



MBSE adoption challenges and best practices: a typical deployment scenario

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What is MBSE?



Model-Based Systems Engineering (MBSE)
is an emerging approach
that applies **modeling** to support
complex system
requirements,
design,
analysis,
and verification & validation activities

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MBSE is the New SE



SE Practices for Describing Systems

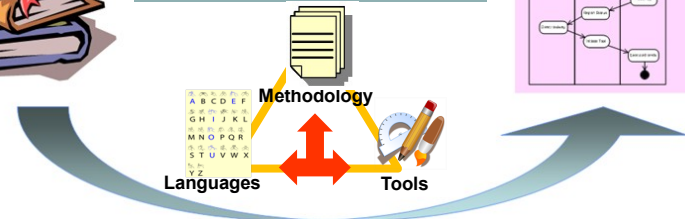
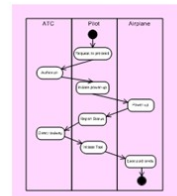


Past



- Specifications
- Interface requirements
- Systems design
- Analysis & Trade-off
- Test plans

Future



Moving from Document centric to Model centric

4/15/2008

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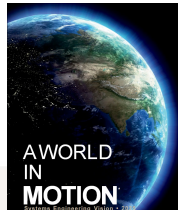
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SE Vision 2025 -



INCOSE

**Virtual Engineering
Part of The Digital Revolution**

F R O M

Model-based systems engineering has grown in popularity as a way to deal with the limitations of document-based approaches, but is still in an early stage of maturity similar to early days of CAD/CAE.

T O

Formal systems modeling is standard practice for specifying, analyzing, designing, and verifying systems, and is fully integrated with other engineering models. System models are adapted to the application domain, and include a broad spectrum of models for representing all aspects of systems. The use of internet-driven knowledge representation and immersive technologies enable highly efficient and shared human understanding of systems in a virtual environment that span the full life cycle from concept through development, manufacturing, operations, and support.

- Systems modeling will form the product-centric backbone of the digital enterprise which incorporates a model-centric approach to integrate technical, programmatic, and business concerns.
- Model-based approaches will enable understanding of complex system behavior much earlier in the product life cycle.

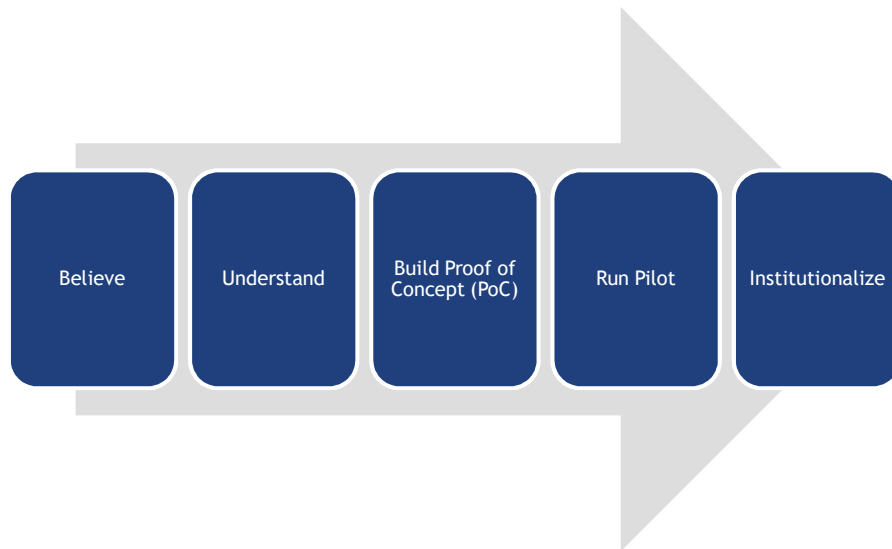
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Typical Process for MBSE Deployment



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Believe: Basic Info



Parties Involved:

- Triggering Party
- Management



Deliverables:

- Management commitment

Showstoppers:

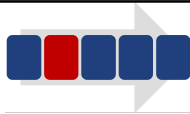
- No commitment from the management

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Understand: Basic Info



Parties Involved:

