

## Grow your company's top and bottom lines with MAGNET's free online tools and resources

Welcome to the first issue of *MAGNET's Manufacturing Roundup*, a newsletter designed to assist Northern Ohio manufacturers address the daily challenges of competing in the global marketplace.

Every other month, *Manufacturing Roundup* will bring you essential intelligence on manufacturing technology topics such as innovation and new product development, facility systems management, process technologies, energy management, Lean manufacturing, Six-Sigma process improvement and similar topics.

In 2009, as part of its federally mandated role as a Manufacturing Extension Partnership (MEP) center, MAGNET has expanded **free access** to all the tools available in its Manufacturing Roundup Service from Questline.

Now, **all** manufacturers in the 29 Northern Ohio counties listed at the end of this article have full access to 16 invaluable online tools for improving competitive advantage, including:

- ◆ The **"Ask an Expert Hotline."** Questline's live hotline to researchers, development experts and engineers who provide confidential **answers to any industry-related question**—from how to reduce overhead costs to finding the nearest workforce development organization. Answers are issued within 24 to 48 hours.
- ◆ An extensive, searchable **Reference eLibrary** with hundreds of articles on manufacturing technology and business efficiency.
- ◆ The **Facility Assessment Wizard** which can generate a customized report that shows how you can lower your energy costs, increase efficiency and improve your bottom lines.
- ◆ An interactive **Benchmarking Tool** to compare your company's performance to industry standards with easy-to-understand tables and charts.
- ◆ **Online Calculators** for fuel cost, annual HVAC cost and motor efficiency.

Here are some of the many ways your company can use the MAGNET/Questline Member Resources:

- ◆ Research patents
- ◆ Calculate your carbon footprint
- ◆ Find new markets and opportunities
- ◆ Answer motor sizing questions
- ◆ Find reliable answers about surge-suppression and power quality questions
- ◆ Locate special equipment
- ◆ Research OSHA and EPA regulations



- ◆ Learn about new welding procedures
- ◆ Evaluate lighting options for parking lots, warehouses or office buildings
- ◆ Estimate the size of a potential new market niche
- ◆ Download MSDS documents
- ◆ Find company profiles
- ◆ Obtain workplace posters

**This comprehensive set of 16 online tools would cost thousands of dollars if purchased from the private sector.**

You can explore all the ways to use these valuable free new tools by registering at: <http://members.questline.com/?24>. Once registered, your email address will give you 24/7 access to all MAGNET/Questline online resources. ■

### **MAGNET's 29-county MEP Service Area includes:**

*Allen, Ashtabula, Auglaize, Cuyahoga, Defiance, Erie, Fulton, Geauga, Hancock, Hardin, Henry, Lake, Lorain, Lucas, Mahoning, Medina, Mercer, Ottawa, Paulding, Portage, Putnam, Sandusky, Stark, Summit, Trumbull, Van Wert, Wayne, Williams and Wood.*

# Is Your Company Leaving Research and Development Tax Credits on the Table?

Out of the IRS returns filed by "C" corporation manufacturers in 2005, a recent study by Ernst & Young identified only 4,921 that filed for the federal government's research and development (R&D) tax credit—and that was a record amount. According to the IPC Government Relations Committee many smaller manufacturers have not been aware that they were conducting activities that would allow them to claim credit for qualified research expenditures (QREs).

Part of the reason is that not all manufacturers are aware that the term "qualified research," as defined by the U.S. Code, includes investments in process improvements that "go well beyond product R&D." These investments can also include the development of in-house software, product design, engineering, and quality assurance. In the case of small companies with less than five million in assets, the average credit was about 2% of the total assets (9% of total assets for companies with less than \$500,000 in assets).

In general, the value of the credit equals the investment expenditures in excess of a defined base, multiplied by the established tax credit rate. The base amount is determined by a formula that measures the intensity of R&D, by reflecting it as a percentage of total gross receipts that were dedicated to R&D expenditures over four preceding years. The credit is tied to an increase in this prior intensity.

By the end of 2004, there were 34 states that also offered R&D credits to companies that had corporate tax liabilities in those states. While many states follow the general design of the federal program, they tend to focus on facilitating growth in targeted economic sectors or specific technologies that the states wanted to pursue. Ohio is one of the states offering this R&D credit.

