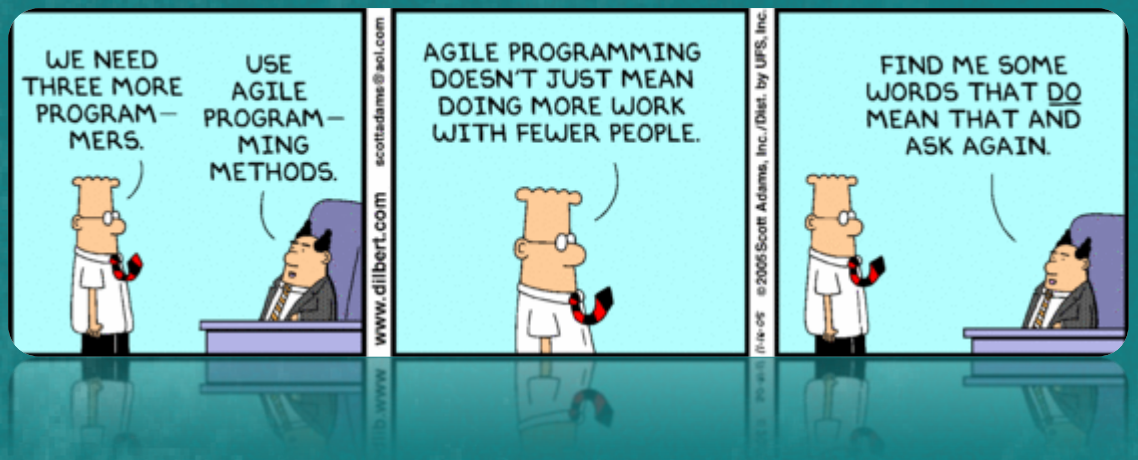
WE NEED THREE MORE PROGRAM-MERS.
USE AGILE PROGRAM-MING METHODS.
www.dilbert.com scottadams@aol.com
AGILE PROGRAMMING DOESN'T JUST MEAN DOING MORE WORK WITH FEWER PEOPLE.
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FIND ME SOME WORDS THAT DO MEAN THAT AND ASK AGAIN.


WE'RE GOING TO TRY SOMETHING CALLED AGILE PROGRAMMING.
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THAT MEANS NO MORE PLANNING AND NO MORE DOCUMENTATION. JUST START WRITING CODE AND COMPLAINING.
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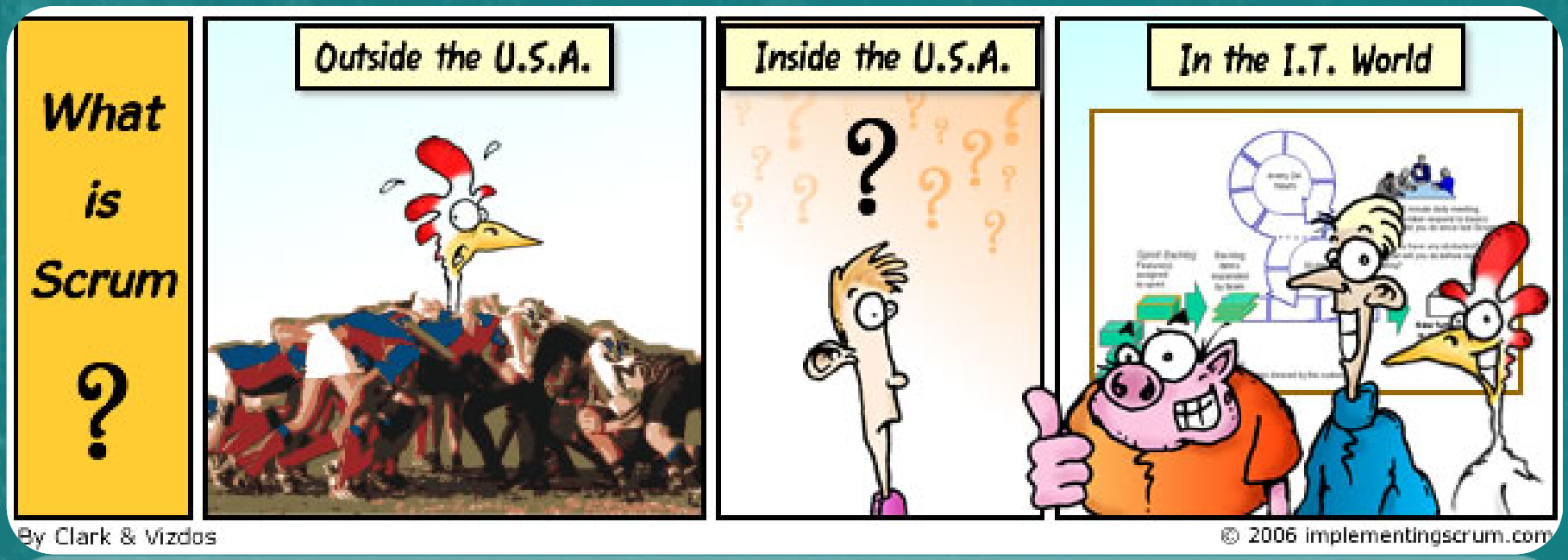
I'M GLAD IT HAS A NAME.
THAT WAS YOUR TRAINING.

Introduction to Agile Scrum

Production and Project Management

"The pessimist complains about the wind; the optimist expects it to change; the realist adjusts the sails."

