Agile & EVM: A Lean Approach to Implementing EVM on Agile Projects

Agile Fundamentals

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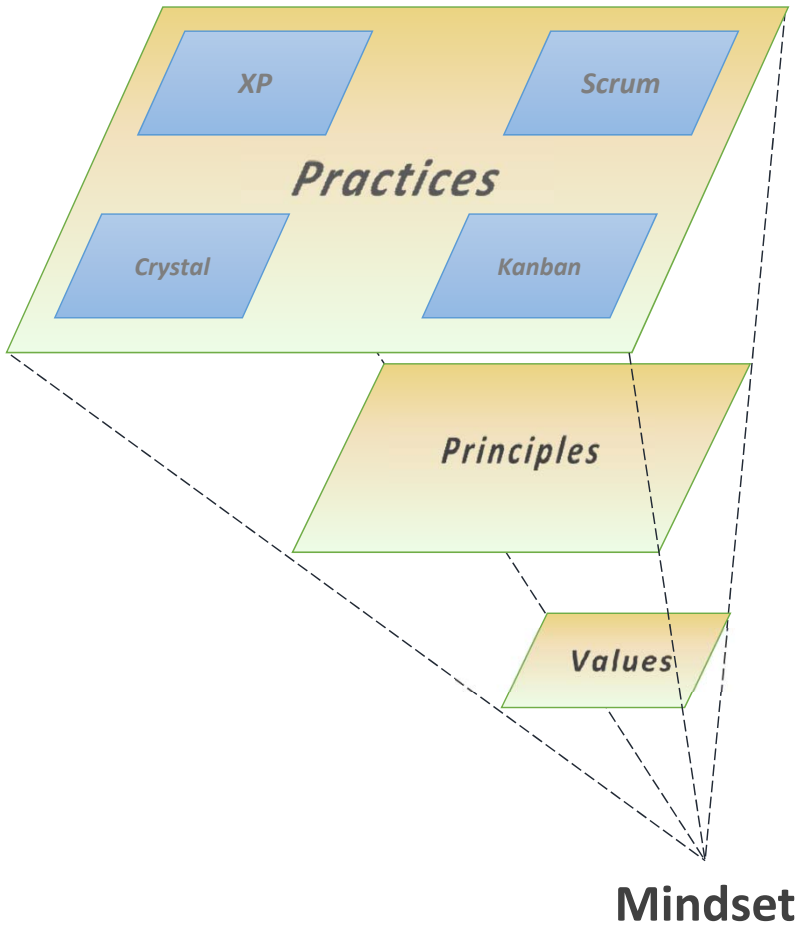
Learning Objectives

- ***Review*** the basic concepts and terminologies used in an Agile environment
- ***Understand*** how Agile processes and practices can be implemented on your project

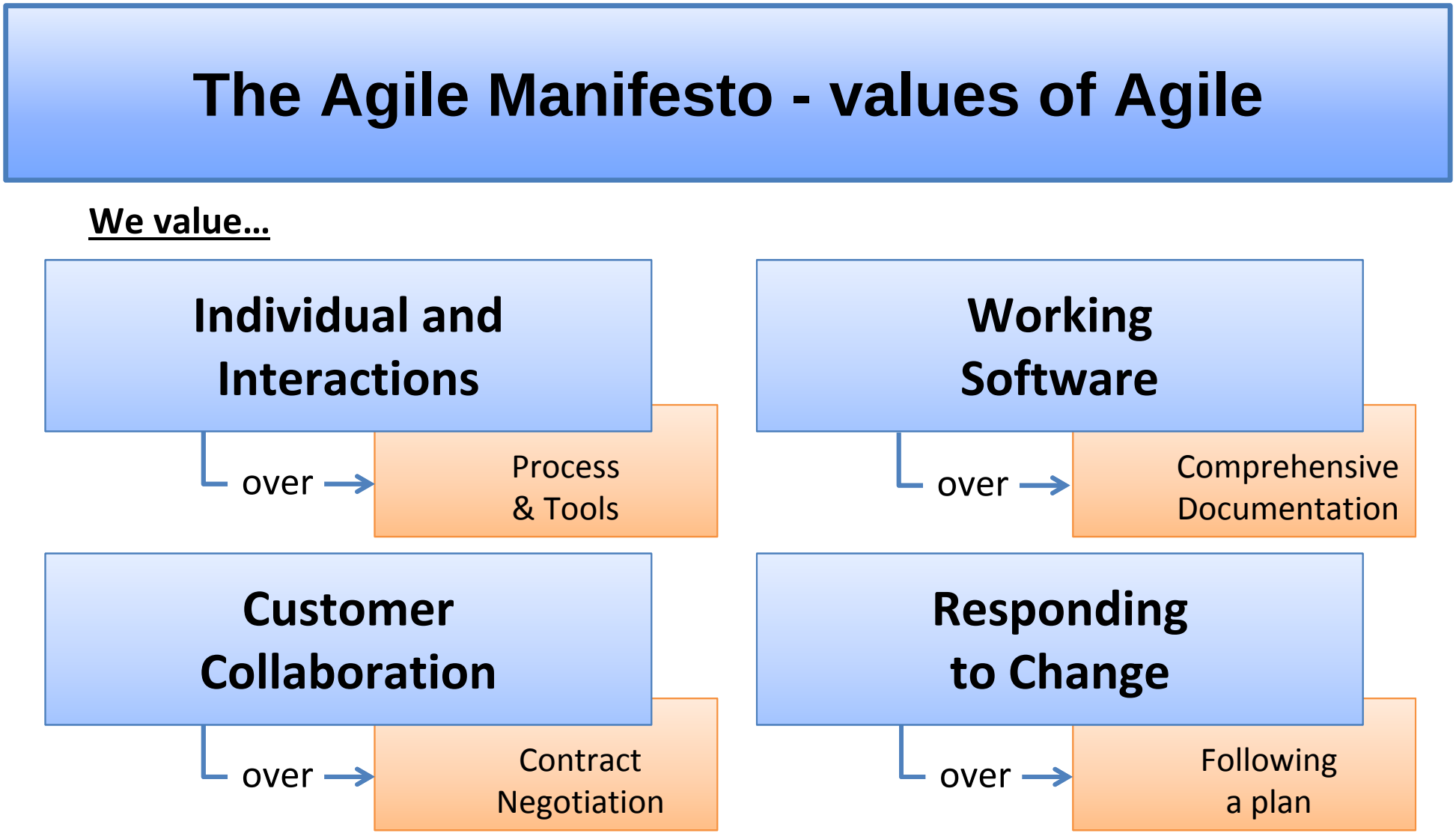
What is Agile?

