



CATALYST CONNECTION

T-RIC Initiative

Petra Mitchell
President and CEO



Regional Innovation Cluster Consortium for Technology Acceleration (T-RIC)

T-RIC Objective

Develop a Regional Innovation Cluster Consortium Model for Technology Acceleration that works together to facilitate technology transfer and product commercialization within its regional small and medium sized manufacturers (SMEs).

T-RIC Mission and Vision

Mission

It is the mission of the T-RIC Consortium to improve the competitiveness of SMEs in southwestern Pennsylvania and increase their success rates in developing and commercializing new technology. We will do this by: 1) increasing the connections between regional SMEs and university and federal laboratories, 2) developing the tools and processes to accelerate technology development and 3) providing the training and assistance to successfully commercialize new technologies and products.

Vision

To create a model for technology acceleration that improves the competitiveness of American SMEs, and inspires them to develop and commercialize new products and services.

Regional Innovation Cluster: “The State of Our Region”



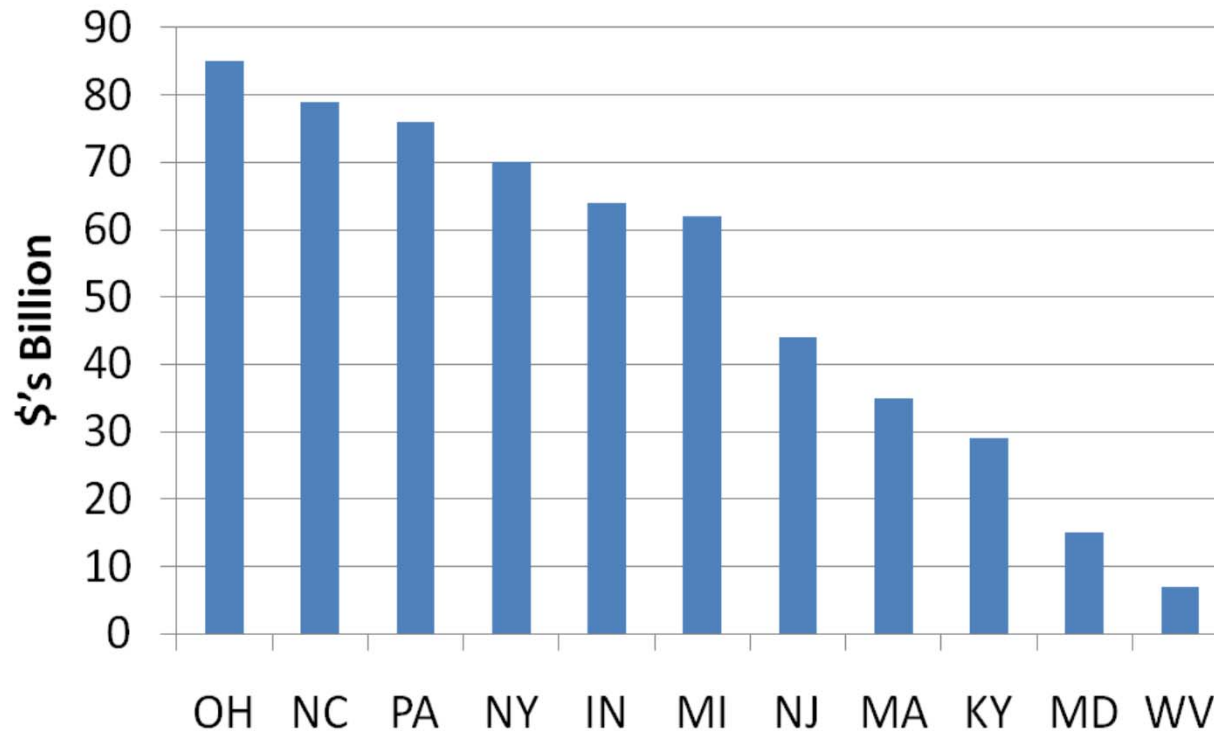
Manufacturing in Pennsylvania: Fast Facts

