partnerships to strengthen small U.S. manufacturers.

As discussed in depth in a new White House and Department of Commerce report, a dense network of small manufacturers makes up the backbone of America's supply chains, contributing more than 40 percent of all manufacturing employment. However, even as their share of U.S. manufacturing employment grows, small firms continue to face stiff challenges in innovation.

As the new report finds –

- Small manufacturers are playing an increasingly important role in U.S. supply chains and the manufacturing sector overall. Today, small manufacturers employ 42 percent - or nearly half of all U.S. manufacturing workers - up ten percentage points from their share in the 1980s.
- Dense networks of these small manufacturers are vital to the process of taking a product from concept to market, and the exchange of manufacturing know-how across suppliers is essential for the diffusion of the new product ideas and innovative processes that give U.S. manufacturing its cutting edge.
- However, because of the unique barriers they face, small manufac-

turers often lag their larger peers in adopting critical new technologies. For example, a recent survey found that fewer than 60 percent of small manufacturers were experimenting in any way with 3-D printing, a potentially transformative technology that is especially beneficial for small companies due to its flexibility. In contrast, over 75 percent of large firms were using the new technology.

The Supply Chain Innovation Initiative will focus on public-private partnerships and new federal efforts to strengthen U.S. manufacturing overall by closing this gap.

Later this year, the Administration will convene a Supply Chain Innovation Roundtable of CEOs and representatives of leading manufacturers committed to partnering with small businesses in their supply chains to accelerate technology adoption, strengthen the linkages within domestic supply chains, and to improve product design and process engineering.

In addition, the Departments of Commerce, Energy, and Defense, as well as the Small Business Administration, will announce additional Federal efforts to help small firms adopt cutting-edge technologies and improve information flow within supply chains.

The new report on the importance of small- and medium-sized manufacturers to supply chain innovation can be accessed at: https://www.whitehouse.gov/sites/default/files/docs/supply_chain_innovation_report_final.pdf



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Engineering Apprentices Fill Skills Gap for Manufacturers

by Michael Griffith, Innovation Engineering Specialist



The Manufacturing Institute and Deloitte recently released their third skills gap study: *The Skills Gap in U.S. Manufacturing 2015 and Beyond*. This re-

port suggests that a widening skills gap over the next decade could result in two million manufacturing jobs that will go unfilled.

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Engineering Apprentices Fill Gap for Manufacturers (Continued)

Furthermore, the study reports that 6 out of 10 manufacturing positions today remain unfilled due to the talent shortage, even though executives are willing to pay more than market rates and that industry perception also plays a role. There are several contributing factors to the widening gap – baby boomer retirements and economic expansion are commonly cited, but a lack of STEM (science, technology, engineering and mathematics) skills among workers is also a factor. Projected manufacturing skill shortages in the workforce category of engineers shows the most dramatic increase over the next 6 years.

The 2014 shortage for engineering skills was 33% and is projected to be as high as 48% by 2020. Seventy-eight percent of manufacturing executives surveyed believe



the skills gap will impact their ability to implement new technologies and increase productivity, and 62% indicate it will impact the ability to innovate and develop new products.

Advanced manufacturing engineering apprentices offer a great multi-purpose solution to narrow the gap. They offer the manufacturer opportunities to 1) improve technology development, 2) increase margins, and 3) mentor and evaluate future skilled leaders. The NWIRC's Advanced Manufacturing Apprentice Program connects manufacturers with regional college and university STEM students for the purpose of developing or implementing technology that will have significant business impact for the manufacturer. Manufacturers can benefit from wage savings of up to 50% of the apprentice's base pay for qualifying three (3) to six (6) month projects.

Because many companies lack the resources to cultivate relationships with regional colleges and universities, the NWIRC Innovation Engineering (IE) Specialist assists with the placement process from identifying a project to selecting a candidate. Snapshots of current qualifying projects include: 1) a company seeking a Materials Engineering student to develop a process for evaluating new product materials, 2) another is utilizing a Quality Engineering apprentice to develop a "test project" auditing their ISO documentation, and 3) yet another is utilizing an Environmental Health & Safety (EHS) Engineering student to assist compliance with new OSHA Globally Harmonized (GHS) System of Classification, Labelling and Hazard Communication regulations.

The bottom line is to be mindful of the widening skills gap and consider how an advanced engineering apprentice might propel your future growth.

For more details about this program, please visit our website www.nwirc.org/ie/app or contact me directly at 814-450-9752.

Source: *The Skills Gap in U.S. Manufacturing 2015 and Beyond*, Manufacturing Institute and Deloitte. Complete study can be found at www.themanufacturinginstitute.org

Learn. Get Inspired. Find Solutions.

NWIRC is a sponsor of this year's eCommerce Day Forum scheduled for May 21 at the Ambassador Conference Center in Erie, PA. This full day event brings together businesses in all industries, including manufacturing, to become better at growing their business through eCommerce. Sessions will offer eCommerce strategies and best practices from companies with first-hand experience and experts in the field. This year, the B2B Panel Discussion will highlight how manufacturers in our region have used eCommerce tactics for their success and things they've learned along the way. The Zippo Manufacturing Company will be a featured participant. You will learn tips for improving your current platform and insight into why you may want to consider an eCommerce strategy. As a sponsor, NWIRC offering manufacturer's a 15% discount off the registration fee. For more details and to register, visit <http://bit.ly/EcomDay2015> and use promo code EcomDayNWIRC15.