A mindset to software development that is:

- Defined by **values** as described in the Agile Manifesto
- Guided by the twelve **principles** behind the Agile Manifesto
- Manifested through many different **practices** such as Scrum, XP, Kanban, etc..



The Agile Manifesto



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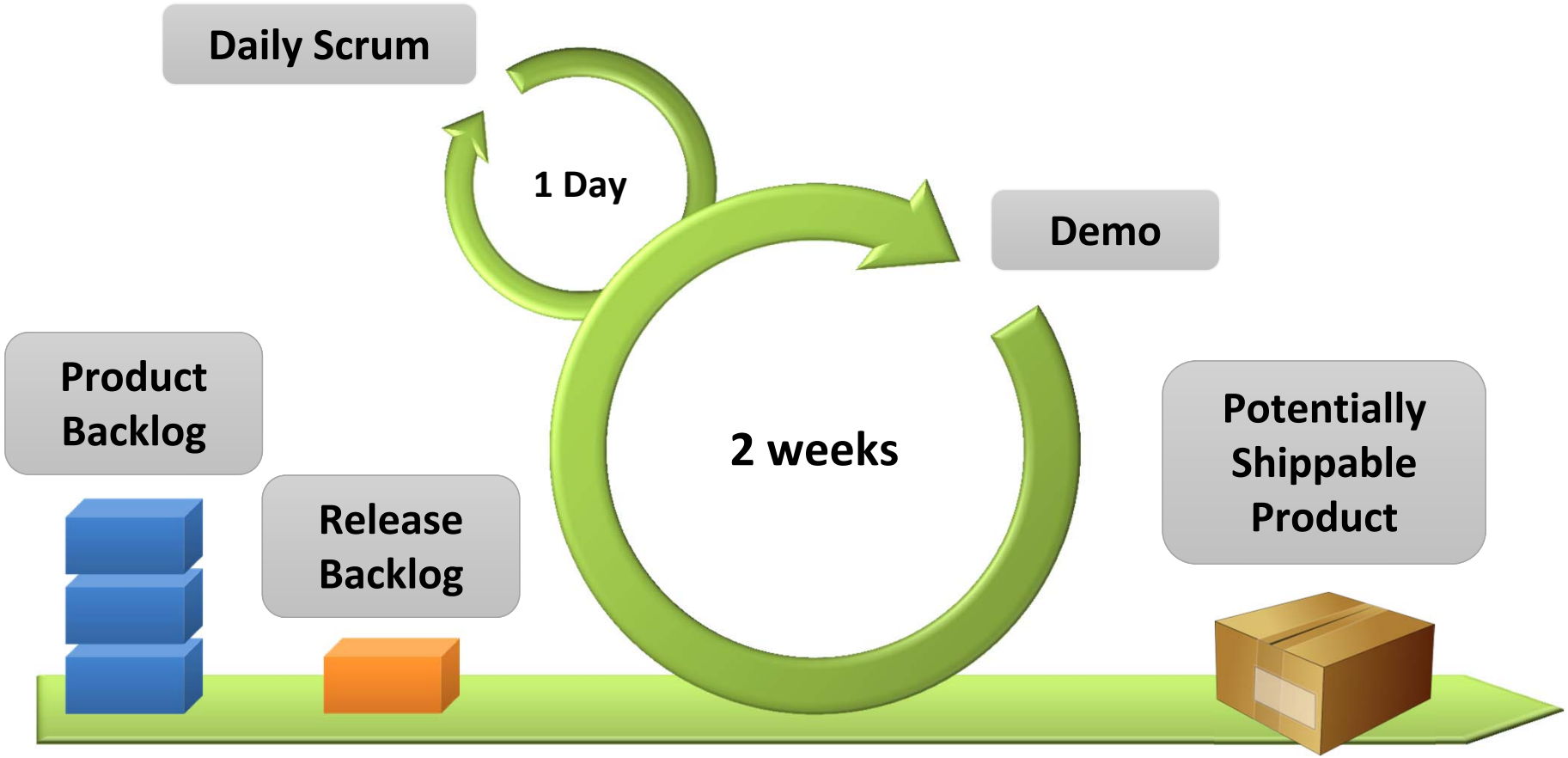
An Agile Process



