



PROJECT MANAGEMENT CENTER FOR EXCELLENCE

A.J. CLARK SCHOOL OF ENGINEERING
Civil & Environmental Engineering Department



AGILE FOR NON-IT PRACTITIONERS

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2016 Project Management Symposium

Agile Overview

- ◆ What is Agile?
- ◆ Why Agile? When Agile?
- ◆ Agile Manifesto
- ◆ Agile Projects
- ◆ Comparing Traditional Project Management to Agile
- ◆ Agile Scrum for Non-IT Practitioners

What is Agile?

- ◆ Principles that guide teams
- ◆ Principles that guide development
- ◆ A culture shift
- ◆ A great solution for some types of projects
- ◆ Open Communication: between teams, stakeholders and customers
- ◆ Different from traditional project management

Busting Agile Myths!

- ◆ Agile works for any project
- ◆ Agile is new and better!
- ◆ Agile is faster!
- ◆ Agile is unstructured
- ◆ Agile doesn't have documentation
- ◆ Agile doesn't need requirements
- ◆ Agile is cheaper
- ◆ In Agile the team get to do what they want
- ◆ Agile is easy...

What is Not Agile?

- ◆ The solution to all project management problems
- ◆ A toolbox of methodologies to be used as needed
- ◆ The replacement for traditional project management processes
- ◆ One specific method for projects to use
- ◆ A reason to not collect requirements and understand customer needs
- ◆ A way to complete projects without following processes

When use Agile?

Consider using an agile approach when 1 or more of these conditions are present:

- ◆ **Uncertainty**

- particularly in requirements and changing conditions

- ◆ **Complexity**

- content, integration, stakeholder mgmt., solution

- ◆ **Innovation**

- new technology, content or system

- ◆ **Urgent**

- high priority, short timeline

Agile Project Management

The Agile Manifesto for Non-IT Projects

*“We are uncovering better ways of **accomplishing work** by doing it and helping others do it.*

Through this work we have come to value:

- *Individuals & interactions* over *processes and tools*
- *Working product* over *comprehensive documentation*
- *Customer collaboration* over *contract negotiation*
- *Responding to change* over *following a plan*

*That is, while there is value in the items on the right, we value the items on the left more.”**



What Agile Entails...

Characteristics:

- ◆ Iterative
- ◆ Incremental
- ◆ Time-boxed

Requires:

- ◆ Trust, commitment, flexibility
- ◆ Understanding business priorities
- ◆ Significant stakeholder engagement

Comparing Traditional to Agile

The Triple Constraint: time, cost, scope

Traditional Project Process:

Plan Driven

- Cost and Schedule are estimated
- Requirements are fixed

Agile/ Adaptive Project Process:

Value Driven

- Features are estimated
- Cost and Schedule are fixed

Agile Methodologies

- ◆ Scrum, Kanban, Lean, etc.

Which is the Best? ... there is no 'best'

- ◆ Which is the best tool?
 - A knife or a fork?
 - What about chopsticks?
- ◆ There is no one method which is best for all projects
- ◆ Depends on the culture/ environment and processes of the organization
- ◆ Require a change to the organizational culture

