Essence Kernel-Based Enterprise Method Architecture

June 20. 2013

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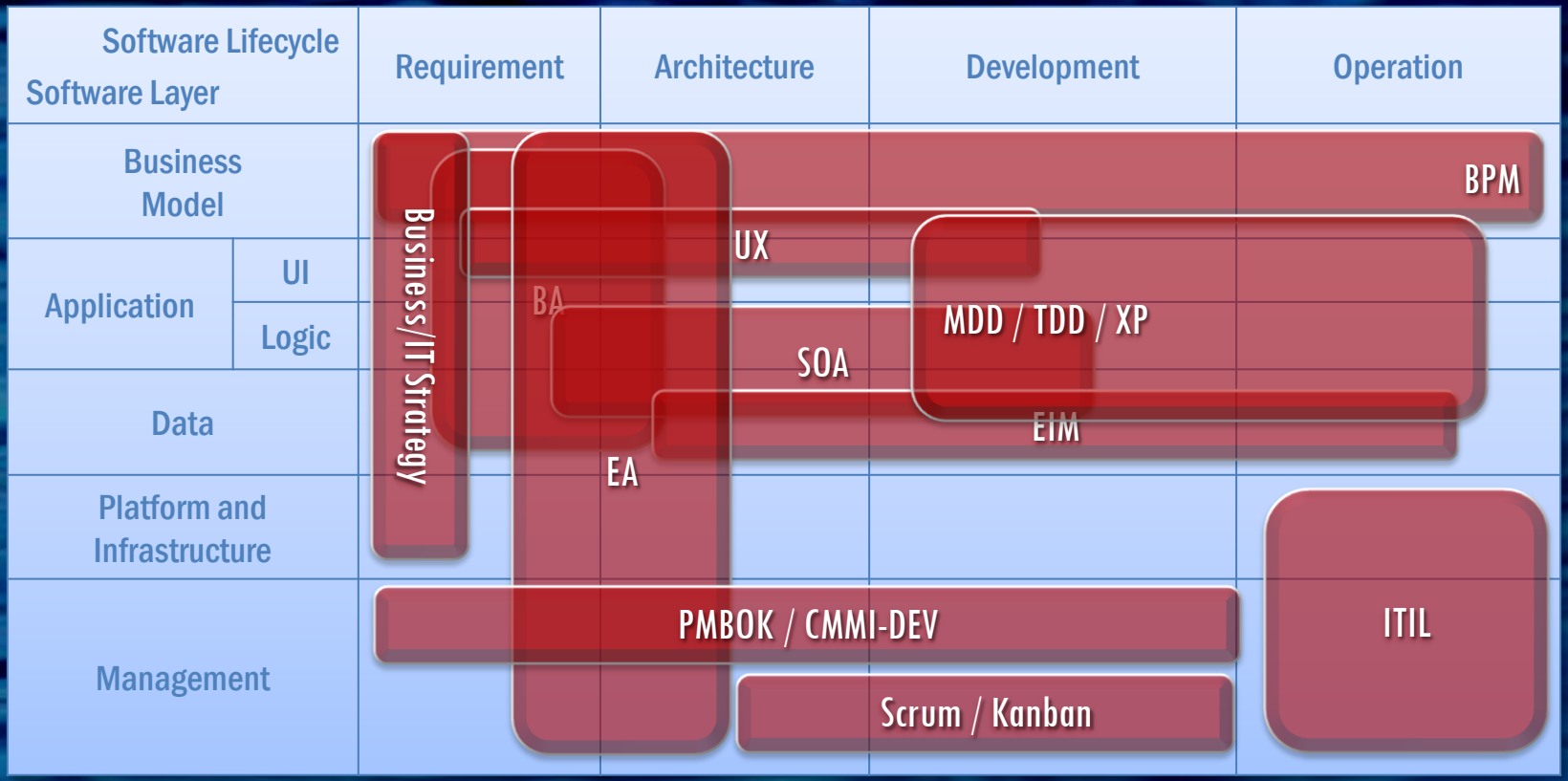
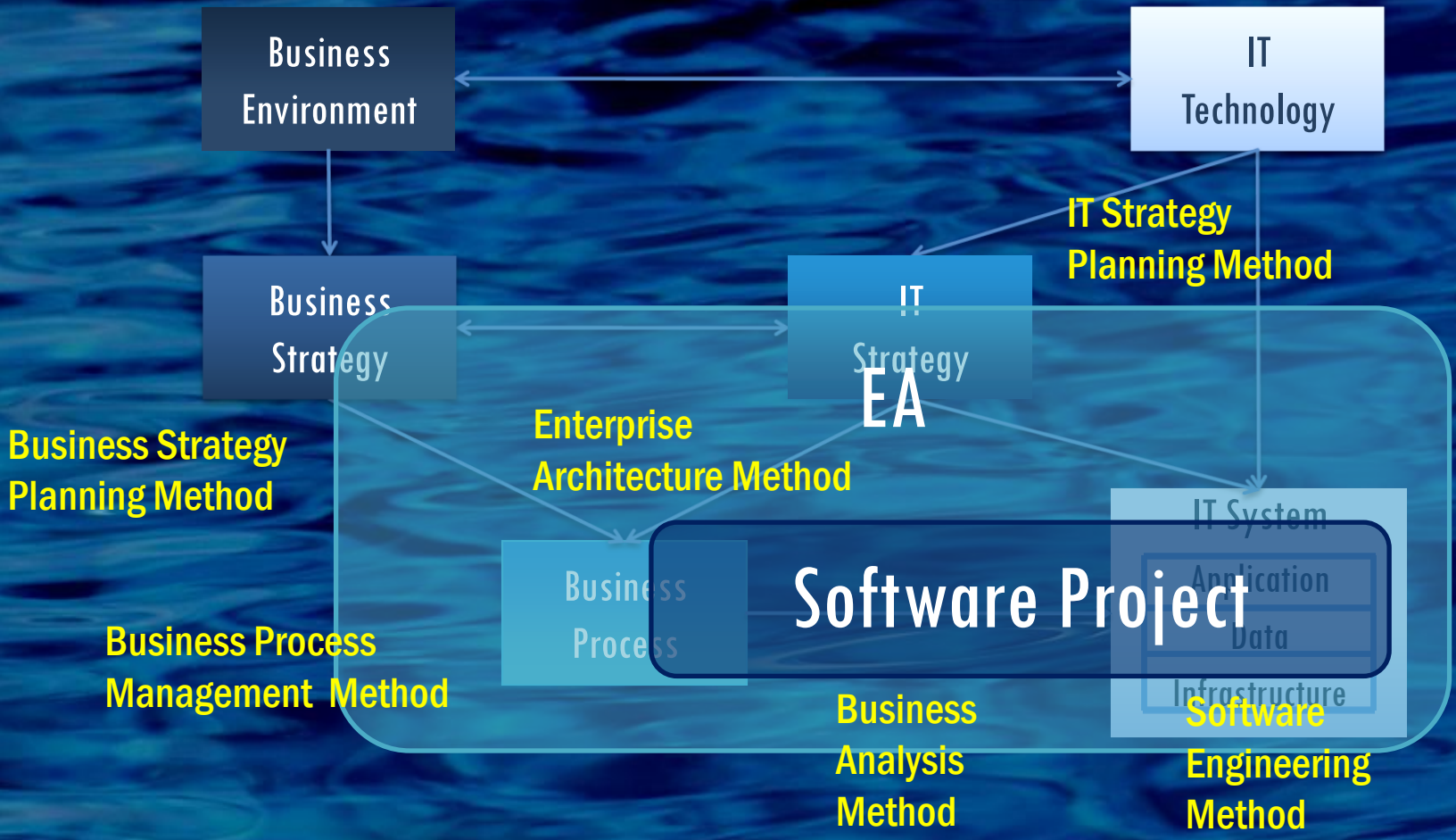
Methods in Enterprises

