

Innovation:

ON

Implementing a 21st Century
Manufacturing Game-Changer

*National Center
For Manufacturing Sciences*

April 14, 2010



National Center for Manufacturing Sciences

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 Collaboration

NCMS Collaborative Model: More Innovation, Less Risk for Manufacturers

NCMS Wins Prestigious IEC Paris Innovation Award

NCMS Wins 2008 "Deals of the Year" Award

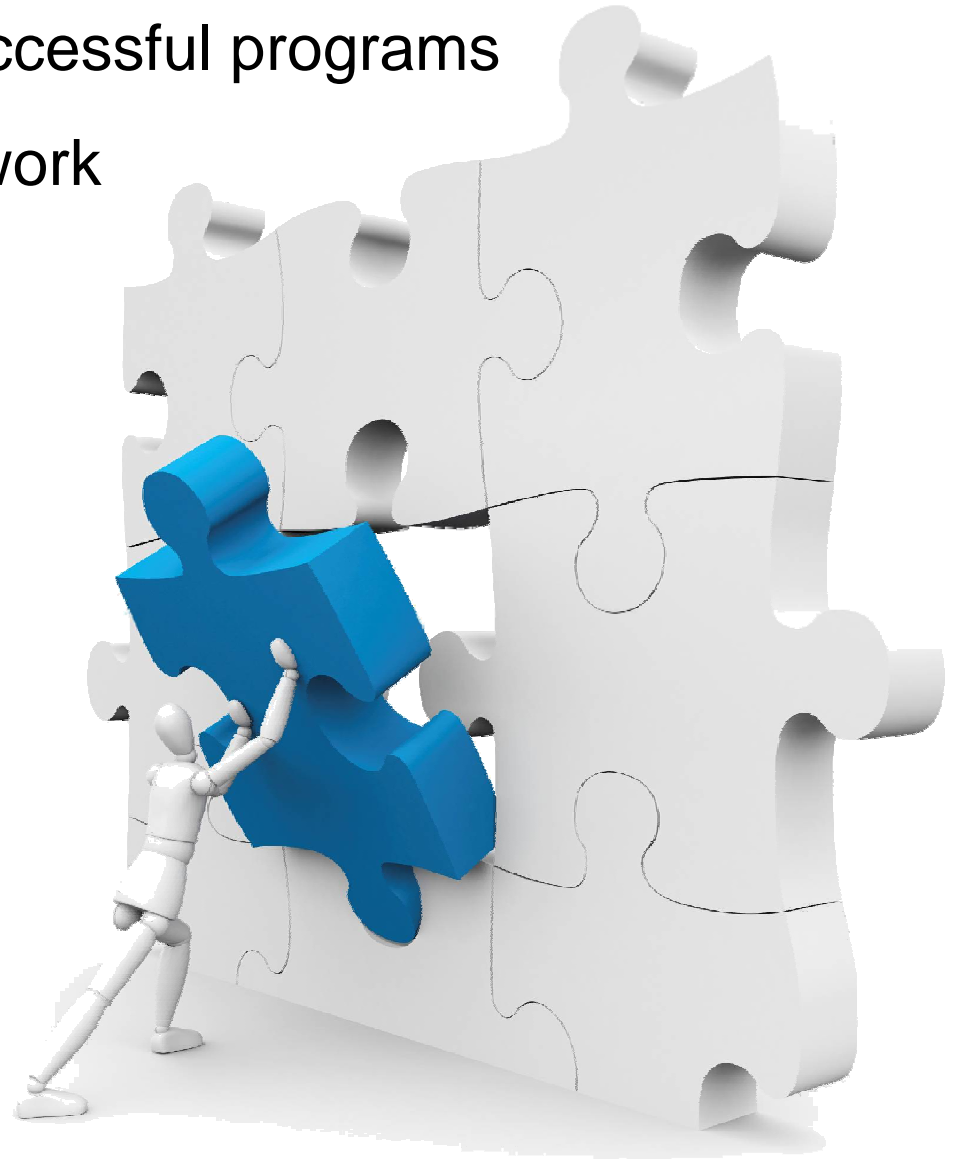
NCMS Wins Seventh Defense Mfg Excellence Award

