The Advanced Manufacturing Partnership and the Advanced Manufacturing National Program Office

Webcasts for Industry
Advanced Manufacturing Office
US Department of Energy

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Overview

- Advanced Manufacturing Activities
- Advanced Manufacturing Partnership (AMP)
- AMP Steering Committee
- AMP Workstream Study Groups
- Office of Manufacturing Policy (OMP)
- NSTC Working Group on Advanced Manufacturing
- Advanced Manufacturing NPO
Advanced Manufacturing Partnership (AMP) Timeline

Industry/Academia Led Activities

- PCAST Report and Launch of AMP, June 2011
- AMP Workstream Study Groups, July - February
- AMP Public Outreach Meetings, October - December
- AMP Steering Committee via PCAST report, April 2012

Government Activities

- NSTC Interagency Working Group, Advanced Manufacturing Report to Congress, April – February
- White House Office of Mfg. Policy, December
- Stand up AMP National Program Office, Jan-March

AMP strategy, implementation, public-private initiatives and institutional structures

2011

2012
Advanced Manufacturing Recommendations: PCAST

1) Launch a Federal Advanced Manufacturing Initiative
   • Concerted, whole-of-government effort, led by DOC, DOD, DOE and NSF
   • Report to President on priority needs for Federal investments, including:
     • Coordinated Federal support to academia and industry for applied research on new technologies and design methodologies
     • Development and dissemination of design methodologies
     • Shared facilities and infrastructure to help small and medium-sized firms compete globally
     • Public/Private Partnerships (PPPs) to advance such technologies through pre-competitive consortia

2) Improve Tax Policy
   • Reform corporate income taxes, extend the R&D tax credit permanently and increase the rate to 17%, as advocated in the President’s Innovation Strategy.

3) Support Research
   • Strengthen research of three key science agencies: NSF, DOE O/S, NIST

4) Strengthen the Workforce
   • Strengthen science, technology, engineering and mathematics (STEM) education
Advanced Manufacturing Partnership

Revitalizing US Manufacturing Through an Industry-Academia-Government Partnership
Advanced Manufacturing Partnership

- Goal is to lay a roadmap that leads to a revitalized US manufacturing sector

- Chartered by President Obama in June 2011

- Co-Chaired by Dow and MIT

- Membership Includes:
  - Stanford, University of Michigan, MIT, UC Berkeley and Georgia Tech
  - Allegheny Technologies, Caterpillar, Corning, Dow, Ford, Honeywell, Intel, J&J, Northrop Grumman, P&G, Stryker and United Technologies
  - Various federal agencies- NIST, DoD, DoE, NSF, OSTP, etc.
AMP Organization

• AMP was organized into 5 workstreams, developing recommendations in parallel
  • Technology Development
  • Shared Infrastructure
  • Public Policy
  • Education & Workforce Development
  • Outreach
Advanced Manufacturing Partnership

Break-through, cross-cutting technologies

- Advanced Sensing, Process Control
- Advanced Material Design
- IT
- Energy Efficiency Manuf.
- Nano-manuf.

Shared Infrastructure (MII’s)

Public Policy (Macro & Partnership)

Education & Workforce Development
Technology Development: Overview

• Two broad objectives
  • Develop a permanent mechanism to be used for identifying and developing key manufacturing technologies
  • Identify a set of top technology areas that would ensure US manufacturing competitiveness.

• Inputs to the process included:
  • Surveys and workshops of industry and university participants
  • Desk research of comparable mechanisms used in other countries and regions to identify and nurture technologies
  • White-paper solicitations from select experts.
Technology Development: Process to ID New Technologies

• A national foresight mechanism generating a national strategy on the set of important future needs and broad technology areas of focus, including a robust input mechanism.

• The use of industry-government-university consortia (where possible) to generate detailed roadmaps for industries of strategic importance.

• Creation and management of programs to carry out the research and eventually help commercialize technologies with strong industry participation.

• Periodic review of program results and strategic analysis of the portfolio of projects is necessary.
Shared Infrastructure: Overview

- The team has refined their recommendations to the following:
  - Creation of a network of Manufacturing Innovation Institutes (MII’s) to bridge the gap between basic research and manufacturing
    » Staffed with university and industry SME’s
    » Infrastructure & expertise available to companies of all sizes
    » Facilitates collaboration between industry & academia and coordinates efforts with national labs
  - The development of a searchable catalog of data, services and facilities that are available for SME use.