✓ Iterative

✓ Continuous Feedback

✓ Incremental

✓ Self-Organizing Cross-functional teams

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Agile Team

Delivery Team

Sponsors

- Provides direction to Product Owners
- Participates in Demos to provide feedback and acceptance

Product Owner

- Owns and prioritizes the Product Backlog
- Communicates Schedule and content
- Gathers and provides details for Scrum Team

Scrum Team

- Organizes and completes work in sprints
- Provides working software to the Sponsors in Demos

Scrum Master

- Ensures process is followed and progress is made
- Promotes collaboration and removes barriers
- Facilitates daily scrums, sprint planning and retrospectives

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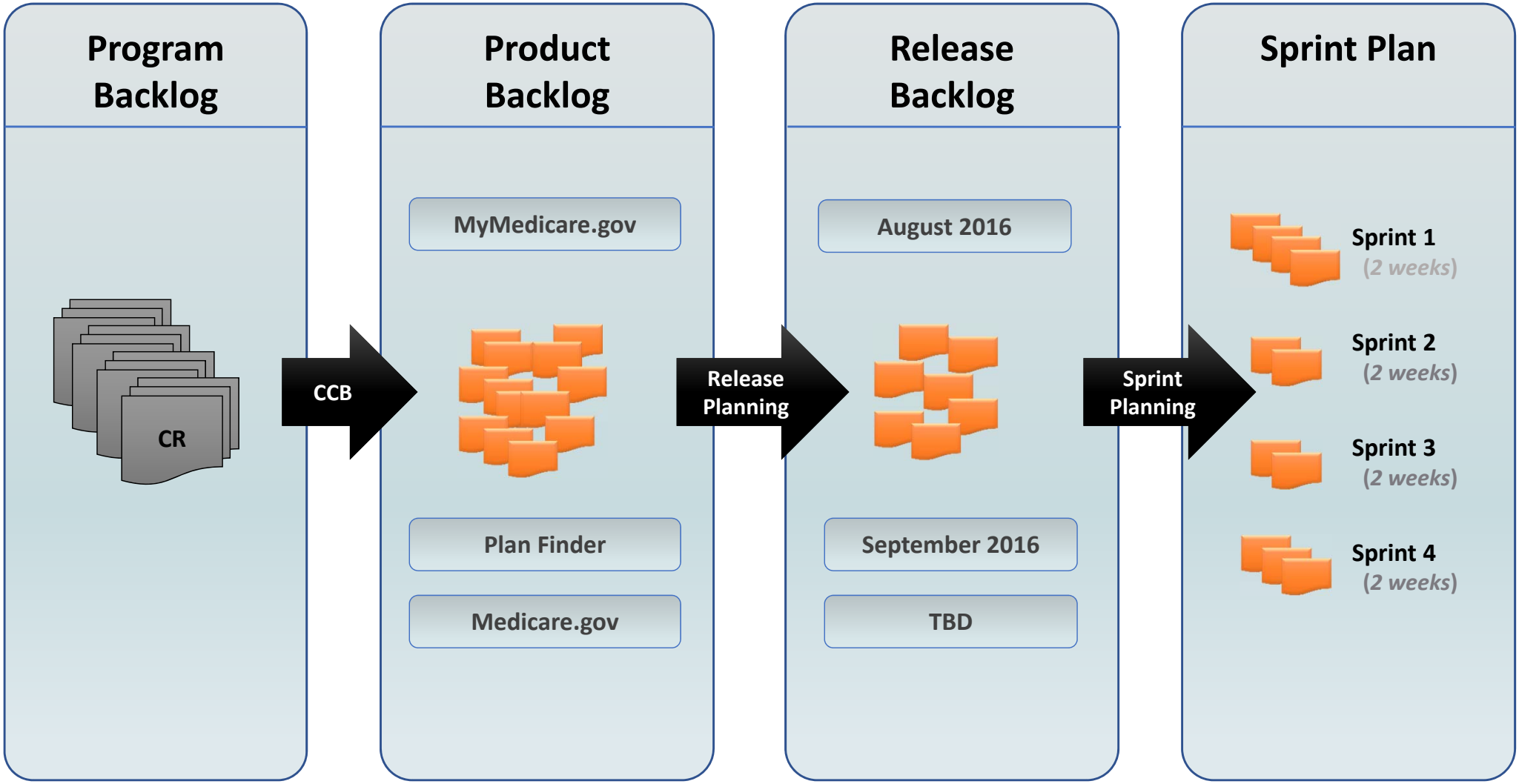
Benefits of Agile