Gross State Product and Productivity		
1st	...largest Industry In Pennsylvania in terms of Contribution to Gross State Product (\$71 billion). From 2010 to 2011, manufacturing GSP saw an increase of...	6.6%
\$125,653	Gross State Product per manufacturing employee. Although trailing the US, this is still an increase from 2010 of...	5.8%
Manufacturing Employment and Compensation		
564,716	...manufacturing employees in Pennsylvania in 2011. This accounts for 10% of the total workforce and is an increase from 2010 of...	0.8%
\$55,243	Average Annual Compensation in 2011. The average annual wages is higher than the average Pennsylvania job by...	17%
Manufacturing Patents and Exports		
60%	...of the 16,054 patents issued between 2001 and 2010 to Pennsylvania companies, were assigned to manufacturing. The total number of patents was ... <small>(Source: Pennsylvania's True Commonwealth – The State of Manufacturing: Challenges and Opportunities, Released February 2011)</small>	9,577
41.0	... billion in total exports. Among all states, Pennsylvania ranks...	10th

Source (unless otherwise noted): Pennsylvania Manufacturing Scorecard 2012, Pittsburgh Regional Alliance and IRC Network, Released September 2012

Comparison to Peer States

Gross Manufacturing Product by State



Note: Overall Pennsylvania is the sixth largest manufacturing state in the U.S.

Manufacturing in Southwestern Pennsylvania: Fast Facts

- Third largest industry, 12.8% growth in 2010
- 95,568 employees, a 1.7% increase in 2011
- \$56K in wage, 4.5% higher than average job
- 29% of all PA exports, even though we have 19% of state's population
- 46 announced manufacturing expansions expected to generate 1,957 jobs

The Region That we Serve

Pittsburgh Region Overview_June 2011.pdf - Adobe Reader

File Edit View Document Tools Window Help


3 / 34 83.4% Find

A snapshot of the Pittsburgh region

- 10 counties = 7,200 sq. miles
- Population = 2.6 million

Strategic Market Access

- 3 rivers make it the 3rd busiest U.S. inland port
- Within 500 miles of 63% of U.S. industrial output



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Manufacturing is Still Critical to Our Economy

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18 / 34 83.4% Find

One of “America’s Hottest Cities” for locating a manufacturing business

- **Manufacturing culture**
 - 3,100 advanced manufacturing firms
 - Employing nearly 100,000 people
- **Century-long tradition as a center of excellence for manufacturing R&D**
 - 120 corporate and federal R&D centers
- **A skilled workforce**
 - 1,500+ engineering grads per year from the region’s universities
 - An additional 1,800 engineering grads are produced each year by nearby Penn State University

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We have a Recognized Energy Cluster

Pittsburgh Region Overview_June 2011.pdf - Adobe Reader

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We are close to critical mass in energy

- \$13.7 billion contribution to regional GDP
- 10-percent of regional economy
- Supports directly or indirectly 105,000 jobs

**The Marcellus Shale prompted over 60 companies to expand their exploration, drilling or service company into the Pittsburgh region since 2007.*

*Energy Companies Growing in the Pittsburgh Region

- Alpha Natural Resources
- Atlas Energy, Inc.
- Bechtel Corporation
- BPL Global, Ltd.
- Bucyrus International, Inc.
- Cabot Oil & Gas Corporation
- Centria Inc.
- CONSOL Energy, Inc.
- Converteam Inc.
- Curtiss-Wright Corporation
- Eaton Corporation
- EQT Corporation
- Flabeg Corporation
- Holtec
- Joy Technologies Inc.
- Plextronics Inc.
- PPG Industries Inc.
- Range Resources Inc.
- Solar Power Industries Inc.
- WESCO International Inc.
- Westinghouse Electric Company

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We Have a Strong University Presence

- Regional University Alliance – Dr. Christina Gabriel – Executive Director
 - University of Pittsburgh
 - Carnegie Mellon University
 - Penn State University
 - West Virginia University
 - Virginia Tech
- Additional University Partners
 - Robert Morris University
 - Duquesne University
 - St Francis University

Large Corporations are Located in SW PA

Pittsburgh Region Overview_June 2011.pdf - Adobe Reader

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16 / 34 83.4% Find

In good company: notable manufacturers growing here

 **Allegheny Technologies**
Specialty Materials That Make Our World



 **Westinghouse**

 **BOMBARDIER**

 **NOVA Chemicals®**

 **Bayer**

 **KENNAMETAL**

 **MITSUBISHI ELECTRIC
POWER PRODUCTS, INC.**



 **LANXESS**

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Regional Innovation Cluster: The Role of Catalyst Connection

