Innovation discussion for Policy Academy

Presentation by:

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What we mean when we say “innovation”

- Shorthand for economic developers
  - Creation of new technology companies
  - Development of new products
  - Industry 4.0 for manufacturing companies
  - Making manufacturers more competitive by adopting new processes, approaches and techniques
  - Thinking creatively; fresh approaches

What we mean when we say “innovation”

- Word association from focus group of voters
  - Technology, new inventions, new method
  - New ways of looking at problems and solving them
  - Self-driving cars, pc/cellphones, making everything eco-friendly
  - New ideas

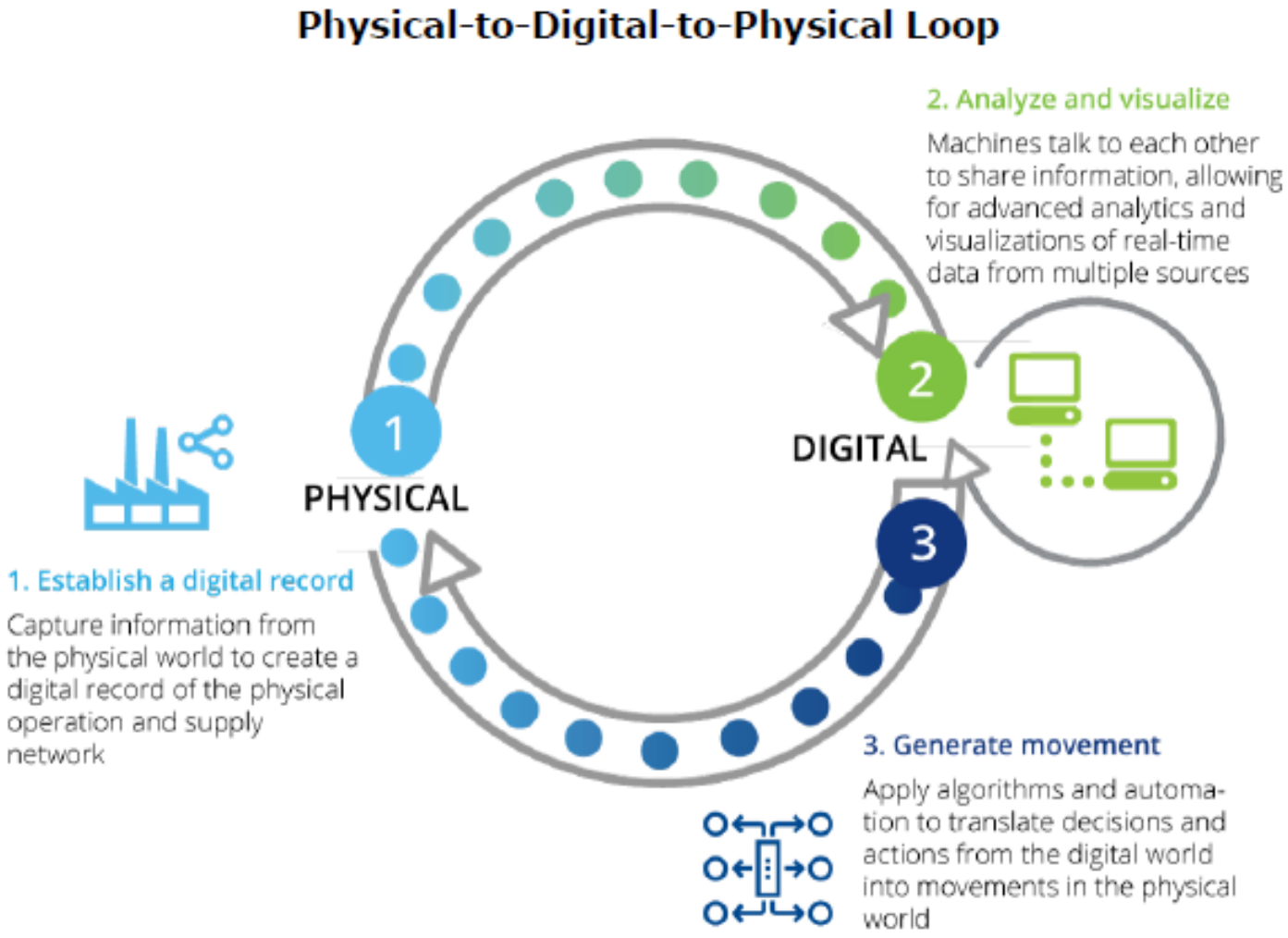
Examples and resources

https://ssti.org/manufacturing-policy-academy-resource-page

- Industry 4.0
  - "Industry 4.0 and the State of Manufacturing" - Mark LaViolette

Industry 4.0 integrates the digital and physical realms

Information is exchanged in the physical-to-digital-to-physical loop.