- Rapid delivery of business value
- High visibility/transparency throughout the life cycle
- Risk Management & Mitigation
- Adaptability and Flexibility
- Impact on quality of the delivered product

Applying Agile to your project(s)

Backlog Overview



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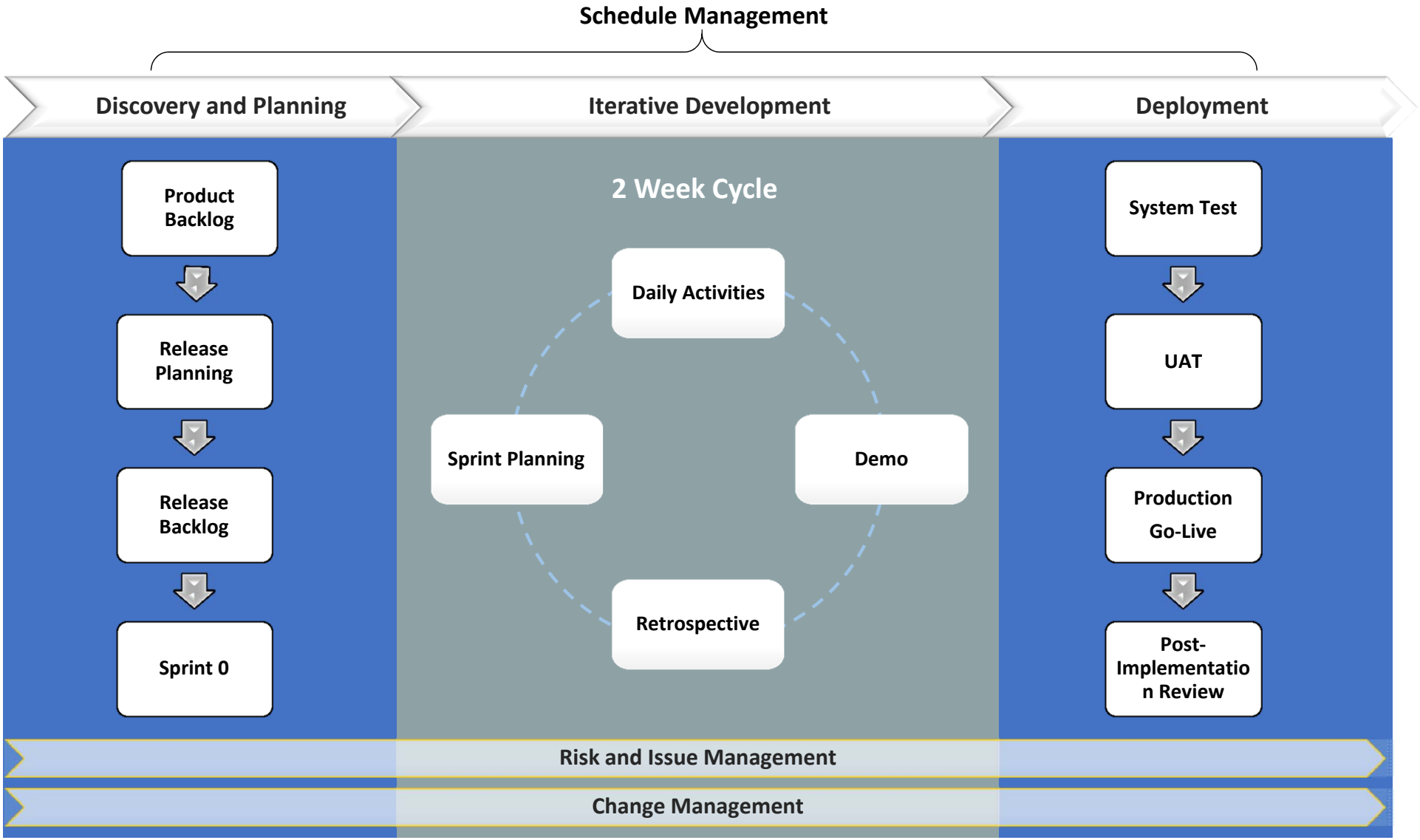
Release Life Cycle



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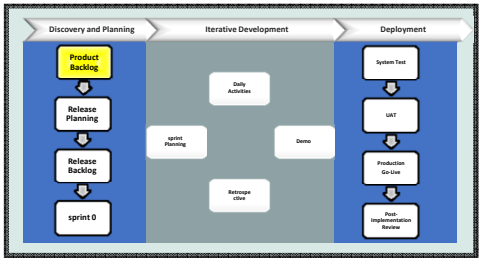
Product Backlog (user stories)



Input	Process	Output
✓ **Change Requests**	•Decompose (CRs) Change Requests to smaller units of requirements, completed in 2 weeks • Describe how users interact with the system, and focus on the value the user receives from the system. • Define the acceptance criteria which determines when the user story has met the user's goal • Estimate the level of efforts for each story	➢ **Product Backlog/User Stories**

