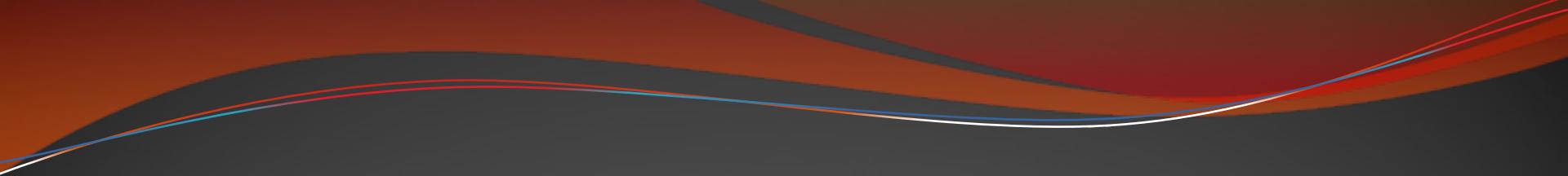


Agile Methodologies

by Sejal D'Souza, PMP, CSM

02/26/2017





Why do you want to learn Agile?

Agenda

- What is Agile?
- Why Agile?
- How Agile?
 - Scrum
 - Kanban
 - Extreme Programming
- Who's Agile?
- Agile Tools
- Other cool stuff

What is Agile?

- <https://www.youtube.com/watch?v=AsFMHnSfI2I> (1.49 min)
- **Agile** is a time boxed, iterative approach to software delivery that builds software incrementally from the start of the project, instead of trying to deliver it all at once near the end.

Waterfall vs Agile

- **What are the Disadvantages of Waterfall?**

- Huge effort during the planning phase
- Poor requirements conversion in a rapidly changing environment
- Time consuming to plan ahead in an environment where requirements may change
- No provision for progressive elaboration

- **What are the Advantages of Agile?**

- All of the above
- People-based rather than Plan-based
- Set of principles – creative, customizable

Agile Manifesto

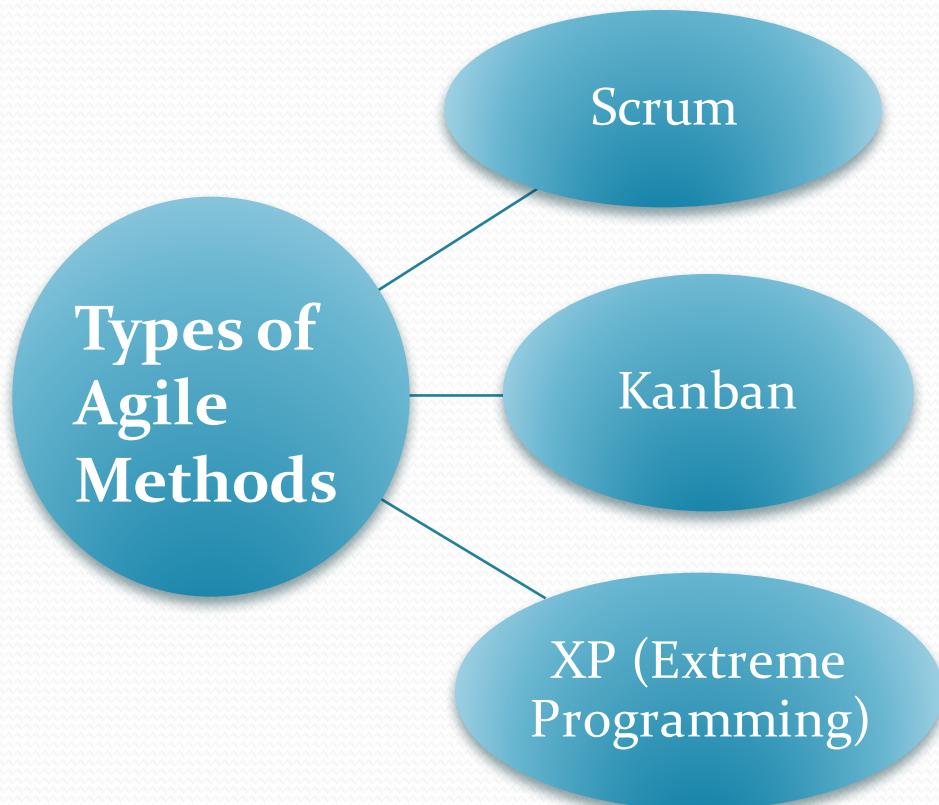
- Agile Alliance (www.agilealliance.org)
 - A non-profit organization promotes agile development

A Statement of Values

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

<http://www.agilemanifesto.org>

Types of Agile Methods



Agenda

- ✓ What is Agile?
- ✓ Why Agile?
- • How Agile?
 - Scrum
 - Kanban
 - Extreme Programming
- Who's Agile?
- Agile Tools
- Other cool stuff

Agile Scrum – video (1.20 min)



What is Scrum?

- Scrum: **agile process** =  **highest business value**
 **shortest time**
- **Rapid and repeated inspection** of actual working software (every two weeks)
- **Business sets the priorities**
- **Teams self-organize** to deliver
- Duration of sprint/iteration = **two weeks**
- **Requirements captured in backlog**
- **Real working software** at end of sprint that is released/continuously improved

Characteristics of Scrum

- **Roles :**
 - Product Owner
 - Scrum Master
 - Scrum Team
- **Ceremonies :**
 - Grooming Meeting
 - Sprint Planning
 - Daily Scrum Meeting (Standup)
 - Sprint Review/Demo
 - Sprint Retrospective
- **Artifacts :**
 - Product Backlog
 - Sprint Backlog
 - Burndown Chart



Product Owner

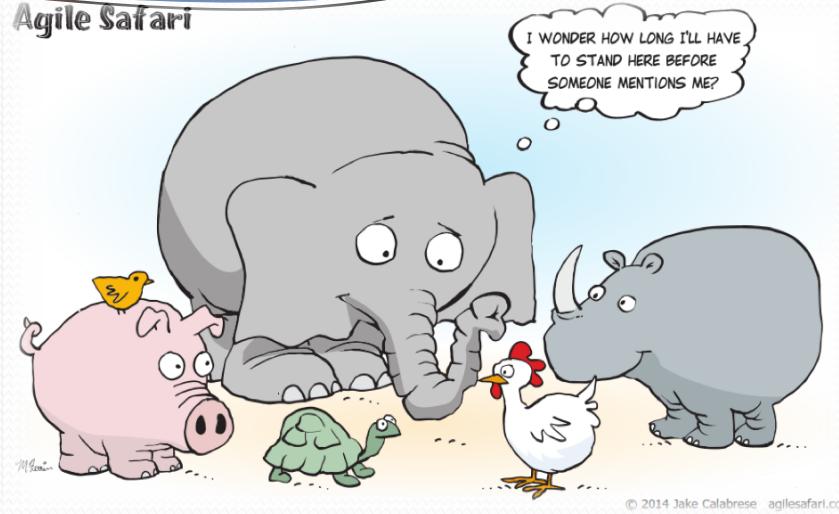
- Defines the features of the product
- Decides on release date and content
- Responsible for the profitability of the product (ROI)
- Prioritizes features according to business value
- Adjusts features and priority every iteration, as needed
- Provides acceptance criteria
- Accepts or rejects work results.

