

Accelerating Technology Transfer

Upstate New York has a growing infrastructure that provides support for early-stage companies, meaning those companies that are already established with some initial funding and staff. However, an ongoing challenge to the goal of building more such companies is how -- at a much earlier stage -- to identify and support new technologies that have the most promising potential for commercialization.

These ideas emerge daily from universities, R&D labs, and the broader community. And the inventors and researchers behind these creations often want to start a company to make products based on their discoveries. But these tech-focused individuals often have no business education or experience, and no effective way to determine whether or not their idea has commercial viability.

In other words, there are billions spent for private and government funding of R&D, and there are equity investors and grants available once a company is formed. However, very few resources are applied to the period after a technology or idea is realized and before the initial seed investment is made in a start-up company -- a period that often lasts several years.

The result is that the world never benefits from many discoveries that actually have commercial potential and, conversely, resources are often wasted trying to build an invention-based business when a quick systematic analysis might have revealed that there was little chance of commercial viability.

For a decade, AM&T has been collaborating with universities and a Rochester-based company to help address this "pre-seed gap" -- the phase between idea realization and the initial or seed investment in a new company. This program is in the form of a series of Pre-Seed Workshops ("PSW"), with the most recent example occurring in May at the University at Buffalo Center of Excellence in Bioinformatics and Life Sciences.



Members of all the Pre-Seed Workshop teams gather every 60-90 minutes for a briefing about their next assignment.

The PSW curriculum used in Buffalo was developed ten years ago by Networks LLC, launched in Rochester, and was quickly adopted by university communities throughout New York State; and AM&T became involved at the outset. Ed Gaetano, AM&T's executive director, explained: "Most people associate AM&T with our primary mission -- assisting established manufacturing companies. However, an important secondary focus is for us to support entrepreneurs in becoming the manufacturers of the future. With this in mind, AM&T has provided Pre-Seed Workshops with a decade of financial support and staff consultants who work directly with the workshop participants."

More recently, Michael Meador, an AM&T principal consultant, became a certified PSW facilitator, and co-led the Buffalo event as well as recent workshops at Cornell, Binghamton, and Stony Brook Universities

Mark Wilson, one of the original PSW creators, described the PSW as, "...a two and a half day, build-a-company event that rallies community talent and resources to investigate and transform potentially commercializable technologies into pre-seed stage companies. We take 6-8 ideas, assemble teams to work with each inventor, and give them a range

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Alliance for Manufacturing & Technology

HOW WE HELP

- Business Assessments
- Strategic Planning
- Lean Enterprise
- Supervisory Training (TWI)
- Project Management
- ISO/AS Quality Systems
- Sales and Marketing
- New Opportunity Identification and Growth — Markets, Products, Services, Customers

AM&T is a not-for-profit economic development organization that receives significant financial support from the New York State Foundation for Science, Technology and Innovation (NYSTAR), and the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP). AM&T is a NYSTAR® designated Regional Technology Development Center for the Southern Tier and is one of nearly 50 MEPs located across the country. AM&T works directly with regional companies to increase their competitiveness and profitability.

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Empire State Development
Division of Science, Technology & Innovation

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A Pre-Seed Workshop Team at University at Buffalo evaluates the commercial potential of using ultrasonic communications in the human body.

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of assignments that examine all the critical aspects of moving their idea from the concept to the pre-seed stage. Each team that conducts the analysis simulates a real start-up company with members who have diverse expertise in technology, business, finance, law, etc., and includes a designated facilitator -- a coach".

At the Buffalo PSW, eight teams were assembled to focus on ideas that included new tools for medical and dental procedures, a drug safety screening device, and software to support better autism treatment and education. During the initial day and a half, the teams built the foundations of their assessments in a series of intense hour-long sessions. They continued working over the following week, and then re-convened for a day to put the finishing touches on a summary of their findings. Each team delivered a 15-minute presentation to a panel of experts representing decades of experience with marketing, investing, and business management. The panel members' feedback

included observations and opinions about the conclusions reached by the teams, as well as recommendations about what next steps should be taken.

Here's a sample of comments from participants in the Buffalo PSW:

"This has exceeded my expectations and opened the door to so many possibilities. I'm glad to attend and for the opportunity to advance my product."

"Thank you for the PSW, it has really helped us have a much better idea of our strengths and weaknesses, and to understand and prepare for the challenges we are about to face."

"The core activities (you) have put together is quite relevant to challenges (that) cities like Buffalo have in nurturing their innovation base."