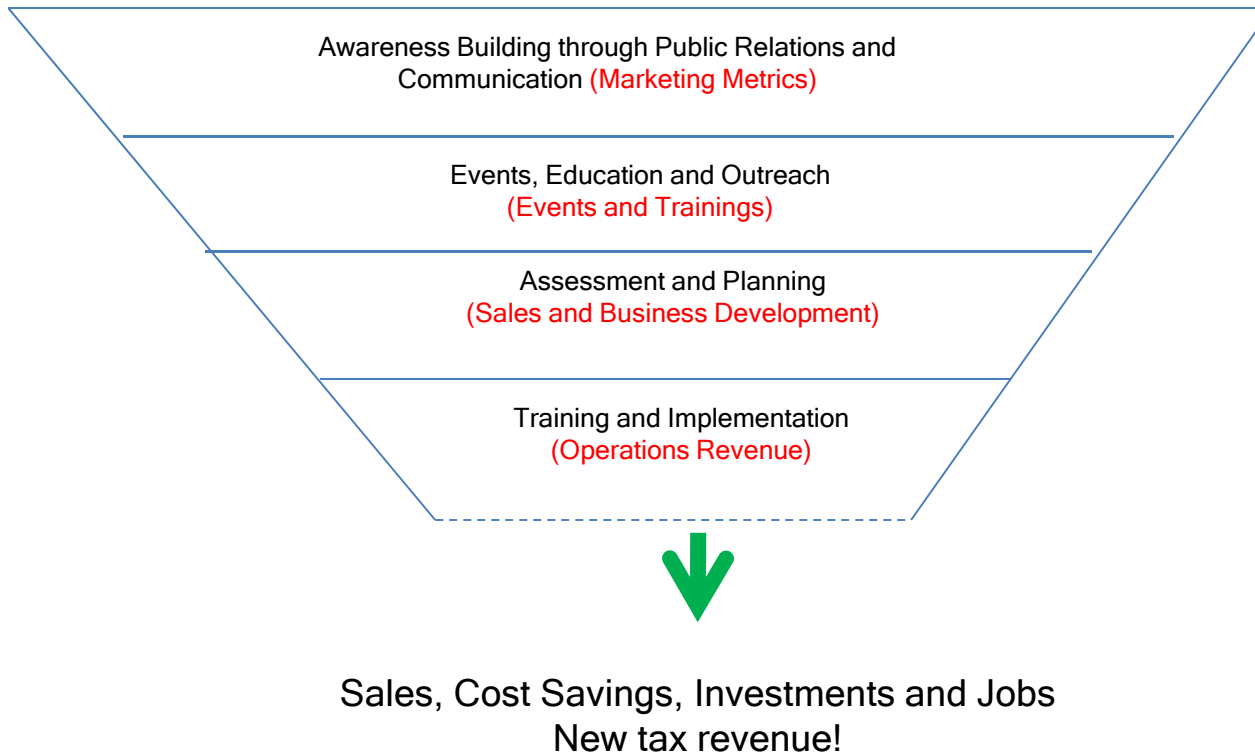
Introduction – Catalyst Connection

Our Mission:

We help manufacturers compete in a global economy, grow their business and create jobs.



Our Business Model



Strategic Partnership Services



Catalyst Connection: Regional Initiatives

- PREP: Partnerships for Regional Economic Performance (PREP)
- **T-RIC: Technology Acceleration Regional Innovation Consortium**
- M-RIC: Marcellus Shale Regional Innovation Consortium
- College Internships
- Adventures in Technology



Regional Innovation Cluster: How It Works

T-RIC Initiative Tasks

- Task 1: Establish a Regional Innovation Cluster (RIC) Consortium
 - NDAs/SOW agreements
 - Business process
 - Team Meetings / project reviews
- Task 2: Develop an Energy Forum
 - Introductory event between technologists and manufacturers
 - Support for commercialization
- Task 3: Develop Technology Acceleration Tool Set & Training Materials
 - Focus on New product development process and supporting tools