The Scrum Master

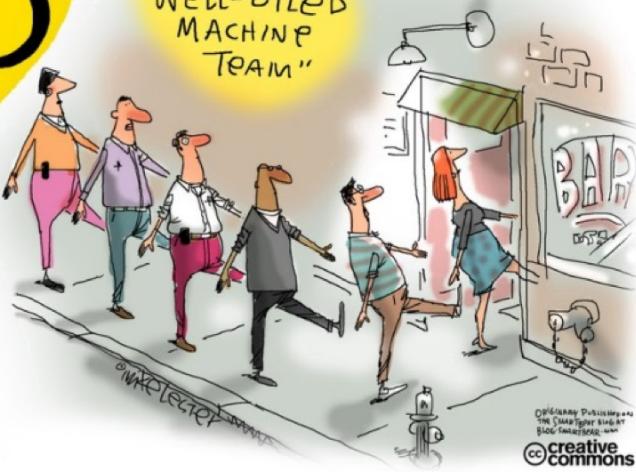
- Represents management to the project
- Responsible for enacting Scrum values and practices
- Trains/mentors team on adopting Agile practices
- Removes impediments, addresses risks
- Ensures that the team is fully functional and productive
- Enables close cooperation across all roles and functions
- Shields the team from external interferences
- Responsible for running agile ceremonies/rituals
- Addresses capacity planning and resource impacts

Scrum Team

- Typically 5-10 people
- Cross-functional
 - QA, Programmers, UI Designers,...
- Members should be full-time
 - May be exceptions (e.g. System Admin, etc.)
- Teams are self-organizing
- Membership can change only between sprints
- Team members generally stays the same to improve velocity over time
 - As team dynamics improve, efficiency of team improves



TYPES OF AGILE TEAMS TO AVOID



Characteristics of Scrum

✓ Roles :

- ✓ Product Owner
- ✓ Scrum Master
- ✓ Scrum Team

Ceremonies :

- ➡ Grooming Meeting
- Sprint Planning
- Daily Scrum Meeting (Standup)
- Sprint Review/Demo
- Sprint Retrospective

Artifacts :

- ➡ Product Backlog
- Sprint Backlog
- Burndown Chart

Product Backlog

- A prioritized features list, containing short descriptions of all functionality desired in the product called **backlog items**
- Usually a combination of
 - story-based work (“let user search and replace”)
 - task-based work (“improve exception handling”)
- List is prioritized by the Product Owner
 - Typically a Product Manager, Marketing, Customer,...
- Is owned and managed by Product Owner, Scrum Master can help.
- Depending on team dynamics, team members can contribute to adding new items to the backlog.
- Created/updated during the Backlog Grooming Meeting
- Can be changed and re-prioritized before each Planning Meeting

Sample Product Backlog

VERSIONS EPICS

Backlog 8 issues [Create Sprint](#)

		TIS-8 Requesting available flights is now taking > 5 seconds	4
		TIS-2 Build out a local office on Mars	2
		TIS-5 Plans for our Summer Saturn Sale	8
		TIS-1 Expand travel to destinations outside of The Solar System	6
		TIS-3 Add support for teams larger than 20 people	4
		TIS-4 Next Generation version of SeeSpaceEZ travel platform	3
		TIS-6 Make working with our space travel partners easier	16
		TIS-7 500 Error when requesting a reservation	6

+ Create issue

0 0 0

Backlog Grooming Meetings

- Meeting during which the list of backlog items (**pending work**) is prioritized and broken down into user stories
- **Frequency:** weekly/biweekly
- **Participants:** Product owner, Scrum Master, Scrum Team/Leads
- **Goal:**
 - Product Backlog is created, modified and updated
 - Backlog items are prioritized
 - Epics and user stories are created or discussed

Epics and User Stories

- What is a **User Story**?

- A unit of work that should be completed in **one sprint**
- Captures description of a software feature from an end-user perspective
- Describes type of role, what they want and why
- Simplified description of a requirement
- Completed in a sprint

- What is an **Epic**?

- An epic captures a large body of work. Can be a **milestone**
- Think of it as a large user story that can be broken down into a number of smaller stories.
- May take several sprints to complete an epic

Creating User Stories

- As a <role> WHO
I want to <task> WHAT
so that <goal> WHY
- Stories should meet INVEST Criteria
 - "I" ndependent (of all others)
 - "N" egotiable (changeable until start of sprint)
 - "V" aluable (business value)
 - "E" stimable (to a good approximation)
 - "S" mall (so as to fit within an iteration)
 - "T" estable (in principle, even if there isn't a test for it yet)

Creating User Stories

- Sample user stories

#	Backlog Item (User Story)
1.	As a Teller, I want to be able to find clients by last name, so that I can find their profile faster
2.	As a System Admin, I want to be able to configure user settings so that I can control access.
3.	As a System Admin, I want to be able to add new users when required, so that...
4.	As a data entry clerk, I want the system <u>to automatically check my spelling</u> so that...

Creating User Stories

- **Acceptance Criteria**

- **Acceptance Criteria** are the conditions that a software product must satisfy to be accepted by the user, customer, PO
- Acts as confirmation when a story is completed and working as intended
- All stories should have an '**acceptance criteria**' (also called '**done criteria**' or '**success criteria**')

User Story: "As online grocery shopper Janine, I should be able to save and view my draft order from any of my devices so that I can complete the order process at my convenience."