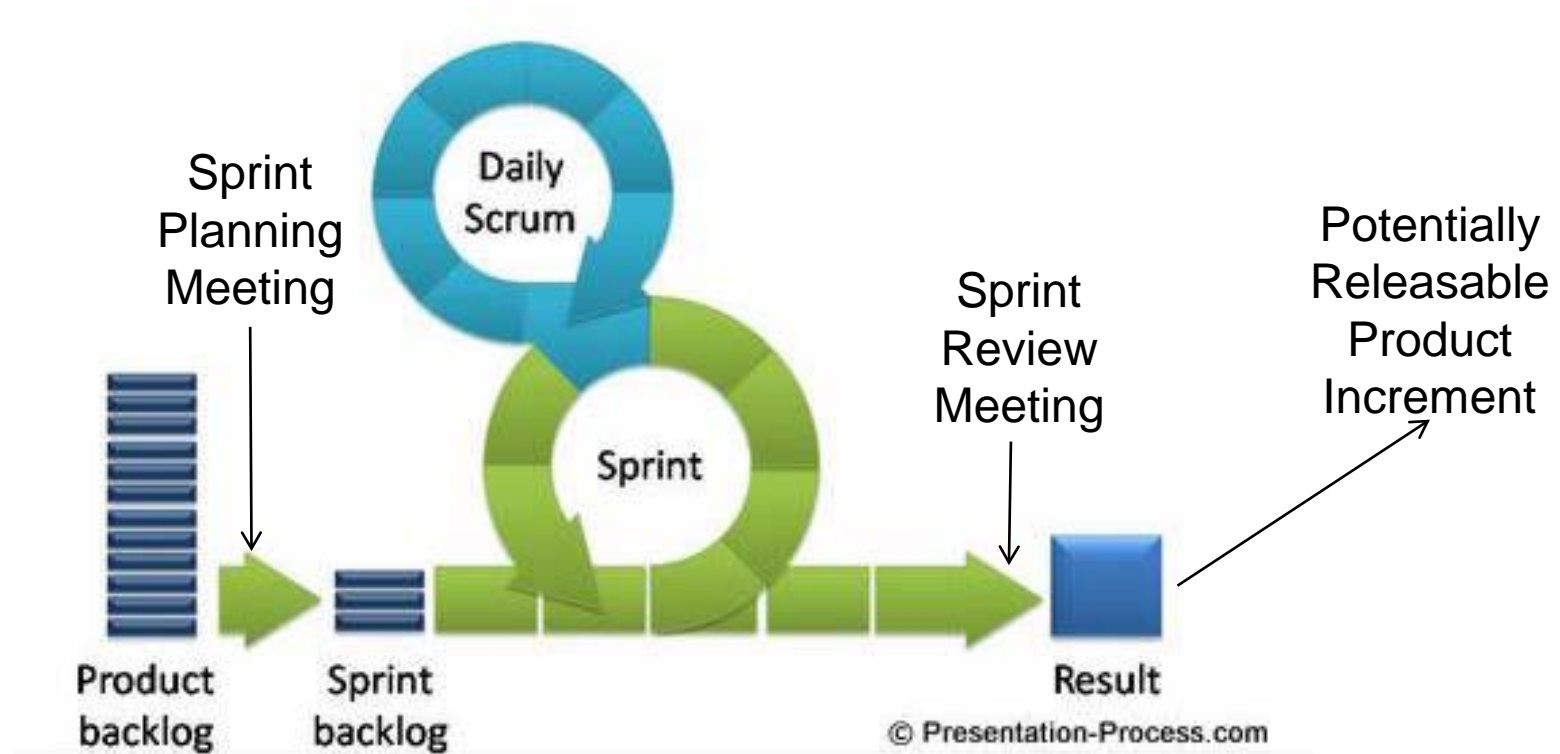
Agile Scrum

What is Scrum?

- ◆ Created in the 1990s by Jeff Sutherland and Ken Schwaber
- ◆ Scrum is an Agile practice for project management
- ◆ Scrum is a specific Agile practice methodology
- ◆ In Scrum work is done in 2-4 week iterations (Sprints)

Agile Scrum

What is Scrum?



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Agile Scrum- Planning

- ◆ Done continuously...
- ◆ Supports the focus of 'Inspect and Adapt'
- ◆ Planning sessions:
 - Product Planning Meeting
 - Sprint (iteration) Planning Session
 - Co-location ad-hoc meetings
 - Daily Stand Up
 - End of iteration Meetings
 - Product review/ demo Meeting
 - Retrospective

Agile Scrum

Who's who? (The roles of Agile Scrum)

