

Next Generation MBE Capability and Maturity Assessment

A Refined Approach for Baselineing
Digital Transformation

GLOBAL PRODUCT DATA
INTEROPERABILITY
S U M M I T
2021



Presenter's Bio

Global Product Data Interoperability Summit | 2021

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- MBE and Digital Transformation Adviser
- Leader in MBE, MBD, digitalization, GD&T, PMI, tolerance analysis...
- ASME Fellow
- Lecturer and Trainer
- Standardization Expert
 - ASME MBE, Y14.5, Y14.41, Y14.48, Y14.100, ISO TC 213, TC 184/SC4...
- Over 35 years industry experience

Head of ITI/Wipro MBE Consulting Practice

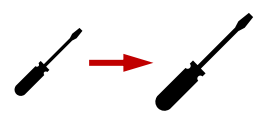


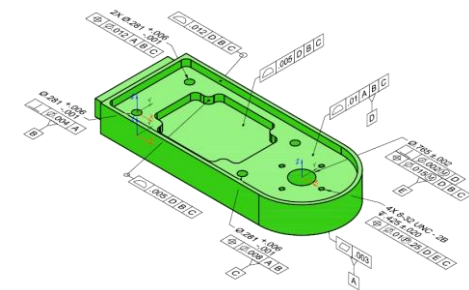
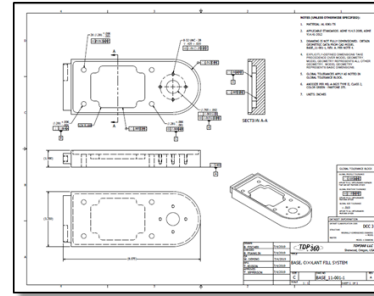
Major Published Works

<i>Mechanical Tolerance Stackup and Analysis</i>	2004, 2011
<i>The Journeyman's Guide to GD&T</i>	2002-2009
<i>GD&T Visual Glossaries</i>	2006-2009
<i>Drawing Requirements Manual 11th Ed</i>	2008
<i>GD&T Update Guide: ASME Y14.5-2009</i>	2009
<i>Digital Data Sets and 3D Solid Modeling</i>	2008
<i>3D Model-Based Enterprise Overview</i>	2013
<i>Solidworks MBD Implementation Guide</i>	2015



Current Approaches to MBD and MBE

- Most current approaches are based on limited ideas of MBD and MBE
 - MBD and MBE focused on
 - 2D drawings vs 3D models
 - Product definition data
 - Design activity and productivity
 - Replace current methods with incrementally better methods 
- Current approaches to MBE assessment originate from the earlier ideas
- Provide incremental improvement and ROI



MBD and MBE

Model-Based Definition (MBD)

System and techniques to define business products and processes using semantic digital data instead of documents

Goals

Increase value of business-critical information

Digital data is master definition

Decrease time requirements

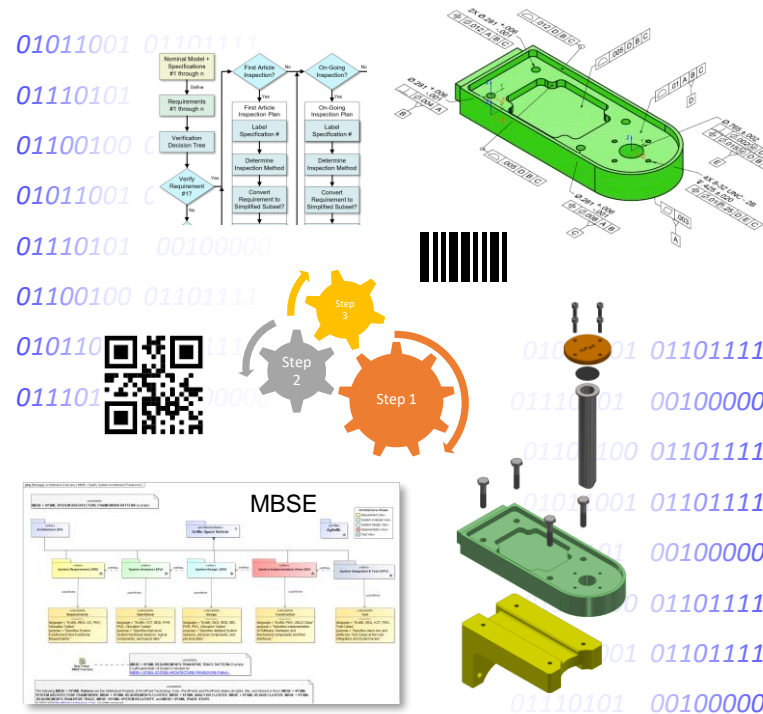
burden on other activities
scrap, rework, RFIs