Acceptance Criteria:

- Every in-progress order must be saved every 5 seconds to the logged in user account as a draft order
- New draft orders must show up as notifications on any devices the user logs in

Creating User Stories

- **Story Point Estimations**

- All stories should be estimated
- Estimates are based on effort or complexity
- Fibonacci Series: 1, 2, 3, 5, 8, 13, 21
 - 1 – Minute
 - 2 – Very Small
 - 3 – Small
 - 5 – Medium
 - 8 – Medium trending large
 - 13 – Large
 - 21 – Extra Large

Characteristics of Scrum

✓ Roles :

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- ✓ Scrum Team

Ceremonies :

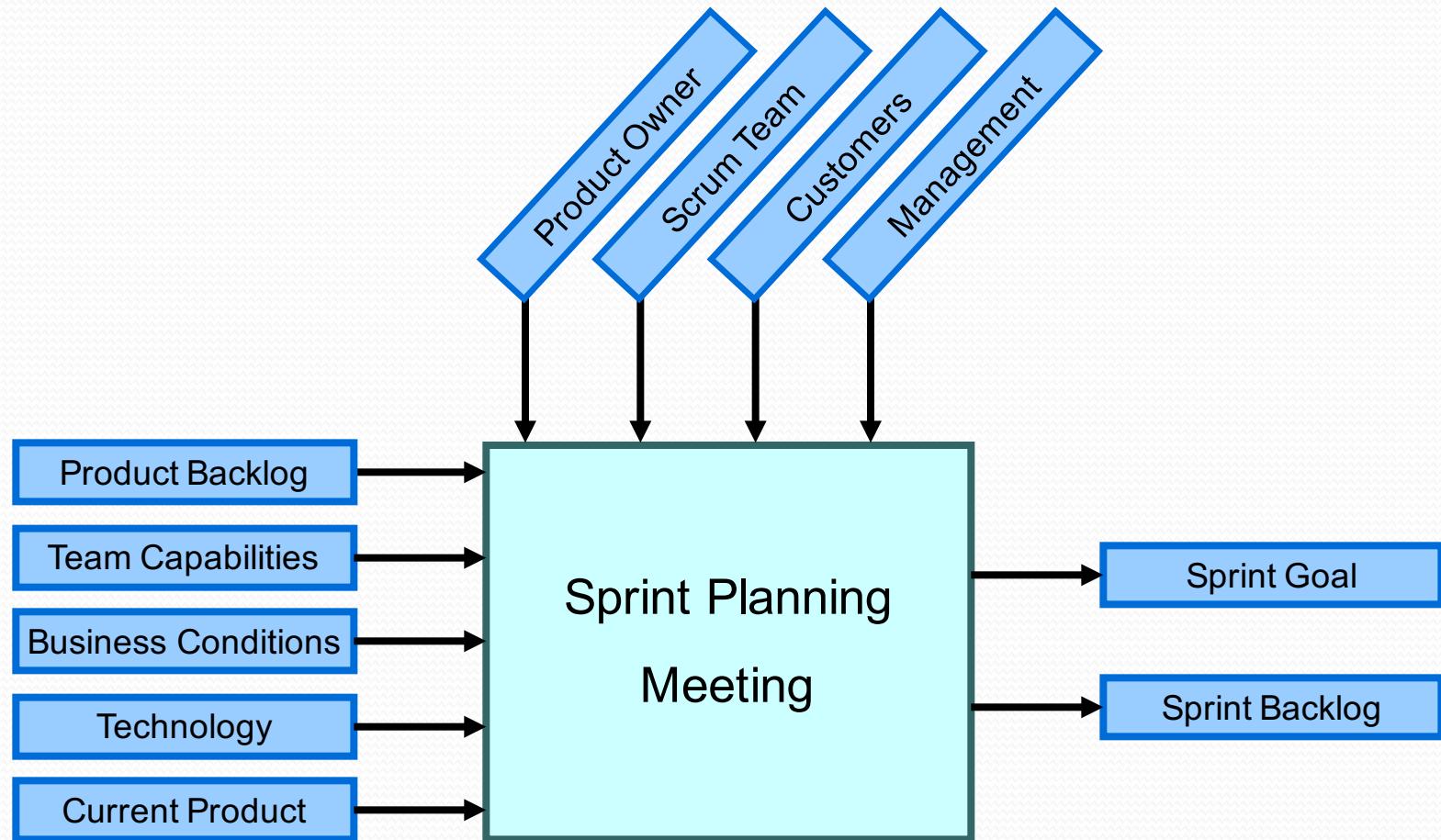
- ✓ Grooming Meeting
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- Daily Scrum Meeting (Standup)
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Artifacts :

- ✓ Product Backlog
- ➡ Sprint Backlog
- Burndown Chart



Spring Planning Meeting



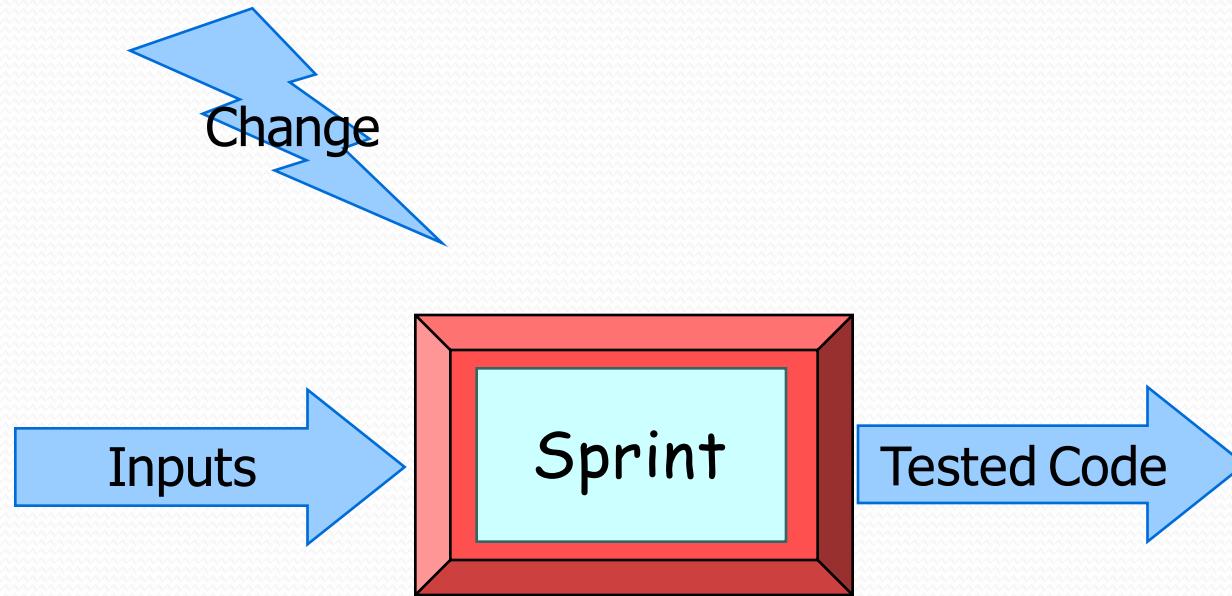
Planning Meetings

- **Sprint planning meeting:**
 - **Scrum Master** facilitates the meeting
 - **Product Owner** clarifies details of the product backlog items and their acceptance criteria
 - Entire **Agile Team** defines the work and effort necessary to meet their sprint commitment.
- Frequency: beginning of each sprint
- Goal:
 - Creating Sprint Backlog
 - Determining the Sprint Goal – user stories to be completed
- ***Team Velocity***