◆ Product Owner

- Responsible to ensure value is delivered to customer

◆ Scrum Master

- Facilitator of Scrum method

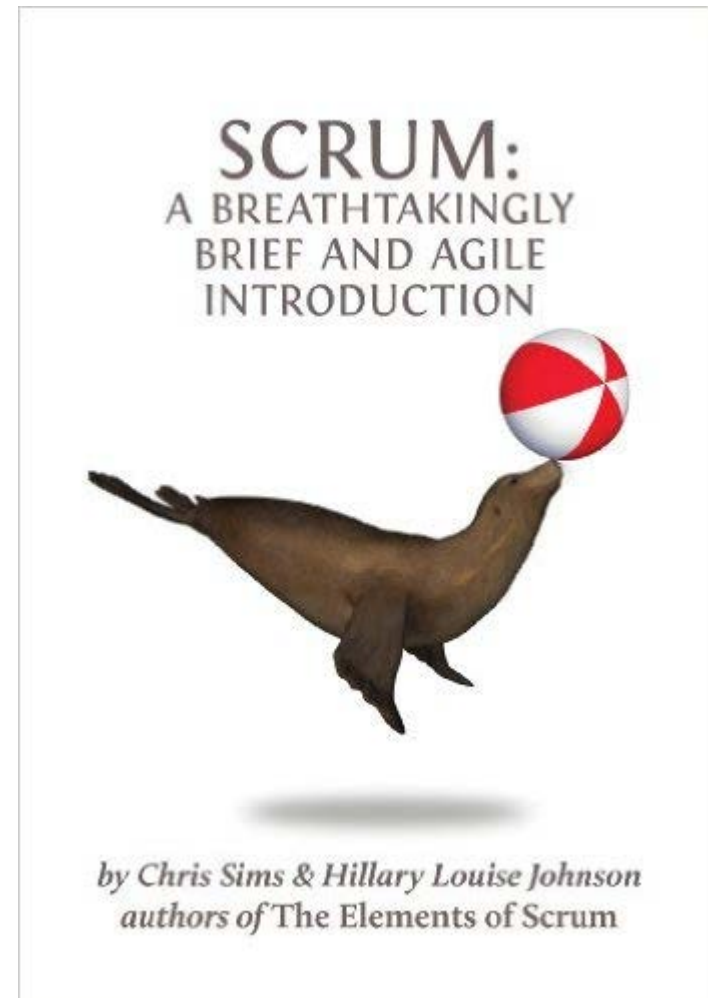
◆ Team Member (Team Size 7 +/- 2)

- Responsible for contributing their skills to the team
- Completes the work of the project

Agile Scrum

Scrum Artifacts

- ◆ The Product Backlog
- ◆ The Sprint Backlog
- ◆ Burn Charts
- ◆ Task Board
- ◆ Definition of Done (DoD)



Agile Scrum- Artifacts

Scrum Artifacts (continued)

◆ The Product Backlog

- Created & managed (groomed) by the product owner (who represents the business/ customer)
- List of all features for the product
- Prioritized by the value each will provide to the customer
- The development Team may add items to it

Agile Scrum- Artifacts

Scrum Artifacts (continued)

◆ The Sprint Backlog

- List of product features which have been agreed upon to complete during a Sprint
- Once this is agreed upon it cannot be changed

◆ Burn Charts

- Tools used to show the work completed for the project (relationship between time and scope)
- Examples: Burn Down Chart, Risk Burn Down Chart

Agile Scrum- Artifacts

Scrum Artifacts (continued)

◆ Task Board

- An information radiator
- Shows tasks and assignees: Planned, WIP, Test, Complete
- Supports: transparency, communication

Agile Scrum- Artifacts

Scrum Artifacts (continued)

◆ Definition of Done (DoD)