T-RIC Initiative Tasks

- Task 4: Conduct 3-5 Energy Technology Innovation Pilots
 - Pilots in process
- Task 5: Measure Technology Acceleration Success
 - MEP Impact process
 - Key performance indicators
- Task 6: Documentation and Lessons Learned
 - Documentation of tools and activities
 - Seeking “early adopters”

Task 1: Establish a T-RIC Consortium

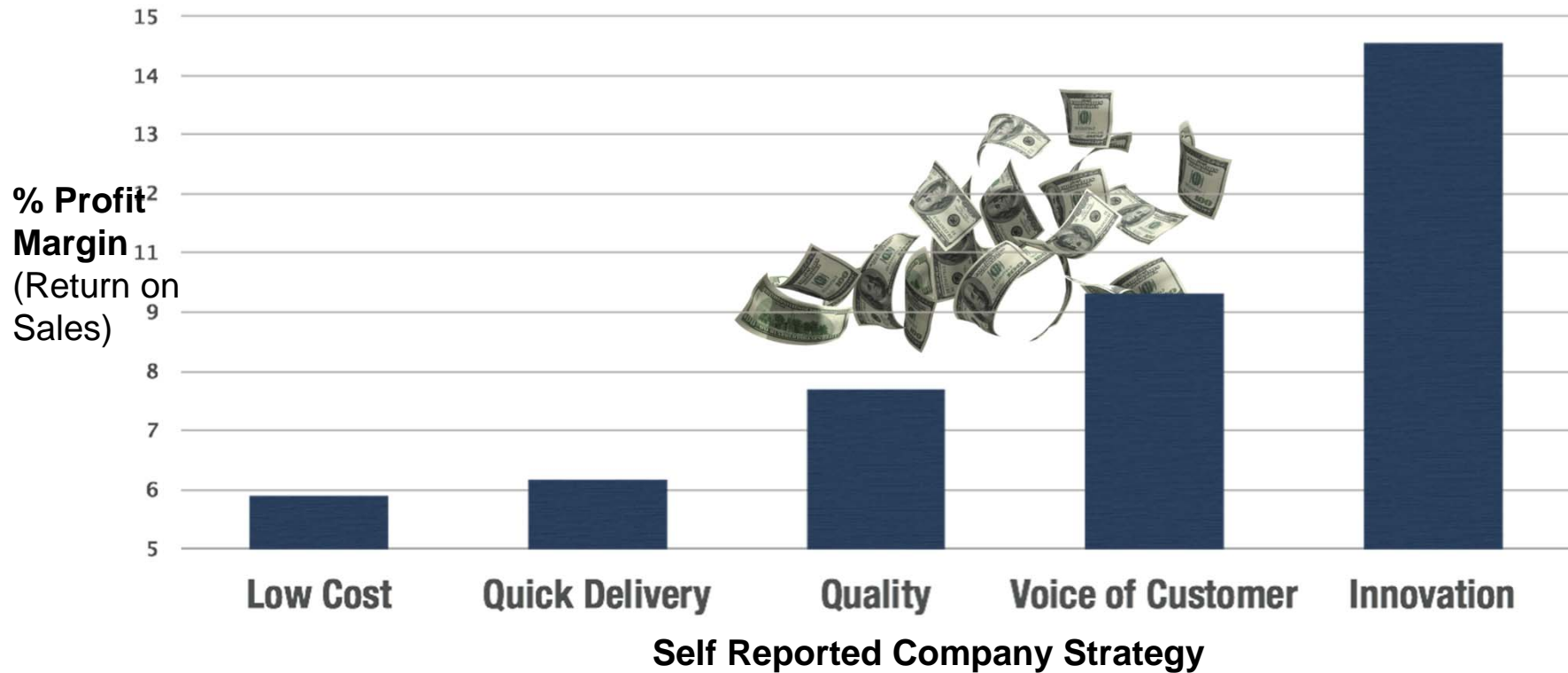
The Consortium consists of:

- Catalyst Connection
- University of Pittsburgh
- National Energy Technology Laboratory (NETL)
- Innovation Works
- Advanced Manufacturing Technology Ventures, LLC (AMTV)

Task 1: How It Works

- Company's submit innovation ideas to the T-RIC Consortium
- Consortium members offer feedback, advice and guidance
- T-RIC resources are applied to projects that are approved by Consortium
- A 4 Step Innovation Process is utilized to improve time to product commercialization and reduce risk