William Arthur Ward


What is Scrum ?
Outside the U.S.A.
Inside the U.S.A.
?
In the I.T. World
By Clark & Vizdos
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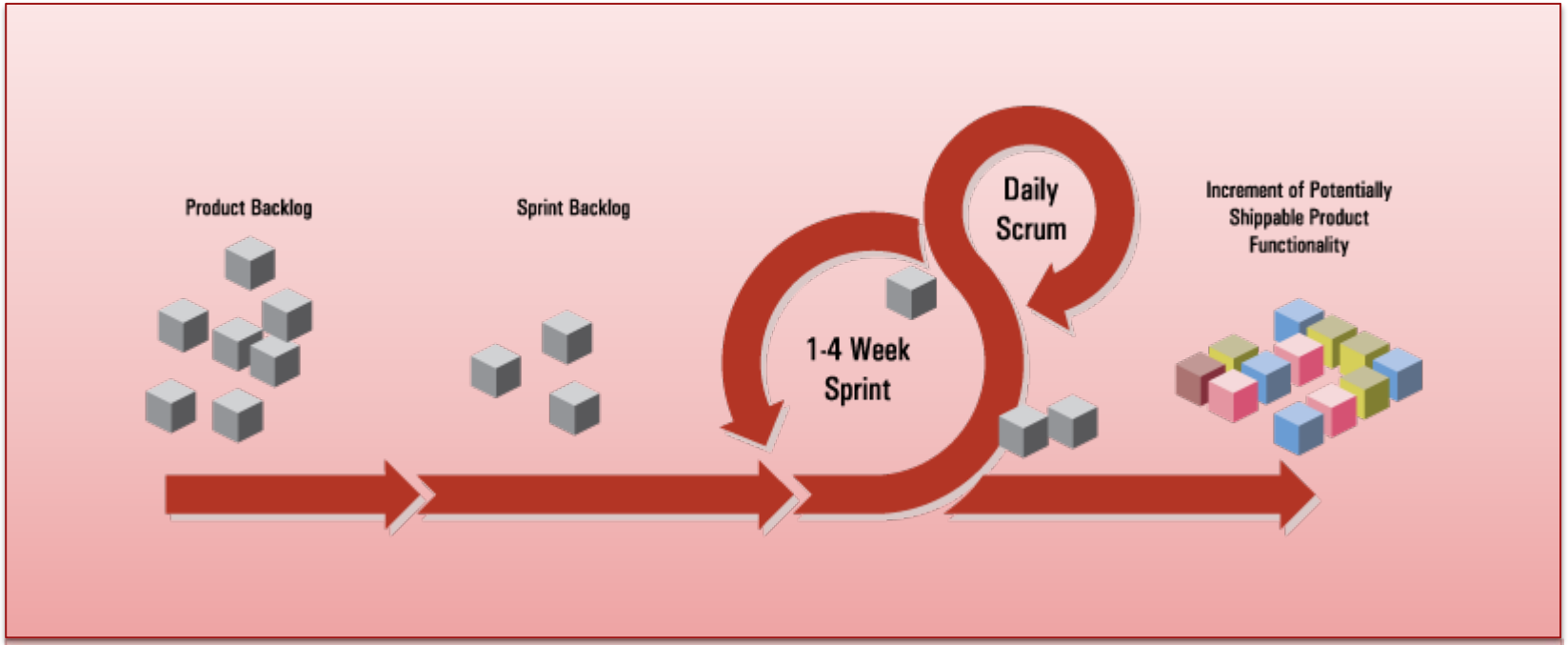
What is a Scrum?

- Is an agile process for software development.
- Is an iterative, incremental process



What is Scrum?

- It is a framework for the team to work on project where instead of detailed descriptions of how everything is to be done, much is left up to the software development team.
- The project progresses via a series of *iterations* called *agile sprints*.
  - Each sprint is typically one to four weeks.
  - At the end of each sprint, a product *increment* is delivered.

Why Scrum?

- Because the team know best how to solve the problem
  - desired outcome, a set of features to be developed
- Self-organizing, cross-functional team
  - no overall team leader who decides which person will do which task or how a problem will be solved.
- Once the Sprint begins, the *scope is frozen* and no change request is allowed until that Sprint is complete.
  - Scrum master protect the team from interferences

Scrum Framework

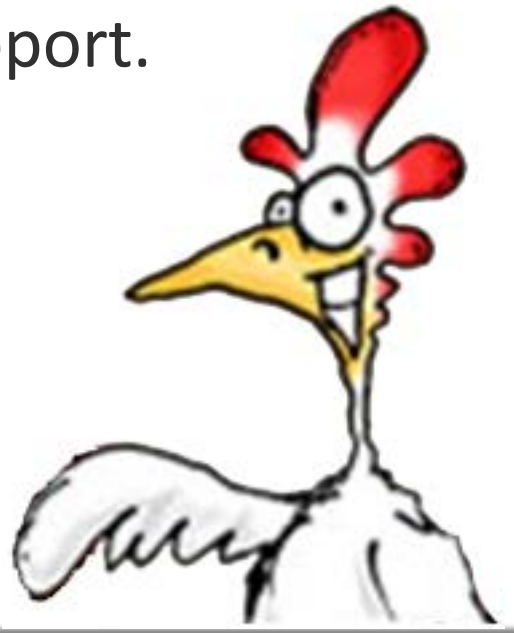
Roles, Artifacts & Ceremonies

What are Scrum Roles?

- The three clearly defined roles
  - The Product Owner
    - represents the stakeholders and the business
  - The Scrum Master
    - a facilitator and project manager, acts as an advocate for the Scrum process
  - The Team, and
    - a cross-functional group of around 7 people, includes artists, designers, programmers etc
- All management *responsibilities are shared*.

Who are the Stakeholders?

- Others who have interests in the product.
- Interested the success of the project, but are not actively contributing
- Includes top management, suppliers, customers, subject matter experts, or product support.



Why Chicken & Pigs?

Why Chicken & Pigs?

- The pigs are the ones *committed* to the project, with `their bacon on the line,' while the chickens are *involved* because they are interested in its benefits.
- The pigs run the scrum. They are the builders and doers.
- The chickens provide impetus through their desires and needs but it is not in their interest to get in the way of the process.
  - Provide their ‘eggs-pertise’ when needed.

What are Scrum Artefacts?

- The Product Backlog
  - The set of all un-implemented Stories that have not been assigned to the current Sprint.
- Sprint Backlog
  - A set of Stories planned for implementation in a Sprint (1—4 weeks).
- Product increment
  - most important Scrum artifact
  - must be of high enough quality to be given to users
  - acceptable to the Product Owner

What are Scrum Ceremonies?

