



18th Annual Washington Policy Conference – June 27-28, 2007

***“Making Manufacturing a National Priority”***

**Technology and Innovation Pre-Read Materials:**  
*Open Innovation and Strengthening the Innovation Infrastructure*

**OVERALL CONFERENCE OBJECTIVE:**

To follow the overall objective of this conference, our breakout group will begin work to develop innovation initiatives and related programs required for strengthening the overall innovation infrastructure.

There are three things we want to do today; i.e., we want to answer:

1. What are the next steps we can take back home to drive the necessary action to move the needle forward on these issues?
2. What do we need from the federal government, especially from the Interagency Working Groups (IWGs) on Manufacturing represented in this meeting and in the AMLF Luncheon Roundtable on Thursday?
3. How can we frame these issues to convince the 2008 Presidential candidates to address manufacturing in their campaigns?

**ACCOMPLISHING THE OBJECTIVE:**

As part of a series of on-going activities, attendees will begin to identify:

- Implications of current policies and barriers to innovation infrastructure related to open innovation platforms.
- Areas of best practice – business models and initiatives that are being implemented across the country.
- Develop recommendations and actionable next steps to increase open innovation adoption.

To be prepared for active participation at the June 27-28 event, you are encouraged to review the material below, which will serve as background for our discussion. There is a

brief section on each of the following: legislative update and programs. A list of questions to guide the discussion is included at the end of this document.

## **LEGISLATIVE UPDATE (Senate and House Bills):**

### Summary of the *America COMPETES Act* (Senate)

The *America COMPETES Act* is a bipartisan legislative response to recommendations contained in the National Academies' **Rising Above the Gathering Storm** report and the Council on Competitiveness' **Innovate America** report. The *America COMPETES Act* focuses on three primary areas of importance to maintaining and improving United States' innovation in the 21<sup>st</sup> Century:

1. Increasing research investment.
2. Strengthening educational opportunities in science, technology, engineering, and mathematics (STEM) from elementary through graduate school.
3. Developing an innovation infrastructure.

More specifically, the *America COMPETES Act* would develop an innovation infrastructure by:

- Establishing a President's Council on Innovation and Competitiveness to develop a comprehensive agenda to promote innovation and competitiveness in the public and private sectors.
- Requiring the National Academy of Sciences to conduct a study to identify forms of risk that create barriers to innovation.

For more information on the *America COMPETES Act*, please visit:

<http://thomas.loc.gov/cgi-bin/bdquery/z?d110:SN00761:@@D&summ2=m&>

### Summary of *21<sup>st</sup> Century Competitiveness Act* (House)

Similar to the Senate bill, the *21<sup>st</sup> Century Competitiveness Act* establishes, revises, and extends specified science, mathematics, education, engineering, technology, research, and training programs. It also authorizes appropriations for NSF and NIST.

The *21<sup>st</sup> Century Competitiveness Act* also begins to address the innovation infrastructure by:

- Strengthen[ing] interagency planning and coordination for research infrastructure and information technology.

For more information on the *21<sup>st</sup> Century Competitiveness Act*, please visit:

<http://thomas.loc.gov/cgi-bin/bdquery/z?d110:HR02272:@@D&summ2=m&>

## **PROGRAM UPDATE:**

Innovation is increasingly a product of more intensely collaborative activities within integrated networks of manufacturers. These activities require stronger means for collaboration and connectivity that will create more usable innovation with increasingly less internal resources. To accomplish such *more with less* goals, outside ideas and resources must be leveraged. But can we all simultaneously leverage outside ideas and resources without each committing to more internal resources?

Proponents of Open Innovation style business models claim such promise. Their support derives from the two seminal works of Henry Chesbrough - *Open Business Models* (2006) and *Open Innovation* (2003). Many technological barriers, antiquated business models, and outdated governance rules still impede collaborative innovation models such as open innovation. Consensus within the manufacturing R&D community is required for identifying and prioritizing these barriers and opportunities.

During this Breakout Session, we will provide the thought leadership for the *next steps* needed for working together on shared open innovation solutions, since many of these *new ways* can not be accomplished without the active involvement of stakeholders outside our normal business networks and spheres of influence. To unleash this type of innovation, we also need to identify implemental multi-stakeholder solutions.

