Cultural Challenges of MBSE Agile Integration

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Agenda

- Cultural Challenges
- Vision for Change
- Infusion of MBSE with Agile
- Engagement with Data
- Retrospective
Cultural Challenges

Internal and External Factors Experienced from Team

- **Cultural Onboarding**
  - Lack of vision statement and missions to align team

- **Communication**
  - Lack of structured teams with objectives and goals working together

- **Empowerment**
  - Lack of decision making responsibilities

- **Virtual Environment**
  - Lack of virtual collaboration to enable visualization and planning during pandemic

- **Managing Expectations**
  - Lack of definition of done for products from stakeholders

- **Collaboration with Teams**
  - Lack of dependencies across teams to understand constraints

- **Vision**
  - Comfort Zone Expansion

- **Operation**
  - Internal Factors

- **Sustainability**
  - External Factors

- **Visualization**
  - Agile

- **Communication**
  - Expecting Agile Benefits without Front-Loading Investment

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Vision for Change
Provide Enablers to Empower Team to Remove Cultural Challenges

Enabler 1 – Motivation Model
- Why must we drive the need for change?
- What is our current technical debt?
- What are the new ways of working to meet benefits?
- How do our technical and operational requirements need to evolve to align with this vision?

Enabler 2 – Initiative and Capabilities
- How should we prioritize upcoming program increment based on contract, technical debt, and change requests to maximize value?

Enabler 3 – Release Planning
- How should we decompose, prioritize and assign work to deliverables to maximize efficiency and value? How much work can we accomplish, based on team velocity?

Enabler 4 – Iteration Planning
- What tasks can our team accomplish within the next 3 weeks? How do we need to move resources amongst scrum teams to maximize efficiency? How are epics from various teams grouped into related iterations?

Enabler 5 – Daily Planning
- How are teams progressing?
- Are there any roadblocks?

A Plan is roadmap of all the initiatives the directorate will align to for the next two program increments.

A Epic is the largest group of related functionality.

A Story is an increment of work to be accomplished within an epic.

A Task is a smaller work item, required to accomplish a story.

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Infusion of MBSE with Agile Methods
Every Release Provide Value with Integrated Requirements and Architecture Product

- Releases are prioritized based
- Epics
- Stories
  - S1: Develop Linkset Module A
  - S2: Perform Peer Review
  - S3: Submit to Board
  - SN……
- Tasks
  - T1: …..
  - T2: …..
  - T3: …..
- Roadmap
- Epic
- Story
- Task
- Real-time metrics
- Jira
- Epics
- Capability: Perform Requirements Modeling
  - E1: Develop the System Specification
    - Level 1
  - E2: Perform Traceability Linkages to Level 2
  - E3: Perform Verification Method Determination
- Capability: Perform Architecture Modeling
  - E1: Develop System Behavioral Architecture Level 1
  - E2: Develop System Structural Architecture Level 1
  - E3: Perform Verification Context at Level 1
- Capability: Perform Integration and Validation
  - E1: Perform Requirement to Architecture Import
  - E2: Validate Traceability for Functions, Interfaces, and Performance
  - E3: Perform Error Resolutions
  - E4: Package for Digital Delivery
- Regular Releases contain groups of features based on priority and dependencies
- Release 1
- Release 2
- Release 3
- Release contents are refined throughout Planning to accelerate value
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Engagement with Data
Provide Transparency Inward and Outward on Progression

SCRUM Teams

Streams of Each Team’s Data

Transform

Replicate

Correlate Data for Directorate View

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## Retrospective

### What to CONTINUE doing
- Product demonstrations
- Transparency and collaboration on roadblocks
- Hierarchy roll-up of sub-tasks to initiatives for ‘big picture’
- Dashboards for sprint and PI health metrics and quick status checks

### What to START doing
- Deep Dive sync-ups with stakeholders and Agile team
- Clearer (searchable) alignment to IMS and SOW
- Plans/Gantt view within PI

### What to STOP doing
- Placing source of truth in non-digital based application
- Rigid Agenda (rolling agenda)
Abstract

- The cultural challenges when transitioning to a new execution framework with an early-career workforce while in a pandemic brings challenges for any leaders. To engage and enroll a virtual team requires dedication to a vision of empowerment for the team members to own how they organize and determine implementation. We inserted agile methods to how we operate our business together for common shared objectives while providing customer transparency on the successes and roadblocks everyday. We are still uncovering cultural habits learned over decades that need to be mended and formed into new world views collaboratively with other teams who interact with us daily. As the benefits of inherent transparency depict insightful measures for teams and program, the enrollment is more embraced. These insightful measures on dashboards readily accessible by all on the program have opened up engagement and a new culture of possibilities that Agile can bring. We have learned the most effective way to empower a largely early-career workforce is to show examples of dashboards, electronic Scrum or Kanban environments, and collaboration practices. Team members will embrace the possibilities and develop improved solutions. Although transitioning to a new execution framework has presented challenges, the improved transparency and collaboration between stakeholders, developers, and customers is aiding in the shift to new world views.