- Sprint Planning Meeting
- Daily Scrum Meeting
- Sprint Review
  - Demonstration Meeting
- Sprint Retrospection Meeting

Scrum Framework

Scrum Roles

Product Owner Producer?

- Prepare the list of features *or requirements*
  - the Product Backlog
- Decides on release date and content
  - Keep the product on track.
- Responsible for profitability of the project (ROI)
- Prioritisation of the backlog, customer interests and user requirements questions
- Availability of the Product Backlog
- Accepts or rejects work results
- Cancel an sprint!

Scrum Master Project Manager?

- A member and not the leader of the team
- Responsible for the Scrum process
  - As *facilitator*
  - Ensuring that everyone follows Scrum rules and practices
  - Team is fully functional and productive
- Remove impediments
- Shields the team from external interferences
  - making sure they do not over-commit themselves to what they can achieve during a sprint.

The Team

- Responsible for developing functionality.
- How to turn Product Backlog into an increment of functionality within an iteration.
- Teams are self-managing, self-organizing, and cross-functional
- Collectively responsible for the success of each iteration and of the project as a whole.

Team Composition

- Compose of ideally 7 plus or minus 2 people (5-9)
- Cross-Functional, self-contained and able to complete all tasks committed
- Everyone in the Scrum team is equally responsible for determining the most suitable way to proceed.
- External sources should be facilitated either by the Scrum Master or by the Product Owner

Challenges of the Product Owner

- Make difficult choices during the sprint planning meeting.
  - Support from management or stalkholders?
- Must have good knowledge of the product both from business and user perspective.
- Balance the interests of competing stakeholders.
- Must not "manage" the team
  - The team and Scrum Master must support the product owner
- Must not add more work after a Sprint is in progress.
- Must be available to the team at any time

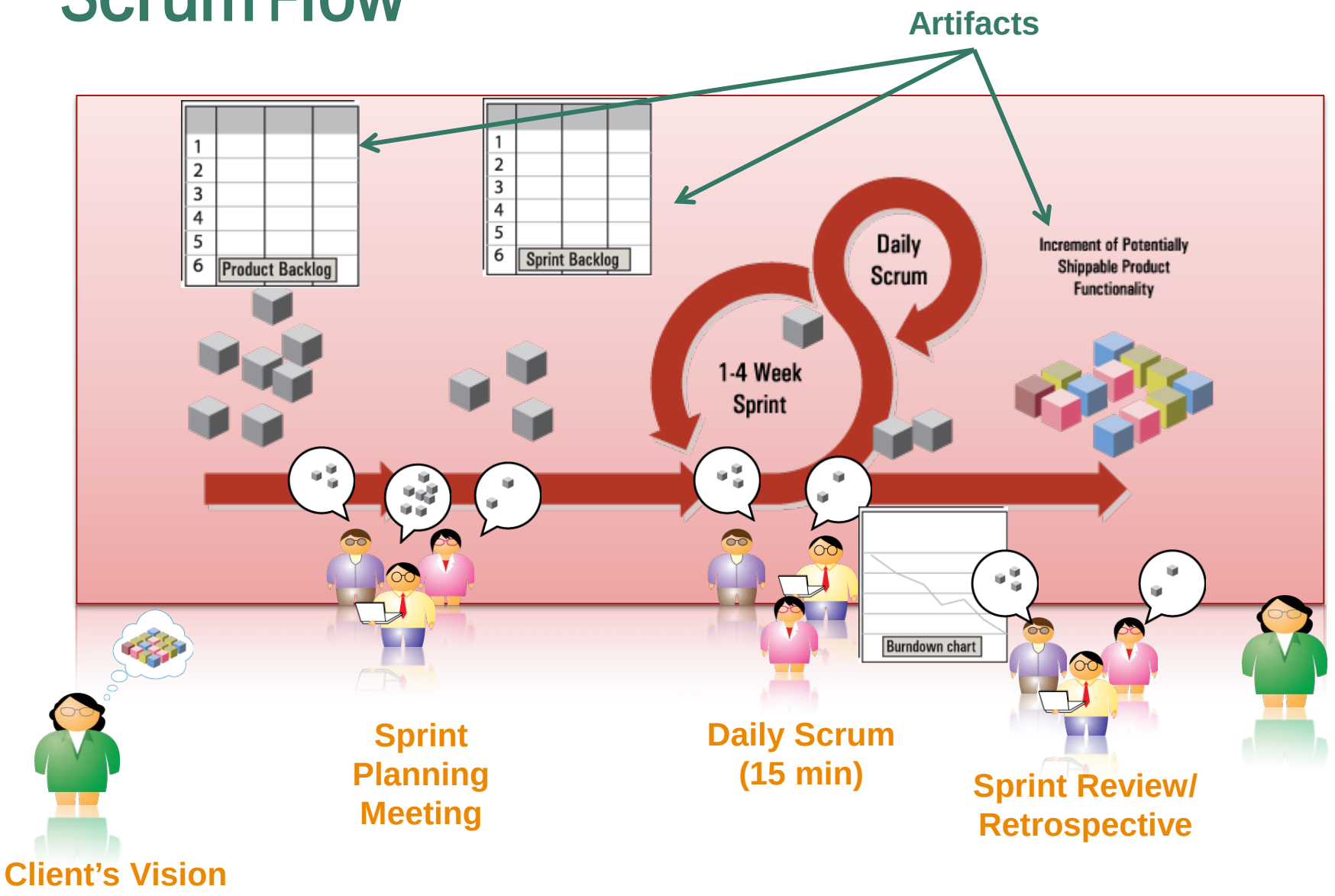
Challenges of the Scrum Master

- Ensures that the team's progress, status and success is highly visible to all stakeholders, including the team itself
  - Manage Sprint Burndown Chart and maintain the Sprint Backlog
  - Facilitates Sprint Planning, Daily Scrum and Retrospective Meetings
- Supports the Product Owner vs Remove impediments