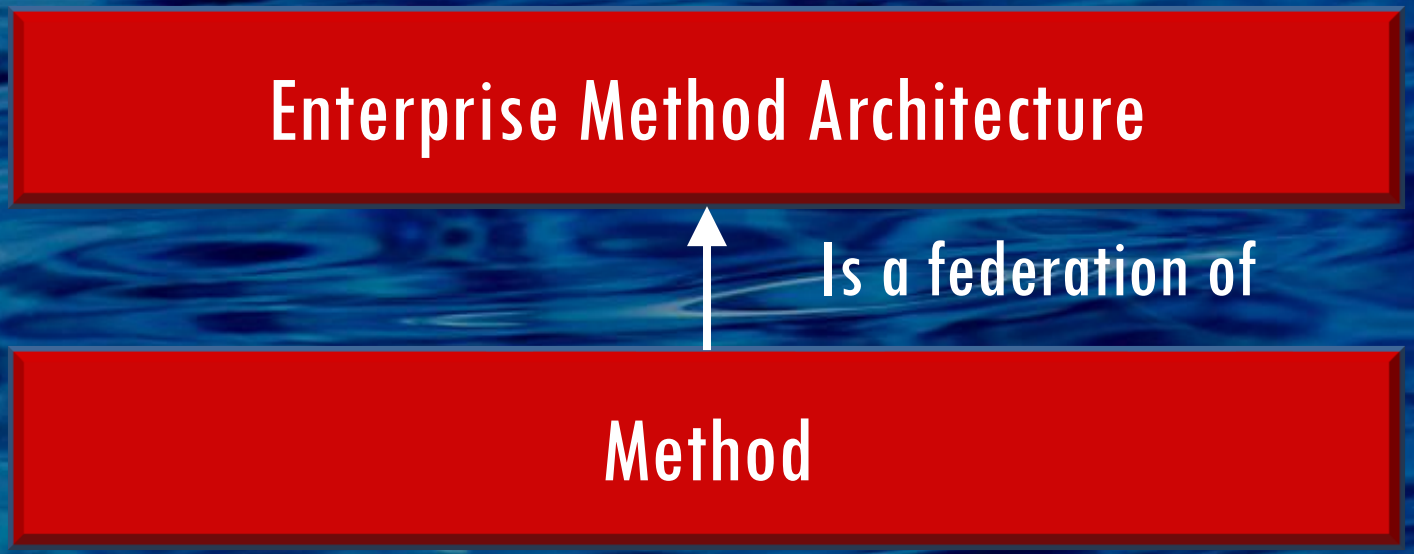


Business-IT Alignment

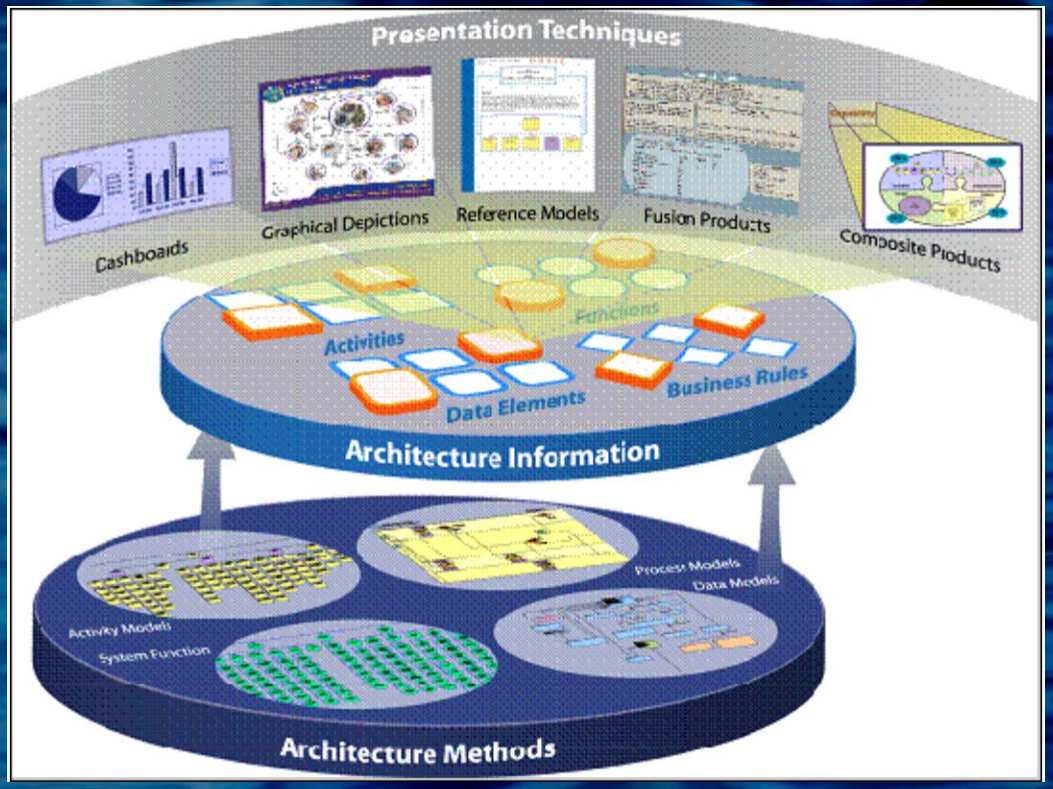


Enterprise Method Architecture

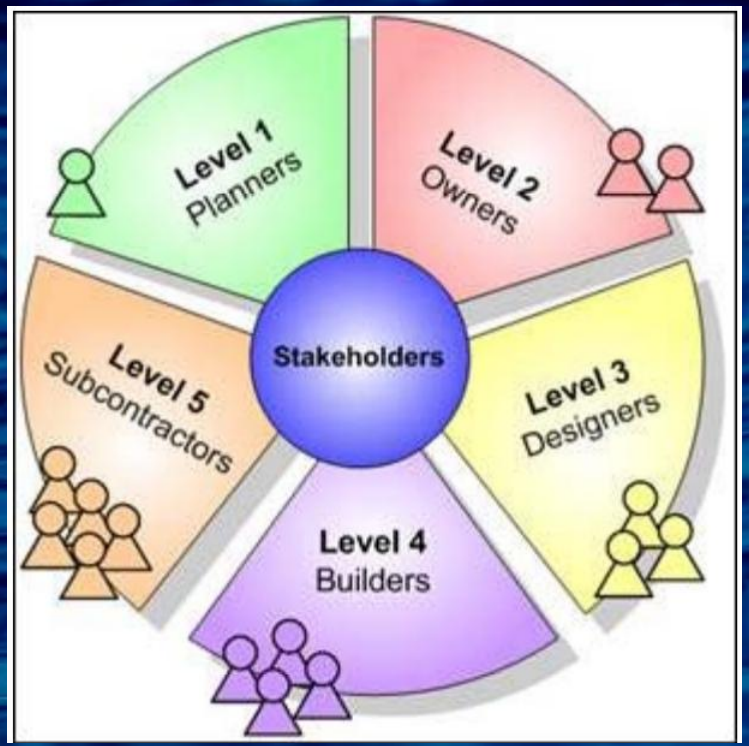
- Understand all methods used in an enterprise
- Analyze their relationships
- Minimize, standardize, integrate and share the set of methods



Example: US DoD



Do methods produce **consistent** models across different views (e.g. across process, information, use case)?

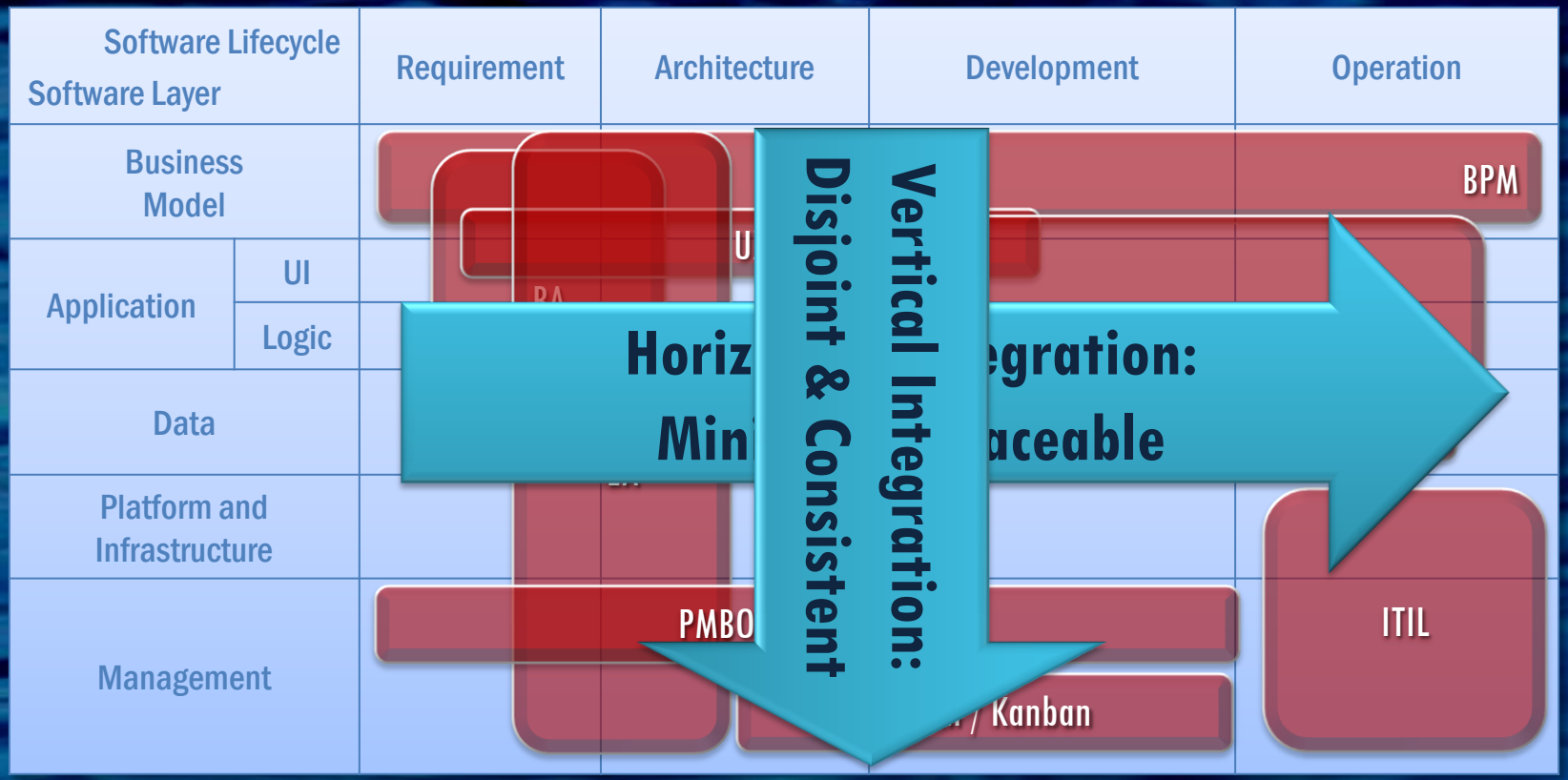


Do methods produce models **traceable** across different abstraction levels?