Task 1: Targeted Companies: “**INNOVATION Means COMPANIES Make More Money \$**”



Georgia Tech 2010

Task 2: Host Energy and Innovation Conference

The screenshot shows a web browser window displaying the website for the 2012 Energy and Innovation Forum. The browser's address bar shows the URL <http://technologyacceleration.org/eiconference.aspx>. The website header includes the T-RIC logo (Technology Acceleration, a Catalyst Connection Initiative) and the NIST logo (Manufacturing Extension Partnership). The main content area is titled "2ND ANNUAL ENERGY & INNOVATION CONFERENCE" and provides the following details:

- Date:** Wednesday, November 28th, 2012
Thursday, November 29th, 2012
- Location:** Hilton Garden Inn, Pittsburgh/Southpointe
1000 Corporate Drive
Canonsburg, PA 15317

Links for [Directions](#) and [Hotel Information](#) are provided. Registration information includes [Register Now](#) and [View the Agenda](#). A sidebar on the left contains navigation links: Home, About Us, T-RIC Process, T-RIC Benefits, Innovations, My Account, and Contact. A right sidebar offers a link to [View last years conference material](#). The main text describes the conference as an opportunity to connect technology needs with solutions, featuring sessions on collaborative research, commercialization, and technical break-outs. Contact information for Anna Mancuso, Program Coordinator, is listed at the bottom.

November 13, 2012

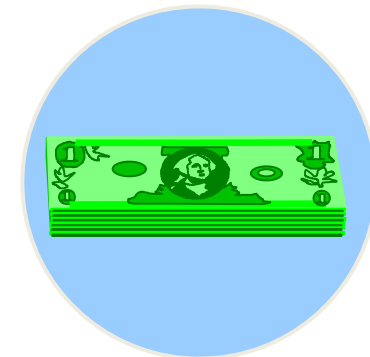
Task 3: Develop Technology Acceleration Tool Set & Training Materials

- Focus on new product development process and supporting tools
 - Innovation Engineering
 - Lean Product Development
 - Product Development Management Association (PDMA) training and certification
- RFQ for Additional Training

Task 4: Pilot Projects: “All Work is a Process”