Scrum Framework

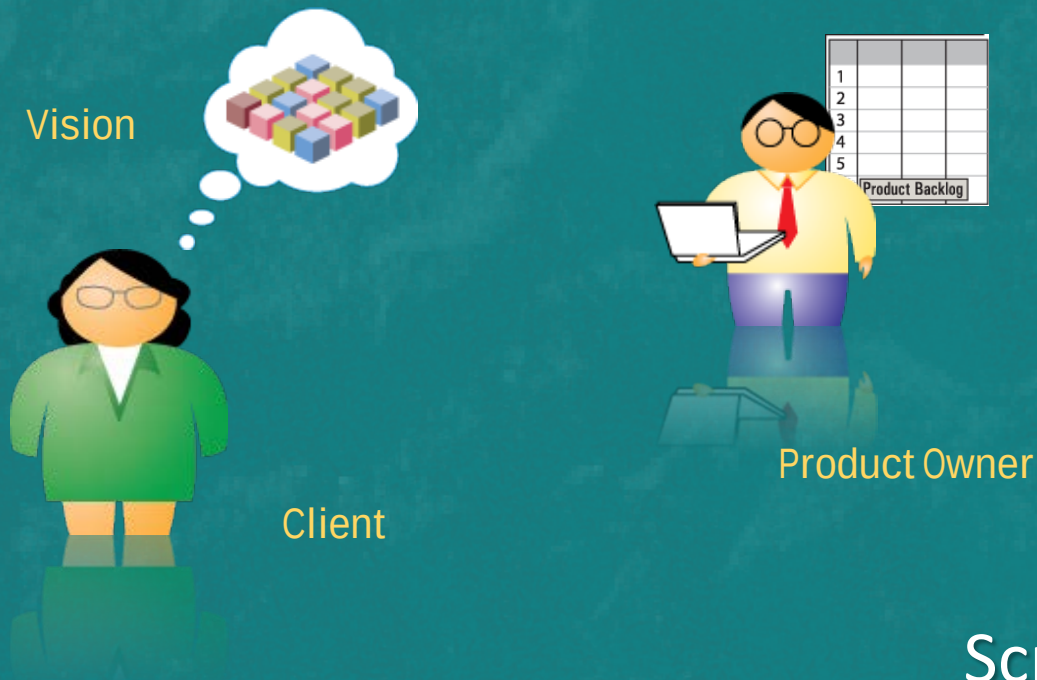
Scrum Flow

Scrum Flow



Scrum Overview

- At the start of each sprint (or iteration)
  - the team collectively selects tasks from Product Backlog.
- During each iteration
  - Daily Scrum are conducted
- At the end of each iteration
  - conduct Sprint Review about the "increment" of a product, and Sprint Retrospective about the process.
  - Prepare for next Sprint!
- Each iteration takes 1-4 weeks.



Scrum Flow

Defining the Product: Product Vision → Product Backlog

Product Vision → Product Backlog

- The product vision is often too vague
- We need to identify the work that is required to validate the vision.
- Items are then placed in a "lightweight" product backlog.

Product Backlog

- List the requirements for the product
  - The project plan is merely an initial estimate of the requirements.
- Product Owner is responsible for Product Backlog content, its availability and prioritization, and Product Backlog is dynamic.
  - It changes according to the environment and as the product evolves.
  - As the Product Owner identify what the product needs to be appropriate, competitive, and useful.

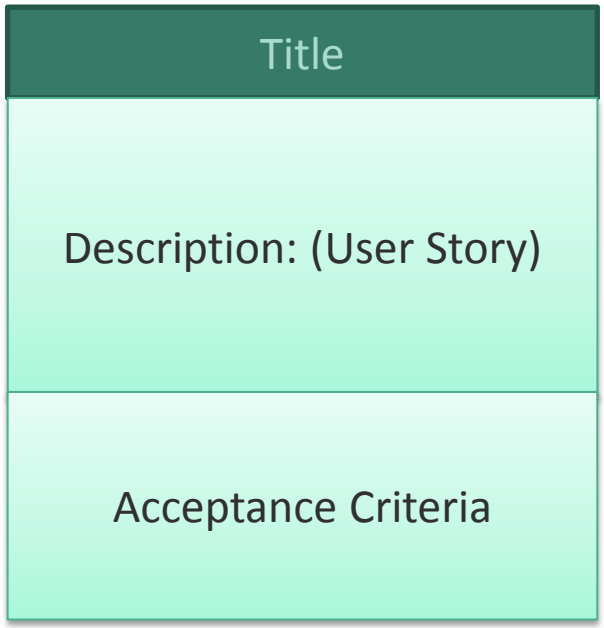
User Stories

- Work is expressed in the backlog as user stories
  - High-level definition of a requirement
- Each user story represents a unit of work
  - Preferable is small enough to be completed by the team in a single sprint.
  - may include several tasks

- The Product Owner is responsible for writing customer-centric stories. (i.e. Product Backlog)

User Story Template

- Typical template has 3 parts: the title, the description (or body of the user story), and the acceptance criteria.



As a [type of user], I want [some goal] so that [some reason].

A brief description of “done”.
“How will I know when I’m done with the story?”

