



BD Hubs: Midwest: “SEEDCorn: Sustainable Enabling Environment for Data Collaboration”

## Midwest Big Data Hub

Accelerating the Big Data Innovation Ecosystem

One of four Big Data Regional Innovation Hubs (BD Hubs) funded by the National Science Foundation through award #1550320

---

## Midwest Manufacturing Spoke

Building a data economy in Midwest manufacturing

Jim Barkley  
Associate Director, Digital Manufacturing Commons



# MBDH Advanced Manufacturing Spoke

- Highly integrative hub, Manufacturing is highly integrative as well
- Has three categories of spokes: society, natural & built world, healthcare & biomedical research
- Natural & built world integrates: water, energy, food, agriculture, transportation, and manufacturing.

By enabling unprecedented interdisciplinary scientific exchanges and collaborations among these five sectors, *SEEDCorn will facilitate partnerships and activities that foster development of necessary analytical methods, big data algorithms, visualization tools, and sensory acquisition methods, as well as access to storage, scalable operational infrastructure, and data management systems.*

# UI LABS



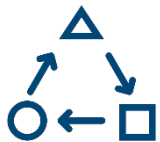
An industry-driven, multi-party collaboration that enables what no company can do on their own.



A collaboration platform for accelerating the development, deployment and adoption of digital technologies.



We leverage collective investments in innovation to deliver better solutions, more quickly and more efficiently.



Our partnerships transform industries.



We are a Chicago-based 501(c)3 non-profit corporation.

# Putting the LABS in UI LABS

**DMDII.** Transform American manufacturing to be the most competitive in the world through the adoption of digital manufacturing technologies.

**City Digital.** Transform cities to enhance how we live, work and play today and tomorrow by digitizing the built environment.



## DMDII

+ a UI LABS Collaboration

LAB 1  
Feb 2014

- Established with a **\$70M cooperative agreement** with the US Department of Defense, +\$12M additional grants
- Fosters development and implementation of digital manufacturing technology **throughout supply chain**
- Addresses underinvestment in **“pre-competitive” applied R&D** that can advance the entire industrial base
- Plus, designs “corporate interest projects” to develop **proprietary go-to-market solutions**
- Current **pipeline of 30+ projects** over next 6 months

**INTELLIGENT MACHINING**




**ADVANCED MFG ENTERPRISE**



**ADVANCED ANALYSIS**



**CYBERPHYSICAL SECURITY**



**DIGITAL MFG COMMONS**





+ a UI LABS Collaboration

## CITY DIGITAL

LAB 2  
Mar 2015

- Partnered with City of Chicago to utilize city as a test-bed and engages municipal leadership in pilot design
- Designs and deploys **pilot demonstration projects** to validate technology, business models, scalability
- Mitigates challenges inherent in municipal collaboration, facilitating replicability and speed
- Current pipeline of **5+ projects** over next 6 months
- Leverages multi-party project investment, plus capitalizes on planned infrastructure investments