- Management
- MBSE Center of Excellence
- External experts (optionally)



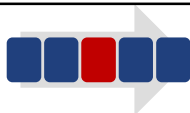
Deliverables:

- Objectives and scope of MBSE adoption
- MBSE literacy (with or without external experts)

Showstoppers:

- Underestimated scope

Duration: ~ 1 month



Build PoC: Basic Info



Parties Involved

- MBSE Center of Excellence
- External experts

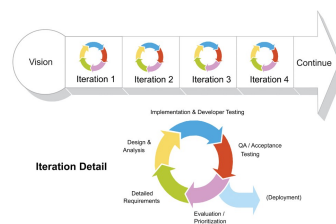
Deliverables

- Methodology
- Toolset & Customizations
- Reference model & Modelling guidelines

Showstoppers

- Value is not proved

Duration: ~ 3 months





Run Pilot: Basic Info



Parties Involved

- MBSE Center of Excellence
- Regular employees

Deliverables

- Employee acceptance
- Methodology evolution



Showstoppers

- Actual value is not proved
- Resistance to cultural change

Duration: ~ 12 months



Institutionalize: Basic Info



Parties Involved:

- MBSE Center of Excellence
- Regular employees

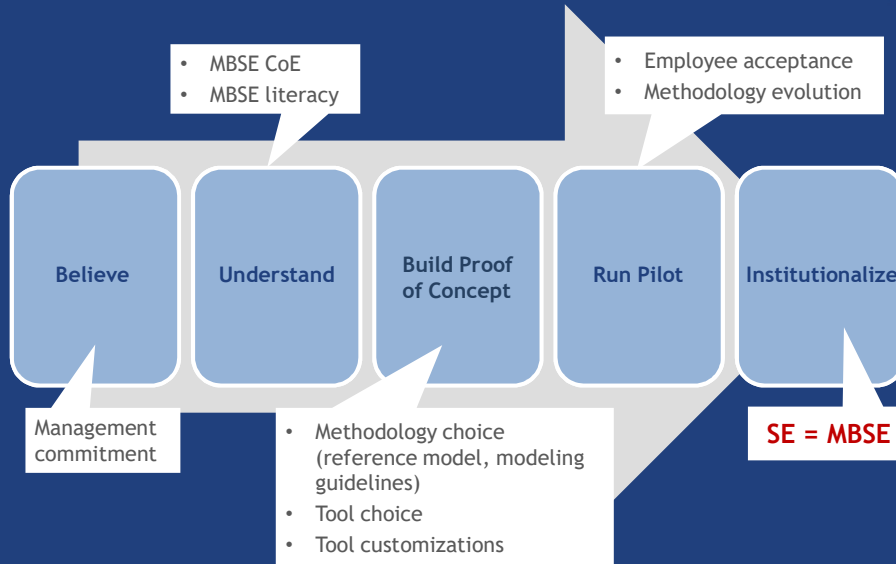
Deliverables:

- **MBSE is the New SE**

Duration: 6-18 months



Summary: Deliverables of MBSE Deployment



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Innovation Drives Success ;)

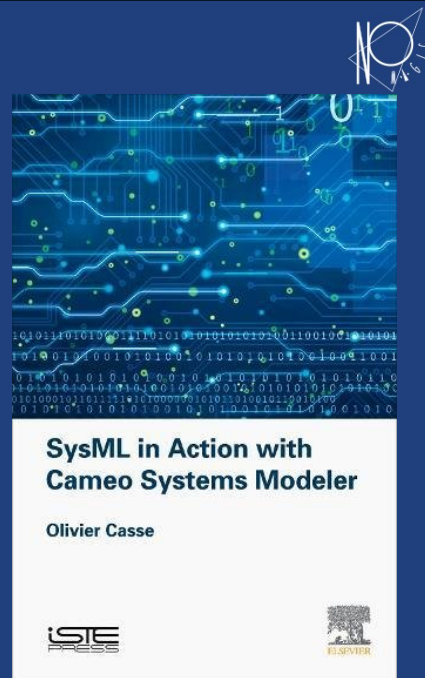


Merci!

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For more details...
Come and see us at our booth



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