While there is an inevitable sense of competition that emerges among the teams, there are no declared winners or losers in a PSW event. Wilson explained that, "Our primary goal is to help potential entrepreneurs move off the point

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Some Recent Activities to Promote Innovation, Collaboration, Growth & Profitability of Manufacturers in the Southern Tier

- Conducted two Value Stream Mapping workshops at a company in Sidney, NY as part of their CFA contract. Eight supervisors and managers received training in recognizing and mapping value streams to improve process flow and eliminate waste. Resulting improvement plans will be implemented later in 2014.
- Conducted a Value Stream Mapping workshop at a company in Hornell, NY as part of their CFA contract. Eight supervisors and managers received training in mapping value streams to improve process flow and eliminate waste. An improvement plan has been developed and will be implemented during additional CFA related training.
- Completed an ISO 9001:2008 Internal Audit at a company located in Groton, NY. There were no findings and a summary report was prepared. Their QMS was deemed compliant and effective.
- Completed an ISO 9001:2008 Internal Audit at a company located in Stamford, NY. Minor findings were noted and a report was prepared. Their QMS was deemed compliant and continues to be effective.
- A significant accomplishment in recent months was to assist twelve companies with in-depth support for twenty Consolidated Funding Applications (CFAs) through the Regional Economic Development Council.
 - Eleven applications requested funds for workforce training.
 - One application was for NY-SERDA energy project funding.
- Eight applications were for capital equipment funding.
- In addition, two companies assisted have been approved for grants from the Workforce Development Institute (WDI) and four are in process.
- Conducted internal audits at companies in Horseheads, NY, Oneonta, NY, Endicott, NY and Binghamton, NY. Reports were provided as to corrective actions required and continued improvements in the systems.
- Continued work at company in Bainbridge, NY assisting with development of their AS 9100 QMS quality manual, procedures and required documentation.
- Assisted an Ithaca company with reviews and assessment of their existing QMS Quality Manual and procedures.
- Participated in a re-registration audit at a company in Binghamton, NY.
- Conducted a Pre-assessment Audit at a company in Syracuse, NY, with participation of our CNY RTDC partner who assisted the effort with obtaining a grant through the Workforce Development Institute (WDI) which helped offset the cost.
- Assisted a Binghamton, NY company with an Audit Response / Corrective Action report required by one of their major customers.
- Participated in a Pre-Seed Workshop at the University of Buffalo Bio-Tech Center. Eight Idea Teams participated. One AM&T staff was a presenting facilitator at the workshop.
- Conducted a multi-day "Spares Order Processing" Value Stream Mapping event at a company in Binghamton, NY with a team of seven people. It is anticipated that when implemented, the plan will result in reduced wastes including process rework, over processing, expediting, rescheduling and changing priorities, etc.
- Completed a 56 hour Green Belt Training Program at an Endicott, NY company. The training program was completed by seven participants and three individuals went on to successfully pass the ASQ certification exam.
- Partnered with AME to conduct a half-day event round table event focused on learning and sharing continuous improvement experiences. The event was attended by fifteen people at a company in Elmira, NY.
- Conducted five four-hour Lean Thinking training sessions at an Elmira, NY company, focused on identifying and improving production and administrative wastes. The training was attended by fifty people.
- Conducted an 8-hour Lean for Manufacturing workshop at a Binghamton, NY company, training participants in Lean Thinking and how to apply Lean tools & concepts. The training was attended by twelve people.
- Completed one multi-day 5S and Visual Workplace event at a Binghamton, NY company. The teams created a workplace where everything is visually clear and controlled. As a result, the workplace will produce fewer defects, less waste, fewer injuries, and fewer breakdowns. These improvements will translate into lower costs and improved quality.

Success is Sweet When Value is Your Core

by Joshua Rapoza

Ok, here we go another “listen to your customer” story. But this one is pretty sweet.

In the 1930s, Sunline Inc. started making a fruit drink mix (similar to Kool-Aid) called Frutola, distributing it all over the US. Through customer feedback, Sunline learned that instead of adding water to the mix to make a drink, kids were eating the mix right from the package.

So in the early 1940s, Sunline pivoted, by discontinuing Frutola and releasing two new products in the candy market, both of which are still on the market today. The first was a paper straw containing the drink mix formerly known as Frutola and was called Pixy Sticks.

The second was a small pouch of the same (or very similar) drink mix with a small spoon. That product's name was Lik-M-Aid. This spoon feature was later replaced by a candy stick and now the product is known as Fun Dip. (Any fan of either of these products (or parent of a child who loves them) knows they tend to make a mess).

Based upon this feedback—of just how messy these products are—in the 1960s Sunline added a hard packed, tablet-like candy containing the same ingredients and called it SweetTarts. SweetTarts became so popular that it almost ended the Pixy Sticks.

Now all owned by Nestle, all of these product iterations are still available and are highly successful products.

What does this teach us about listening to our customers? Your value is at your core. Don't change what your customers value in your product, pay attention to what they value and then change everything else.