Cross-industry technology & manufacturing consortium

World leader in collaborative project management

24 years experience guiding successful programs

The Ultimate Collaborative Network



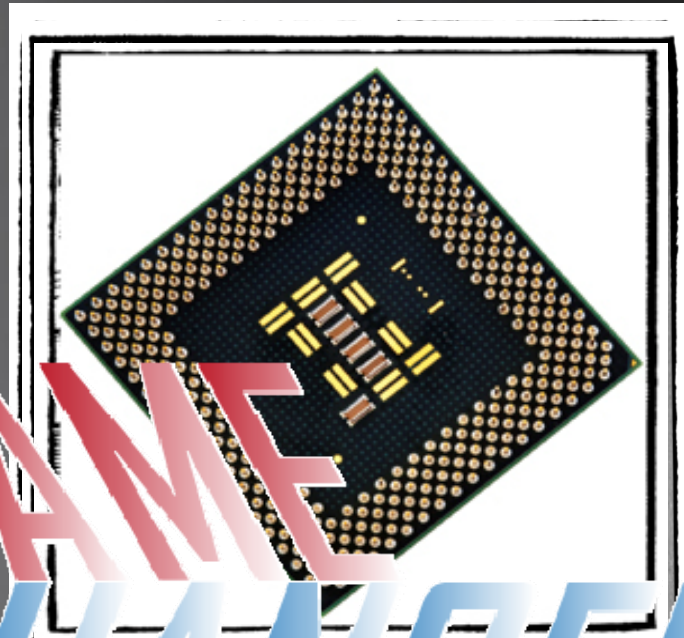


Collaboration
reduces the risk of innovation

Innovation
must be commercialized

Commercialization
is always the goal





GAME CHANGERS

Single-Chip Microprocessor
~ 1300 BCE

HPC

is the future...