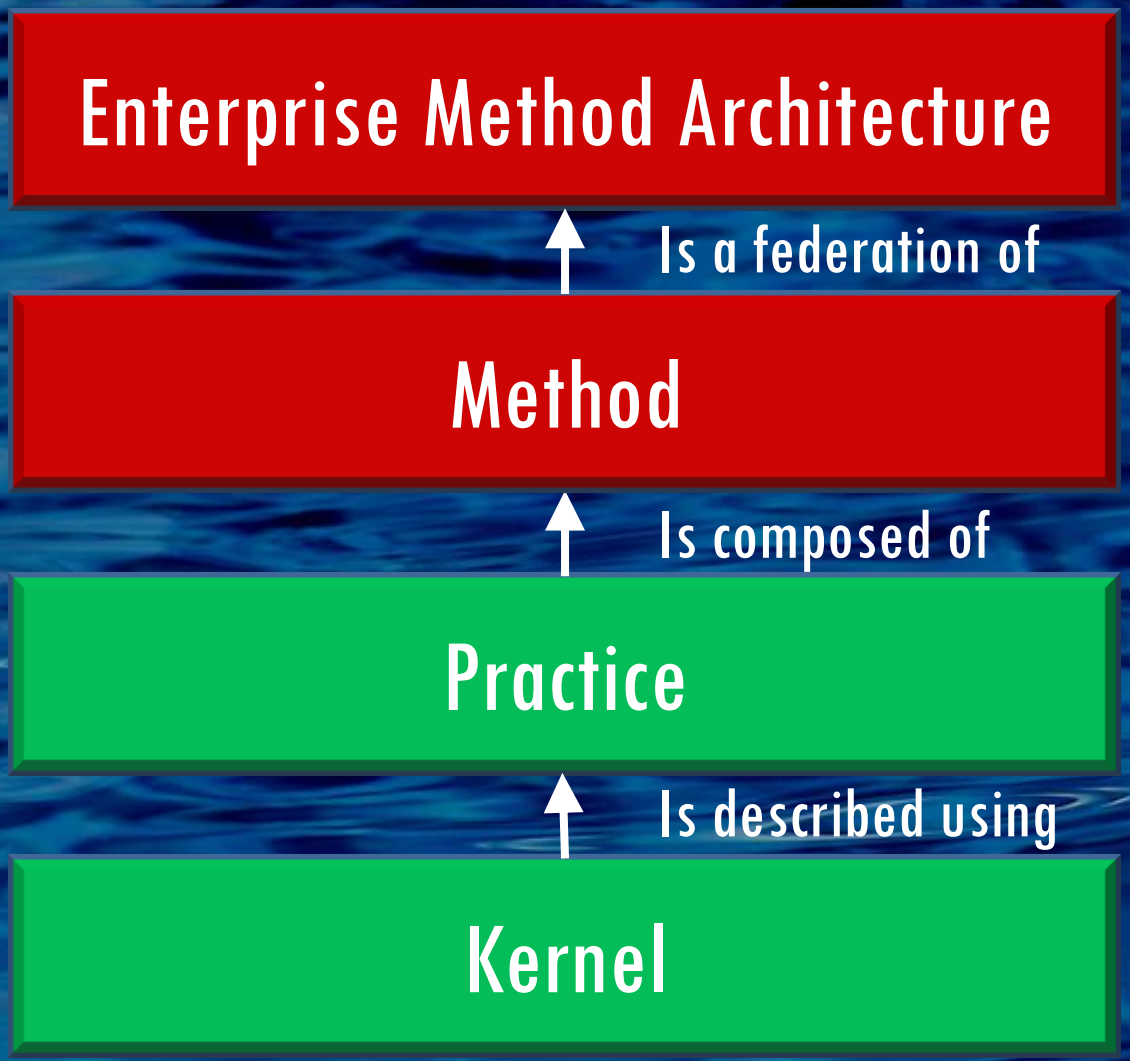
Example: DoDAF Meta Model (DM2)

- Define concepts and models usable in DoD's 6 core processes:
  - Capabilities Integration and Development (JCIDS)
  - Planning, Programming, Budgeting, and Execution (PPBE)
  - Acquisition System (DAS)
  - **Systems Engineering (SE)**
  - Operations Planning
  - Capabilities Portfolio Management (CPM)
- Establish guidance for architecture content as a function of **purpose**
- Make DM2 so the architectures can be **integrated**, analyzed, and evaluated to mathematical precision
- Establish and define the constrained **vocabulary** for description and discourse about DoDAF models and their usage in the 6 core processes
- Specify the **semantics and format** for federated EA data exchange between architecture development and analysis tools and architecture databases
- Support discovery and understandability of EA data:
  - Discovery of EA data using DM2 categories of information
  - Understandability of EA data using DM2's precise semantics

Methods Integration



Essence Approach to EMA



M. E. C. E.

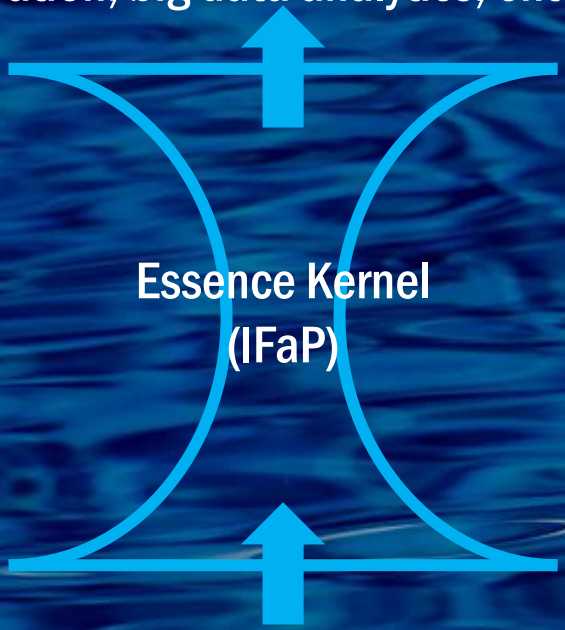
Comparable

Standard Vocabulary, Semantics and Format

Essence Approach to EMA

Hour Glass Model of Middle Out Architecture

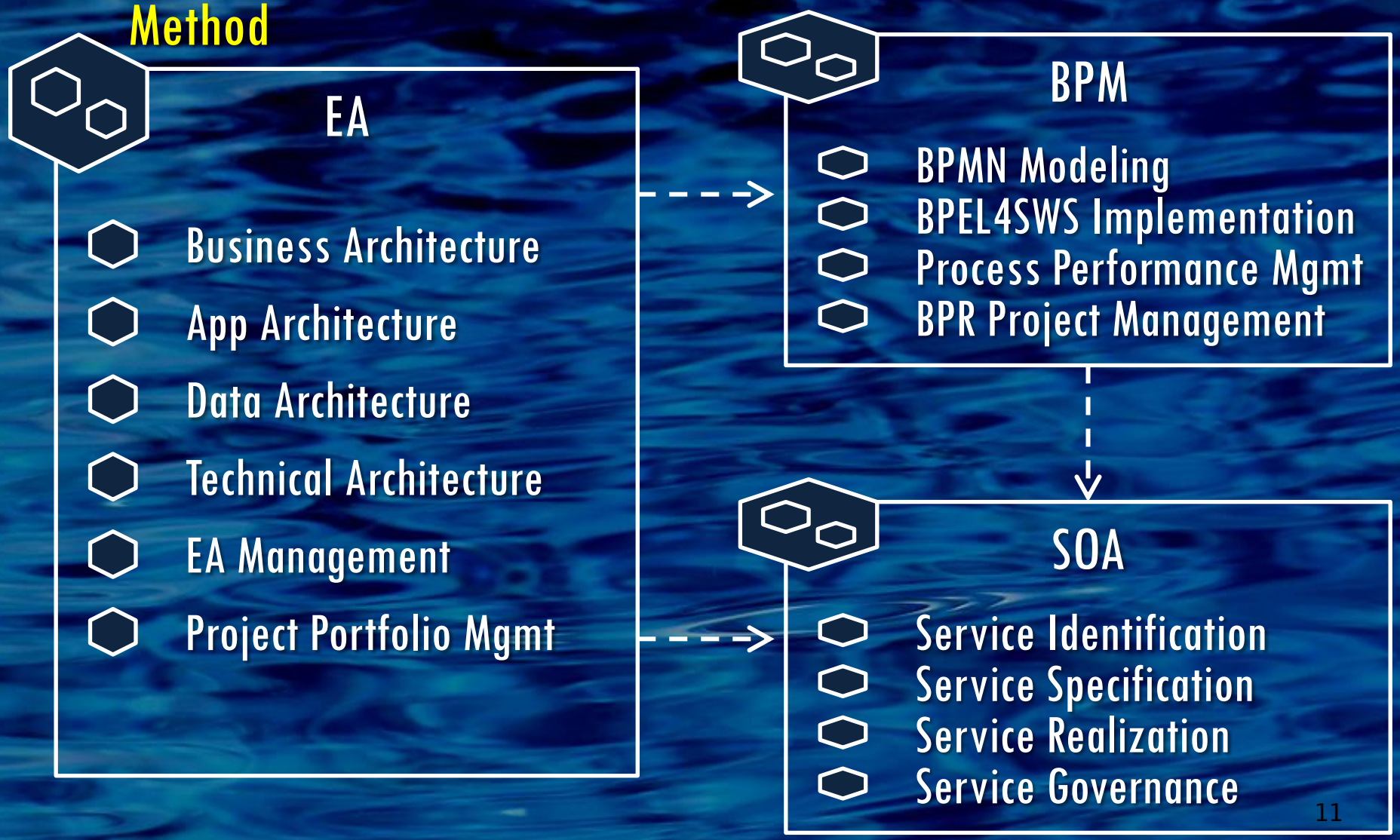
New demands for methods
(e.g., cloud migration, big data analytics, enterprise mobility)