Increase efficiency and productivity
quality and profitability
value of staff and IP

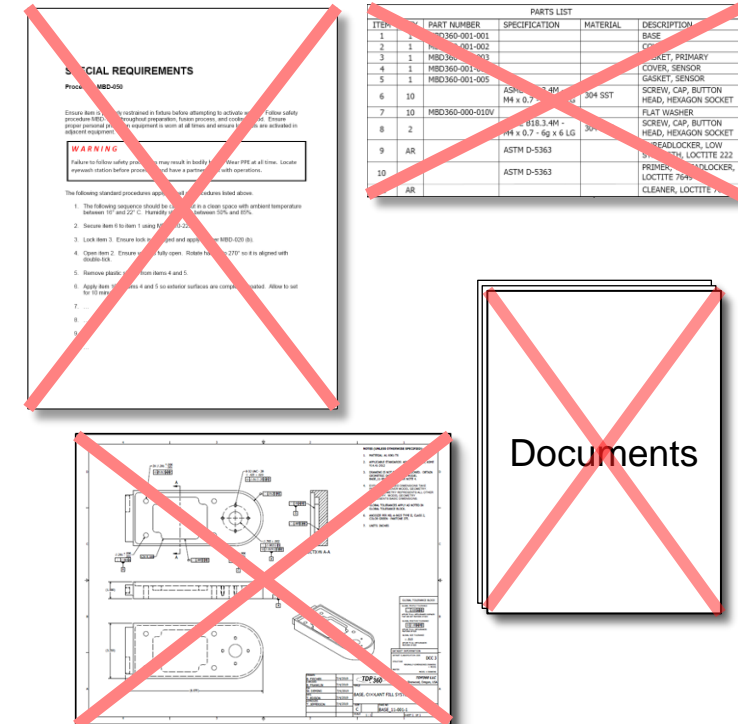
Data can be used directly by software

Enable automation

Yes



No



Model-Based Enterprise (MBE)

Organization focused on using MBD across the enterprise and throughout the product lifecycle