Sprint Backlog

- User Stories:
 - Sub-tasks - Stories are broken down into sub-tasks
 - Assignee - Assign person working on a story or task
 - Story Points - Team verifies assigned story points for each story
- Sprint Backlog is created and organized in order of priority
- No more than 300 tasks in the list
- If a task > 16 hours, it should be broken down
- No stories are added during the sprint

No Changes during the Sprint



- Plan sprint durations around how long you can commit to keeping change out of the sprint
- NO outside influence can interfere with the Scrum team during the Sprint

Sample Sprint and Product Backlogs

JIRA Dashboards Projects Issues Agile Service Desk Capture Portfolio Create Search ? ⚙️ 🚀

Scrum: Teams in Space

QUICK FILTERS: Tech Debt Product UI Server Only My Issues Recently Updated

VERSIONS	EPICS	Sprint 6 4 of 24 issues visible Clear all filters 24/Nov/14 11:05 PM • 08/Dec/14 11:05 PM SeeSpaceEZ Plus, Space Travel Partners, Summer Saturn Sale, Afterburner Plus, Large Team Support, Local Mars Office, Hyper-speed shuttles, New launch platforms, Delicious Space Nutricion, Spacetainment, Microgravity Delight	Backlog 7 of 44 issues visible Clear all filters Create Sprint TIS-67, TIS-68, TIS-56, TIS-8, TIS-9, TIS-7, TIS-10, TIS-55, TIS-57, TIS-59, TIS-61	Teams in Space / TIS-67 Developer Toolbox does not display by default Large Team Support Status: CODE REVIEW Component/s: None Labels: None Affects Version/s: None Fix Version/s: None Epic: Large Team Support Reporter: Jennifer Evans Assignee: Jennifer Evans Created: 16/Oct/14 9:43 AM Updated: 20/Dec/14 1:46 PM Issue Links
All issues	<p>↳ TIS-67 Developer Toolbox does not display by Large Team Support </p> <p>↳ TIS-68 Homepage footer uses an inline style - Large Team Support </p> <p>↳ TIS-56 Add pointer to main css file to ins 2.0 Large Team Support </p> <p>↳ TIS-8 Requesting available flights is now ta 2.0 SeeSpaceEZ Plus </p>	<p>↳ TIS-67 Developer Toolbox does not display by Large Team Support </p> <p>↳ TIS-68 Homepage footer uses an inline style - Large Team Support </p> <p>↳ TIS-56 Add pointer to main css file to ins 2.0 Large Team Support </p> <p>↳ TIS-8 Requesting available flights is now ta 2.0 SeeSpaceEZ Plus </p>		
SeeSpaceEZ Plus				
Space Travel Partners				
Summer Saturn Sale				
Afterburner Plus				
Large Team Support				
Local Mars Office				
Hyper-speed shuttles				
New launch platforms				
Delicious Space Nutricion				
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Microgravity Delight				

Characteristics of Scrum

✓ Roles :

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Ceremonies :

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- ➡ Sprint Review/Demo
- ➡ Sprint Retrospective

Artifacts :

- ✓ Product Backlog
- ✓ Sprint Backlog
- ➡ Burndown Chart

Daily Scrum

- Also known as '**Standup**'
- Parameters
 - Daily
 - 15-minutes
 - Stand-up
 - Not for problem solving
- Three questions:
 1. What did you do **yesterday**
 2. What will you do **today**?
 3. What **blockers** are in your way?

Daily Scrum

- Is NOT a problem solving session
- Is NOT a way to collect information about WHO is behind the schedule
- Is a meeting in which team members make commitments to each other and to the Scrum Master
- Is a good way for a Scrum Master to track the progress of the Team
- Help avoid other unnecessary meetings

Scrum FAQs

- Why daily?
 - “How does a project get to be a year late?”
 - “One day at a time.”
- Can Scrum meetings be replaced by emailed status reports?
 - No
 - Entire team sees the whole picture every day
 - Create peer pressure to do what you say you’ll do

Sprint Review/Demo Meeting

- Team presents what it accomplished during the sprint
- Typically takes the form of a demo of new features or underlying architecture
- Informal
- Participants
 - Customers
 - Management
 - Product Owner
 - Other engineers

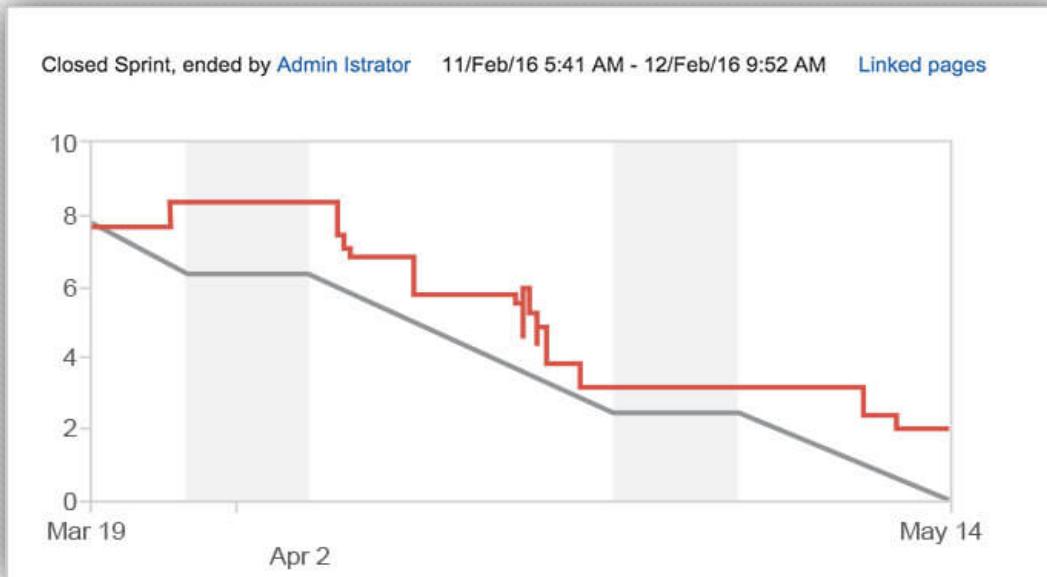


Sprint Retrospective Meeting

- Scrum Team
- Feedback meeting
- Provides a Safe environment for team members to pick on areas that need improvement
- Is NOT an opportunity to point fingers
- IS an opportunity to work together to improve as a team
- Three questions
 - What went WELL?
 - What did NOT go well?
 - How can we improve?
- Don't skip for the first 5-6 sprints!!!

TEAM RETRO @ THE END OF TRAINING!!

Sprint Burn down Chart



- Depicts the total Sprint Backlog hours remaining per day
- Shows the estimated amount of time to release
- Ideally should burn down to zero to the end of the Sprint
- Not a straight line
- Can bump UP if new stories are added in the middle of the sprint.
- However, bad practice to bump up/add stories in the middle of the sprint.