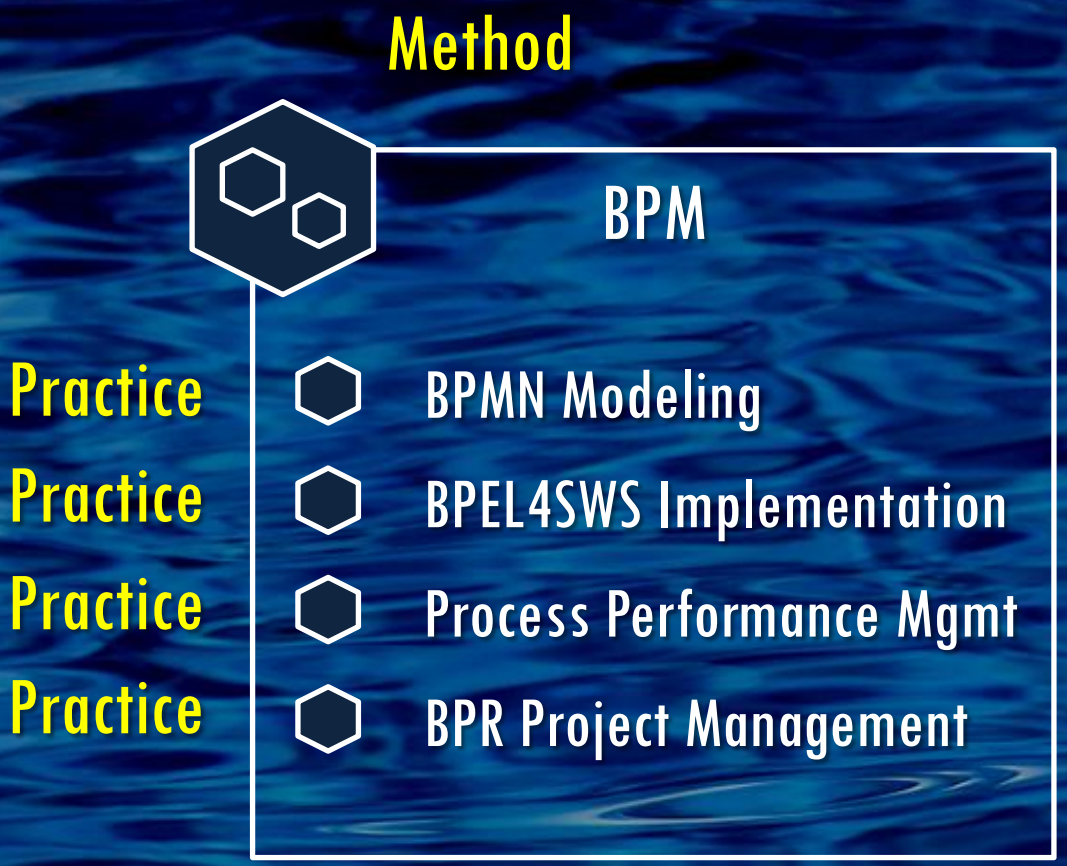
New emerging best practices

Advantage of Essence Approach

Example EMA


Method
EA
Business Architecture
App Architecture
Data Architecture
Technical Architecture
EA Management
Project Portfolio Mgmt
BPM
BPMN Modeling
BPEL4SWS Implementation
Process Performance Mgmt
BPR Project Management
SOA
Service Identification
Service Specification
Service Realization
Service Governance

Method


Method
BPM
Practice
BPMN Modeling
Practice
BPEL4SWS Implementation
Practice
Process Performance Mgmt
Practice
BPR Project Management

Practice Template

Practice

BPMN Modeling

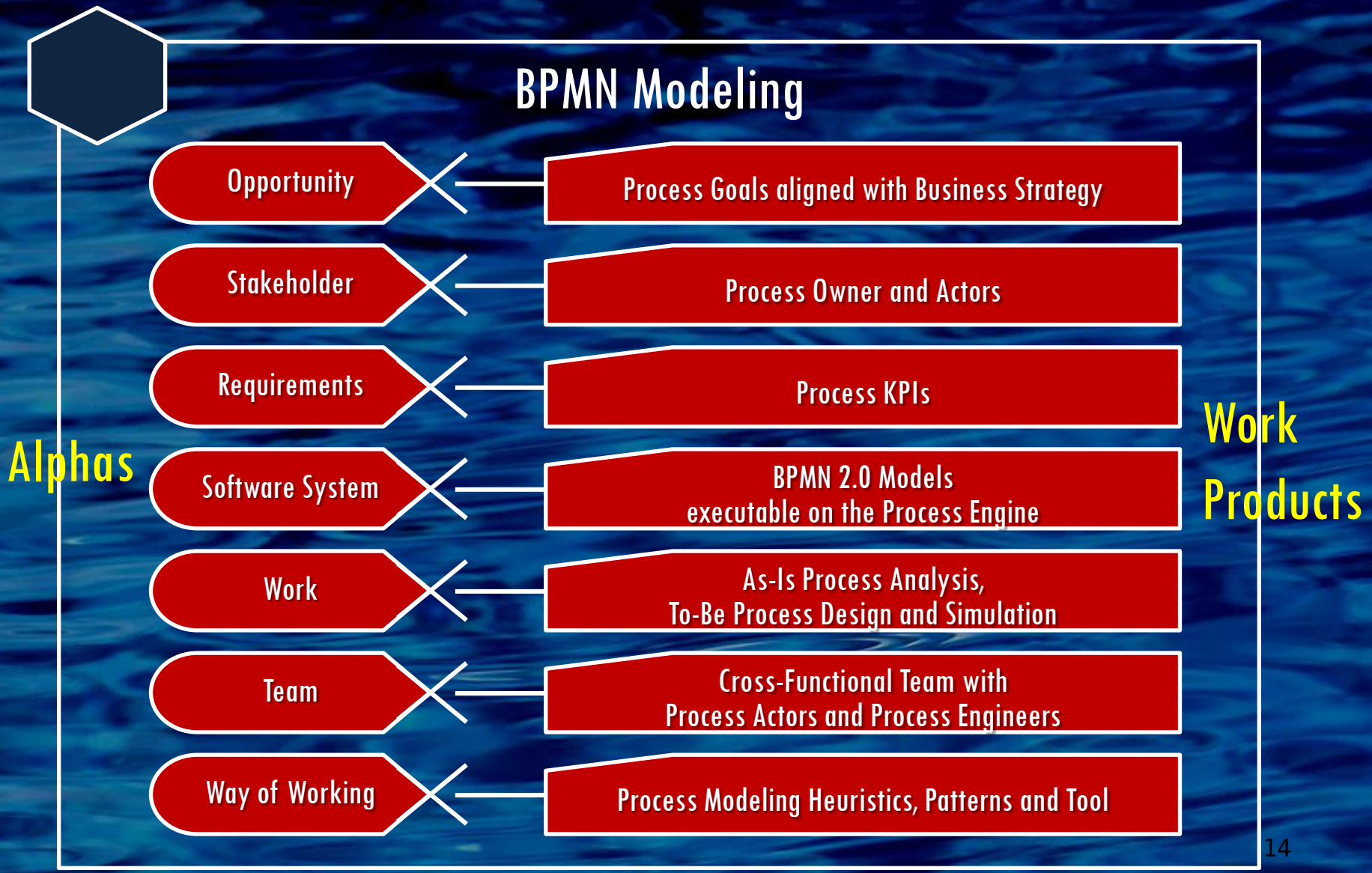
Kernel Alphas

- Opportunity
- Stakeholder
- Requirements
- Software System
- Work
- Team
- Way of Working