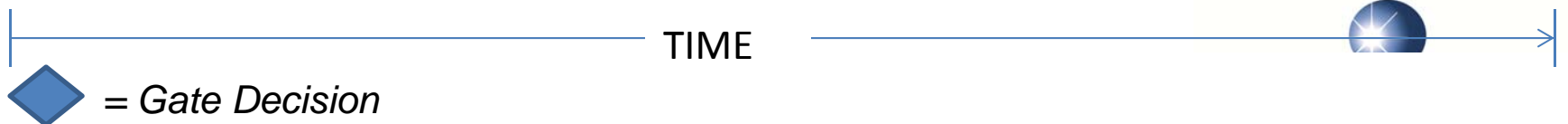
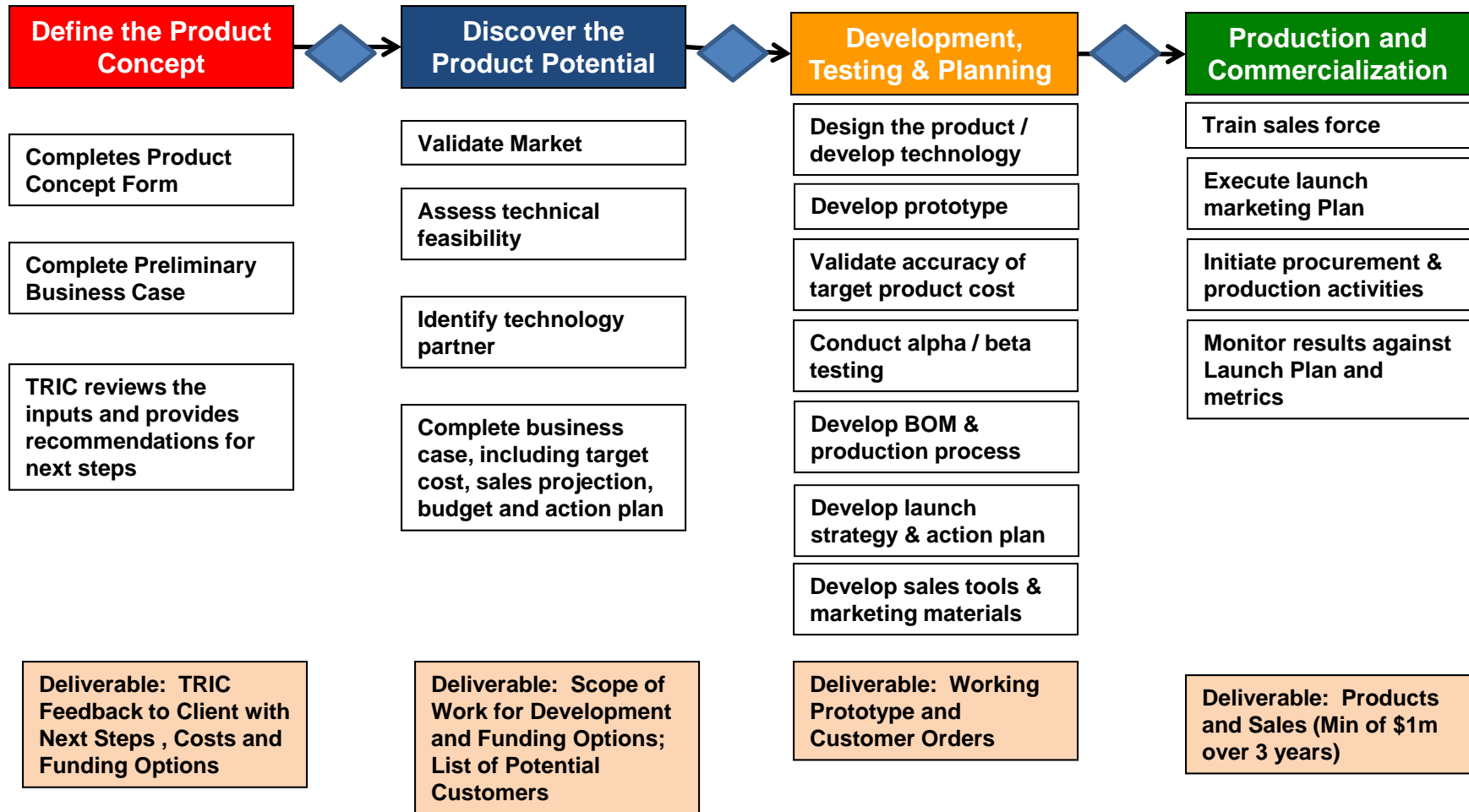
Idea



Successful Product

Any process can be redesigned to be faster & more effective

Task 4: Pilot Projects: Using A 4 Step Process for Innovation to Decrease Risk and Increase Speed



Task 4: Pilot Projects - Deliverables

Innovation Step	Deliverable From Each Step
Step 1: Opportunity Identification	A <u>defined innovation concept</u> , with a written description of the innovation, including its primary features and benefits as well as a broad understanding of the resource require to make it a reality.
Step 2: Opportunity Selection	A <u>solid business case and business plan</u> for the project, including strategic, customer, market, technical and financial analyses.
Step 3: Development & Testing	A <u>working prototype</u> of the product or service, with performance characteristics verified by users.
Step 4: Production & Commercialization	<u>Finished products or services</u> , with established pricing; marketing plan; distribution system; and customer support services.

Task 4: Conduct 3-5 Energy Technology Innovation Pilots

T-RIC M-RIC Other	IDEATION PHASE	PHASE 1	PHASE 2	PHASE 3	PHASE 4
		Opportunity Identification	Business Case Development	Development, Testing & Planning	Production & Commercialization
LOW RISK		TIGG Corporation	Ohm-Labs	Angstrom Sciences Berner International ECSI Mecco Premier Automation	Kopp Glass Acutran
	MEDIUM RISK	TIGG Corporation	Lewis Environmental	Angstrom Sciences	
		Univ. of Pitt Bridge Scour		EXTECH	
		Univ. of Pitt Zero Power RFID			
Univ. of Pitt Weapons Decon					
CERMUSA					
Kopp Glass					
Nabco					
HIGH RISK			Fortier Engineering Universal Electric	nanoGriptech	Canon Boiler Works Ingmar Medical
	<u>Innovation Management System (IMS)</u>				
	1) TIGG Corporation				
	2) MCC International				
	3) Kopp Glass				