Characteristics of Scrum

✓ Roles :

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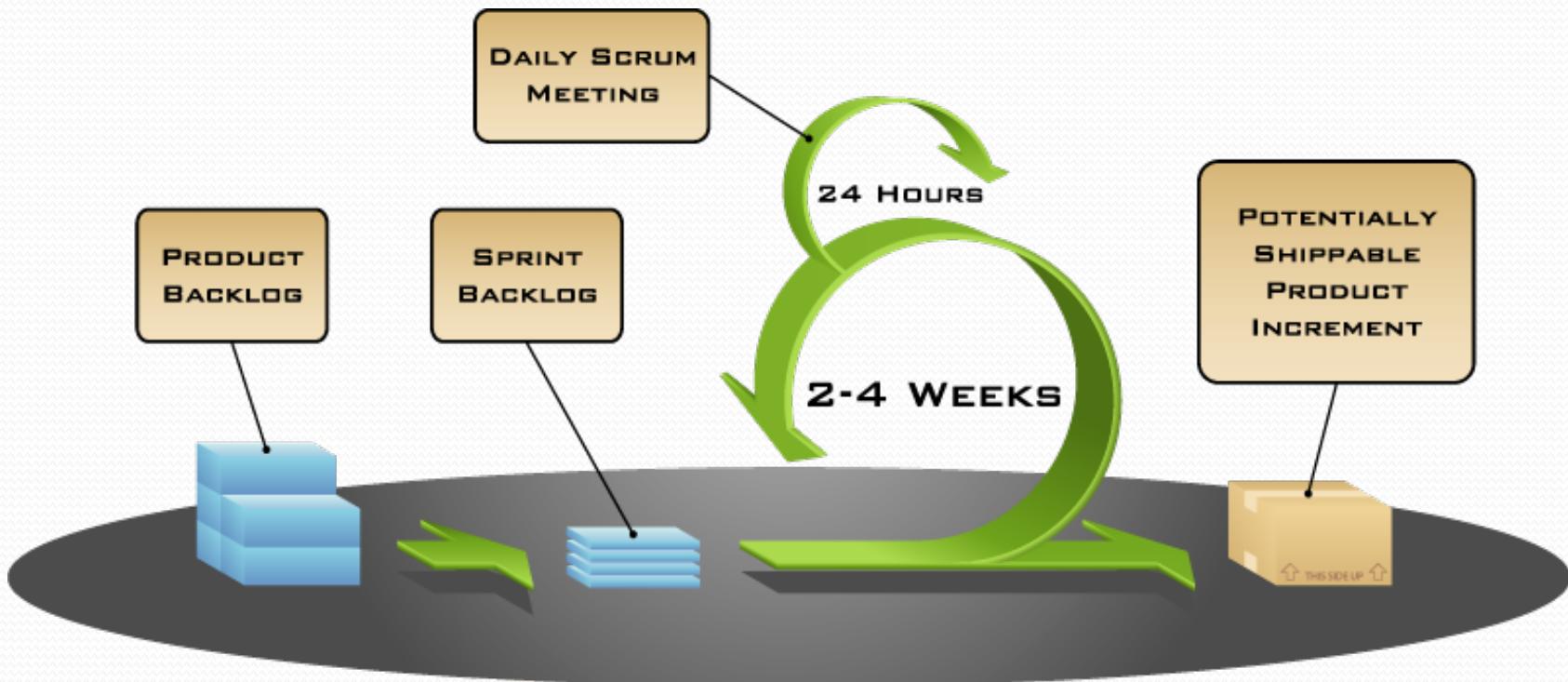
✓ Ceremonies :

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✓ Artifacts :

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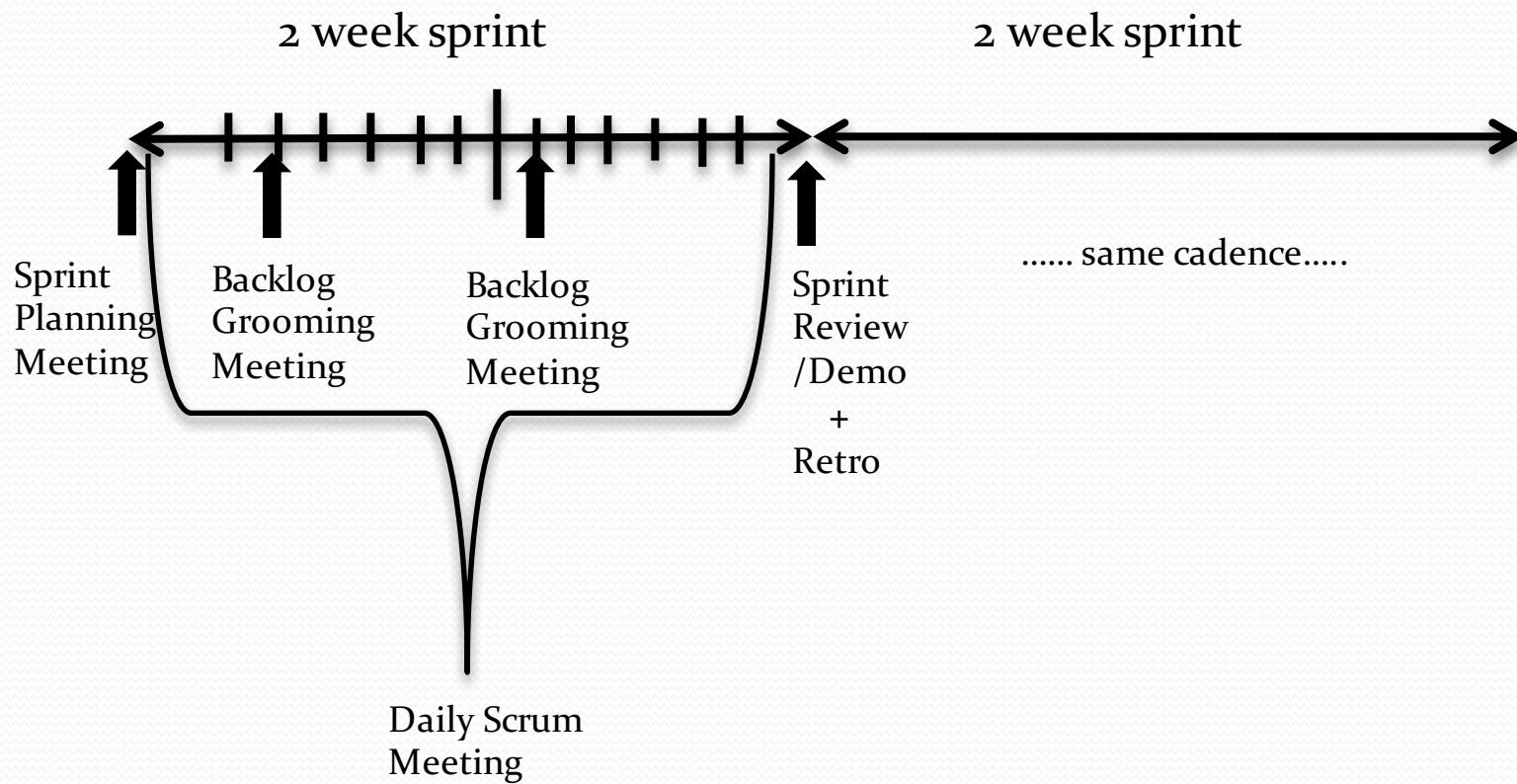
How does this all tie in together?