...of Design

...of Business

...of Innovation

...of Technology

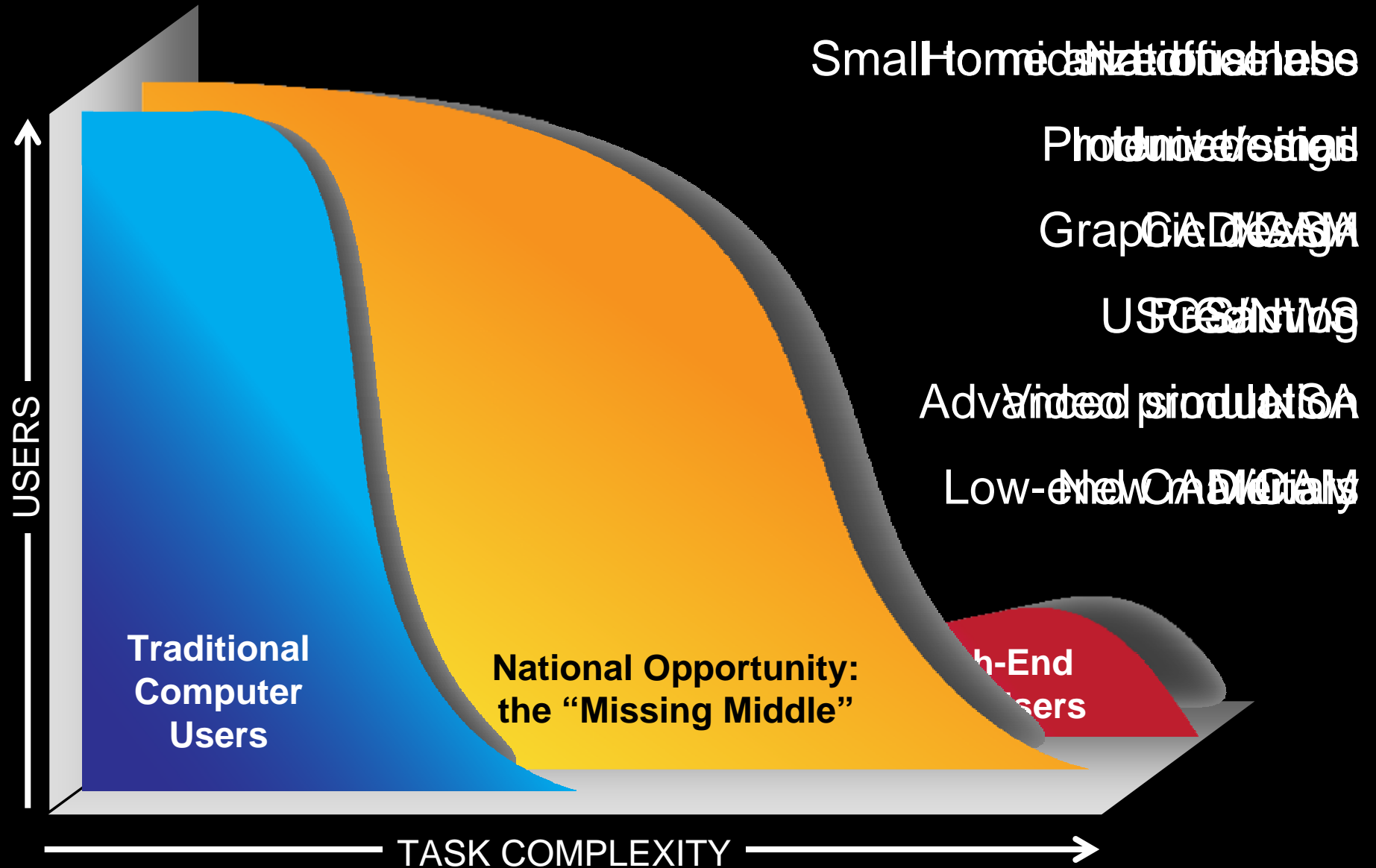
...of Sustainability

...of Manufacturing

...of Competitiveness

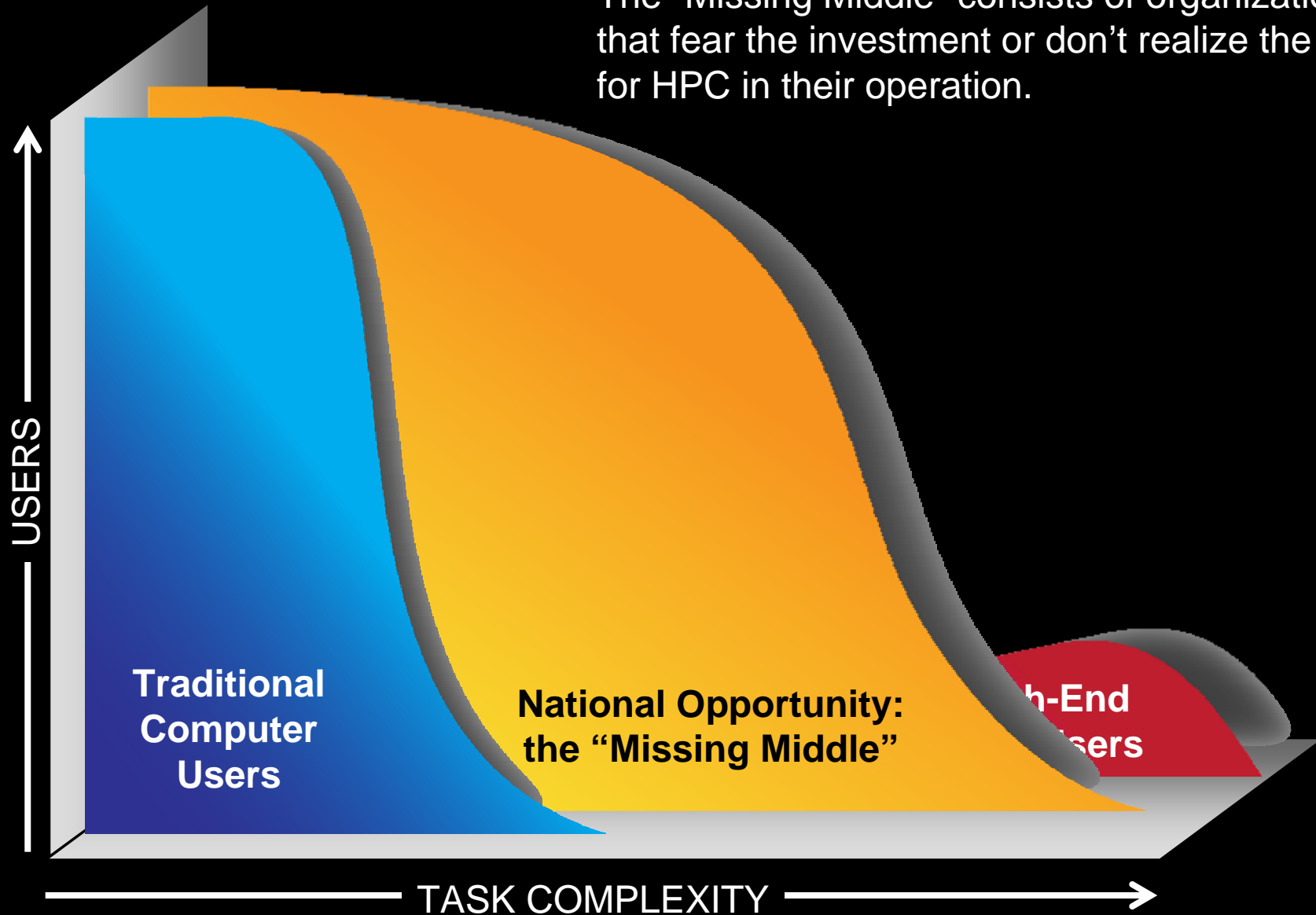


THE OPPORTUNITY



THE PROBLEM

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”

PREDICTIVE INNOVATION CENTERS



 In Process

 Planned

**WHAT WE
ARE DOING**



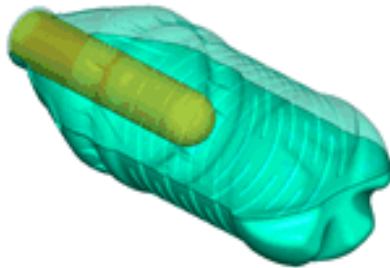
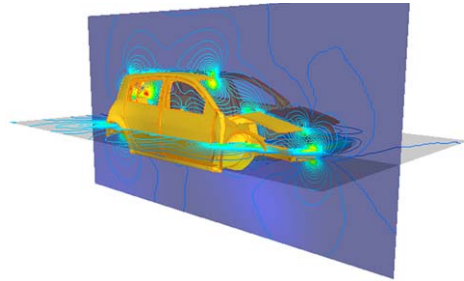
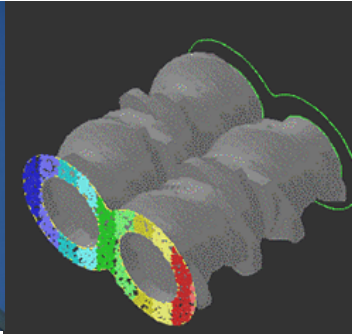
NOW



ENGAGE INDUSTRY

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





CONCEPT
EVALUATIONS

Integrate HPC with Current Projects

Lightweight Materials

Remote HPC Integration

Complexity Analysis

Simulation Accelerating Experience

Variability Integration

Macro-Composite Reinforcements

Process Optimization

Resin Infusion Technologies





IMPROVE YOUR SUPPLY CHAIN AND INCREASE GLOBAL COMPETITIVENESS

Another innovative project from NCMS
Observe now!

CALL FOR OBSERVERS!

Participate in project meetings

Share your expertise with the team

Expose your supply chain to HPC concepts with no cost up-front

Help guide the future of HPC in industry