Product Owner
Accountable for user stories created

Scrum Team
Analysts create user stories and defines their value

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Example of User Stories

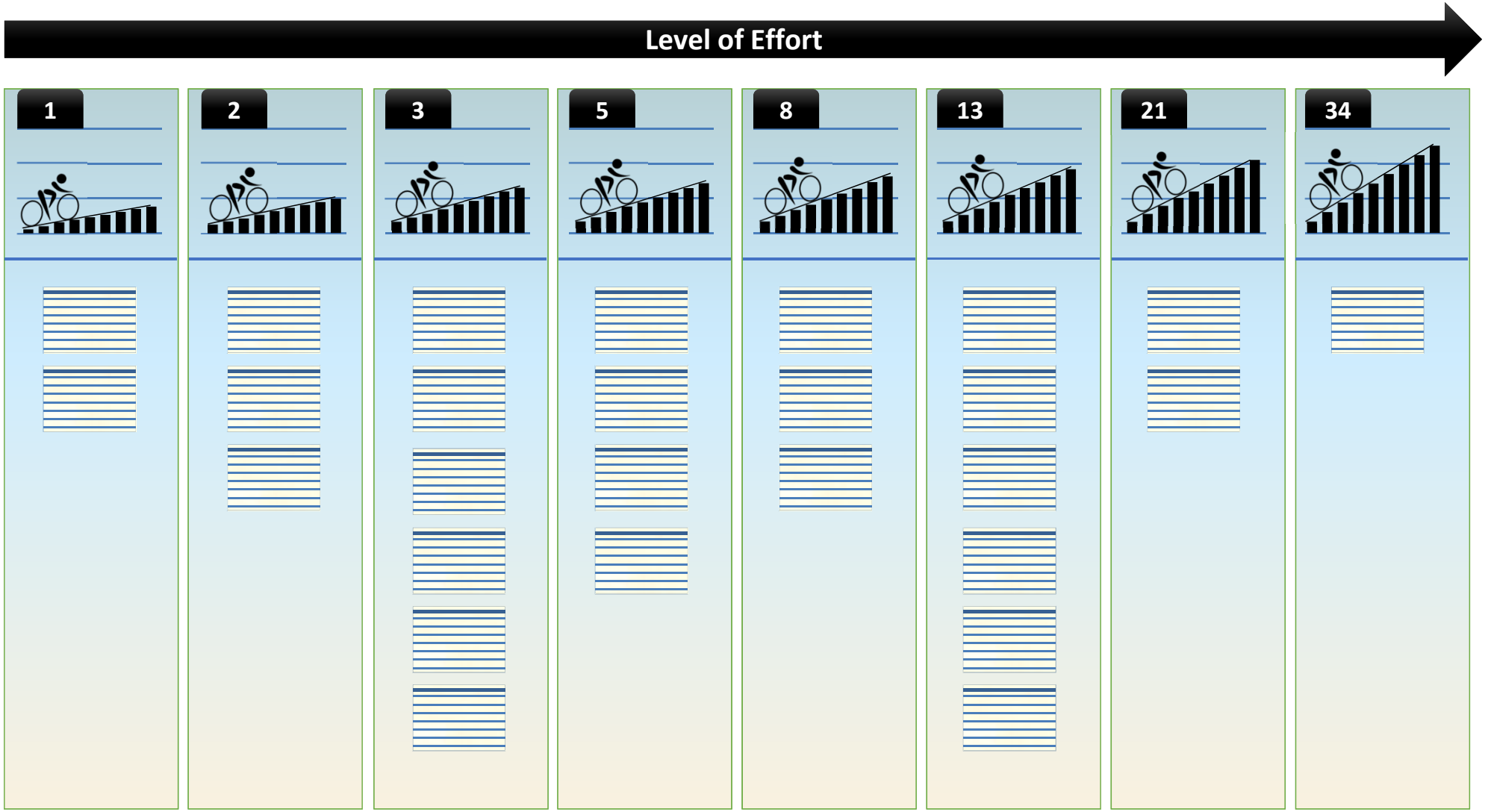
As a beneficiary, **I want** a global web navigation header, **so that** I can have access to information from any page within the website.

Who, **What**, **Why**

Acceptance Criteria

- The system shall show 5 main tabs on the header
  - *List of all tabs*: e.g. “Home”, “Manage Your Health”, “Medicare Basics”, “Resource Locator”, “Help and Support”
- All buttons shall have a dropdown to show sub-tabs
  - *List of all sub-tabs*
- Verify that all buttons are clickable to show an overview of each tabA

Story Point Estimation



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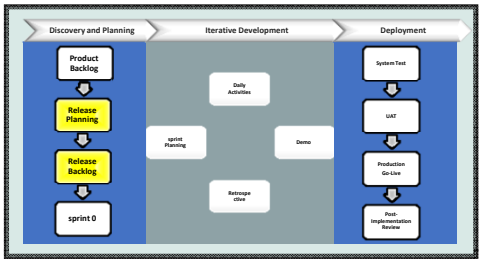
Release Planning



Input	Process	Output
✓ **Product Backlog** *Detailed discussion of approved user stories amongst all stakeholders*	• Team capacity is defined based on: 1) historical velocity, 2) length of current release, and 3) team size. • If team capacity cannot accommodate all approved user stories, options include: 1) increase team size, 2) increase release length, or 3) defer user stories to a future release based on client priority.	➢ **Release Backlog**