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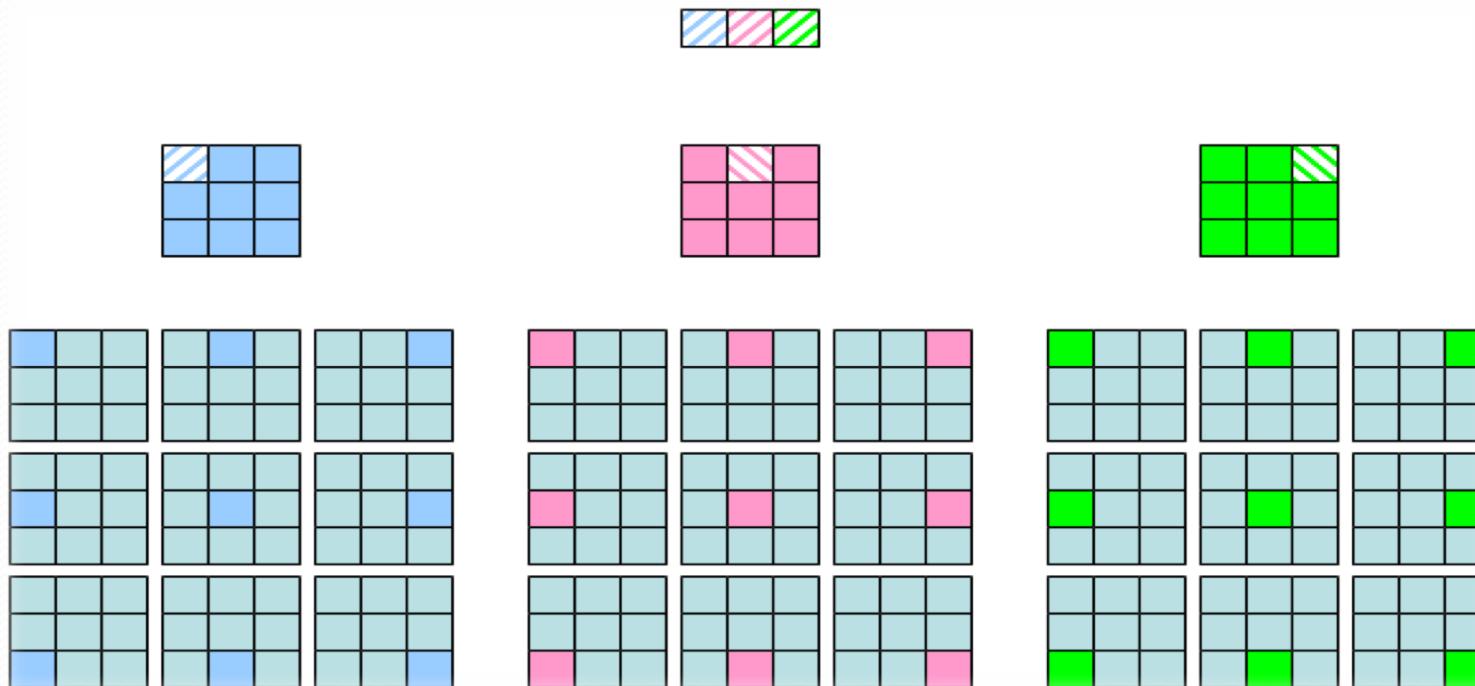
- Video (6.45 mins)

Timeline of Ceremonies



Scalability of Scrum

- A typical Scrum team is 6-10 people
- Jeff Sutherland - up to over 800 people
- "Scrum of Scrums" or "Meta-Scrum"



What have we covered so far?

- ✓ Why are we doing this?
- ✓ What is Agile?
- ✓ Why Agile?

→ How Agile?

- ✓ Scrum
- • Kanban
- • Extreme Programming

Who's Agile?

Agile Tools

Other cool stuff

Kanban

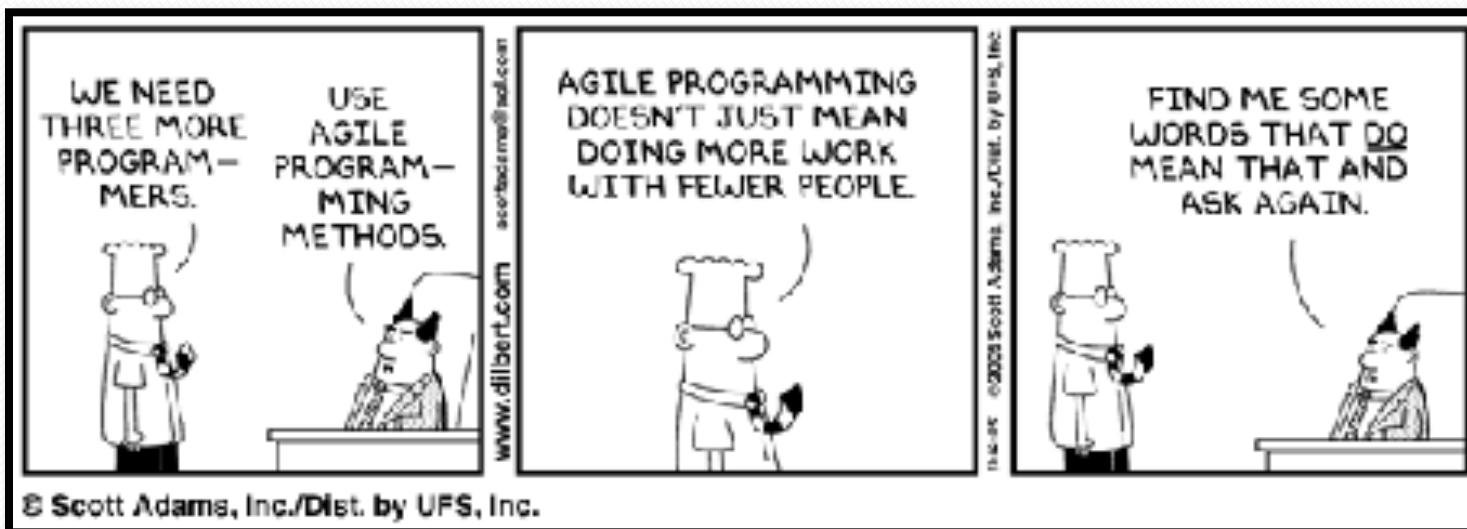
- [Video](#) (2.50 min)
- Kanban Principles
 - Visualize what you do today (workflow)
 - Limit the amount of work in progress (WIP)
 - Prioritize FIFO (First in first out)
- Benefits
 - Shorter cycle can deliver features faster
 - Responsive to changing priorities
 - Reducing waste by eliminating activities that don't add value
 - Easy to setup and organize

