Factory of the Future: GE Bets on Cloud

by Bob Bengel, NWIRC President/CEO

As a digital industrial company focused on customers across the aviation, energy, healthcare, and transportation industries, in early August GE announced plans to enter the cloud services market with its new Predix Cloud computer offering. Designed specifically for industrial data and analytics, GE expects this platform-as-a-service (PaaS) to capture and analyze the unique volume, velocity, and variety of machine data within a highly secure, industrial-strength cloud environment.

“Cloud computing has enabled incredible innovation across the consumer world. With Predix Cloud, GE is providing a new level of service and results across the industrial world,” said Jeffrey Immelt, CEO of GE. “A more digital hospital means better, faster healthcare. A more digital manufacturing plant means more products are made faster. A more digital oil company means better asset management and more productivity at every well. We look forward to partnering with our customers to develop customized solutions that will help transform their business.”

Strategically, GE is aiming to combine its expertise in both information technology and operational technology to deliver advanced tools such as asset connectivity, machine data support, and industrial-grade security and compliance.

According to GE, the Industrial Internet is generating data twice as quickly as any other sector and with investment in infrastructure expected to top $60 trillion over the next 15 years, the number of devices connected to the Internet will continue to grow — generating an unprecedented collection of data and analytics. The company expects the Predix Cloud to enable operators to use all of this data faster and more efficiently — saving billions of dollars annually.

According to Roger Pilc, Chief Innovation Officer of Pitney Bowes: “Like GE, Pitney Bowes is in the midst of its own physical and digital transformation. With our APM (asset performance management) apps running on Predix Cloud, we’re able to extract and analyze data from our assets faster than ever, and use that insight to drive real business outcomes for Pitney Bowes and its clients, including lower operational costs, greater productivity and output, and higher service levels. GE knows industrial machines and related data analytics better than anyone, and we look forward to continuing to partner with them on more Industrial Internet solutions.”

GE businesses will begin migrating their software and analytics to the Predix Cloud in Q4 2015, and the service will be commercially available to customers and other industrial businesses for managing data and applications in 2016.

To learn more about Predix Cloud, visit http://www.gesoftware.com/predix.

R&E Tax Credits: Benefits for Manufacturers

Michael S. Neubauer, CPA, CVA, MBA
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What comes to mind when you hear the terms “research and experimentation” or “research and development”? If you tend to think of ground-breaking innovations or inventions, you are not alone. For this reason, a number of manufacturers have overlooked the Credit for Increasing Research Activities, commonly referred to as the “R&E Tax Credit.”

Many companies don’t realize their efforts, time, and resources could have been used to reduce their tax burden.

Previously, a requirement existed that in order to have activities qualify for the R&E Tax Credit, capability, method, and design all had to be uncertain. Additionally, there was a discovery test which required knowledge exceeding that of other professionals in the field (typically patentable knowledge). This is likely a key factor leading to the present-day misconception that research and experimentation activities must be related to brand new inventions.

In recent years, this requirement was modified so that only one

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R&E Tax Credits (Continued from page 1)

of these items (capability, method, or design) is required to be uncertain, and the discovery test was eliminated. In the case of most custom manufacturers, the capability to do the job and the method by which the job will be completed are certain. However, if design at the onset differs from design at the completion of the job, the design would be considered uncertain and the expenditures incurred would likely qualify for the R&E Tax Credit. A company that has design uncertainty and goes through a process of experimentation in order to eliminate this uncertainty would qualify for the credit. There are R&E tax credits at both the Federal and Pennsylvania level, each offering benefits that have the potential to make a significant impact to a company’s bottom line. When a company engages in a project or job that qualifies for the R&E Tax Credit, wages, materials / supplies, and outside services used in activities prior to the point of commercial production will qualify for purposes of computing the credit. This includes, but is not limited to, the time and materials related to production costs, as well as testing and modification of custom tools, dies, molds, production construction costs, and payments to suppliers.

Approximately 61% of the R&E Tax Credit dollars claimed are within the manufacturing sector. Manufacturers that are typically eligible to receive significant benefits include, but are not limited to: plastic injection molders, powder metal manufacturers, tool & die, fabricated metal, chemicals, primary metals, aerospace, and other custom manufacturers. A significant number of manufacturers in our region have found that with the proper understanding of the R&E Tax Credit, a substantial benefit exists that lowers their tax burden and helps them to be more competitive in the marketplace. In addition, new regulations were recently issued that allow depreciable property to qualify for the credit, as well as allowing for a simplified version of the credit (the Alternative Simplified Credit) to be claimed on an amended return, significantly expanding the potential impact of the credit in the first year it is claimed. Given these recent changes, now is the perfect time to begin assessing whether or not your company qualifies for R&E Tax Credit benefits.

CYBERSECURITY SERIES

Over the next several months, NWIRC will present articles by guest writers who are experts in various areas of cybersecurity.

Part 1: Legal Perspective- Preventing and Responding to the Rise of Cyber-Attacks

John Persinger, Associate, MacDonald Illig

Although the Sony, Target, and Home Depot data breaches dominated the recent headlines, manufacturers are also increasingly coming under attack from hackers. There are two specific types of attacks that are on the rise: (1) spearfishing attacks; and (2) intellectual property theft.