No funding required, just be a member of NCMS

How Predictive Innovation will Change Manufacturing Forever



Left-hand view of test & simulation.
They may look similar...

As the premier provider of collaborative research, information, knowledge and expertise to the North American manufacturing and defense community, NCMS has spearheaded numerous

technology developments. Today, one of America's greatest competitive assets is our high performance computing (HPC) capability. This tool set has been steadily developed and utilized by our nation's

APPLICATION DEVELOPMENT

Collaborate with George Washington University
National Crash Analysis Center (GWU-NCAC)
to develop a prototype "application" concept
remotely evaluating model validation

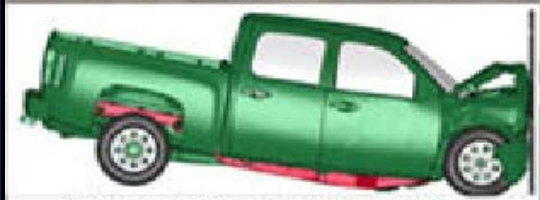




TAUBER INSTITUTE FOR GLOBAL OPERATIONS
BUSINESS • ENGINEERING • LEADERSHIP

Summer project with University of Michigan Tauber Institute for Global Operations to evaluate strategy and develop business plan and ROI statement





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www.ncms.org

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Thank You

Questions?
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