CCMR JumpStart Applications Now Open for Fall 2014 projects

In the JumpStart program, small businesses in New York State that have a well-defined technical challenge are partnered with Cornell faculty who have the expertise needed to overcome these challenges. The program provides a one-semester commitment of time and money that is subsidized by NYSTAR. Since 2005, 59 NYS small businesses have participated to solve technical problems, explore new markets, improve existing products, and create new ones.

CCMR Industrial Collaboration Program (ICP)

The CCMR Industrial Collaboration Program (ICP) is a Flagship Program for large and small businesses worldwide. ICP projects facilitate

low-cost R&D collaborations on advanced materials with Cornell faculty. ICPs are tax-deductible and offer a low 5% university overhead, making them an extremely cost effective way to benefit from Cornell expertise!

CCMR StartUp-Facilities

The CCMR Industrial Partnership Program is offering a first-ever incentive program to industry users called Start-up-Facilities. Startup-Facilities provides up to \$500 of funding to companies new to the CCMR for their first use of the CCMR Shared Facilities. This is a limited time offer available, one per company, from June 15, 2014 through December 31, 2014 or while funds exist.

www.ccmr.cornell.edu

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of indecision. Recognizing and acknowledging that an idea doesn't have commercial merit is valuable at this pre-seed stage -- it enables the potential entrepreneur to move on, to reallocate energy and resources to a new project.”

That said, the PSW does have an impressive track record for helping ideas move forward. Seventy Pre-Seed Workshops have been held involving 2,697 participants, with 401 teams analyzing the same number of ideas, inventions, and innovations. The PSW has helped create or strengthen over 170 high-tech, for-profit ventures, and many PSW participants have gone on to win local, national, and

international business plan competitions. Many have also received grants and/or secured seed and venture capital funding. Based on survey results, Wilson estimates that about \$100M in follow-on capital has been raised and over 600 jobs created.

Gaetano said that fostering regional collaborations are an integral part of AM&T's strategic plan. “We have outstanding internal resources, but our ability to best serve all manufacturing companies, including start-ups, is to link arms with the best resources throughout the state -- and the national MEP network of organizations that share our mission. Our work with the Pre-Seed Workshop is a prime example of that philosophy.”



10.03.14

Manufacturing Day 2014

Manufacturing Day has been designed to expand knowledge about and improve general public perception of manufacturing careers and manufacturing’s value to the North American economy. In addition, manufacturers will learn about business improvement resources and services delivered through manufacturing extension partnerships.

HOST AN OPEN HOUSE

As a manufacturer it’s your opportunity to:

- Tell your company’s story
- Dispel outdated myths about manufacturing
- Inspire a new generation of manufacturers
- Connect with potential customers in your community
- Learn about manufacturing extension partnerships that can improve your efficiencies and work force skills and boost your profits
- Visit other manufacturers to initiate business relationships and learn what is being made in your community

The core element to Manufacturing Day is the schedule of manufacturer’s open houses. Manufacturing Day producers will promote the open house schedule through general and trade media campaigns which will alert thousands of people to visit manufacturers and see that American manufacturing is a vibrant career path and employers need skilled workers. The event will also make it possible for manufacturers to visit other participating companies in their region that may be potential business partners – either as customers or suppliers.

Register to host an open house at your company
 Sign-up to visit other manufacturer’s open house events
www.mfgday.com



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Alliance for Manufacturing & Technology

Benefits of Becoming an AM&T Associate

- Four free hours of consulting services
- Your company's profile will be featured in the "Associates' Corner" of our monthly newsletter, which is distributed throughout eight counties: Broome, Chemung, Chenango, Delaware, Schuyler, Steuben, Tompkins, and Tioga. Also, the newsletter is featured on our website giving your company worldwide exposure
- Discounted fees at AM&T sponsored seminars & workshops
- A free Performance Benchmark and Transformation Planner (\$2,500 value)
- A link to your company's website from ours
- Assistance with Technology Transfer, Funding Sources, Venture Capital Investment, Networking, Research & Development Programs, etc

Call Jim Cunningham at 607-725-1225 to ask about becoming an associate.

More information at www.amt-mep.org

Associates' Corner



Silicon Carbide Products, Inc. (SCP) is located at the Airport Corporate Park in Horseheads where its 26 employees manufacture abrasion-resistant products used in the power generation, mining, and molten metal contact industries.

SCP was founded in September 1994 by Martin Metzger and Mark Witmer, and in 2010 was named to the list of Best Companies to Work for in New York, specifically as one of the top 25 companies in the category of 15-249 employees. The company also received the SBA's 2011 Small Business Excellence Award.

The company casts its custom products from a variety of grades of silicon carbide, a synthetic material known for its hardness and strength, and its resistance to high temperature and corrosion by other materials. There are several grades of silicon carbide, each with unique physical characteristics. Witmer, the company's vice president, explained that one of the company's strengths is its ability to match the product characteristics with the application requirements.

