Supporting Rural Manufacturing
by Bob Zaruta, President/CEO, NWIRC

Earlier this year, the Manufacturing Innovation Blog (powered by the Manufacturing Extension Partnership-MEP), published a post about the geography of manufacturing. The article references rural America’s dependence on manufacturing as noted in a report published by the USDA Economic Research Service, “Rural America At A Glance: 2016 Edition” and the important role of the MEP National Network™. Within Pennsylvania’s rural communities, the industrial sector is the largest provider of worker wages and benefits, and many companies are small enterprises playing a critical role in their community. Rural manufacturers often don’t have abundant resources available, like their urban counterparts, to help identify and seize growth opportunities (new customers, new markets). This is exactly the mission of the MEP National Network™ - to enhance a companies’ competitiveness and reinforce their sustainability. As one of seven Centers of the PA MEP, NWIRC serves 13 of the PA counties, the vast majority of which are located in counties classified as rural. To support the MEP mission, we are always looking to address the issues and challenges these manufacturers face by developing new programs and resources to help these companies flourish.

We know that many manufacturers have a challenge in attracting and retaining skilled employees, and this becomes a greater challenge in the rural areas with a smaller population base. Several of our strategic efforts underway center around helping companies develop and sustain a continuous improvement and growth-minded organizational culture of highly engaged employees. A culture that enables the company to stay ahead and outperform its competition, improve its customer and employee satisfaction, and enable greater capacity to seize new business opportunities and to realize significant profitable growth.

Our Lean Together™ working groups focus on concepts from the book, 2nd Lean, which is all about employee involvement and helping your team understand daily productivity and how they fit into the bigger picture. On April 5th, we are hosting employee involvement expert, Steve Ansuini, to share insights and experiences of how companies reap higher gains by focusing more on people versus the bottom line. In addition, we are planning our annual Growth Conference on June 14th in St Marys with this year’s theme ‘Cultivating Rural Manufacturing’ with presenters who focus on leveraging the strengths of rural manufacturers.

These are just a few of the initiatives that enable NWIRC to support manufacturers in rural communities, and beyond.

1 EMSI, U.S. Census Bureau, U.S. Department of Commerce and/or Pennsylvania Center for Workforce Information & Analysis

Showcasing the Latest Manufacturing Technology

The Manufacturing Advanced Expo is coming to Erie May 10th…to showcase the latest manufacturing technology for regional manufacturers. More than 30 exhibits will feature and demonstrate the latest innovations, including collaborative robots, machine safety, and energy saving solutions. The day will also include educational sessions on technology solutions to improve processes and operations.

Presentation topics will include:
- Latest Developments of Hybrid Multi-Tasking Machines presented by Mazak
- An Introduction to Industrial IoT, Industry 4.0 & Why You Should Care presented by Balluff, Inc.
- Reduce Set-up Time and Increase Utilization presented by Hirschmann Engineering USA, Inc. and Methods Machine Tools, Inc.

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- Improving Process Efficiency and Increasing Product Quality Made Easy Using Machine Vision presented by Cognex
- Milling Strategies to Increase Profitability presented by Methods Machine Tools, Inc.
- Robots For Everyone. How Any Company Can Utilize the Latest Tools to Transform Manufacturing Tasks presented by Universal Robots & Robotiq

This free event is scheduled for May 10th from 12noon-5:00pm at the Ambassador Conference Center in Erie PA. The event is hosted by the Northwestern PA Chapter of National Tooling and Machining Association (NWPA-NTMA) and Northwest Industrial Resource Center (NWIRC), with NEFF as the Premiere Sponsor.

According to John M. Bridgen, Sales Team Leader for NEFF- Industrial Automation Distributors- the event Premiere Sponsor, this type of event is important to bring all the latest technology to one place for manufacturers in the region to talk one on one with many product representatives in one day. “This event will get the conversation started about technology a manufacturing company may be thinking about or perhaps didn’t know much about, then follow-up onsite visits can be planned with representatives to review specific needs for their operation,” said Brigden. “We encourage manufacturers to bring along their automation and manufacturing challenges (reduced scrap, increased up-time, etc), because there will be a room full of experts able to provide ideas on moving an application or process forward.” Bridgen said that manufacturers can bring along sample parts for vision or to be picked, so the manufacturer’s representative can better understand the application and they can get started on an evaluation.

There is no charge for the event, but registration is required at www.nwpa-ntma.com/expo. For more information, contact Tami Adams at tadams@nwpa-ntma.com.

Realizing the Importance of Calibration

by Richard A. Litts, President, Litts Quality Technologies, Inc

We all have the experience of pulling into a gas station and deciding which grade to purchase for our vehicle. Sometimes our decision is based upon the manufacturer recommendation while other times it is a matter of price. Usually there is a sign outside the gas station showing the price per gallon in an attempt to entice us into believing one is better than the other. When you look at the sign and it shows: $2.659, $2.959 or $3.259, how do you know that you are getting what you pay for? The same holds true when you visit your local supermarket and purchase cold cuts in the deli. How confident are you that you actually get one pound of that honey oven roasted turkey breast for $8.99? The answer hopefully is that the gas pump metering device and the deli weighing scale are calibrated. Next time you do one of these activities take a look – do you see a calibration sticker from a qualified source? Is it within the calibration frequency or has it expired?