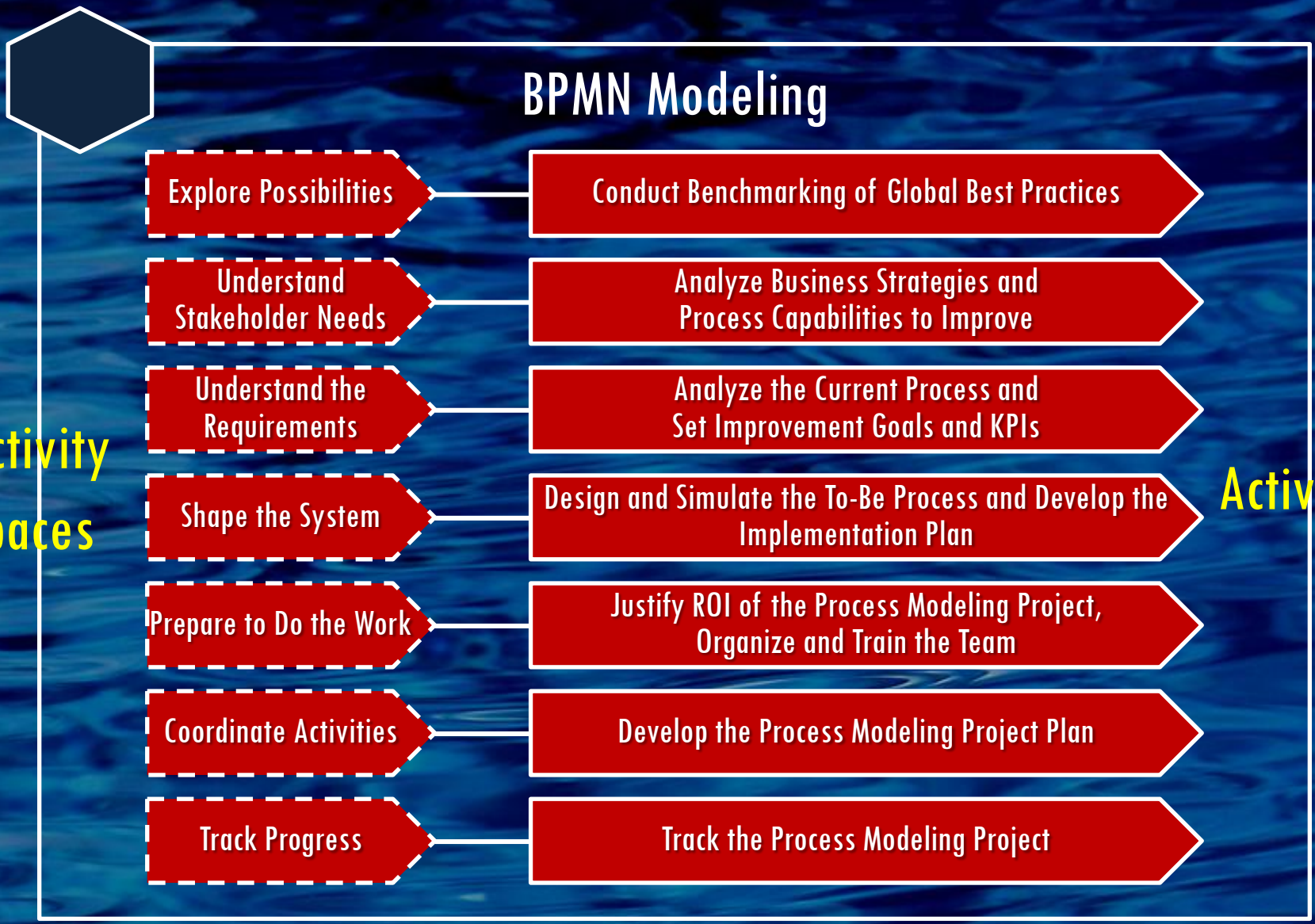
Kernel Activity Spaces

- Explore Possibilities
- Understand Stakeholder Needs
- Understand the Requirements
- Shape the System
- Prepare to Do the Work
- Coordinate Activities
- Track Progress