- The MII concept will be further polished to include a strong technology transfer provision
Public Policy: Overview

• The goal was two-fold:
  • To define the macro policy elements that are required to “set the table” for a resurgence in manufacturing
  • To identify particular policy needs that facilitate collaboration between industry, academia and the national labs / federal agencies
Public Policy: Macro Policies

- Comprehensive tax reform lowering corporate rates to below 25% and a coherent national energy strategy
- Permanent R&D tax credit
- Sound cost-benefit analysis for all regulations to consider US competitiveness and innovation
- Pursue better fair-trade enforcement, and protection of IP
- Modify the GI bill so that it covers non-degree skilled trades and accreditation training
Public Policy: Partnership Policies

• Eliminate caps on the amount of corporate investment in university research programs

• Connect the ecosystems of university startups and domestic manufacturing using a MEP tie-in and the reporting of domestic manufacturing from university spinouts & licensing

• Expand resources available (like venture capital mechanism) to bridge the “valley of death” for new technologies / start-ups.
Education & Workforce Development: Overview

• Community colleges have the biggest potential to impact the workforce of the US manufacturing sector near-term

• High school teaching and learning models must be adapted to meet the needs of today’s workforce so that post-secondary institutions can focus on accreditations, not remedial teaching

• Project-based learning models are the game-changer at all education levels to bring a short-term improvement in workforce readiness
  • Internships, Apprenticeships, Co-ops & Job Shadowing in STEM fields
  • Technical curricula with hands-on projects
Education & Workforce Development: Overview

- This team worked on six individual aspects of workforce development:
  - Identification of Attributes of Successful Partnerships
  - Federal Funding Options for Curricula Development
  - Standards and Certifications
  - Joint Development of University Manufacturing Programs
  - The Image of Manufacturing
  - Recruitment of Veterans to the Manufacturing Sector
Outreach

• This team served in a coordination capacity to support the activities of the other workstreams and to provide stakeholders the opportunity to provide input to the process.

• The team coordinated four regional meetings, which took input from more than 1000 participants in late 2011.

• Members also provided Hill briefings and met with numerous trade associations.

• The team is now responsible for the assembly of the final report.
AMP Going Forward

• Recommendations will be further refined over the next six weeks and a final report submitted to PCAST at end of March

• A NPO has been established for manufacturing, which we hope will help coordinate the implementation of AMP recommendations
Office of Manufacturing Policy (OMP)

White House Office of Manufacturing Policy Co-chairs

Secretary Bryson
Department of Commerce

Director Sperling
National Economic Council

**Office of Manufacturing Policy**: Operates within the White House NEC
First cabinet level meeting held January 20, 2012

**Goal**: Ensure effective coordination of manufacturing policy implementation and to serve as a resource for agencies to highlight and coordinate their manufacturing activities
NSTC Interagency Working Group on Advanced Manufacturing

**NSTC Committee on Technology:** Interagency Advanced Manufacturing working group
- chartered March 30, 2011
- Co-chaired by DOE, DOD, and NIST

**IAM Charter:** to develop a strategic plan to guide Federal programs and activities in support of advanced manufacturing research and development

**COMPETES REAUTHORIZATION 2010:** Congress calls for strategic plan to address
- Foster transfer of R&D results into U.S. based manufacturing
- Strengthen education and training to ensure a well-trained workforce
- Assist SMEs in developing and implementing advanced manufacturing
- Specify objectives, metrics, and roles

*Release of report to Congress targeted for late February 2012*
Advanced Manufacturing National Program Office (NPO)

• Advanced Manufacturing National Program Office
  • Announced by Secretary Bryson, December 19, 2011
  • True interagency staff, with IPA/fellows from industry and academia
  • Hosted by Department of Commerce/NIST

• The AM-NPO will:
  – Lead other federal agencies involved in U.S. manufacturing and support interagency coordination of advanced manufacturing programs
  – Provide a linkage to the private-sector partnerships between manufacturers, government, and universities.
  – Satisfy the PCAST report recommendation to create an integrated private/public advanced manufacturing initiative.
  – Work to implement recommendations from AMP
Adv Mfg NPO: Core Federal Partners

Advanced Manufacturing
National Program Office

Program 1  Program 2  Program n

Project A  Project B  Project C  Project D

Adv Mfg Programs
Agency Projects
Adv. Mfg. NPO Planned Activities

- Respond to AMP, PCAST, IAM recommendations
- Coordinate federal advanced manufacturing strategic planning
- Coordinate AM planning and budget activities with EOP
- Produce annual AM supplements to the President’s Budget
- Support advanced manufacturing public-private partnerships
- Establish broad engagement mechanisms among stakeholders in government, industry, and academia
- Hold public workshops throughout the US on initiatives and priorities
To access the slides from this and previous Webcasts, please visit:
http://www1.eere.energy.gov/manufacturing/resources/tuesday_webcasts.html
Next Month’s Webcast

Please join us for our next Webcast.

**Topic:** Superior Energy Performance (SEP) and ISO 50001: How SEP will Help Your Plant Implement ISO 50001

**Date and Time:** Tuesday, March 13 at 11:00 a.m. PST/2:00 p.m. EST

**To Register:** [https://www1.gotomeeting.com/register/112323080](https://www1.gotomeeting.com/register/112323080)