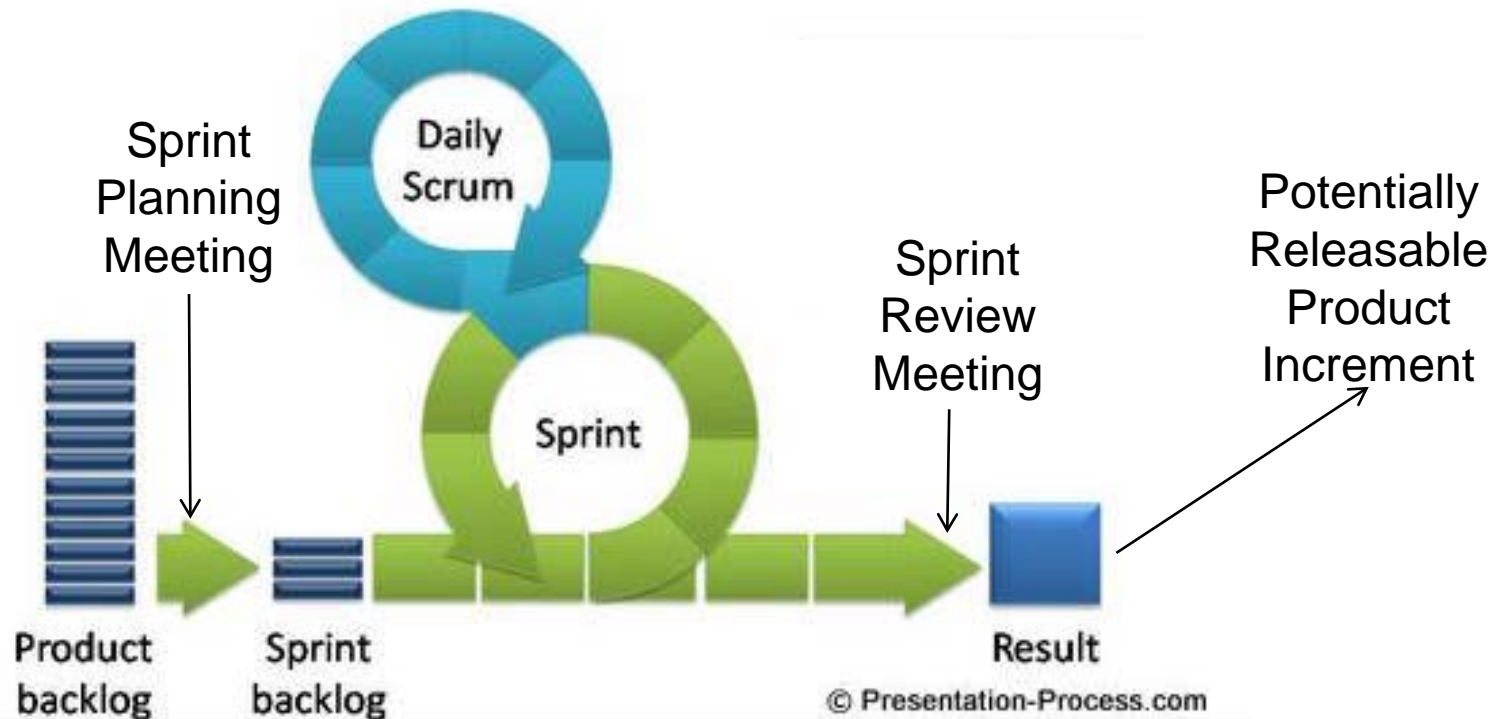
- Agreed upon to ensure customer needs are met
- What is so for product backlog item so it is considered done
 - ❖ Definition of Done for a feature (story or product backlog item)
 - ❖ Definition of Done for a sprint (collection of features developed within a sprint)
 - ❖ Definition of Done for a release (potentially shippable state)

Agile Scrum

Sprint Planning & Ceremonies:

◆ The Sprint Cycle

- A 2-4 week cycle which delivers a portion of business functionality



Agile Scrum

Sprint Planning & Ceremonies: (continued)

◆ Sprint Planning Meeting

- 1-2 hours; Output -> the Sprint Backlog
- Part 1) “What will we do?”
 - ❖ Commit to deliverables for the sprint
- Part 2) “How will we do it?”
 - ❖ ID the tasks to complete to deliver the agreed upon user stories (features)

Agile Scrum

The Daily Scrum:

- ◆ 15 minutes (hard stop)
- ◆ Standing Meeting
- ◆ Each participant (team member) answers:
 - What have I done?
 - What I plan to do?
 - What barriers are in my way?
- ◆ Not for solving problems

Agile Scrum

User Stories:

- A requirement detailed using 1-2 sentences in the language of the user
- It describes the need or function they would like the system to do
- Stories are sized (estimated)
- Example format:

As a <type of user>,
I want to <do something>,
so that <some value is created>.