Goals

Maximize value obtained from business-critical information

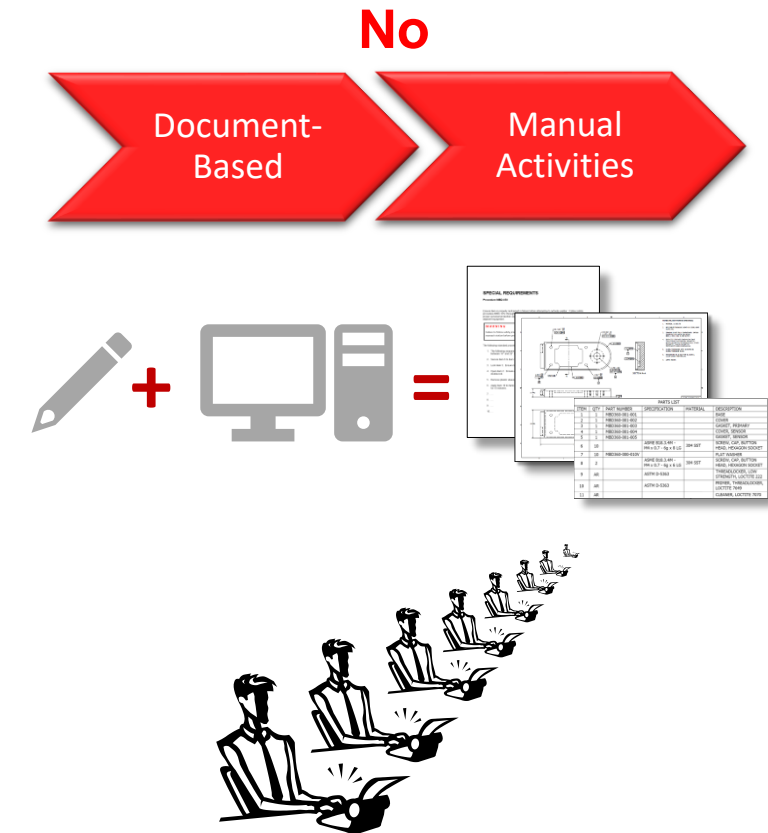
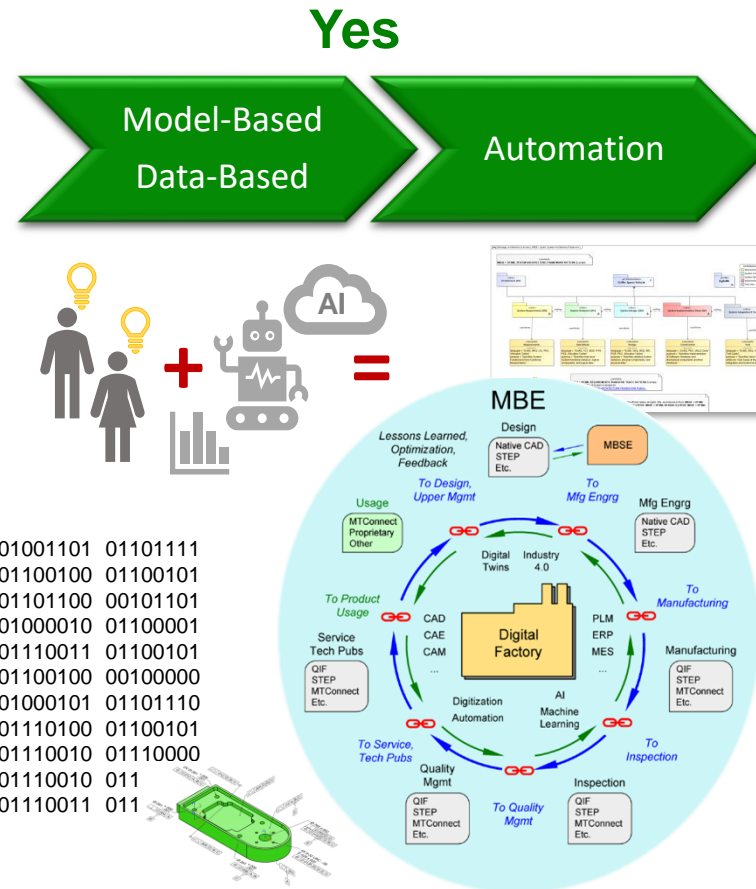
Eliminate manual and document-based activities