Practice Instantiation



Practice Instantiation



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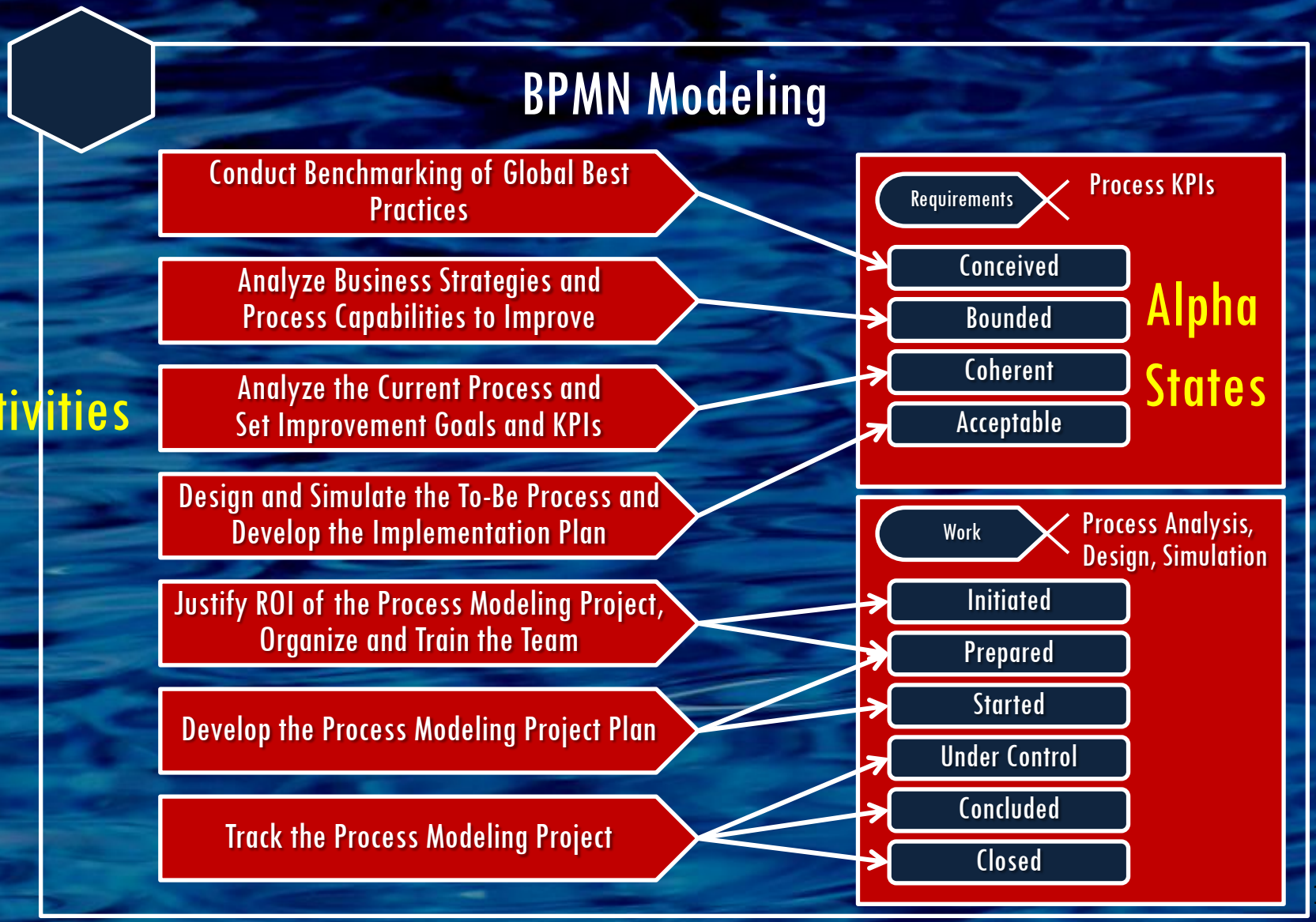
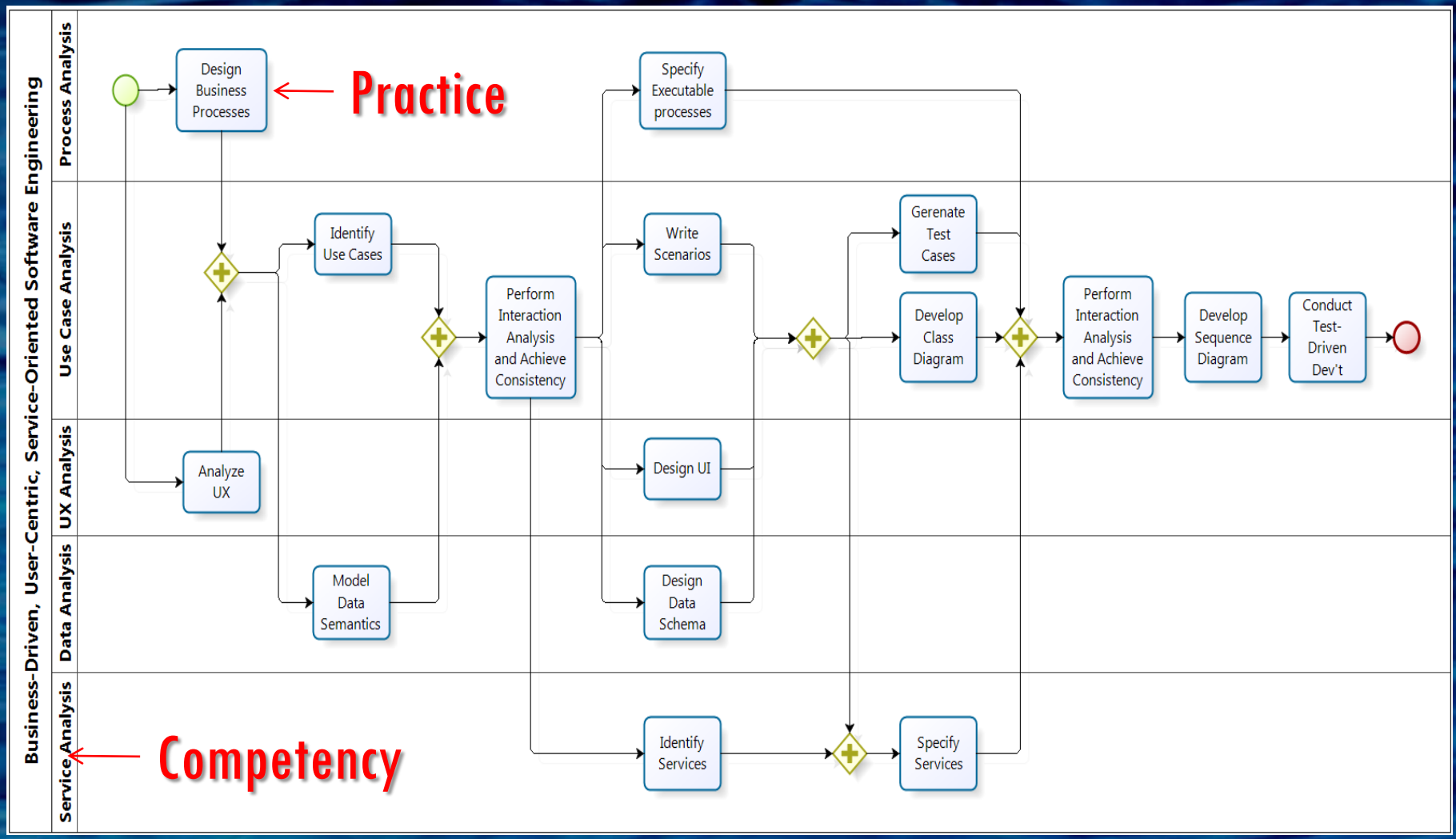
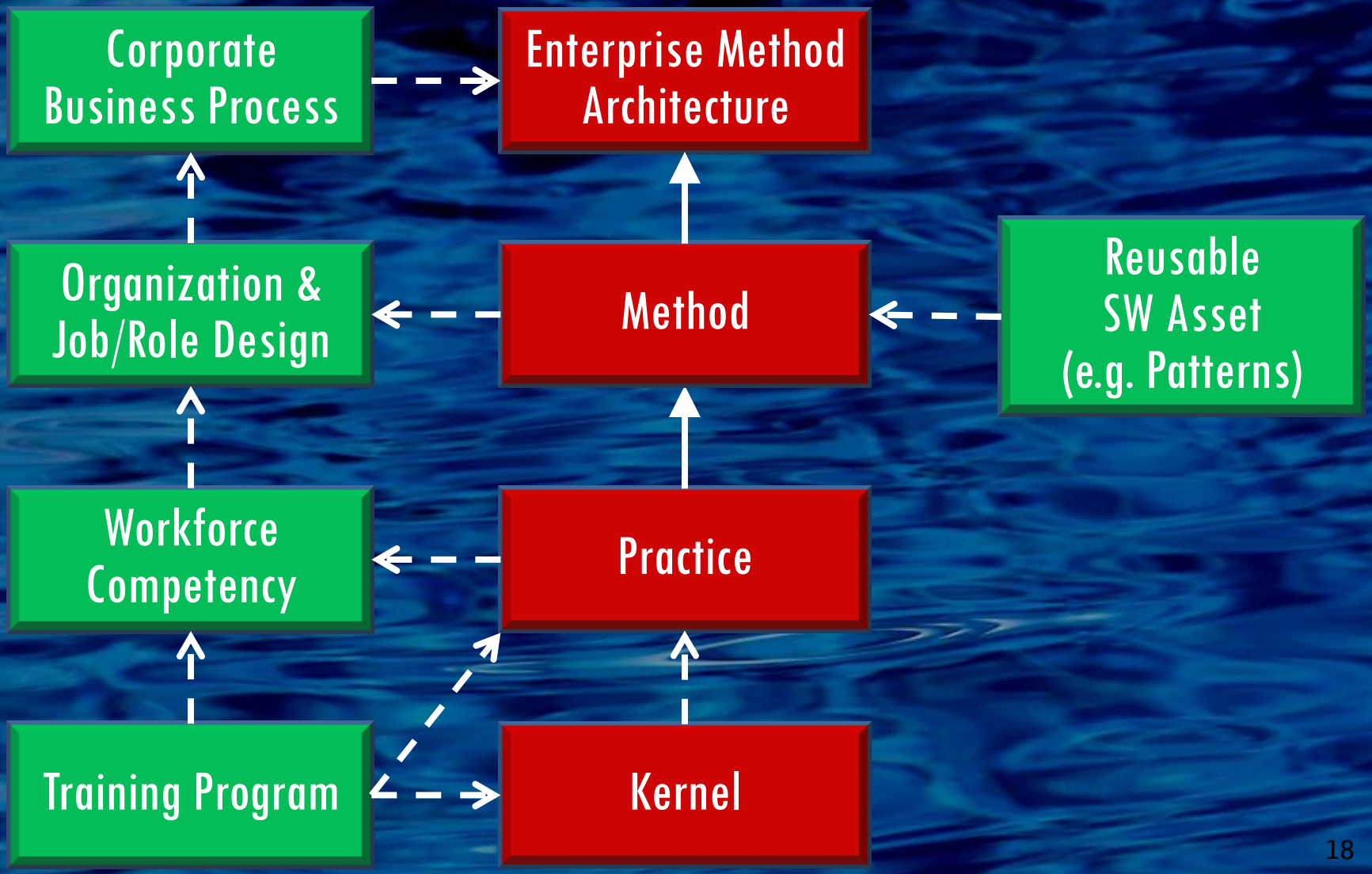