Product Backlog: User Stories

User Story ID: 1

As a customer, I want to be able to register in to the website and store my preferences, previous buying history etc so that I do not have to remember anything

User Story ID: 3

As a proprietor, I should be able to know the current sales and other details so that I can know the sales trend

User Story ID: 2

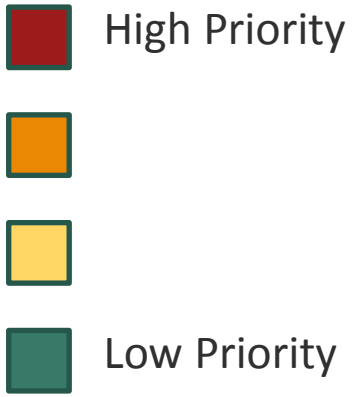
As a Developer, I should be able to test the code developed in an efficient way via a continuous integration server so that the customer gets quality product at the end

User Story ID: 4

As a customer, I should be able to browse through the Flower Collection in a easy way so that the buying experience is pleasant

User Story ID: 5

As a proprietor, I should be able to see my loyal customers and should be able to offer them better discount over others so that they come back even more



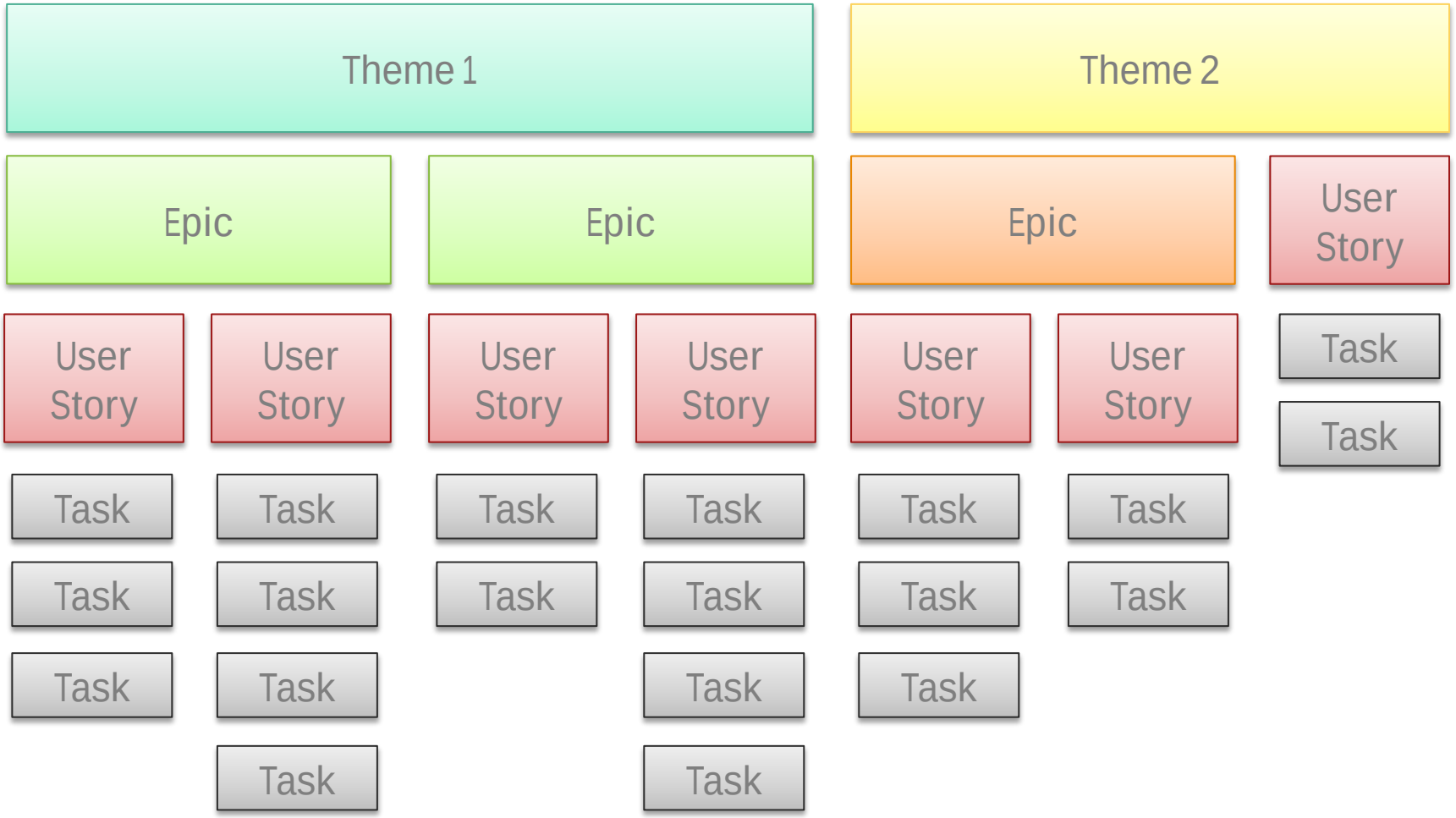
Epics

- Some Stories are large and cannot be completed within a sprint.
- These large stories are considered epics
  - Represent a significant amount of work.
  - May be broken into smaller user stories.

Themes

- Describe an area of focus
  - a collection of User Stories that have some unifying trait or concept.
- Each theme would probably contain several epics or many user stories.

Themes, Epics and User Stories



Managing User Stories

- User stories are broken down into smaller user stories as they approach the top of the prioritised product backlog.

- Too many small Stories can be difficult to manage.

Scrum Flow

Sprint Planning Meeting: Refining the Product Backlog

Planning Meeting

- The Team sit down to discuss the effort to complete the projects (moderate usually the product owner)
  - Select a small story and give it an effort of 1 story point
  - Compare the “relative” effort for all the story in your product backlog
  - Discuss and agree on an estimate
    - re-estimates if differ significantly

User Stories & Story Points

- Story points are used to estimate the effort to implement the work
- One story point could be a day, or an hour, or something in between…..*confused?*

Planning Poker

- Each card has one of the valid estimates on it
  - for example: 0, 1, 2, 3, 5, 8, 13, 20, 40 and 100
- If story is bigger than agreed limit (8, 13 or more) then it should be split into more smaller stories.
  - It is too complex to be developed.
  - developers can be more precise in theirs estimation for smaller story

Lab Exercise

User Story & Estimation

Refining the Product Backlog

- Refining the Product Backlog is an on-going activity. These includes but is not limited to:
  - keeping the Product Backlog ordered;
  - removing or demoting items that no longer seem important;
  - adding or promoting items that arise or become more important;
  - splitting items into smaller items; merging items into larger items;
  - estimating items.