Scrum Team
Determines team capacity

Product Owner Establishes a priority for each user story

Scrum Master
Monitors capacity vs. level of effort

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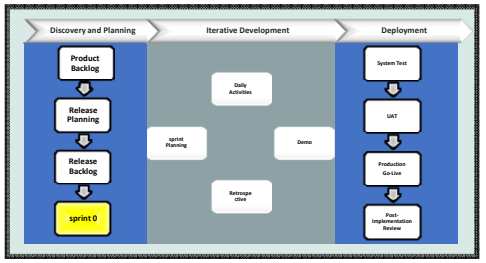

Input	Process	Output
✓ **Release Backlog**	• Setting up the environment • Housekeeping activities (e.g. ALM tools setup, ensemble folders, etc.) • Creating the initial business case document • Sprint 1 planning	➢ **Business Case document** ➢ **Environment, Housekeeping finalized** ➢ **Completed Sprint 1 plan**

Scrum Team
Housekeeping, Setting up environment

Product Owner
Prioritization of requirements and signing off

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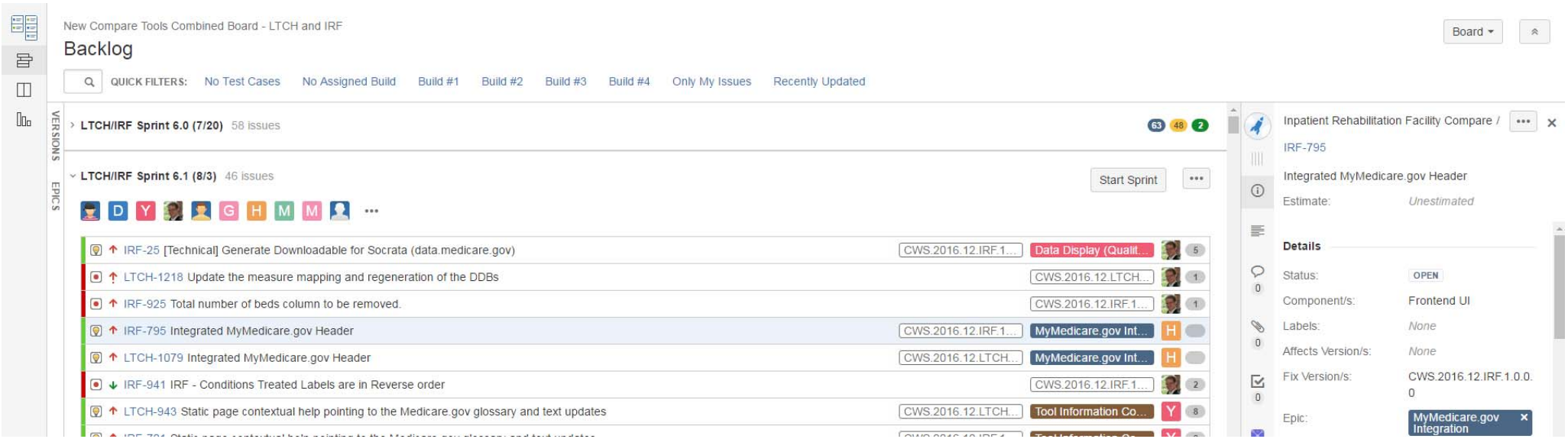
Release Backlog



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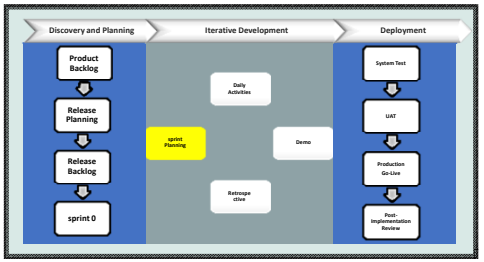
Sprint Planning



Input	Process	Output
✓ **Release Backlog**	• Identify User Stories for sprint and distribute them to each build based on dependencies, priority and complexity • Create list of tasks to accomplish for each user story • Team member select or are assigned tasks • Estimate # of hours for tasks	➢ **Sprint Plan**