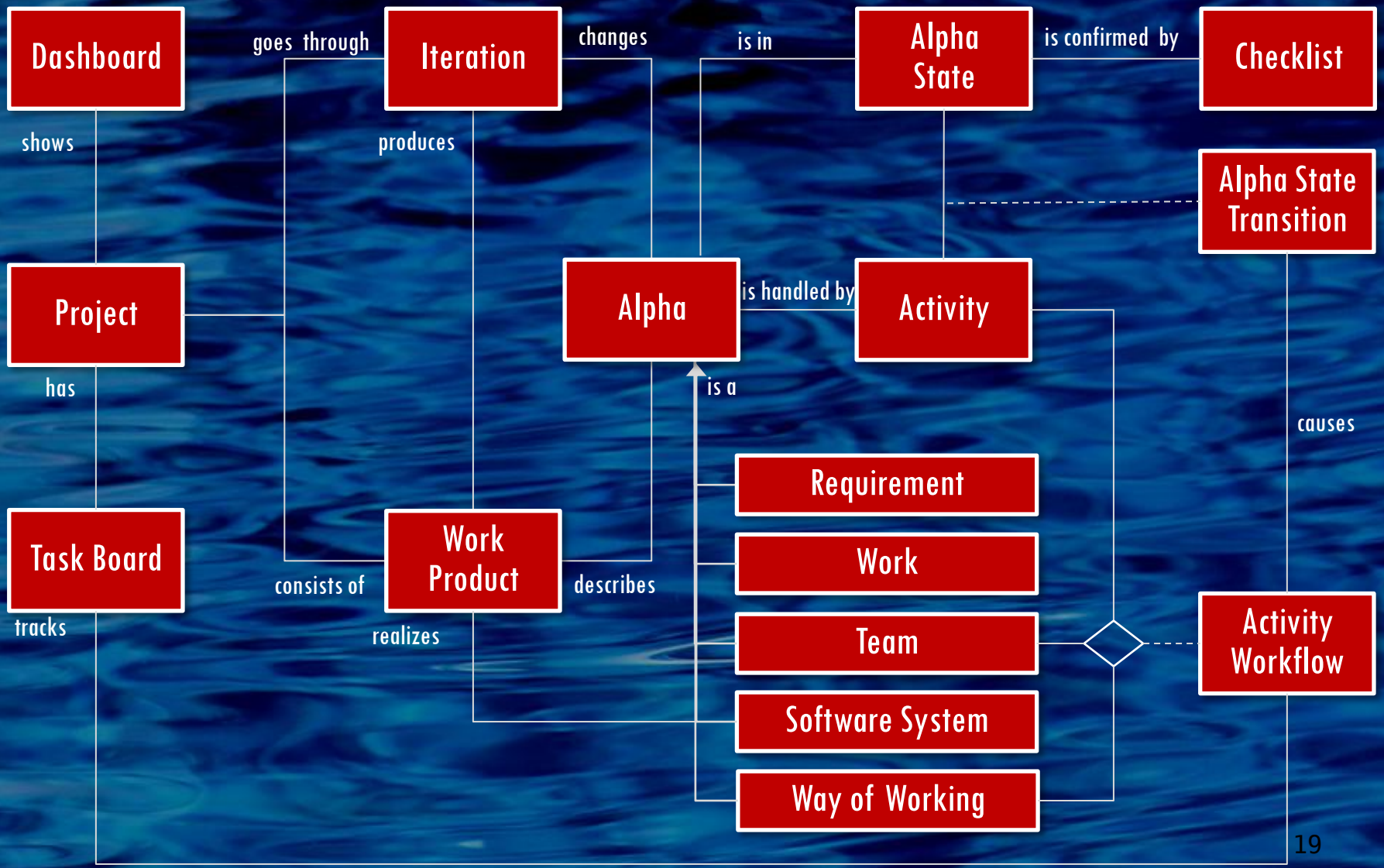
Method Composition



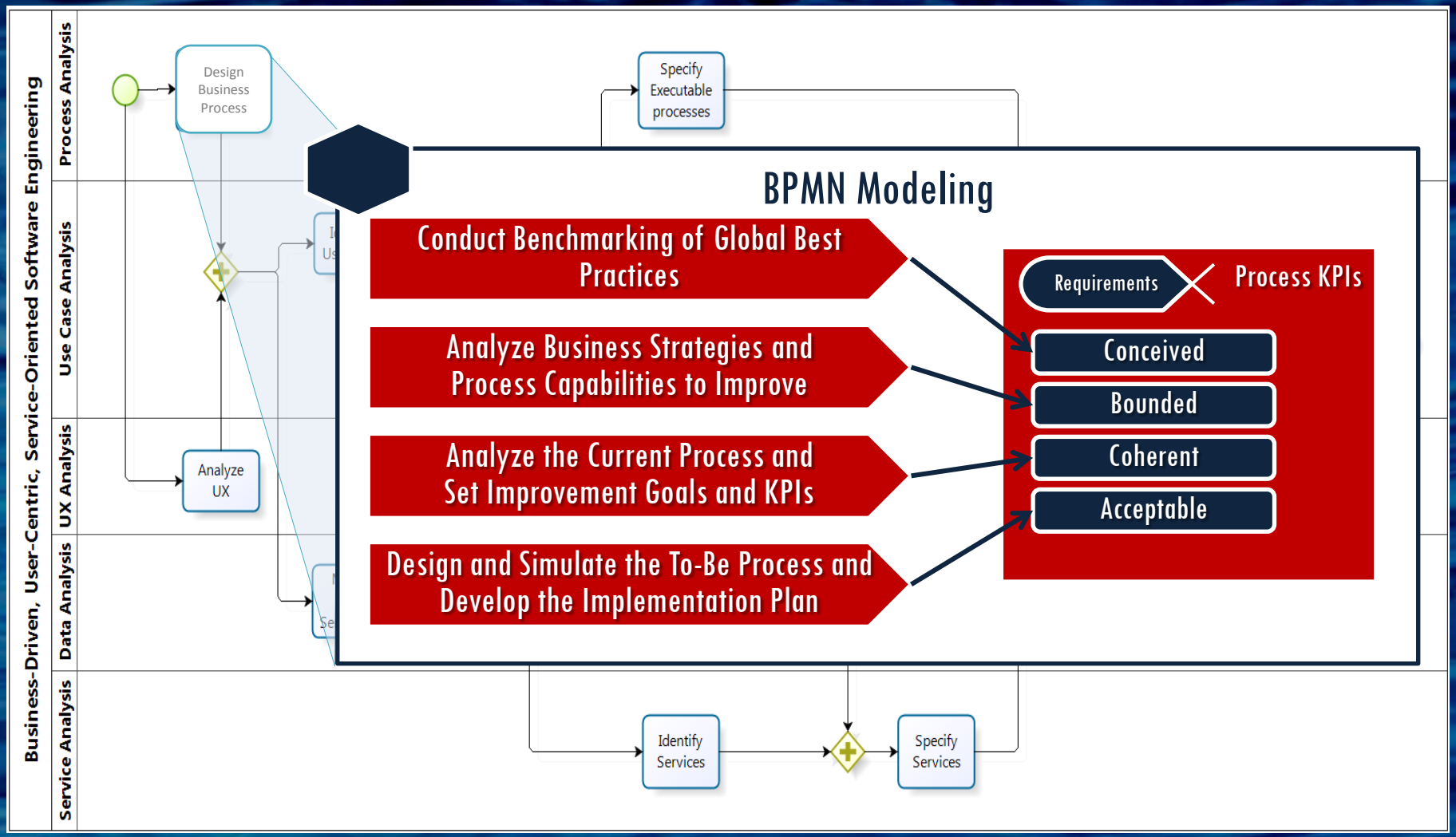
Institutionalization of EMA



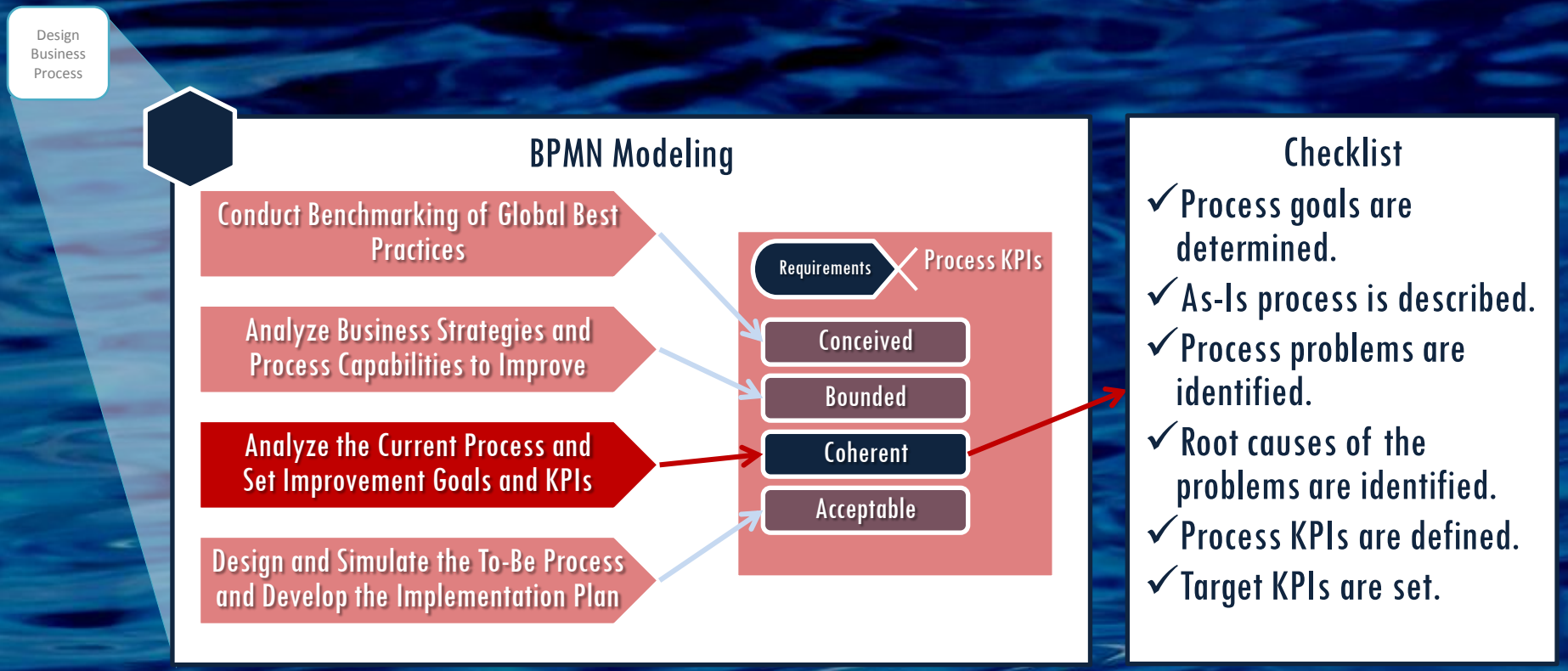
Management of Essence-Based Project



Case Study


Business-Driven, User-Centric, Service-Oriented Software Engineering
Process Analysis
Use Case Analysis
UX Analysis
Data Analysis
Service Analysis
Design Business Process
Specify Executable processes
Analyze UX
Identify Services
Specify Services
BPMN Modeling
Conduct Benchmarking of Global Best Practices
Analyze Business Strategies and Process Capabilities to Improve
Analyze the Current Process and Set Improvement Goals and KPIs
Design and Simulate the To-Be Process and Develop the Implementation Plan
Requirements
Process KPIs
Conceived
Bounded
Coherent
Acceptable

Case Study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Requirements
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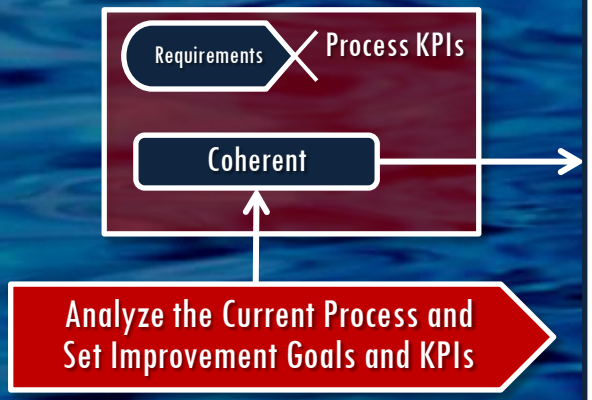
Checklist
✓Process goals are determined.
✓As-Is process is described.
✓Process problems are identified.
✓Root causes of the problems are identified.
✓Process KPIs are defined.
✓Target KPIs are set.