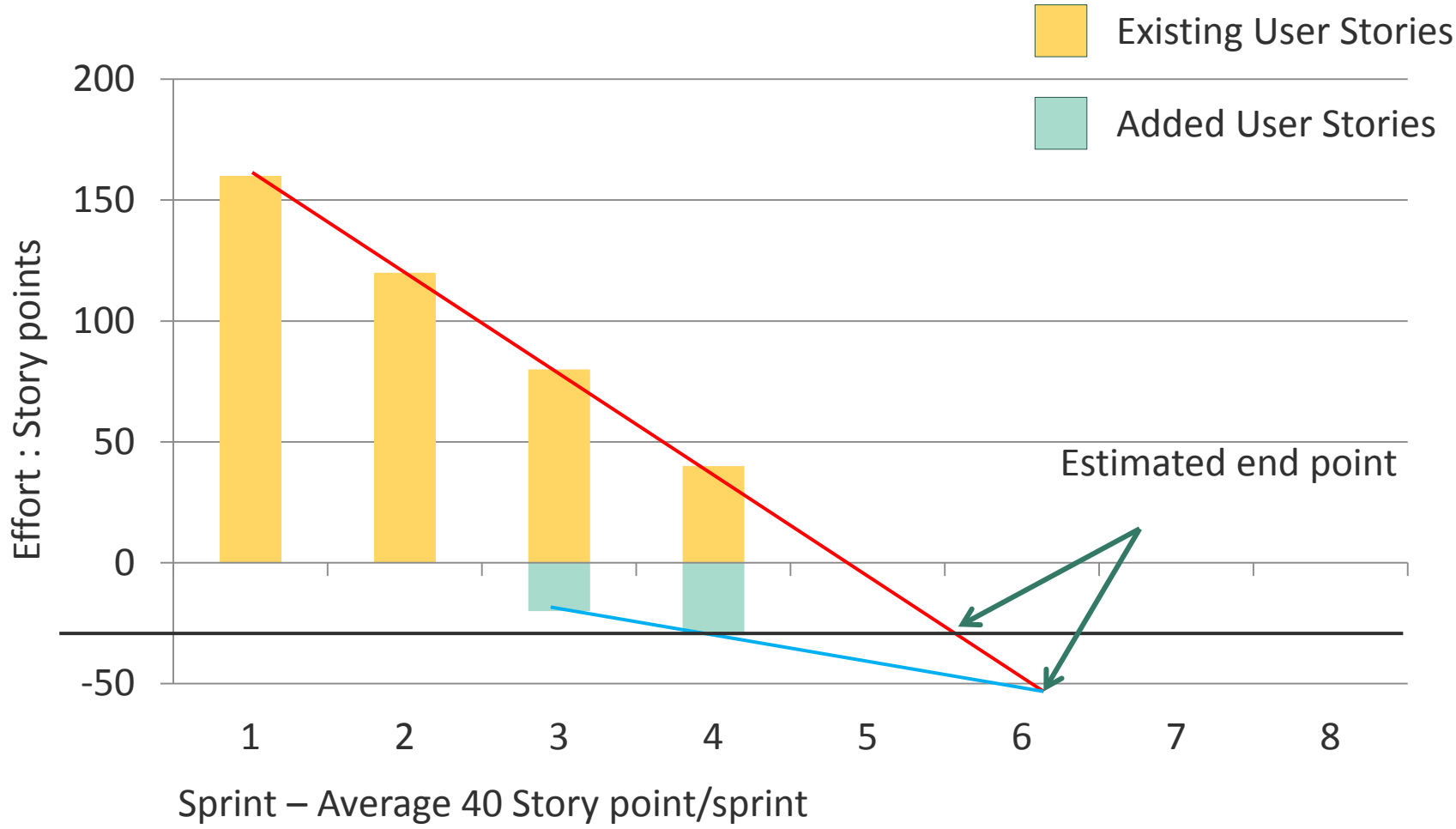
Refining the Product Backlog

- *Prior to the Sprint Planning Meeting*
- In preparing for the upcoming Sprints, attention to items that are coming up for implementation.
  - Each item entering the Sprint should ideally represent an increment
  - The Team needs to be able to build each item within a single Sprint.
  - Everyone needs to be clear on what is intended.
- All the team members, not just the Product Owner should be involved.

Product Burndown Chart

- Show the "big picture" view of a project's progress
- The amount of effort can be measure by story points.
- This chart is updated at the beginning of each sprint, how much work (or effort) left to do is shown.
- The burndown chart show the amount of work remaining across sprints.
- The chart tracks the progress of the product.

Product Burndown Chart



Scrum Flow

Sprint Planning Meeting: Choosing a Sprint

Sprint Planning Meeting

- Each Sprint begins with *a time-boxed* Sprint Planning Meeting.
  - Time-boxed 2 hours per week of duration
  - Attended by entire team: Scrum Master, Product Owner and Scrum Team
- The Product Owner and Team talk about the *highest-priority* items on the Product Backlog.

Sprint Planning: Selecting the Task

- The team takes a look at the requirements, considers the available technology, and evaluates its own skills and capabilities.
- It then collectively determines how to build the functionality, modifying its approach daily as it encounters new complexities, difficulties, and surprises.
- The team figures out what needs to be done and selects the best way to do it.