Source: Center for Integrated Research

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  - "How Digitalization is Transforming Modern Manufacturing and Implications for U.S. States" - Stephen Ezell

State Policy Ideas to Spur Manufacturing Digitalization

- ✓ Articulate a state-level manufacturing digitalization strategy.
- ✓ Develop a customized manufacturing digitalization readiness assessment instrument for your state's manufacturers.
- ✓ Facilitate networking/peer-to-peer learning among manufacturers.
- ✓ Launch a Digital Manufacturing Demonstration Facility.
- ✓ Match investment SMEs make to become Tier 3 MxD members.

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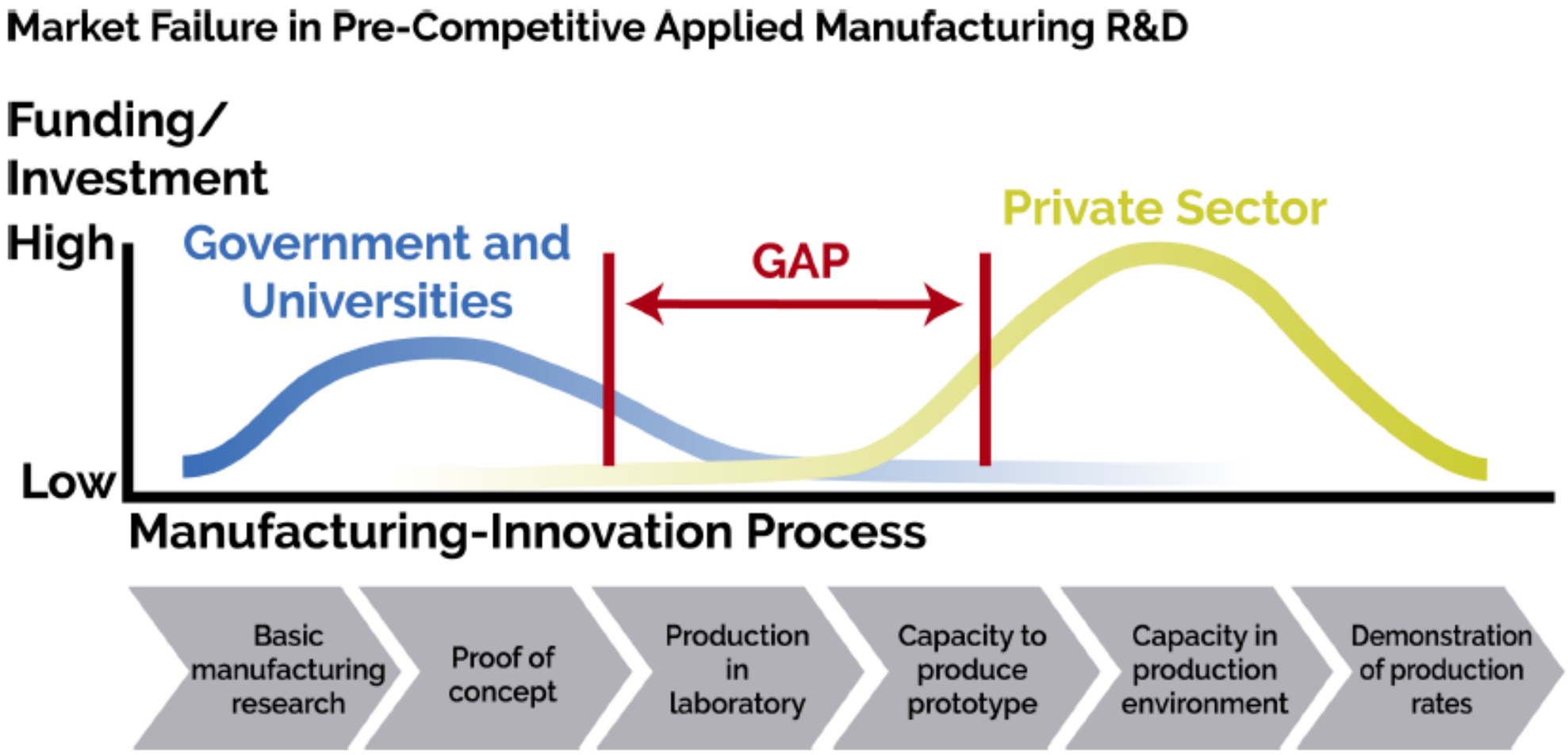
- University-manufacturer collaboration
  - "Advanced Manufacturing and Innovation: Manufacturing USA and the Importance of Manufacturing Clusters" - Mike Molnar

Manufacturing USA Bridges Gaps

The federal role is to create a neutral convening space for U.S. Industry and Academia to collaborate. Federal start-up investment ($70 million/institute over 5-7 years) must be at least 100% matched



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  - "Building Industry Consortia for Pre-Competitive Research" - Henry Cialone

Consortia the EWI Way

- EWI selects a focus areas based on technology trends and industry inputs
- Industry members make the rules (EWI makes recommendations based on prior experiences)
- One operator: managed as an EWI joint-industry project
- Caution:
  - Not a “quick fix” – can take over a year to put together
  - Must be mindful of antitrust laws during formation and at every meeting
- IP and confidentiality often a challenge, but the following typically works
  - Multi-party mutual NDA (background and consortium originated)
  - NERF rights for consortium originated IP (owned and managed by EWI)
  - Background IP not affected
- Oversight/“governance”: paying members (research partners do not pay) vote for projects
- Transition through proprietary development / implementation projects on consortium-developed concepts