If your company is thinking about venturing into eCommerce; launching a website; or entertaining a new enterprise resource planning (ERP) system, talk to your NWIRC Business Advisor today about our IT KickStart Mini-Grant.



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Propel your new IT initiative with a grant from the NWIRC. We also provide solutions and connections with public and private resources.

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- Expanding networks and virtualization

Visit www.nwirc.org for more details.

Building An Employee Development Program You Can Be Proud Of

by Kevin Smith, VIE Associates

The search for skilled talent continues and is becoming a significant challenge for many companies and HR professionals. As a result, many leaders are becoming aware not only of the need to change how they recruit talent, but also the need to get serious about developing internal talent. Unfortunately, **only one in four CEOs report being satisfied that learning and development is making a significant enough contribution in their workforce** (Corporate Leadership Council 2011).

Effective organizations today understand the importance of developing a structured, proactive and multi-tier employee development program. This approach helps close the skill gap by increasing the competencies of those already employed while keeping high performers growing and engaged through continual skill development. In order to develop such a program, there are three keys to success that organizational leaders must keep in mind.

Change the role of HR within your organization

If your HR Manager is spending time planning company parties, chasing new hires for completed paperwork, or dealing with payroll issues, you may need a paradigm shift within your organization. Effective, talent-driven organizations understand the changing role of Human Resources and are shifting the position to one that is much more strategic and forward thinking. In order to implement any effective long-term talent management initiative, the successful HR practitioner must have the skills and authority to perform the following foundational activities:

- Delegate basic administrative functions to administrative personnel. Deploy self-service models to reduce the tactical activities currently distracting the HR practitioner from becoming truly effective.
- Educate line managers on the importance of mentoring and coaching. Managers must be proactive in managing and coaching talent. As a result, the HR practitioner must be able to identify a potential manager's ability to do so during the selection and hiring process.
- Become a true HR professional. Many times personnel holding the HR position were promoted or transferred within. Often in small companies, the HR role is held as a part-time duty by those whose "main job" is in accounting or office management. Today's human resource manager must be aware of the new skills, knowledge and ability required to develop an effective workforce.

Know what it is that you need to know

Too often organizations are reactive to employee development needs. Supervisors take a look at their workforce and determine training needs based upon an immediate need. However, the first step in implementing an effective employee development program is performing a structured needs assessment. A needs assessment is a process designed to identify current and future training needs, those who need the training and what kind of training will be most effective. Many times organizations continue to send employees to training that is not needed, delivered using an ineffective method, or is not in line with the future needs of the organization. A training needs assessment

helps save organizations the wasted time and resources that are symptomatic of ineffective development initiatives. Assessments range from those that help identify the organizational needs to those that are designed to identify the content of a training program. Today's HR professionals must be aware of these tools and use them at planned intervals to ensure an effective program.

Apply training strategically

As a training professional, people are often surprised when I tell them that classroom training, as critical as it is, should only account for about 10-15% of an employee's overall development. Unfortunately, leaders often send participants to training programs only to have them return to the status quo shortly following the training. To ensure effective employee development, organizations must structure their program with the following in mind:

- Classroom training and self-study should account for 10-15% of an individual's development
- Another 15-20% of an employee's development should come from coaching, mentoring and other types of work/feedback relationships.
- The remaining 65-75% of an employee's development should come from the assignment of structured, challenging assignments that take employees out of their comfort zone.

Today's HR professionals must understand this training-to-experience relationship and build a framework that supports the organization's comprehensive training efforts.

Successful organizations are continually looking at different ways to overcome today's workforce challenges and maintain a highly skilled and engaged workforce. Although many of the challenges are external in nature, all efforts must be taken to prevent the loss of high performing and high potential employees currently in place. Developing a comprehensive employee development program must be a major part of those efforts. Understanding the new face of the HR role, assessing the true needs of the workforce, and applying personnel development solutions in a strategic way is key to developing an effective program of which you can be proud.



▶ YOUR STRATEGIC BUSINESS ADVISORS

If you have questions, or would like to speak with someone from NWIRC about services, please contact your Strategic Business Advisor:

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▶ UPCOMING EVENTS

Root Cause Analysis May 19

Location: Erie

Don't just put a bandage on a problem – fix it permanently! This class will enable you to find the root cause – the fundamental underlying reason for a problem by defining, identifying, solving and preventing it from occurring again.

ISO 9001:2008 Audit Training May 19 & 20

Location: Erie

During this 2-day training, participants will learn how to conduct an audit, write the audit report, and take corrective action. Participants will also learn foundational ISO 9001:2008 quality management system requirements, the auditing process, audit instruments and the documentation process.

Statistical Process Control June 9

Location: Hermitage

SPC can be a part of your quality management system. This hands-on class will teach you integrate SPC charts, how to select and use the proper control chart, how to establish control limits and demonstrate how to gather data, construct a control chart, and continue monitoring a problem.

Master Planning of Resources June 11, 18 & 25

Location: Meadville

Explore processes used to develop sales and operations plans, plus identify and assess internal and external demand and forecasting requirements. This course focuses on the importance of producing achievable master schedules that are consistent with business policies, objectives, and resource constraints.

**Check our website for
additional training events.**

For more information visit www.nwirc.org/events