Provide maximum benefit of MBD to all business activities

Obtain maximum value from MBD

Increase value of IP, staff, labor, CAPEX and OPEX

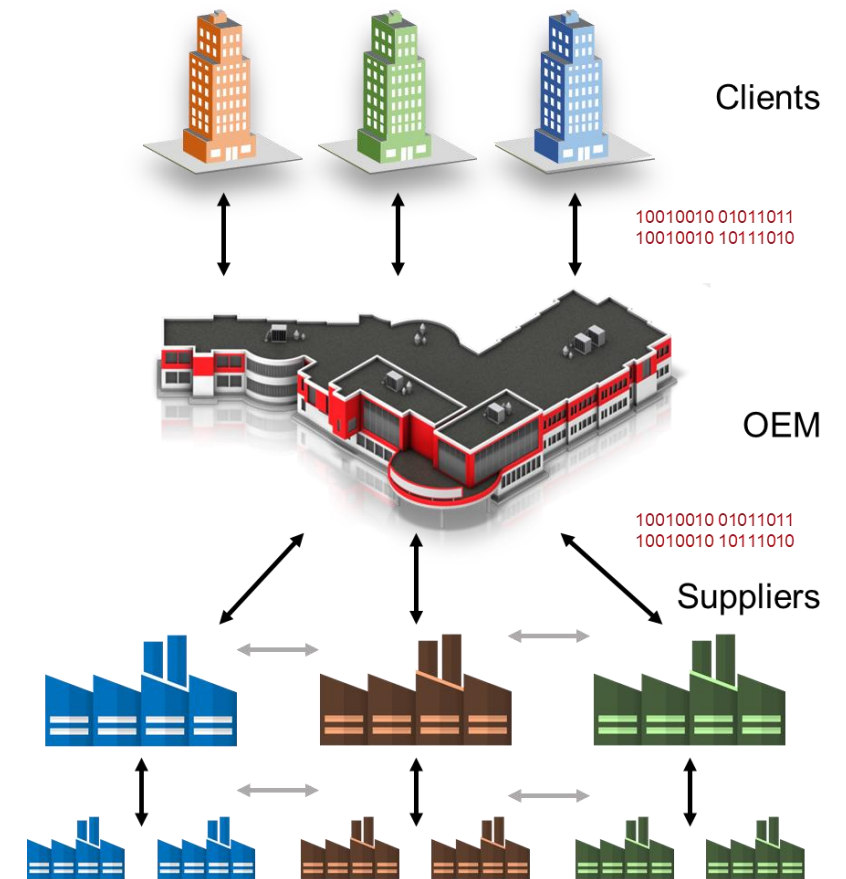
Automate...



MBE Assessment

Our Approach to MBE Assessment

- Focus on potential and realized business value from digitalization
- Primary focus of MBE assessment
 - Value obtained from business-critical information and IP relative to CAPEX and OPEX
 - Includes efficiency, productivity, quality, time to market, throughput, profitability...
- *Not limited to 2D drawings vs 3D models*



MBE Assessment – Current State

- Assess extended enterprise (internal and external)
- All instances and uses of product- and process-related data, etc.
- Elicit and compile information

Categories

- Business approach
- Culture
- Environment
- Information artifacts
- Information flow
- Information management
- Infrastructure
- Leadership
- Quality systems
- Resiliency
- Security
- Work execution
- etc.

MBE Assessment – Current State

Calculate

- Current MBE Capability (MBE_{CC}) Potential business value of current state
- Current MBE Maturity (MBE_{CM}) Realized business value of current state
- Current MBE Gap (MBE_{CG}) Difference between current capability and maturity

$$MBE_{CG} = MBE_{CC} - MBE_{CM}$$

- MBE_{CG} additional value enterprise could obtain today with minimal CAPEX
- MBE_{CG} low-hanging fruit, potentially easy and low cost to bridge

MBE Assessment – Future State

Calculate

- Future MBE Capability (MBE_{FC})
- Future MBE Maturity (MBE_{FM})
- Future MBE Gap (MBE_{FG})

Separate activity from initial assessment

- Potential business value of future state (planned)
- Realized business value of future state (planned)
- Difference between future capability and maturity

$$MBE_{FG} = MBE_{FC} - MBE_{FM}$$

- MBE_{FG} additional value enterprise could obtain in future with minimal CAPEX
- MBE_{FG} low-hanging fruit, potentially easy and low cost to bridge

Conclusion

- MBE assessment should focus on evaluating potential business value and realized business value from digitalization.
- Assessment should not only focus on replacing 2D drawings with 3D models.
- Our goals are to provide guidance and help our clients
 - Understand their situation and the potential value of MBE and digitalization
 - Design, develop, test, and implement digitalization infrastructure, systems, and processes
 - Obtain maximum value from business-critical information and IP
 - Obtain maximum value from CAPEX and OPEX by leveraging digitalization and MBE

Thank You!

Contact

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*Our team provides industry-leading
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