Developing a Regional Nanotech Cluster

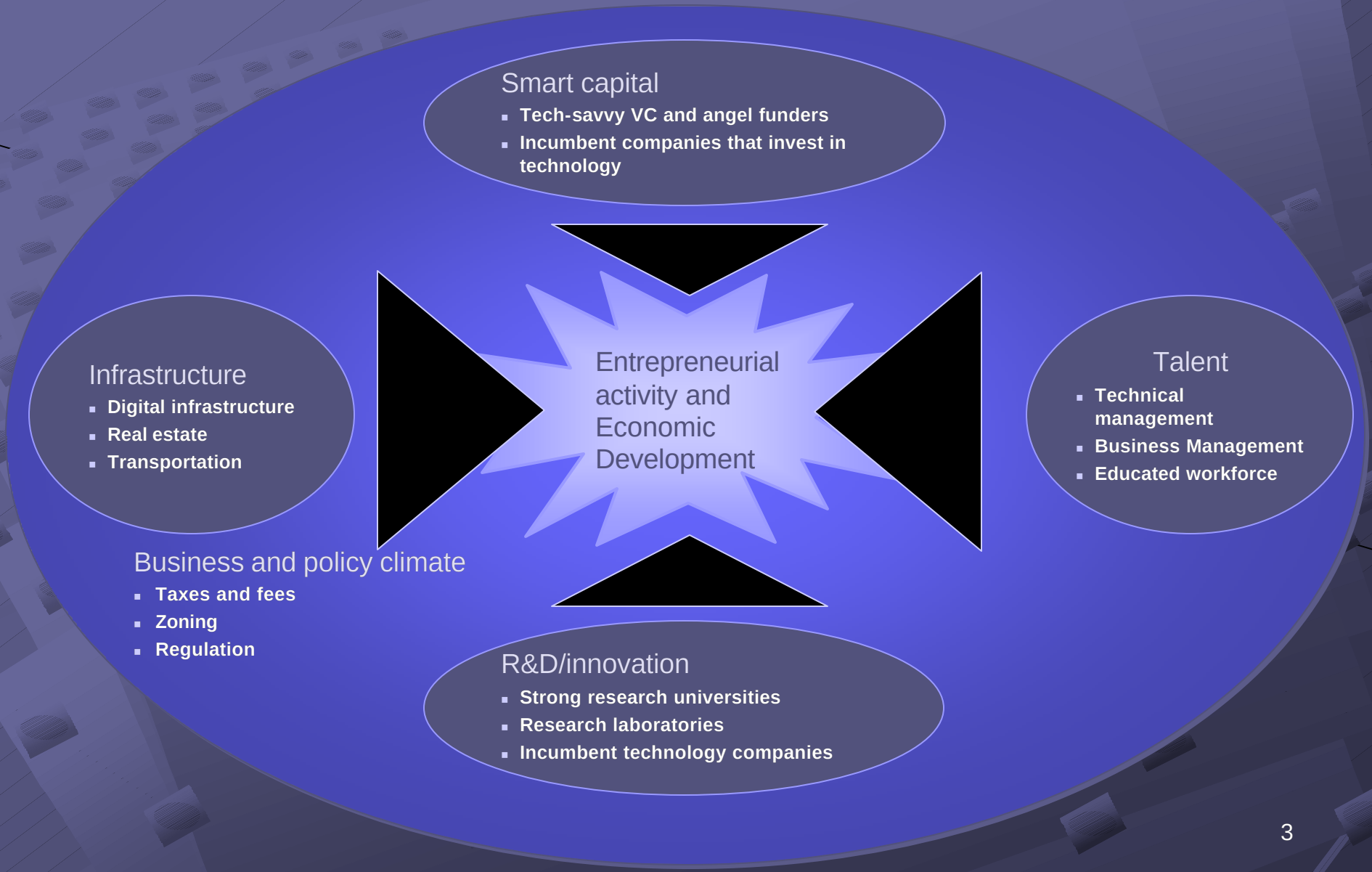
PCAST / OSTP Workshop on Federal-State R&D Cooperation

June 29th, 2004

Toward A Coordinated, Regional Cluster Model

- Despite significant investment in recent technology waves (biotech, ecommerce) for economic development purposes, little benefit has been seen in the Midwest
- Instead, the innovations developed through the fantastic research at Midwest institutions has been “exported” to the coasts
- We believed a new ecosystem oriented approach was necessary to internalize the benefits of innovation and allow a cluster to nucleate and grow over time

AtomWorks' Ecosystem Orientation



Focused upon engaging and connecting key players into a cohesive whole

Research infrastructure

- NSEC Centers: NU & U of I
- NASA Center: Purdue
- MRSECs: NU, U of C, U of I, UW Madison
- NCN: U of I & Purdue
- Argonne Center for Nanoscale Materials

Intellectual capital

- Well known leaders – 2001 & 2002 Feynman Prize winners
- Most of the top Chemistry, Chemical Engineering, and Material Science Programs