PHYSICAL INFRASTRUCTURE



TRANSPORTATION

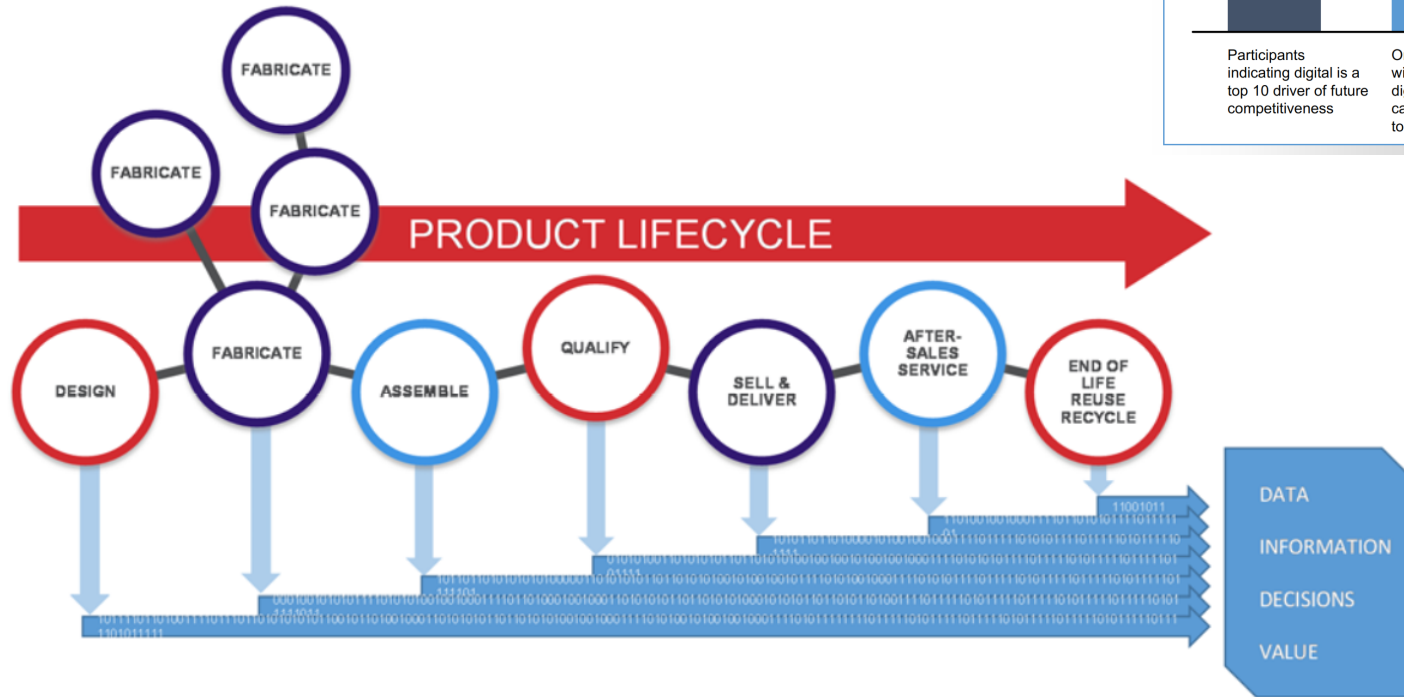


ENERGY MANAGEMENT



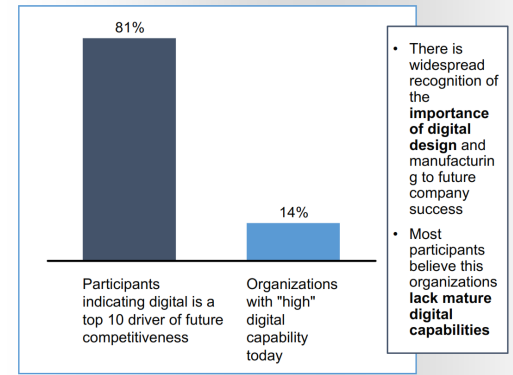
WATER & SANITATION

# Digital Manufacturing



## DATA ACROSS THE PRODUCT LIFECYCLE

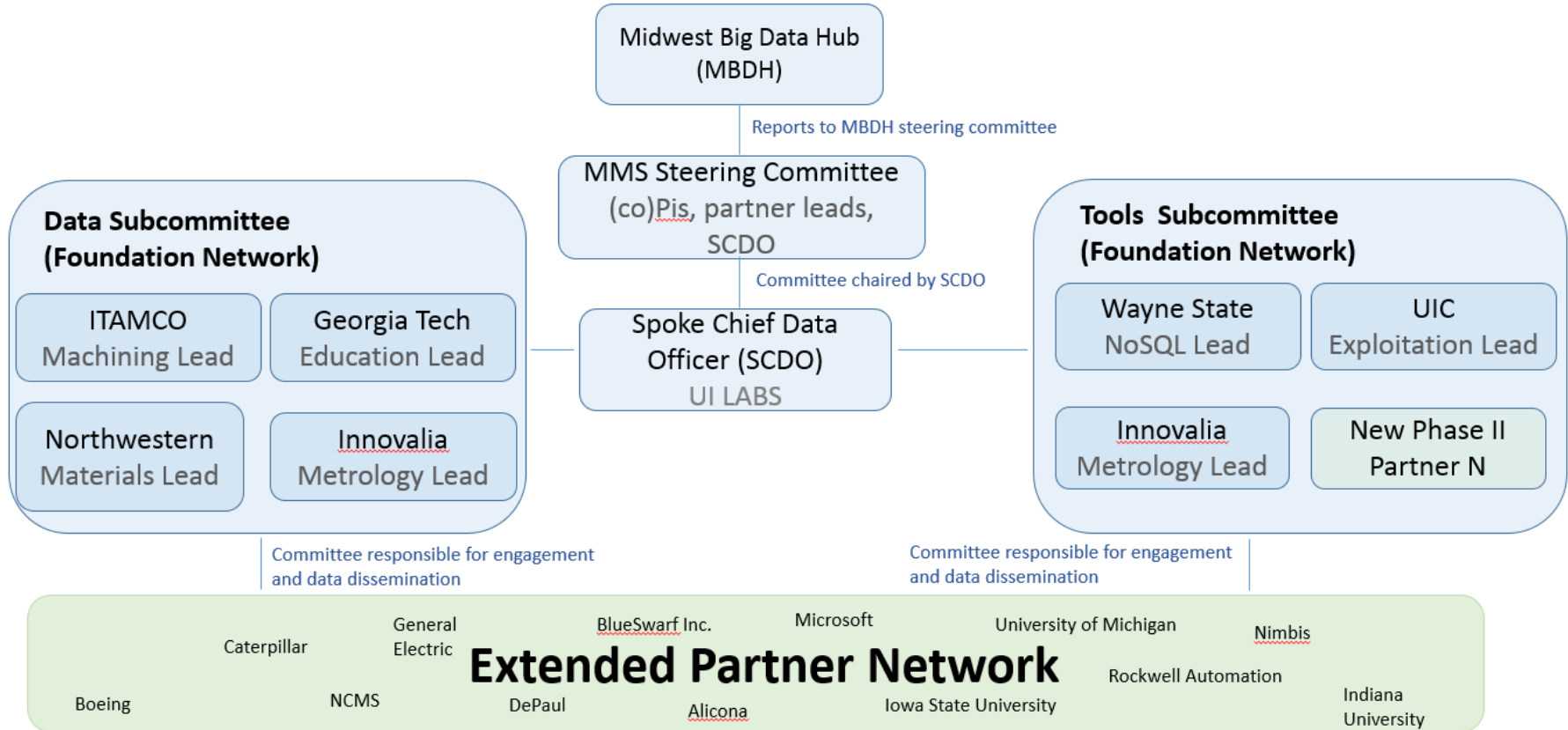
Digital manufacturing can be defined as the aggregation and use of data across the lifecycle of a manufactured product.



# Midwest Manufacturing Priorities

- Industry
  - Big equipment OEMs (auto, tractor, construction, etc.)
  - Tier N “feeders” into OEMs (SMMs)
  - Analytics software vendors in Chicago tech corridor
- Research
  - Advanced analysis (e.g., performance prediction)
  - Material science (ICME, etc.)
  - Machine tools (efficiency, optimization, etc.)
  - Metrology & scanning

# Midwest Manufacturing Spoke Proposal



**Midwest Big Data Hub**

Accelerating the Big Data Innovation Ecosystem