Agile Scrum

Sprint Review:

- ◆ The end of the sprint
- ◆ Any and all Stakeholders are invited to this meeting
- ◆ Review the stories which meet the DoD
- ◆ Review the stories which did not get done
- ◆ Schedule 0.5-1 hr/ week of development

Agile Scrum

Sprint Retrospectives:

- ◆ Continuously 'Inspect and adapt'
- ◆ Team and Product Owner
- ◆ Lessons Learned
- ◆ Process Improvement
- ◆ ID no more than 1-2 strategic changes for the next sprint
- ◆ 1-2 hours/ week of development

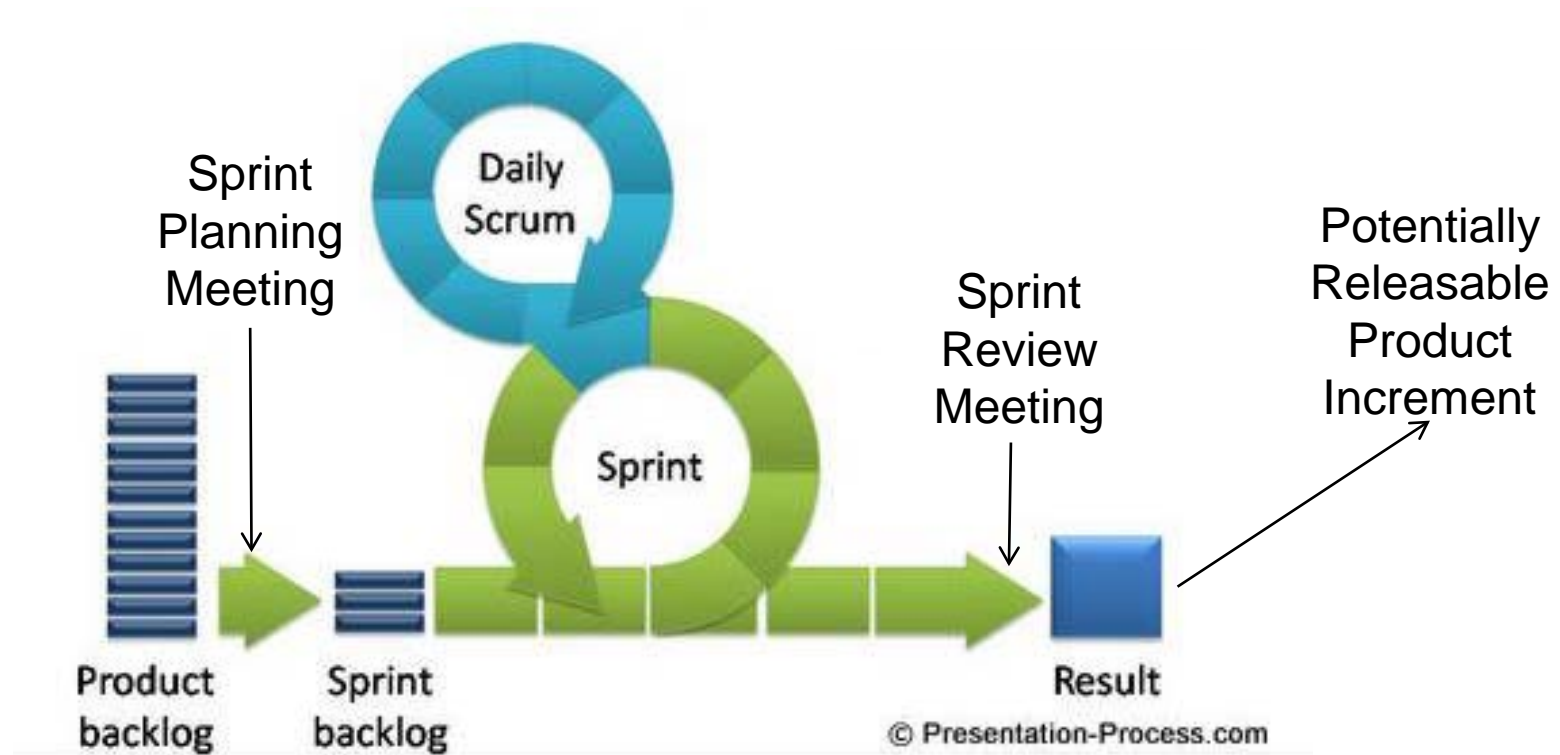
Agile Scrum

Abnormal Sprint Termination:

- ◆ Requirement are not changed during a Sprint
- ◆ Decision to terminate the Sprint early
- ◆ Product Owner makes this business decision
- ◆ If done:
 - All changes made during the sprint are backed out
 - Hold a retrospective (very important to do!)
 - After the retrospective, plan the new Sprint

Agile Scrum

Scrum in 1000 words (a picture)...



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Agile Methodologies

References:

- ◆ *“Relating PMBOK Practices to Agile Practices”*, Sliger, Michele, (2011)

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- ◆ *“Agile Risk Management for Projects and Programmes”*, Hamilton-Whitaker, (2011, Canada)

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<http://agile101.net/2009/07/28/12-principles-of-risk-management-pmbok-with-an-agile-slant/>

- ◆ Vikas Hazrati: ‘Agile in Enterprise’
- ◆ Softhouse, (n.d.) Scrum in Five Minutes. Retrieved from <http://www.softhouse.se>

Agile Methodologies

For discussion and resources on Agile...

Please join me on **LinkedIn** in the



Agile Risk Management Group

http://www.linkedin.com/groups?gid=4020498&trk=myg_ugrp_ovr

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Additional Information

PMI-ACP® Certification

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PMI Agile Certified Practitioner (PMI-ACP)®