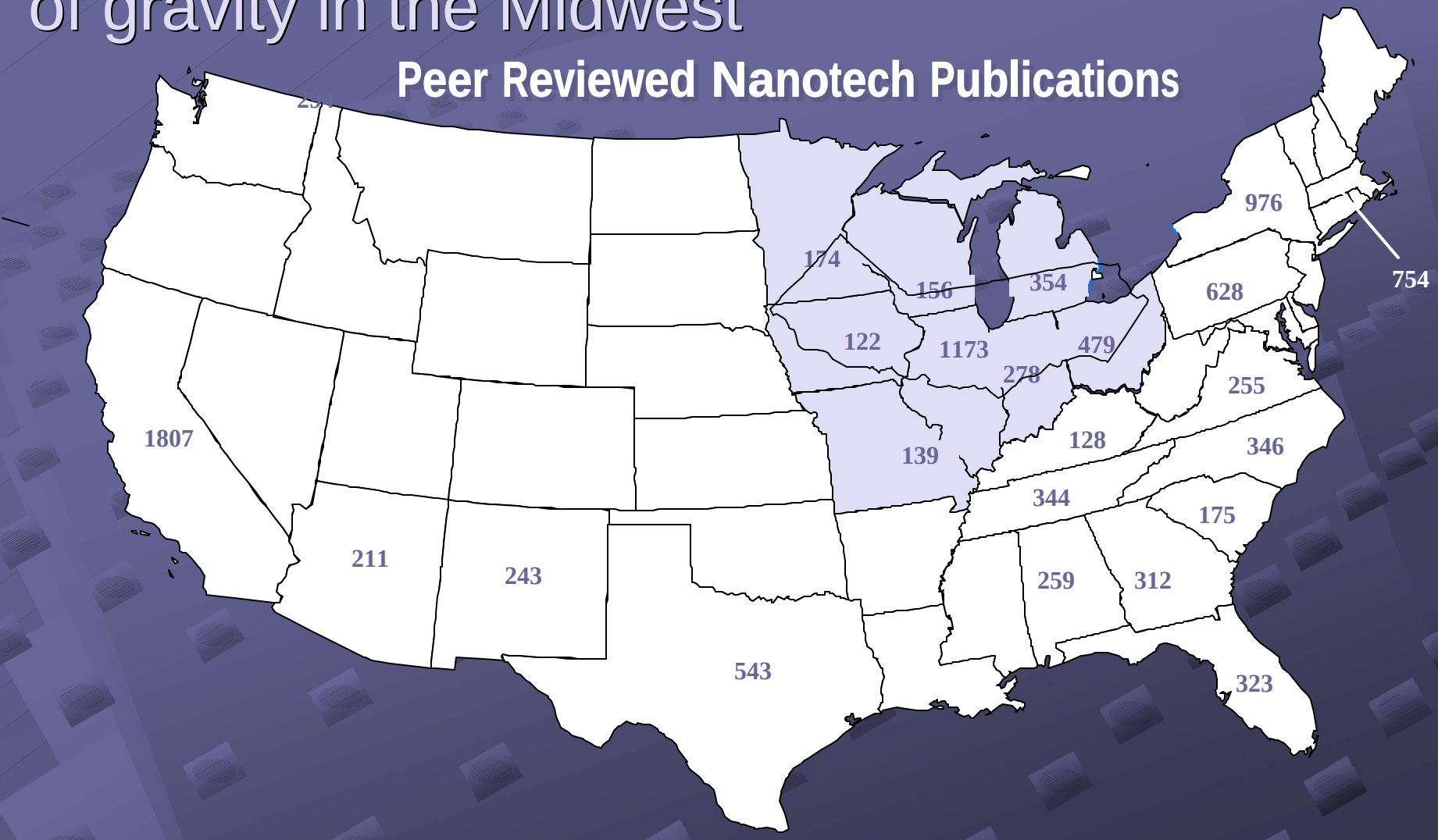
Critical Mass of Start-ups

- Arryx
- ChemSensing
- NanoDisk
- NanoInk
- NanoMateria
- Nanophase
- NanoSi
- Nanosphere
- Questek
- Advanced Diamond
- NanoFilm
- Platypus
- OpGen
- nPoint
- Imago
- BioForce

Diverse industrial leadership

- Aerospace/Defense: Boeing
- Automotive: Big 3 + Tier 1
- Chemicals: BP, Dow, Monsanto, S.C. Johnson
- Electronics/Communications: Motorola, Tellabs
- Pharmaceuticals / Medical Products: Abbott, Baxter, Guidant, Lilly, Medtronic
- Food Chain: Kraft, ConAgra, ADM, Sara Lee

Establishing critical mass and a new center of gravity in the Midwest



1986 - 1987		1991 - 1992		2001 - 2002	
USA	~120	USA	~1,500	USA	~10,000
WW Total	~450	WW Total	~3,800	WW Total	~34,000

Source: Jim Murday, NNCO, AtomWorks Feb 6th event

With relatively limited investment in network coordination and trust building activities

Technology life cycle

Build awareness

- To educate the public, the business community, and the scientific community on the benefits of nanotechnology commercialization and the region's leadership in doing so

Build community

- To provide forums for interaction and networking and to build trust across the constituencies.

Develop and integrate resources

- To assist research institutions, nanotechnology companies, and prospective entrepreneurs in identifying and obtaining financial or other business building resources, including access to infrastructure.

Advocate

- To serve as the voice of the Midwestern nanotechnology community to ensure a supportive environment for its development.