NCMS to Bring High Performance Computing to Manufacturers

National Manufacturing Consortium Defines New Industry “Game Changer”

Senator Stabenow to Keynote NCMS Sustainability Conference

DoD Taps NCMS to Lead Robotics Consortium

MI Turns to Trusted Ann Arbor Group to Review Economic Development

NCMS-Managed Project Participant Lands

Small Startups find Big Opportunities with

NCMS Collaborative Model: More Innovation, Less Risk for Manufacturers

NCMS Wins Prestigious JEC Paris Innovation Award

NCMS Wins 2008 “Deals of the Year” Award

NCMS Wins Seventh Defense Mfg Excellence Award
Cross-industry technology & manufacturing consortium

World leader in collaborative project management

24 years experience guiding successful programs

The Ultimate Collaborative Network
Collaboration reduces the risk of innovation.

Innovation must be commercialized.

Commercialization is always the goal.
Putting the Pieces Together:
The ultimate network

GOVERNMENT

COMMUNITY

INDUSTRY

R&D EXPERIENCE

TECHNOLOGY

DEVELOPERS

END USERS

INTEGRATORS
Steel ~1300 BCE
Printing Press 1586
Steam Power 1698
Assembly Line 1906
Single-Chip Microprocessor ~1300 BCE
HPC is the future... of Design of Business of Innovation of Technology of Sustainability of Manufacturing of Competitiveness
THEOPPORTUNITY

- Home and office use
  - Internet/email
  - Graphic design
  - Gaming
  - Video production
  - Low-end CAD/CAM
- National labs
  - NASA
  - USGS/NWS
  - NSA
  - Military
- Small to midsize business
  - Product design
  - CAD/CAM
  - Prediction
  - Advanced simulation
  - New materials

National Opportunity: the “Missing Middle”

Traditional Computer Users

High-End Users

Users

Task Complexity

Traditional Computer Users

National Opportunity: the “Missing Middle”

High-End Users
The “Missing Middle” consists of organizations that fear the investment or don’t realize the need for HPC in their operation.
The Challenges

Technical
Software, Hardware, People

Business
ROI inadequately defined
Accessibility of equipment

Perception
“HPC has no purpose outside a research lab”
HPC is expensive and requires huge infrastructure

Adoption
Early adopters have seen major success
But HPC penetration still eludes “the missing middle”
WHAT WE ARE DOING

Now
Work with the evolving Alliance for High Performance Digital Manufacturing and a wide variety of government agencies and legislators to ensure HPC buy-in and encourage participation from key stakeholders.
Integrate HPC with Current Projects

- Lightweight Materials
- Complexity Analysis
- Variability Integration
- Process Optimization
- Remote HPC Integration
- Simulation Accelerating Experience
- Macro-Composite Reinforcements
- Resin Infusion Technologies
Collaborate with George Washington University National Crash Analysis Center (GWU-NCAC) to develop a prototype “application” concept remotely evaluating model validation.
Summer project with University of Michigan Tauber Institute for Global Operations to evaluate strategy and develop business plan and ROI statement.
Thank You

Questions?
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