Difference b/w Scrum and Kanban

SCRUM	KANBAN
Scrum is more prescriptive with its constraints such as sprints, burndown charts or cross functional team needs.	There is no prescribed iteration. It is continuous. Cross functional team is optional.
Scrum has prescribed roles.	No defined roles.
The change has to wait for the next sprint.	Change can be done any time, however WIP limit is a constraint.
Scrum retrospective meetings.	No retrospective meetings.
Board is optional.	A visible board is prescribed for cards.
Product backlog is owned by only its team. It is not shared with other teams.	Kanban board is visible by any team.

Extreme Programming

- **Pair Programming**
- Working in teams so that knowledge is distributed
- Subscribes to ‘2 heads are better than 1’
- Reduces bottleneck if 1 team member is unavailable



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 - ✓ Scrum
 - ✓ Kanban
 - ✓ Extreme Programming



Who's Agile?



Other cool stuff on Agile
Team Retro

Who uses Agile?

Autodesk

ORACLE

BBC



CivicActions
Empowered

IBM

CapitalOne

Adobe

The Economist

CSC

EA

xerox



Fidelity
INVESTMENTS

Google

Salesforce



VALVE

TOYOTA

MOTOROLA

37signals

Who uses Agile?



Autodesk



YAHOO!

ERICSSON

Google

Microsoft



SIEMENS

NOKIA

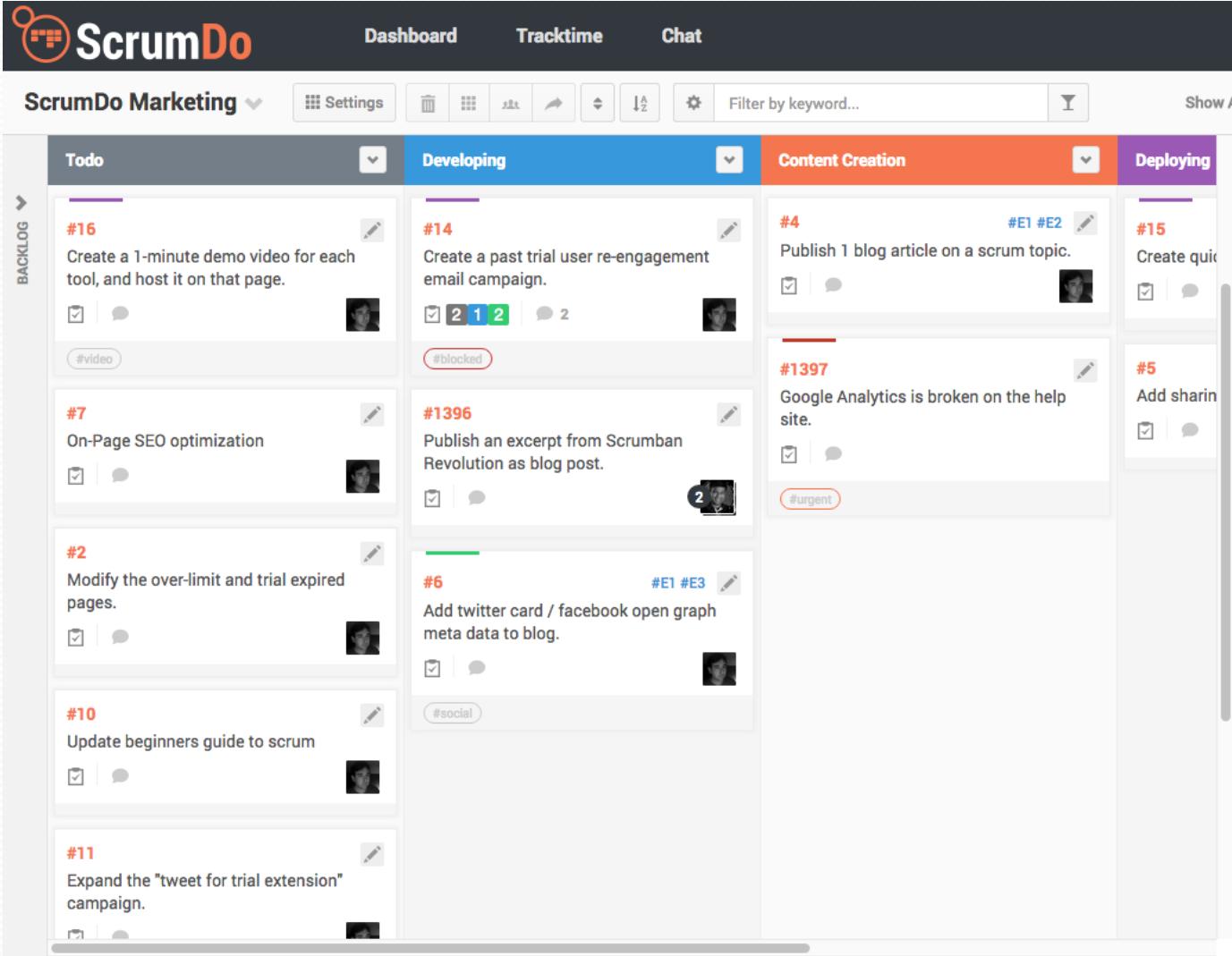
myspace®
a place for friends



ING DIRECT™

McKinsey&Company

Example: Marketing scrum board



The screenshot shows a ScrumDo marketing scrum board with four columns: Todo, Developing, Content Creation, and Deploying. The Todo column contains backlog items like 'Create a 1-minute demo video' and 'On-Page SEO optimization'. The Developing column has items like 'Create a past trial user re-engagement email campaign' and 'Publish an excerpt from Scrumban Revolution as blog post'. The Content Creation column includes 'Publish 1 blog article on a scrum topic' and 'Google Analytics is broken on the help site'. The Deploying column lists 'Create quick' and 'Add sharin'. Each card includes a summary, priority, due date, and a list of users involved.