Task 4 – Pilot Projects

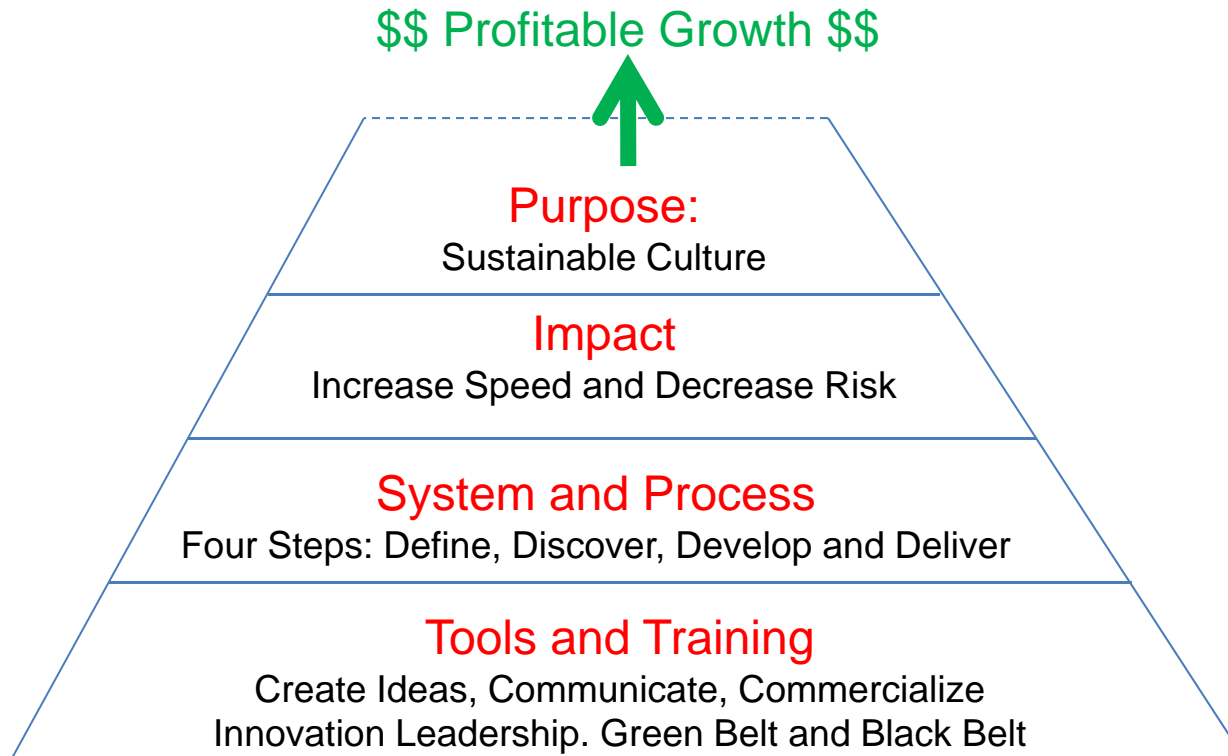
<http://technologyacceleration.org/Innovations/Default.aspx>

The screenshot shows a web browser window titled "Available Innovations - Windows Internet Explorer". The address bar displays the URL <http://technologyacceleration.org/Innovations/Default.aspx>. The page features a header with the T-RIC logo (Technology Acceleration, a Catalyst Connection Initiative) and the NIST logo (Manufacturing Extension Partnership). The address "Catalyst Connection - 2000 Technology Drive - Pittsburgh, Pa - P:412-918-4300 - F:412-687-2791" is also present. A navigation menu includes "Home", "About Us", "T-RIC Process", "T-RIC Benefits", "Innovations", "My Account", and "Contact". The main content area is titled "Available Innovations" and lists several projects: "Bridge Scour Sensor", "Emergency Radio Communication System", "Weapons Decon Material", and "Zero Power RFID". A "News & Events" section on the right side of the page announces the "REGISTRATION NOW OPEN: 2nd Annual Energy & Innovation Conference November 28th -29th, 2012 at the Hilton Garden Inn, Pittsburgh/Southpointe". The Windows taskbar at the bottom shows the Start button, several open applications, and the system clock set to 2:51 PM.