Scrum Team Creates Tasks for each User story, estimates # of hours

Product Owner
Provides details on User Story, e.g. Acceptance Criteria

Scrum Master
Assess changes, Tracks the status, Prevents roadblocks

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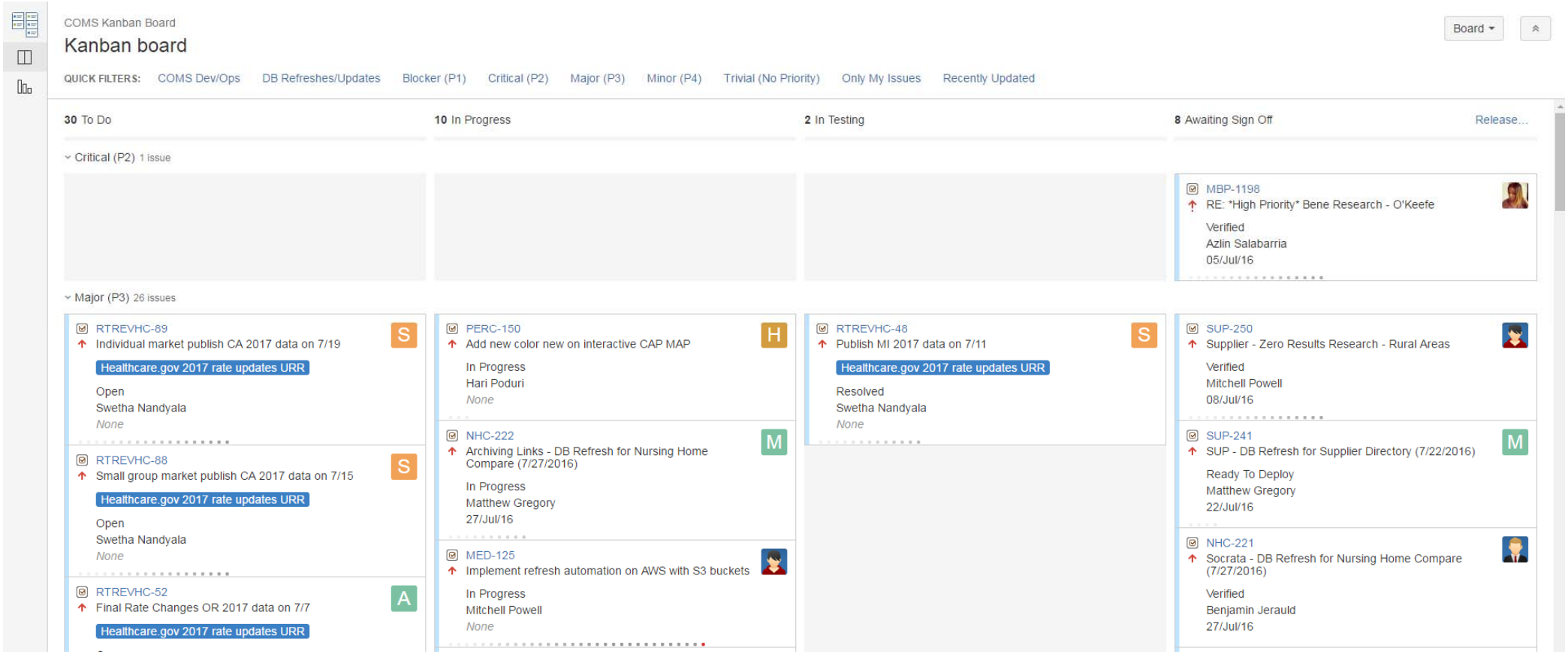
Sample Task board / Kanban board



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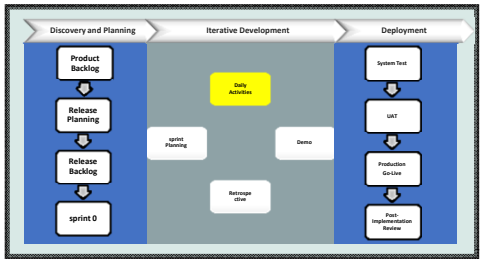
Daily Scrums



Input	Process	Output
✓ Tasks in ALM tools	• A 10-15 min daily meeting to enhance visibility and alignment between team members • Each member tell what they have worked on, what they will work on next, and what road blocks they face	➢ Update status of tasks in ALM tools

Delivery Team
Update their status prior to meeting and briefly discuss their work during meeting

Scrum Master
Shelves any extended discussions to later meetings

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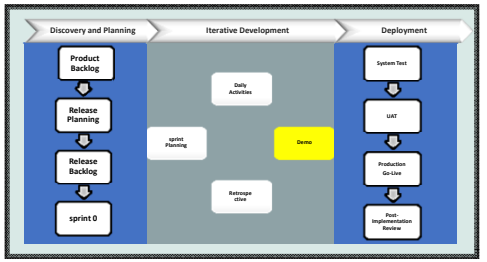
Sprint Demo



Input	Process	Output
✓ **Sprint User Stories** ✓ **Sprint Work Output** (demonstrable software)	• Review sprint plan with focus on planned vs. completed user stories for the sprint. • Demonstrate completed User Stories while reviewing Acceptance Criteria for each story.	➢ **Updated user stories in ALM tools**

Sponsors: Review and provide feedback. Provide acceptance of completed User Stories.

Product Owner Establishes a priority for each user story

Scrum Master Facilitate process/activity

Scrum Team Provide a demonstration of the completed User Stories. Capture feedback and new User Stories.

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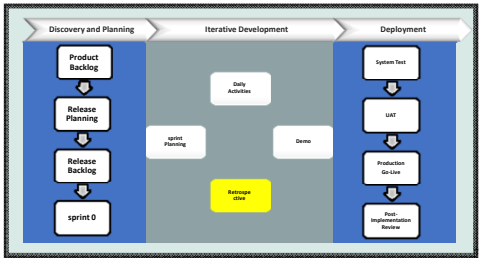
Sprint Retrospective



Input	Process	Output
✓ **Individual input on successes and challenges**	• Review and reflect on team performance. • Identify impediments, and list of action items to address or escalate if needed. • Determine if sprint planning adjustments need to be considered for future sprints.	➢ **Updated Lessons Learned Document** ➢ **Updated process/working agreements documents** (*optional*)

Scrum Master Facilitate activity. Focus on continuous improvement. Capture feedback and action items.