Any company that may be eligible for federal or state R&D tax credits should have their tax accountant investigate. They should also determine whether the company is entitled to refunds for prior years. ■

**The October 2008 Emergency Economic Stabilization Act (bailout bill) included a two-year extension of the federal R&D tax credit.**

# Exploring the S

MAGNET and America's Manufacturing Extension Partnerships (MEPs) have turned their focus to helping small to medium-sized manufacturers define and build attributes that will distinguish them from their competition. Trials for the first "growth services" offering—Eureka! Winning Ways—began in the fall of 2006. Launched in 2007, the program was widely implemented in 2008.

## ABOUT EUREKA! WINNING WAYS

Founded by Doug Hall in 1986, Eureka! Winning Ways combines leadership training, a workshop, and a project management system into a program designed to help small businesses profit and grow. The Eureka! Winning Ways program is designed to do the following:

- ◆ Improve the effectiveness of a company's sales and marketing staff
- ◆ Define new customers and new markets
- ◆ Show companies how to design more profitable products and services

## HOW THE E!WW PROGRAM WORKS

Employees work together in a 1-1/2 day training session generating ideas for growth. Using a scientific scoring system, the team selects the two ideas with the greatest chance for success and begins the process of bringing them to realization.

### Day 1:

- ◆ Eureka!—Employees work together learning how to facilitate growth. They must create a balance between ideas for growth, what customers want, and what the company can deliver. This may include new customers or markets, new and improved products or services, green opportunities, and more.
- ◆ Merwyn Concept Research—Scientific research helps employees select the two ideas that are most likely to succeed.

### Day 2:

- ◆ During the half-day TrailBlazer development session, employees create a systematic plan for turning the top growth ideas into reality.



## KEY POINTS

- ◆ Many smaller manufacturers may not be taking full advantage of the federal R&D tax credit program.
- ◆ Small companies could claim a tax credit equal to 2% or more of their assets.
- ◆ Qualified research expenditures (QREs) can include process improvements.
- ◆ The state of Ohio also offers an R&D credit.
- ◆ For information on this credit, call the state's Office of Tax Incentives at 1-800-848-1300.

# Success of Eureka! Winning Ways WITH MAGNET

- ◆ TrailBlazer Development—Employees create an action plan for turning top growth ideas into reality. Weekly coaching sessions are held over the course of one month to keep project leaders on track, budgets low, and learning and profit potential high.

Finally, during the next quarter an accelerated workshop is conducted to generate new ideas.

## ANALYZING THE RESULTS

To identify the profiles and outcomes of clients who have been through the Eureka! Winning Ways training, the MEPs contracted with **SRI International** in collaboration with **Georgia Tech** to find out if clients who participated in the Eureka! Winning Ways program viewed the program as successful.

The criteria for selecting the case studies included the size of the company, the industry or industry sub-sector, the length of the company's affiliation with the respective MEP center, the diversity of the Eureka! Winning Ways growth coaches, and geographic locations.

The following two case studies come from companies who have worked with the Minnesota MEP on EWW.

### CASE STUDY ONE: CARDSOURCE

With revenues of approximately \$12 million, CARDSource is a 31-year-old company based in Eagan, Minnesota. With approximately 50 employees, it produces and distributes plastic membership cards, credit cards, and gift cards. For 3-4 years, the company experienced a 10% growth in revenues, but in 2006 growth flattened. In June 2007, employees participated in the Eureka! Winning Ways program. Participants included members of sales, finance, production, and engineering. Strategic business consultants affiliated with CARDSource participated as well.

Eureka! Winning Ways provided the following benefits to CARDSource:

- ◆ An opportunity for the company to focus on the development of new ideas during a time that was critical for continued success
- ◆ The staff now realizes the benefit of distributing idea generation more broadly within the company
- ◆ It became clear that top managers are not solely responsible for business improvement and new development



**Findings and Observations:** Since participating in the Eureka! Winning Ways program, CARDSource has come to realize the importance of an idea generation and evaluation process and plans to dedicate more human resources to the development of new ideas and the exploration of new practices.

### CASE STUDY TWO: HARMONY ENTERPRISE

With annual revenues of approximately \$11 million and approximately 65 employees, Harmony Enterprises in Harmony, Minnesota designs and manufactures recycling products. Harmony has experienced growth in revenues of 10-15% annually, but their goal is to increase revenues 25-30% annually.

In June 2007, staff members from engineering, accounting, sales, production, and customer service (14 employees in all), took part in a Eureka! Winning Ways session. Two of the 64 ideas generated during the session made it through the vetting process. One idea—the use of photovoltaic cells as the principal source of power for Harmony balers and compactors—has not made it into development. The second idea, an automated tying system has been developed, produced, and added to Harmony's portfolio of product features. This feature has contributed to a 53% increase in revenues since October 2007.