Case Study



Checklist

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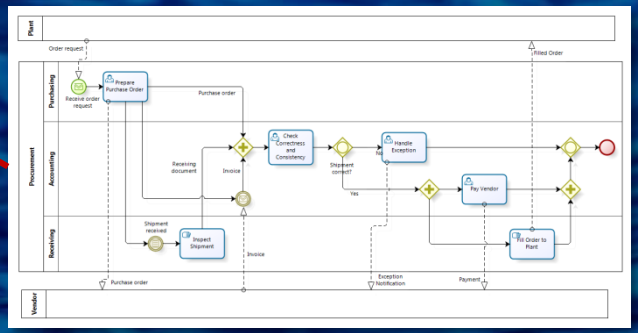
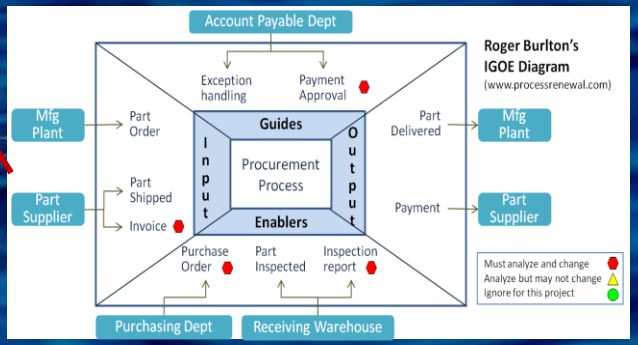
Level 1 Metrics	Performance Attributes				
	Customer-Facing			Internal-Facing	
	Reliabilty	Responsiveness	Agility	Cost	Assets
Perfect Order Fulfillment (RL.1.1)	✓				
Order Fulfillment Cycle Time (RS.1.1)		✓			
Upside Supply Chain Flexibility (AG.1.1)			✓		
Upside Supply Chain Adaptability (AG.1.2)			✓		
Downside Supply Chain Adaptability (AG.1.3)			✓		
Supply Chain Management Cost (CO.1.1)				✓	
Cost of Goods Sold (CO.1.2)				✓	
Cash-to-Cash Cycle Time (AM.1.1)					✓
Return on Supply Chain Fixed Assets (AM.1.2)					✓
Return on Working Capital (AM.1.2)					✓





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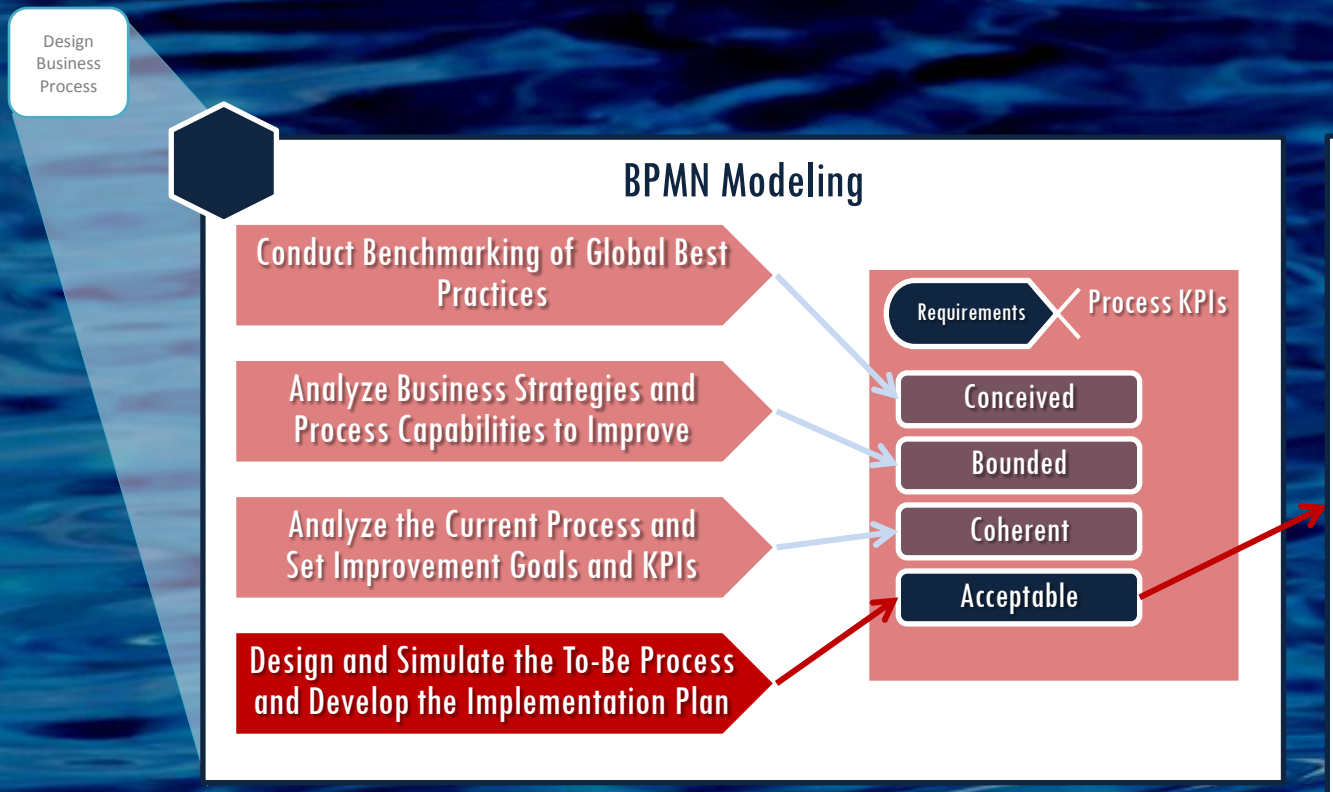
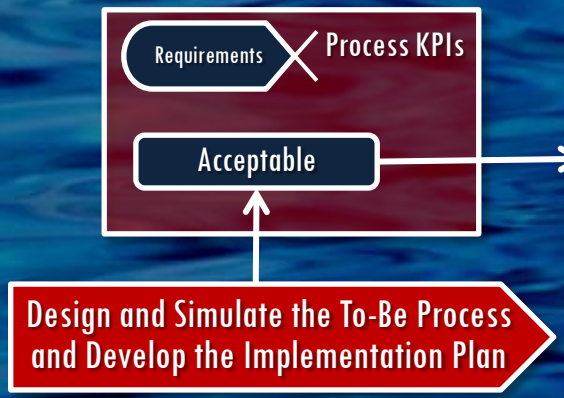


Checklist

- ✓ Global best practices are analyzed.
- ✓ Industry reference models are analyzed.
- ✓ Applicable BPR patterns are selected.
- ✓ To-Be process is designed.
- ✓ Information requirements are defined.
- ✓ Business rules are specified.
- ✓ Process simulation attains target KPIs.
- ✓ Organization and jobs are designed.

Case Study



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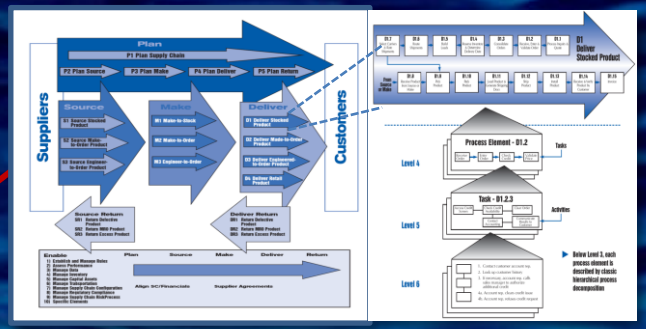

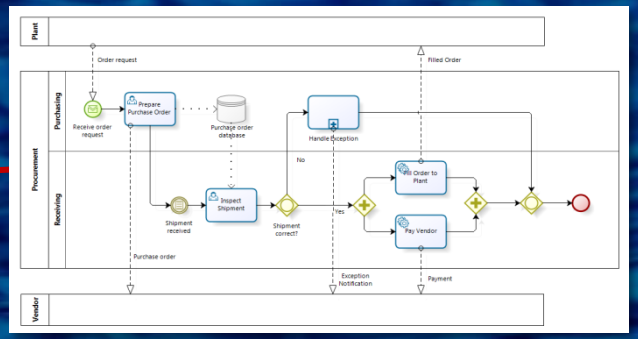

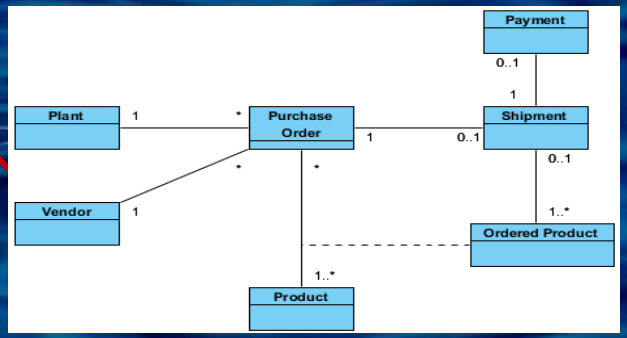

Conclusion

- We need to build a library of practices using the common kernel,
- not just for software engineering, but also for other disciplines essential for business-IT alignment
- We need to develop an easy-to-use tool to compose practices into a method, and a marketplace where global best practices can be traded.
- We need to produce success cases of developing and managing Enterprise Method Architectures based on Essence.
- We need to extend the kernel to accommodate ever expanding use cases and technologies of software.

Thank YOU!