Product Owner/ Scrum Team Provide feedback and suggestion to what worked well and what requires improvement.

All Reach consensus on any new process/working agreements for future sprints.

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Sample output of Sprint Retrospective

Things Went Well	What didn't work	Please Change
Better automation for most of deployment tasks (+)	Database Structure (!)	Add new server for testing (Δ)
New ALM Tool (+)	Refactoring time takes way too long (!)	Create 2 new VMs (Δ)
Stronger Talents (+)	Quicker Feedback (!)	Provide faster IT support for new members (Δ)

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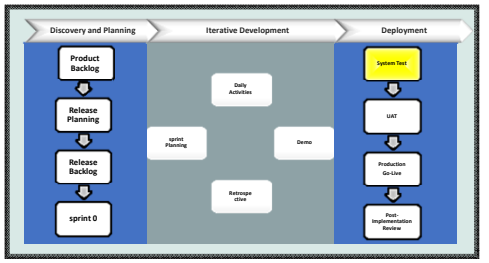
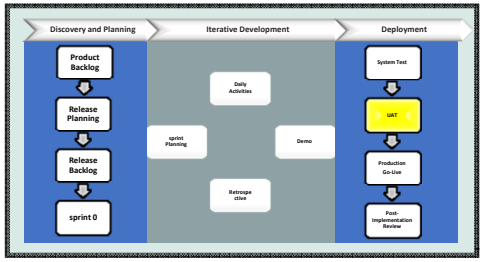
System Test



Input	Process	Output
✓ **Validation Readiness Review (VRR)** ✓ **Completed User Stories**	• Perform full regression of application including all integration with external systems • Prepare all deliverables • Implementation Readiness Review (IRR)	➢ **UAT Software Package** ➢ **UAT Non-Software Package**

Scrum Team: Perform System Test activities to prepare UAT package. This includes full regression testing of entire application.

User Acceptance Test (UAT)



Input	Process	Output
✓**Implementation Readiness Review (IRR)** ✓ **UAT Software Package** ✓ **UAT Non-Software Package**	• Hold a UAT Kickoff Meeting with all stakeholders to set expectations • Daily UAT calls to manage feedback and issues • Go/No Go Meeting	➢ **UAT Comments/feedback** ➢**Go/No Go Decision**

Sponsors: Review and provide feedback. Provide acceptance of UAT package

Product Owner Review and provide feedback. Manage and prioritize UAT feedback/issues. Provide acceptance of UAT package

Scrum Team: Manage and implement any critical or High priority issues/feedback for Production package.

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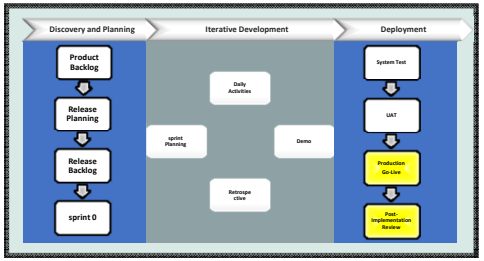
Go Live and Post Implementation Review



Input	Process	Output
✓ **Production Readiness Review (PRR)** ✓ **Production Software Package** ✓ **Production Non-Software Package**	• Sign-off on Production validation • Post-Implementation Review (PIR) – Lessons Learned	➢ **Working software on Production** ➢ **Lessons Learned**

Sponsors: Participate in the PIR discussion

Product Owner: Participates in Production Validation. Participates and contributes in PIR discussion

Scrum Team: Validate production load. Participate and contribute in PIR discussion

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Questions?

Agile Terminologies

Term	Definition
Scrum	A process framework that contains **sets of practices** and **predefined roles** (Scrum Master, Product Owner, Team)
Program Backlog	The list of **work items** containing broad descriptions **prioritized by business value**
Product Backlog	The list of user stories **prioritized** by business value
Release Backlog	The list of user stories the team must implement for the scheduled release
sprint Plan	The list of work the team must address during the next sprint
sprint/Sprint	The basic unit of development in Scrum (*i.e.* 2 weeks)
User Stories	A high level requirement that captures what the user wants to achieve (*i.e.* "As a <role>, I want <goal/desire>, to <value>")
Story Point	A relative measure used by Scrum teams to measure the effort required to implement a user story.

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Agile Terminologies

Term	Definition
Capacity vs. Velocity	Velocity - an estimate of how much work a team **usually completes** in a given time period (based on what has been completed recently) Capacity - an estimate of how much work it **can complete** in a given time period
Retrospective	A meeting at the end of sprints where a team looks back on a past period of work so that they can learn from their experience and apply this learning to future work
Demonstration	A review held at the end of sprints to show the results of what was completed in the sprint.
Burn Down Chart	Daily progress for an sprint over the sprint's length