Eureka! Winning Ways provided the following benefits to Harmony Enterprises:

- ◆ Harmony updated and improved their Web site and marketing materials

## KEY POINTS

Eureka! Winning Ways is designed to help small businesses profit and grow by helping them to define new customers and new markets.

In northern Ohio, MAGNET is your provider of Eureka! Winning Ways services. If you're interested in EWW, call Bob or Linda at MAGNET at 1-800-GROW-MFG.

- ◆ During the session employees must create a balance between ideas for growth, what customers want, and what the company can deliver.
- ◆ Eureka! Winning Ways shows companies how to design more profitable products and services.

- ◆ A 53% increase in revenues, resulting from the development of an automated tying system—an idea generated during the session
- ◆ The development of a collaborative partnership with the University of Minnesota
- ◆ The staff now realizes the benefit of distributing idea generation more broadly within the company

**Findings and Observations:** Harmony Enterprises felt the program was a success because the ideas generated during the session were within the scope of what the company could do at the time. The automated tying system was accomplished with existing capacity so there was a disproportionate gain in revenue relative to their investment, but the success of that idea is having a positive impact on plans for the development of the solar-powered balers. ■

# New Product Development: Innovation by Chaos or Order?



The **InnovationNetwork** of ThinkSmart defines innovation as "implementing new ideas to create value." It means doing things differently, exploring new territory, and taking risks.

There are two schools of thought on innovation for new product development. One perspective is to achieve a "lean" product development process based on order. Another perspective is that the product development process is inherently chaotic. A proponent of the first perspective, Dr. James Morgan, outlined the following lean product development process in an article titled "**Applying Lean Principles to Product Development.**"

- ◆ A holistic, systems approach to product development that integrates people, process, and technology.
- ◆ An embedded customer-first approach to product development.
- ◆ A front-loaded process, as opposed to the "fire, ready, aim" approach.
- ◆ Built-in learning and continuous improvement that incorporates post-mortem learning events.

- ◆ Synchronized [non-linear] processes for simultaneous execution that discriminate between stable data and variable data.
- ◆ Rigorous standardization (reusability, common architecture, and standard processes) that creates strategic flexibility.
- ◆ Go-to-the-source engineering that keeps designers in close proximity to physical products.

Consultant Jim Clemmer epitomizes the chaotic perspective in "**A Process for Continuous Innovation and Controlled Chaos,**" stating that a "continuous innovation stream comes from controlled chaos." This chaos is epitomized by exploring and experimenting, while developing and integrating new products. The exploration phase looks for unmet needs and new market opportunities that are consistent with a firm's internal corporate vision and core competencies.

These two actually have a lot in common. The customer-first attitude of lean product development and the exploration phase of controlled chaos both require market insight. In an APQC best practices report, **New Product Development: Gaining and Using Market Insight**, APQC studied new product launches from six organizations: 3M, Compaq, Johnson & Johnson, Maytag, Motorola, and Xerox. It studied the ability of these companies to develop a market insight capability, the tools and techniques used to gain market insight, and how this information was shared (knowledge management). The results of this study included the following insights:

- ◆ Customer knowledge (voice of the customer) drives innovation. Businesses often assume they understand the needs of their customers when they do not.
- ◆ Cross-functional teams (marketing, engineering, IT, and so on) trained in market research are most effective in gaining market insight.
- ◆ Market insights should be shared not only internally, but also with outside partners, such as suppliers and vendors.

## Additional Resources

- ◆ **Innovation and Organizational Learning** by Jim Clemmer.
- ◆ **New Product Development Body of Knowledge** by DRM Associates and PD-Trak Solutions. ■

MAGNET is a provider of Manufacturing Extension Partnership (MEP) services through the National Institute of Standards and Technology (NIST), an agency of the U.S. Department of Commerce. MAGNET is also one of the Ohio Department of Development's seven Edison Technology Centers and a Third Frontier Center of Excellence in Product Innovation.

For more information on MAGNET, visit [www.magnetnetwork.org](http://www.magnetnetwork.org).

To see our Product Design & Development capabilities, visit [www.magnetpdd.org](http://www.magnetpdd.org)

To speak with MAGNET, call 1-800-GROW-MFG and ask for Linda Barita or Bob Sichau.

Email us a question at [info@magnetnetwork.org](mailto:info@magnetnetwork.org)

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4600 Prospect Avenue  
Cleveland, Ohio 44103-4314  
Manufacturing Advocacy & Growth Network  
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