One key to consistency and quality is that the company design, develop, and manufactures its own family of silicon carbide formulations used to cast SCP's products. SCP's competitive advantages include in-house pattern making, close monitoring of process controls, and proprietary furnace controls that optimize firing consistency and material performance.

He noted that the company ex-

panded its rapid prototyping capabilities by acquiring two 3-D printers that can create ABS plastic molds from specification provided by the customer or internally developed. They have also added a portable coordinate measuring machine that enables precise field inspection and reverse engineering.



SCP products include power plant burner liners and flue gas spray nozzles; mining components; liners for the natural gas industry including frac sand handling; petroleum industry components; material handling liners; molten metal pump sleeves; hydro cyclone apexes; crucibles; bearings and similar wear components; centrifuge port liners; and other abrasive environment applications. More than 2,400 unique components have been produced and installed in over 17 countries.

With assistance from AM&T, SCP has completed ISO 9001:2008 Certification, conducted Strategic Planning and Sales Training, and implemented Lean Manufacturing including 5S programs.

For information, contact: Martin Metzger at 607-562-8599 or visit scprobond.com

Associates' Corner



Doron Precision Systems, Inc. has over 40 years experience with products that provide driving simulation training for law enforcement, fire and EMS, commercial truck, transit bus, and novice drivers.

After acquiring the Singer Company's driver simulation business in the early 1970's, Doron became the first company to develop and produce complete driving simulation systems, including hardware, computer software and audiovisual software with driving scenarios supporting specific training objectives.

From the company's facility in Binghamton, more than 25,000 driving simulators and over 400 motion entertainment systems

have been delivered to more than 60 countries, enabling over 10 million drivers to be trained using Doron's products.



Employees at the company include training and traffic safety professionals, electrical/electronic engineers, mechanical and software engineers, technicians, and draftspersons. To create content and materials as well as the simulation technology, the company relies on advice from curriculum committees

of nationally recognized traffic safety education experts.

A local example of Doron's products is the 550Bus interactive driving simulator installed last year at the Broome County Department of Public Transportation. This system includes the Situation Display, Performance Evaluation System and Scenario Developer Software options. The Scenario Developer enables transit instructors to create unique training scenarios.

The company has 50 employees, including service personnel who are strategically located throughout the country. These regional service personnel maintain an inventory of most commonly used parts to help keep down-time at a minimum.

Contact Doron at 607-772-1610 or visit doronprecision.com

Around the Southern Tier

Jul 16	After Hours Mixer - Watkins Glen Area Chamber - 607-535-4300
Jul 17	Networking At Noon - Tompkins County Chamber - 607-273-7080
Jul 17	Business After Hours - Corning Area Chamber - 607-936-4686
Jul 24	Business After Hours - Chemung County Chamber - 607-734-5137
Jul 25	Nanotechnology in Solar Applications - Greater Binghamton Chamber - 607-772-8860
Aug 05	Human Resources Roundtable - Tioga County Chamber - 607-687-2020
Aug 14	Business After Hours - Chemung County Chamber - 607-734-5137
Aug 15	Orion: New Hope for U.S. Spaceflight - Greater Binghamton Chamber - 607-772-8860
Aug 20	Business After Hours - Watkins Glen Area Chamber - 607-535-4300

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HELPING MANUFACTURERS PLAN, PERFORM, PROFIT & GROW

We are a team of experienced, skilled consultants and trainers dedicated to helping manufacturers in the Southern Tier of NY plan, perform, profit & grow. Our goal is to have manufacturers remain, grow and prosper in the Southern Tier.

AM&T uses a comprehensive, overall business approach to create significant and long-lasting business improvements. Our experience is that individual improvement methodologies will provide some measurable benefits on their own, but it is the combination of them across the whole value chain that will lead to dramatic gains.

WE HELP BUSINESS LEADERS:

- Assess their current state
- Articulate and define their desired future state
- Train their workforce in improvement methodologies
- Implement process improvements across the whole value chain
- Identify new opportunities
- Achieve and sustain growth and breakaway results

AM&T DELIVERS:

A third-party survey for 2008-2013 reported impacts of:

- 3,461 jobs created or retained
- \$622 million in increased or retained sales
- \$15.0 million in cost savings
- \$44 million in investments
- \$845 million total impact
- 4.6 out of 5.0 Customer Satisfaction

OUR SKILLS:

- Business Assessments
- Strategic Planning
- Lean Enterprise
- Supervisory Training (TWI)
- Project Management
- ISO/AS Quality Systems
- Sales and Marketing
- New Opportunity Identification and Growth — Markets, Products, Services, Customers

Our integrated, comprehensive approach, applied to the whole value chain, can make a difference. We are "hands-on", roll-up-your-sleeves people and we're passionate about manufacturing.

Call Jim Cunningham at 607-725-1225 to ask how we can help.