- ◆ “PMI’s Agile Certified Practitioner (PMI-ACP)® credential is a response to project management’s increasing
- ◆ “The PMI-ACP recognizes knowledge of agile principles, practices and tools and techniques across agile methodologies.” (PMI, 2014)

By earning the PMI-ACP®, practitioners can:

- ◆ Demonstrate to employers their level of professionalism in agile principles, practices, tools and techniques.
- ◆ Increase their professional versatility in project management tools and techniques.
- ◆ Hold a certification that is more credible than existing offerings based only on exams or training.

Reference: PMI, “PMI Risk Management Professional (PMI-RMP)” Retrieved from:
<http://www.pmi.org/en/Certification/PMI-Risk-Management-Professional-PMI-RMP.aspx>

PMI-ACP® Certification

Who should apply:

- ◆ If you already use agile practices or your organization is adopting agile methods, earning the PMI Agile Certified Practitioner (PMI-ACP)® certification will demonstrate your knowledge of and commitment to this rapidly growing approach to project management.

PMI-ACP Requirements:

General Project Experience

- ◆ 2,000 hours working on project teams (within the last 5 years), or an active PMP®

Agile Project Experience

- ◆ 1500 hours working on agile project teams or with agile methodologies (within the last 3 years)

Education

- ◆ 21 contact hours in agile practices

Reference: PMI, "PMI Risk Management Professional (PMI-RMP)" Retrieved from:
<http://www.pmi.org/en/Certification/PMI-Risk-Management-Professional-PMI-RMP.aspx>

PMI-ACP® Certification

How to Apply:

- ◆ Online at www.pmi.org
- ◆ More Info:
 - PMI-ACP® Handbook
 - PMI-ACP® Exam Content Outline
- ◆ Learn more at: <http://www.pmi.org/Certification/New-PMI-Agile-Certification.aspx>

Reference: PMI, "PMI Risk Management Professional (PMI-RMP)" Retrieved from:
<http://www.pmi.org/en/Certification/PMI-Risk-Management-Professional-PMI-RMP.aspx>