Calibration is the process that determines if the monitoring or measuring equipment is being compared to a standard that is “traceable” to a known artifact. The Department of Defense defines traceability as – “The ability to relate individual measurement results to national standards or nationally accepted measurement systems through an unbroken chain of comparisons.”

In the United States we typically look to the National Institute of Standards and Technology (NIST) as the competent organization to provide manufacturing companies a traceable standard. The Hierarchy of Standards may be defined by:

- National – NIST or designated authority (laboratory)
- Primary – Transferred by NIST
- Secondary – Performed by organizations with access to Primary
- Working – Used to calibrate measuring equipment in a manufacturing facility

If NIST or another national governing body doesn’t have a standard for your monitoring or measuring equipment, you create your own and define the process for determining the standard. You want confidence that the product you are producing is meeting your internal and external customer requirements. Calibration is a significant part of providing assurance that you are meeting these requirements. We know that if we aren’t meeting internal customer requirements we probably won’t meet external customer requirements. Control of monitoring and measuring equipment is part of Quality Management.

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These coordinated activities of doing things up front before the request reaches the ‘production process’ typically cost manufacturing facilities less money in the long run. Many of the ISO Management System Standards have a requirement that when you calibrate monitoring or measuring equipment and it is out of tolerance, you have to assess and record the impact of how much it was out of tolerance on all product that was monitored or measured since the last time it was calibrated. In practical terms, this means that if you calibrate a micrometer on a yearly basis, you have to go back and assess the impact on all product that was measured using that micrometer since the last time it was calibrated. That is one-year worth of data and you must have a record of the assessment. The worst case is that you have to notify your customer that you may have shipped them nonconforming product.

Years ago, a company that publishes case studies was interested in implementing a quality management system. During the development process, I asked them how they knew all of the required documentation is included in the report binder. The owner said, “we weigh it”. The next logical step was to take a look at the weighing scale. In our discussion I asked if the scale was calibrated. The reply was – “not sure”. I then asked how confident he was that the scale would pick up a single sheet of missing documentation from the binder. The response – 100%. I took a stack of paper, turned on the scale and started adding sheets. As I added sheets, the owners’ facial expressions began showing concern. After placing the eighth sheet on the scale registered the first digit. In this case there were two issues. One was having the correct equipment that would detect one missing sheet and the other is having the weighing scale calibrated. It is the responsibility of top management to make sure that the monitoring and measuring system is capable and calibrated. This includes providing resources to 1) make sure the organization has the right monitoring and measuring equipment, 2) make sure that if calibration is performed in-house that employees have the skills and can apply those skills to perform calibrations, 3) to communicate to the organization the importance of using calibrated monitoring and measuring equipment, and 4) maybe most important… the impact of not using calibrated monitoring and measuring equipment. If not, the results can be very costly in terms of scrap, rework or missed customer commitments.

What’s So Cool About Manufacturing Finale

The What’s So Cool About Manufacturing Student Video Contests in Northwest and North Central PA have called it a wrap. Both held their Awards Galas in March, announcing the winners in various categories. Check out the www WhatsSoCool.org website for a list of winners in each of the contests and you can still see all the videos!

The work has already begun for the 2018/19 program (starts with the new school year this Fall). Contact one of the contest managers if you would like to get involved.

Northwest Contest (expanding beyond Erie County):
Laurie Knoll, NWIRC, 814.217.6066
North Central Contest:
Pam Streich, NC Workforce Development Board, 814.245.1835

Northwest Viewer’s Choice: Corry Area Middle School and Viking Plastics

North Central Viewer’s Choice: Oswayo Valley and Cutco Corporation

Cultivating Rural Manufacturing

Manufacturers Growth Conference

Save the Date!
Thursday, June 14, 2018
The Highlands, St Marys PA
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:

**Tom Weible**  
814.590.5202  
Cameron, Clarion, Clearfield, Elk Jefferson, McKean & Potter Counties

**Susan Hileman**  
814.572.2077  
Crawford, Forest, Mercer & Venango Counties

**Ed Barthelmes**  
814.923.3084  
Erie & Warren Counties

UPCOMING EVENTS

**ISO 9001:2015 Internal Auditor**  
April 17, 18, 19  
June 19, 20, 21  
Locations: Erie / Corry  
This 3-day course will provide a detailed review of ISO 9001:2015 quality standard, including the most recent changes. Participants will learn how to conduct an audit, write the audit report, take corrective actions, and more.

**Calibration & Measuring Equipment**  
April 24, 25  
Location: Erie  
Proper gauging/measuring techniques guide the continuous improvement process within an organization. This program will help to improve the competency level of individuals involved in determining if a product meets customer requirements.

**Failure Modes & Effects Analysis**  
May 2  
Locations: Erie  
A failure modes & effects analysis (FMEA) helps uncover potential failures before they occur...while investigating at-risk processes, components, or products. Learn how to conduct and analyze FMEAs and add this to your quality management toolbox.

**IATF 16949:2016 Internal Auditor**  
May 1, 2, 3  
Location: St Marys  
Training of this automotive standard will provide understanding of quality management principles in context with ISO 9001:2015 and the IATF 16949:2016, along with techniques of process-based auditing. Compliance to this revised standard is required by Sept. 2018.

For more information or to register for training, visit www.nwirc.org