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  - "University-Industry Partnerships" - Paula Sorrell

Site Visit by Staff, Scorecard Assessment

Deep Dive Analysis Into Firm

- Financial Assessment & Benchmarking
- Market Assessment
- Operational Assessment
- Technical capability Assessment

Project Manager's Data Informed Recommendations

RFP with Scope(s) of Work written by Project Manager

1,000+ vetted experts or university/labs resources

Use formal selection process to select best identified resources

Negotiate agreements to maximize impact and reduce cost

Co-funded Implementation to ensure timelines, milestones are met

Continuous project management to successful completion and beyond

Examples and resources

- Connecting start-ups and manufacturers
  - "Greentown Manufacturing Initiative" - Matt Sweitzer

Greentown Manufacturing Initiative impact

- ✓ Supported over 160 hardware startups across Massachusetts
- ✓ Grew supplier base to 260+ suppliers
- ✓ Made over 900 connections betweens startups and manufacturers
- ✓ 100 assembly contracts and manufacturing purchase orders signed with a *known* economic value of $3.6m to date
- ✓ Silverside Detectors NIST 2018 Manufacturing Hero award **video**

Examples and resources

- Connecting start-ups and manufacturers
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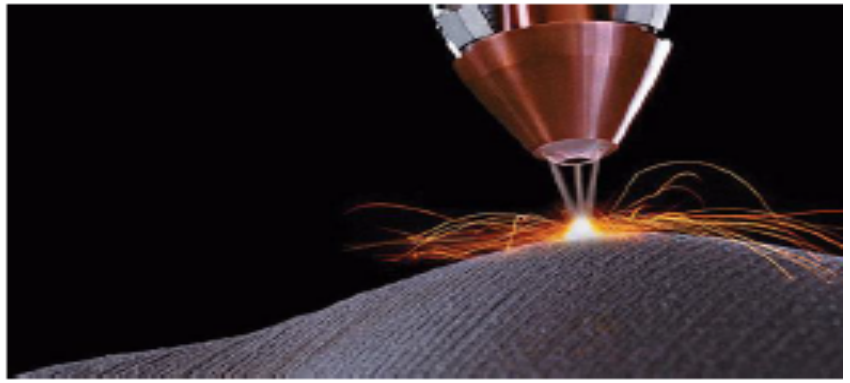
  - "Innovation Works" - Bob Starzynski

Scalable Innovation – Feeding a Local Supply Chain

Problem:

- Early stage hardware companies lack know-how to engage local supply chain partners.
- Local manufacturers need access to new markets, customers, technologies to sustain business.



Solution:

- Make connections between regional manufacturers and early stage companies (AL Gear, IW portfolio, etc.) for design support, prototyping and supply chain.
- Assist Gear companies in reaching commercialization faster through manufacturing curriculum addendum.
- Create opportunities for local manufacturers to find new customers, new revenue and new markets.
- Offset costs of set-up and initial purchase orders

Benefits:

- IW hardware companies better understand design for manufacturing and find local supply chain.
- Regional manufacturers engage new markets and diversify customer base.
- IW provides better value to small businesses in outlying/rural communities while staying true to mission.

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- New product development
  - Oklahoma State University New Product Development Center partnership with the Oklahoma Manufacturing Alliance

What We Do

Inventor's Assistance Service

The Inventor's Assistance Service (IAS) is a program sponsored by The Oklahoma Center for the Advancement of Science and Technology. It offers inventors preliminary patent research; market research; engineering design, modeling and drawing; and prototyping services. Research and development is conducted by professional IAS staff and undergraduate research assistants.

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- Innovation vouchers
  - "Supporting Manufacturing Innovation and R&D with Voucher Programs"– ITIF, Connecticut, Rhode Island (webinar recording at: https://vimeo.com/306053953)

Innovation Vouchers: The Basics

- Grants provided to SMEs enabling them to purchase services from universities/research institutions to stimulate innovation.
- Used for R&D assistance, technology feasibility assessments, overcoming specific product development hurdles, product prototyping, lab validation, field testing, etc.
- $25-$50K grants typical in United States; in Europe €10-€25K grants more common.

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  - Illinois Manufacturing Innovation Voucher - IMEC

The Illinois Manufacturing Innovation Voucher will award **up to $25,000** in match funding to:

- **Accelerate Technology Adaption**
- **Identify and Implement Productivity Improvements**
- **Overcome Organizational Growth Barriers**

Voucher projects must be conducted in Illinois is for existing Illinois manufacturers with between 5 and 500 employees. Projects are expected to be practical in nature and focus on productivity improvements and/or product development that lead to **innovation** and **measurable gains**.

For Additional Questions or Information:

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Contact Information

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