Sprint Planning: What & How

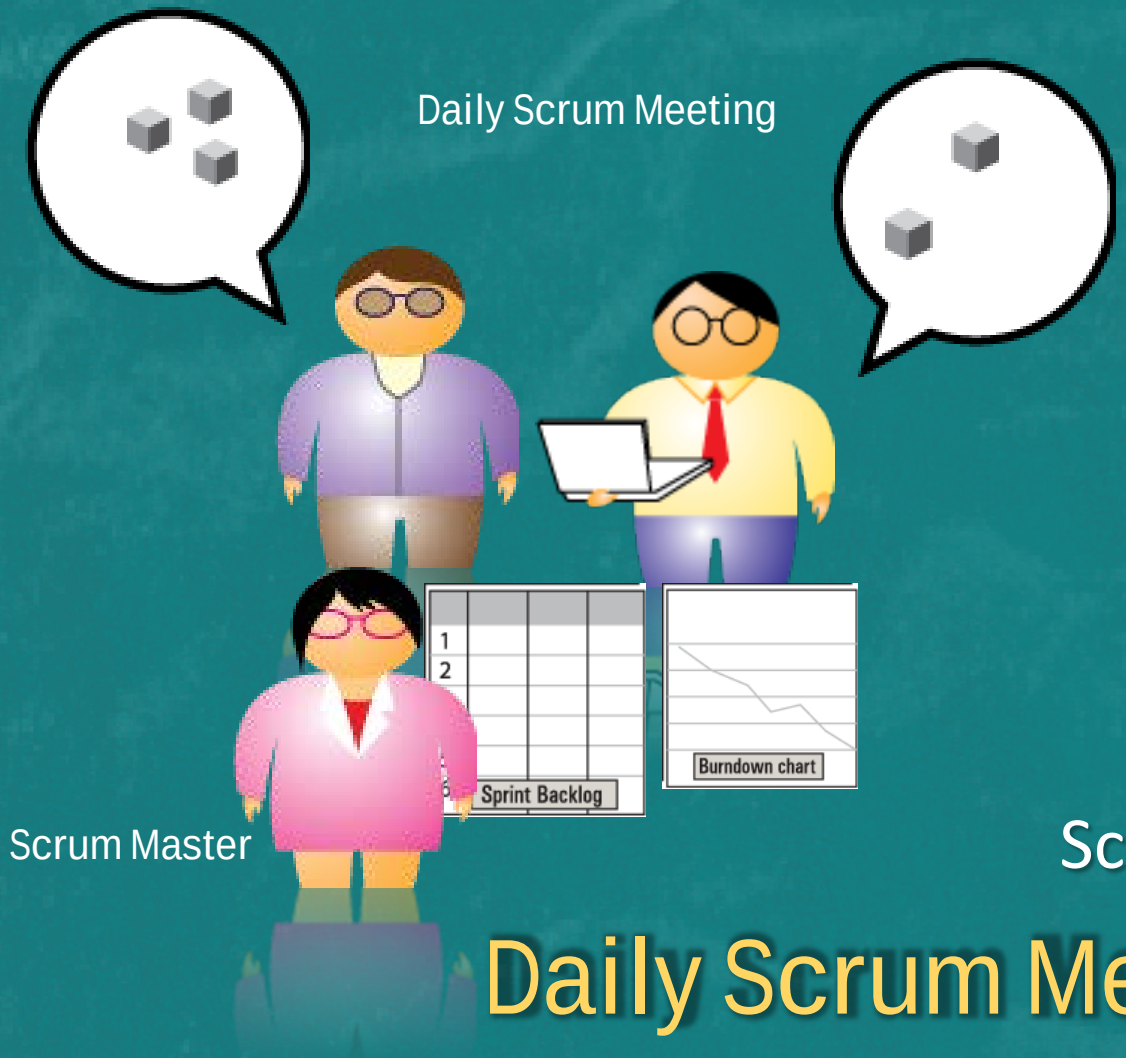
- The meeting consists of 2 portions
- Determine "what" work will be completed in the Sprint;
  - Product Owner describes and presents the ordered Product Backlog items and Sprint Goal to the Team, who collaborates about understanding the work of the Sprint.
- Determine "how" to meet the Sprint Goal
  - The scrum team plans in detail which tasks are necessary to fulfil the Sprint Goal and deliver the forecasted Product Backlog items according to capacity of team.

What are Sprint Goals?

- A sprint goal summarises the desired outcome of an iteration.
- Once the shared goal has been selected, the team implements it.
- Stakeholder's feedback is then used to understand if the goal has been met.

Sprint Planning: Closing

- Sprint Planning concludes with the Scrum Team coming to a common understanding of the quantity and complexity of what is to be accomplished during the Sprint, and within a rational range of circumstances, expect to complete it.
- The Team estimate the effort they will complete and commit to each other to accomplish it.
- Team lists the items they can commit to and then create a *Sprint Backlog*



Scrum Flow

Daily Scrum Meeting: The Sprint

Sprint Backlog

Discover more to be done

Story ID	Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Hours Remaining	**120**	**126**	**115**	**100**	**80**	**62**	**51**	**54**	**48**	**38**	**24**				
5	UI Design …	8	16	12	8	4	3	3	3	3	3	3				
	Code …	16	14	12	9	4	0	0	0	0	0	0				
	Code …	12	12	8	6	4	1	1	1	1	1	1				
	Code …	16	16	16	16	16	16	8	2	0	0	0				
	Testing …	12	12	12	12	12	8	8	8	8	4	4				
2	UI Design …	8	8	8	6	4	0	0	0	0	0	0				
	Code …	16	16	15	12	8	10	7	4	4	4	0				
	Code …	4	4	4	3	0	0	0	0	0	0	0				
	Code …	16	16	16	16	16	16	16	12	8	6	4				
	Testing …	12	12	12	12	12	8	8	8	12	12	8				
	Added Code…								16	12	8	4				

Tasks

More work added

Sprint Backlog

- Consists of *the tasks* that a Team performs to turn the selected Product Backlog item into an increment of potentially shippable product.
- It is developed during the Sprint Planning Meeting the Team plans to accomplish during the sprint.
  - Consist a highly visible, real-time picture of the work
  - Only the Team can change the Sprint Backlog during the sprint.
- Each tasks should takes roughly 4 to 16 hours to finish.
  - Longer tasks are considered placeholders that haven't yet been appropriately defined.

Sprint Backlog

- *Prior* to the Daily Scrum Meeting, the estimated number of hours remaining to complete a task is placed in the intersection of the task and the Sprint day by the person working on the task.