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Task 5: Measure Success – Sustainable Innovation



Task 5: Measure and Sustain: Facilitate Virtual Collaboration

MyManufacturingConnection
empowered by **CATALYST CONNECTION**

Make New Connections...

Through My Manufacturing Connection, The Catalyst Connection community is an innovative social interaction tool that paves the way for a highly efficient form of communication through the use of online collaboration, idea sharing, and instant feedback. As the thought leader in your small or medium sized business, you are given the opportunity to work closely with the Catalyst Connection staff as well as other community members to reach your organization's goals. Through online collaboration, idea sharing, and feedback, your organization's plans can now be accomplished more efficiently and effectively.

Login

USERNAME
PASSWORD

[Forgot your password?](#)

[Login](#) [Sign-Up](#)

Stay connected using a wide variety of professional networking tools

- Profiles will allow you to share things with other My Manufacturing Connection users such as contact information, links to your Facebook and Twitter accounts, and photos of yourself.
- Share files with others with permission settings which allow you to control who can read, edit or download them. You can truly collaborate on a document in real time and get feedback instantly.
- The Collaborations feature allows you to create and join groups with peers on a topic of interest. Share information and files to other Collaboration group members to stay connected.
- Educate yourself with a variety of Webinars, Videos, Blogs and our special Manufacturer's Toolbox created by the experts in their field and available for you to access free 24 hours a day.
- The Business Directory allows you to learn more information about our sponsor businesses that provide services specifically for the needs of manufacturers. Please support this site by doing business with these great organizations.

MyManufacturing Connection Bloggers

 Business Best Practices Petra Mitchell Why We Created MyManufacturingConnection.org Read more by author	 Human Resources David Rea Hiring Qualified Workers Read more by author
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Manufacturers Toolbox

The tools you need to increase profits

Upcoming Events

Applying Lean in the Office
3/1/2012

MyManufacturingConnection.org is our newest outreach tool.
It is an online collaboration site that allows manufacturers to interact with one another as well as Catalyst Consultants and other experts to help them achieve success and find solutions to problems right from their desk 24 hours a day.

Task 5: Measure and Sustain: T-RIC Collaboration Group

The screenshot displays a web browser window with the URL http://www.mymanufacturingconnection.org/community/group.php?group_id=45. The page features the My Manufacturing Connection logo, which is "empowered by CATALYST CONNECTION". A navigation menu includes Home, Publications, Collaborations, Businesses, Events, Blog, Marketplace, Forums, and More... The user is logged in as "Petra" and has a "Logout" link. The main content area is titled "Technology Acceleration Regional Innovation Cluster Consortium" and includes tabs for Collaboration Details, Members, Photos, File Explorer, Discussions, and Comments. The "Collaboration Information" section provides the following details:

Collaboration Name	Technology Acceleration Regional Innovation Cluster Consortium
Description	The mission of the T-RIC Consortium is to improve the competitiveness of small manufacturers in southwestern PA and to increase their success rates in developing and commercializing their innovations.
Category	Industry Networks

Additional options for the collaboration include "Leave Collaboration", "Subscribe to Collaboration", "Invite New Members", and "Report this Collaboration". The bottom of the browser window shows the Windows taskbar with several open applications, including Catalyst Connection, My Manufacturing Connection, SalesLogix, and an email inbox.

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Summary

- SW PA regional strengths include manufacturing, energy and university research
- Small manufacturers are well-positioned for growth
- Catalyst Connection offers dedicated services in innovation, technology transfer and new product development
- We utilize an established proven process and are augmenting our services with Innovation Engineering Concepts
- We have secured additional funding to build on our TRIC initiative to specifically focus on the Marcellus-Shale end markets

Summary(cont.)

- Our research partners are committed to continued project and client support.
- Over 19 companies have already engaged with us in various stages of innovation and new product development
- One company is selling new products, and we are measuring their results
- We plan to sustain this initiative as part of our overall “Strategic Partnership Services”

Benefits

- Clients – technical assistance and support, business growth and profitability,
- Researchers – Knowledge sharing, hands-on experience, consulting revenue
- Catalyst Connection – reinforcing our value proposition, securing additional funding, meeting our mission and objectives
- Region – economic impact!

For More Information

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