Spearfishing attacks primarily start as an e-mail that appears to be from a trusted source, such as a boss or coworker. The purpose is to coerce you into providing a payment or sensitive information. To achieve this goal, the attacks will mimic the language and style used by the trusted source. Earlier this year, Krebs on Security, a cyber security blog, reported on an Ohio manufacturing firm that had suffered a spearfishing attack. An employee received a supposed-email from her boss, who was traveling abroad at the time. The e-mail asked her to wire $315,000 to China to pay for raw materials, which the employee did. Apparently, the boss had requested such transfers before, so the e-mail did not seem out of the ordinary. However, after reviewing the e-mail further and picking up on the formal tone, the employee realized that it was a scam, and the bank stopped the wire transfer.

Manufacturers are also facing an increase in attempted intellectual property theft. In May, the U.S. Government indicted five Chinese nationals for computer hacking, economic espionage and other offenses. The Government alleges that these hackers, among other activities, hacked Westinghouse and stole confidential and proprietary technical and design specifications for pipes, pipe supports, and pipe routing within a Westinghouse-built power plant. Manufacturers with government contracts are particularly susceptible to attacks from foreign hackers.

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Preventing and Responding to Rise of Cyber-Attacks (Continued from page 2)

To better protect your business from hackers, here are a few things that you should consider doing:

1. Identify What is At Risk. Do you have customers’ financial records? Intellectual property? By determining what is at risk, you can better prepare for an attack.


3. Invest in Cyber Liability Insurance. The average cost of a data breach is an estimated $3.8 million. Obtaining cyber-liability insurance may help defray these costs.

In the event that you suffer a cyber attack, here is what you should do:

1. Contact a Cyber Security Consultant. You will need to determine what has been taken and ensure that the hackers no longer have access to your network.

2. Contact Legal Counsel. If you suffer a data breach, you have specific legal obligations. Consult an attorney to ensure that you fulfill these obligations and mitigate any potential liability.

As more information becomes digital and more workplaces rely on digital technologies, hacking attempts of manufacturers will only grow. By preparing for these attacks now, you will possibly prevent an attack from occurring or you might minimize your liability if an attack occurs. MacDonald Illig’s Emerging Technologies Practice Group can entertain questions about preventing or responding to a cyber-attack.

NWIRC promotes apprentice opportunities at career fairs

by Gretchen Reinard, Program Coordinator

Does your manufacturing operation have a need for a Science, Technology, Engineering & Mathematics (STEM) student who can propel a project, but you have limited resources for recruiting? The NWIRC’s Advanced Manufacturing Apprentice Program connects manufacturers with regional college and university STEM students who can develop or implement technology that will have significant business impact. NWIRC makes having an apprentice affordable for manufacturers by offering a mini-grant to offset apprentice wages.

We will be representing our regional manufacturers at university career fairs, including Penn State University Park, Penn State Behrend, and Western PA Collegiate Job & Internship Fair (WestPACs) in Monroeville, to promote available apprentice positions and pre-qualify hundreds of students from various disciplines and geographic areas. Many students attend university, college, and technical school career fairs because they are a one-stop shop to meeting numerous employers and employers benefit by accessing thousands of qualified students at one time and place. Career fairs are especially useful when there are many positions that need filled quickly. NWIRC’s presence at career fairs will provide an opportunity for us to make personal connections with candidates above merely receiving resumes via email or online submissions, essentially a pre-qualification interview. Manufacturers in our 13-county region of NW PA will receive a direct benefit as we continue to build a pool of qualified candidates for matching with their open apprentice positions. This process of connecting manufacturers with the best available apprentice candidates is a key for enhancing business growth.

To learn more about our Advanced Manufacturing Apprentice Program and to have your apprentice opportunity promoted at upcoming regional university career fairs, contact Gretchen Reinard (814.898.6887) or your NWIRC Business Advisor.
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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Take a tour of NWIRC.org!

UPCOMING EVENTS

**HR Forum: Transfer Training into Results**  
September 10, 15, 16 and November 11  
Location: Erie / Hermitage / DuBois / Cranberry  
This program is geared for HR Managers and will focus on how to make learning pay off in the workplace... after the classroom sessions are over.

**Lean Champion Certification**  
October 27,  
Nov 3, 10, 17  
Location: Corry  
Hands-on training and one-on-one assignments specific to your manufacturing business. The program is presented once a week for 4 weeks. Principles of Lean and Value Stream Mapping (the first two sessions) can be taken as stand-alone training.

**Arc Flash**  
October 28  
Location: St.Marys  
This half-day program will cover OSHA regulations pertaining to NFPA 70E, arc flash hazard assessments, electrical hazards and potential injury, safety-related maintenance requirements, protective equipment, employee responsibilities, and more.

**ISO/TS 16949 Audit**  
November 3  
Location: St.Marys  
During this 3-day training, participants will develop skills for identifying non-conformance and promoting continual improvement within their service or manufacturing organizations.

Don’t miss: Morning Huddle- Navigating from Peachtree, Quickbooks, or Excel to ERP in Erie, October 6.

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