The breakout session topics to be covered include:

1. Open Innovation Models (Wednesday, 1:30 PM)
2. Open Innovation – Partnering with NIST & Federal Labs (Wednesday, 3:30 PM)
3. Open Innovation – Sustainability (Thursday, 9:00 AM)
4. Open Innovation – Leveraging AMT’s MTConnect (Thursday, 9:30 AM)

## **Questions and Reference Material for Breakout Session Group Discussion:**

### **Open Innovation Model**

- What are the best practices in open innovation?
- How and where can open innovation style business models be more utilized to accelerate commercial innovation in the U.S. manufacturing sector?
- What type of open innovation infrastructure is required for adoption?
- Address the barriers to open innovation including:
  - Intellectual Property, Connectivity, Collaboration, Overcoming Inertia
- Recommendations and next steps for each stakeholder?
- What role can NACFAM play to enable intense innovative collaboration?

### **Brief Overview of Open Innovation:**

<http://www.quickmba.com/entre/open-innovation/>

### **Open Innovation Success Story:**

“NineSigma: Nurturing Open Innovation”, *BusinessWeek* (June 12, 2007)  
[http://www.businessweek.com/innovate/content/jun2007/id20070611\\_139079.htm?chan=top+news\\_top+news+index\\_innovation+%2Bamp%3B+design](http://www.businessweek.com/innovate/content/jun2007/id20070611_139079.htm?chan=top+news_top+news+index_innovation+%2Bamp%3B+design)

### **How Could Open Innovation Fit into Your Innovation Strategy?**

“The Innovation Value Chain”, *Harvard Business Review* (June 2007)

[http://harvardbusinessonline.hbsp.harvard.edu/b01/en/common/item\\_detail.jhtml;jsessionid=FMX2CTWX3IEGQAKRGWDR5VQBKE0YIISW?id=R0706J](http://harvardbusinessonline.hbsp.harvard.edu/b01/en/common/item_detail.jhtml;jsessionid=FMX2CTWX3IEGQAKRGWDR5VQBKE0YIISW?id=R0706J)

#### Challenges with Open Innovation:

“Corporate open innovation – if it’s so good why isn’t everyone doing it?”,  
National Endowment for Science, Technology and the Arts (June 2007)  
[http://www.nesta.org.uk/informing/articles/corporate\\_open\\_innovation.aspx](http://www.nesta.org.uk/informing/articles/corporate_open_innovation.aspx)

#### **Open Innovation – Partnering with NIST & Federal Labs**

- What federal policies and agency involvement can enable/accelerate open innovation for manufacturing?
- How should open innovation business models better connect industry needs with research (university/national lab/entrepreneurs) opportunities and accelerate innovation?
- Identify 3-4 focus areas of technical opportunity/commercial need that can be further modeled as prototypical examples, e.g., nano structures?
- Disruptive or transformational technologies have traditionally been tech-push focused. How can open innovation incentives and policies be developed to manage the “valley of death” facing 5-20yr technology industry initiatives?

Automotive Research Alliance between universities, Oak Ridge National Lab, and automotive manufacturers and their suppliers. See news release:

<http://www.utk.edu/news/article.php?id=4112>

#### **Open Innovation – Sustainability**

- After hearing David Kepler’s (SVP, Dow Chemical) keynote, what are some opportunities for replicating the Dow Chemical collaboration model?
- What are the gaps, required incentives, and policies currently relevant to commonly shared sustainability barriers?

Dow Chemical’s new and unique partnership with Berkeley Labs and China’s Energy Resource Institute (ERI). See news release: <http://studio-5.financialcontent.com/genpublishing?GUID=2009956&Page=MediaViewer&Ticker=DOW>

#### **Open Innovation – Leveraging AMT’s MTConnect**

The objective of MTConnect is to develop an open standard that defines a multiplatform protocol and interchange format to facilitate the communication and transfer of data among devices, applications, and factory equipment. The standard will be extensible, incorporating a standard method for announcing or detecting entities in a networked community, and has the backing of several major machine controller providers.

- What barriers preclude adoption of this open innovation?
- Would you participate in this development or use this platform? Why or why not?
- What other technologies would benefit from a similar open innovation initiative?
- What are your recommendations as to the steps that should be taken to broaden awareness and acceptance of this type standard?

For more on Association for Manufacturing Technology (AMT) Initiative, see article: <http://www.industryweek.com/ReadArticle.aspx?ArticleID=13265>