



MBE and the SMM

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Introduction

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B.S. Mechanical Engineering

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Work History:

MxD USA, Sr. Technology Strategy Associate

IMI Precision, Project Engineer

Atkore Int'l, Operations Supervisor

Medtronic, Operations Supervisor

DuPont, Mechanical Technology Engineer

GE Aviation, Lean Engineering Intern





Agenda

Takeaways

Problem Statement

Potential Solutions

Closing



Bottom Line, Up Front

**SMM culture is
changing**

Engage with MxD

**Seek opportunities to
subsidize SMM
digitalization**



Problem?

- Continuous improvement
- Everybody wants data
- Regulations/Qualifications
- Industry 4.0 proliferated data sources
- Cost vs. ROI
- Burgeoning new tools like AI



The Makeup of the U.S. Manufacturing Industrial Base

239,607 U.S. MANUFACTURING FIRMS



Adoption Barriers

- Unclear of MBE and associated technologies
- ROI
- Unaware of resources available through MEP, State, and Local governments
- Long term benefits

Adoption Barriers

- Unaware of the benefits
- Not applicable to their business (IP owning vs job shops)
- Skeptical of customer's use of data
- Full toolset provided by MBE
- Suspicious view of service providers' claims



Adoption Barriers

- Human
 - Resources
- Knowledge
 - Change management
 - Know-how
- Investment
 - Business case preparation
 - Disruption of services
 - Money



Adoption Barriers

- Customers need to build the capabilities
- Lack of horizontal pressure to change
 - Cultural
- Lack of standardization
- Near vs far sighted

So What? – Effect on OEMs/DoD

Digital Thread

Need data!

Inability to create a digital twin

Integration of new technologies

Compliance

Manually linked compliance data

Raw material/component sourcing [Regulatory]

Continuous [Product] Improvement

Lack of cradle to grave information continuity

Added [implied/soft] costs from production

Supply chain implications [Risk Mgmt.]

Overcoming Costs



- MEP, State, and Local opportunities to subsidize costs for SMMs
- Segment suppliers by job shops vs. IP containing – customizers
- Training opportunities to cover a perfunctory period
- Value realization must happen to continue

Making it Easy to Do

- Team up with other industry OEMs
- Set similar standards/codes that do not conflict
- Biggest hold up – OEMs not driving the change



Engaging with MxD



Manufacturing x Digital

- MxD Technology mapping
- MBE assessment upgrade
- Future LLM projects
- Projects

Recap: Overcoming Barriers to SMM Digitalization

SMM culture is changing

- More SMMs are starting to digitalize
- Limited pressure on SMMs
- OEMs need to drive MBE

Engage with MxD

- MxD is doing a lot of work focused on SMMs
- Engage with our road mapping effort to help build requirements

Seek opportunities to subsidize SMM digitalization

- Work with MEPs, and state and local opportunities to help subsidize costs
- Work with SMMs to help build out business case

Call to Action



- How many SMMs are in attendance today?
- How can MxD support MBE awareness effort at SMMs?
- Who would be interested in a pilot program with MxD?
- Who is interested in working with MxD for technology road mapping?



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