Todo	Developing	Content Creation	Deploying
#16 Create a 1-minute demo video for each tool, and host it on that page. #video	#14 Create a past trial user re-engagement email campaign. #blocked	#4 Publish 1 blog article on a scrum topic. #E1 #E2	#15 Create quick
#7 On-Page SEO optimization	#1396 Publish an excerpt from Scrumban Revolution as blog post.	#1397 Google Analytics is broken on the help site.	#5 Add sharin
#2 Modify the over-limit and trial expired pages.	#6 Add twitter card / facebook open graph meta data to blog. #social		
#10 Update beginners guide to scrum			
#11 Expand the "tweet for trial extension" campaign.			

Agile Tools

- What are the Agile tools most widely used?



- Mapping Agile to Microsoft Project
 - Epic = Milestones/Summary tasks
 - Stories = Deliverables
 - Sub-tasks = Sub-tasks

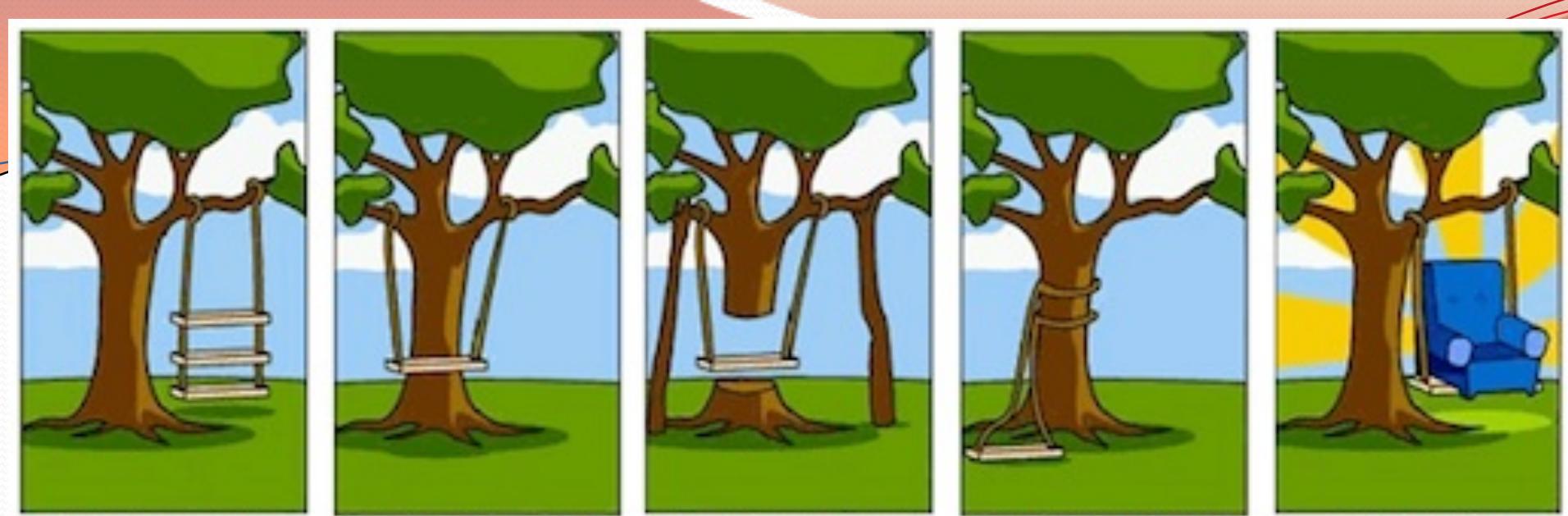
Agile Tools - JIRA

JIRA Dashboards Projects Issues Agile Service Desk Capture Portfolio Create Search ? ⚙️ 🚀

Scrum: Teams in Space

QUICK FILTERS: Tech Debt Product UI Server Only My Issues Recently Updated

VERSIONS	EPICS	Sprint 6 4 of 24 issues visible Clear all filters 24/Nov/14 11:05 PM • 08/Dec/14 11:05 PM SeeSpaceEZ Plus, Space Travel Partners, Summer Saturn Sale, Afterburner Plus, Large Team Support, Local Mars Office, Hyper-speed shuttles, New launch platforms, Delicious Space Nutricion, Spacetainment, Microgravity Delight	Backlog 7 of 44 issues visible Clear all filters Create Sprint TIS-67 Developer Toolbox does not display by Large Team Support TIS-68 Homepage footer uses an inline style - Large Team Support TIS-56 Add pointer to main css file to ins 2.0 Large Team Support TIS-8 Requesting available flights is now ta 2.0 SeeSpaceEZ Plus TIS-9 After 100,000 requests the SeeSpace 2.0 SeeSpaceEZ Plus TIS-7 500 Error when requesting a reservation 2.0 SeeSpaceEZ Plus TIS-10 Bad JSON data coming back from h 2.0 SeeSpaceEZ Plus TIS-55 Links should not be in italics SeeSpaceEZ Plus TIS-57 Buttons need to be red SeeSpaceEZ Plus TIS-59 Look into API errors SeeSpaceEZ Plus TIS-61 Small CSS error 2.0 SeeSpaceEZ Plus	Details Status: CODE REVIEW Component/s: None Labels: None Affects Version/s: None Fix Version/s: None Epic: Large Team Support People Reporter: Jennifer Evans Assignee: Jennifer Evans Dates Created: 16/Oct/14 9:43 AM Updated: 20/Dec/14 1:46 PM Issue Links
All issues				
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Delicious Space Nutricion				
Spacetainment				
Microgravity Delight				



How the customer explained it

How the project leader understood it

How the engineer designed it

How the programmer wrote it

How the sales executive described it



How the project was documented

What operations installed

How the customer was billed

How the helpdesk supported it

What the customer really needed

Pros/Cons of Agile

■ Advantages

- Completely developed and tested features in short iterations
- Simplicity of the process
- Clearly defined rules
- Increasing productivity
- Self-organizing
- Each team member carries a lot of responsibility
- Improved communication
- Combination with Extreme Programming

■ Drawbacks

- Lack of necessary documentation
- Requires close collaboration
- Greater demands on developers and clients
- Less predictability

Common mistakes of new Agile teams

- Poor team structure
- Lack of team empowerment
- Poor planning
- Inefficient testing
- Ignoring customer feedback
- Don't address user resistance

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 - ✓ Scrum
 - ✓ Kanban
 - ✓ Extreme Programming
 - ✓ Who's Agile?
 - ✓ Other cool stuff on Agile
-  Team Retro

Team Retro

- Answer 3 questions: (use stickies provided)

What went well?	What didn't go well?	Suggestions to improve?

Contact Information

Contact me for everything Agile...

Training & Consultation

LinkedIn: Sejal D'Souza, PMP, CSM

Email: sejaldsouza@gmail.com



References

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