Daily Scrum Meeting

- During the Sprint execution, it is the Team's responsibility to meets every day to ensure that they are on track for attaining the Sprint Goal.
  - Time-boxed to not more than 15 Minutes
  - Facilitated by Scrum Master and attended by Scrum Team & Product Owner(Optional)
- Daily Scrums serve to synchronise the work of team members as they discuss the work of the Sprint.
- Track progress daily in daily Burndown Chart

Daily Scrum Meeting

- The Daily Scrum (or Stand-up Meetings) improves communication, eliminates other meetings, identifies & removes impediments to development, highlights and promotes quick decision-making, and improves everyone's level of project knowledge.

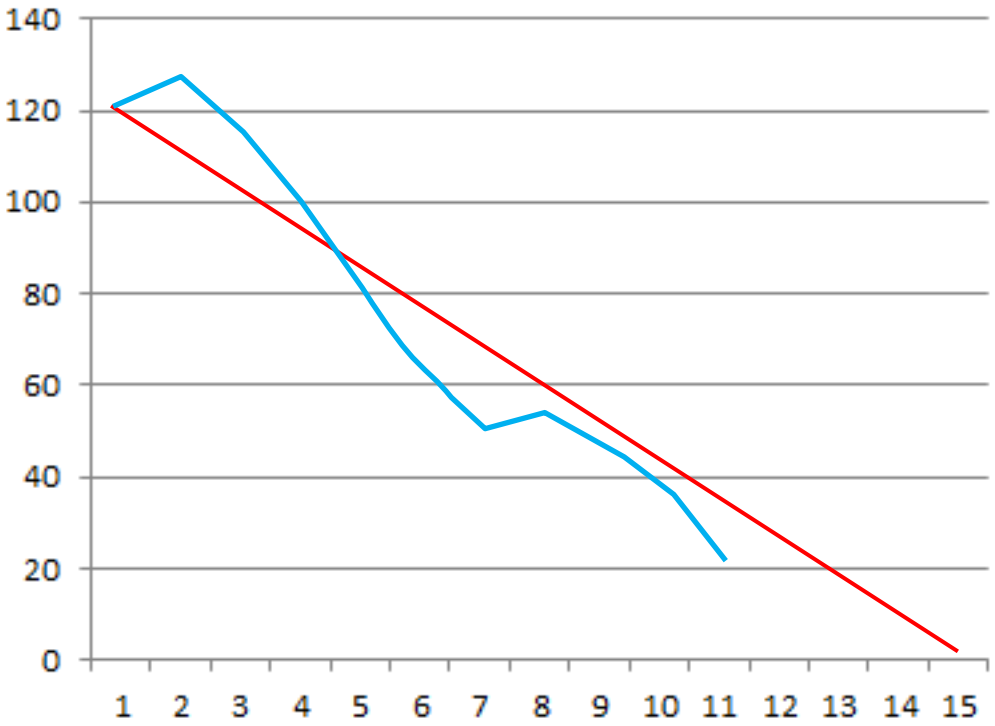
Daily Scrum: How?

- It is held at the same time at same place each day. Members share what they worked on the prior day, will work on today, and identify any impediments to progress.
- Each Team member explains: *(important!)*
  - What have you done (since the last meeting)?
  - What are you going to do (before the next meeting)?
  - What are the problems you had encountered?

Daily Scrum: Keeping it Simple

- Why stand-up? 15 minutes?
- Discussions are kept brisk but relevant
- By focusing on what each person accomplished yesterday and will accomplish today, the team gains an excellent understanding of what work has been done and what work remains.
- Any impediments raised are resolve by Scrum Master as quickly as possible.
- *Don't go into detail! Leave it AFTER the Daily Scrum!*

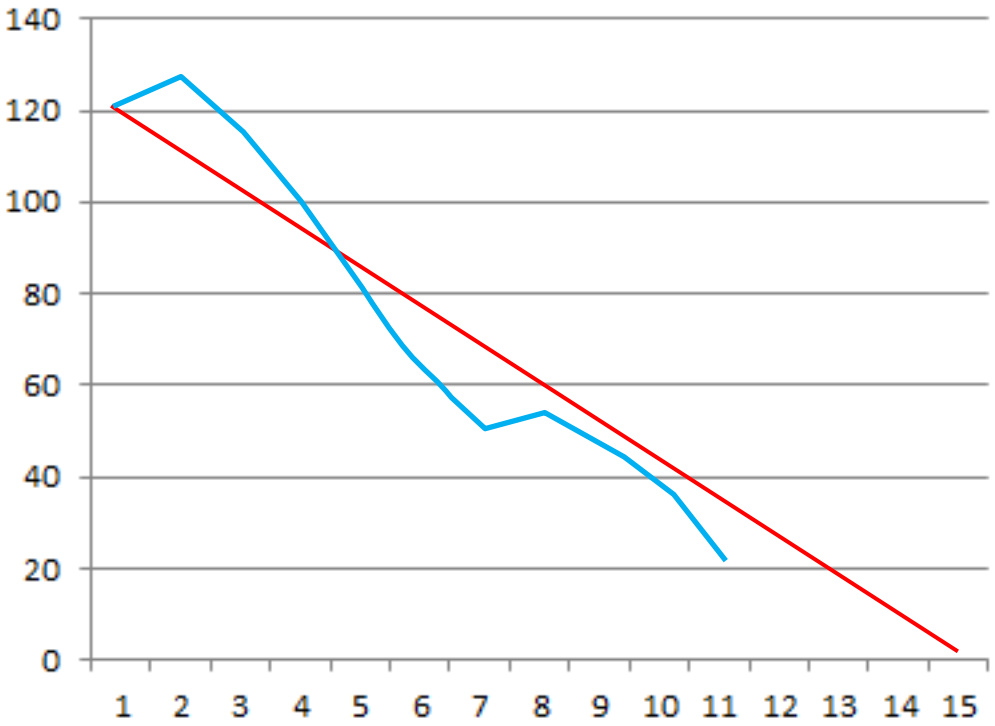
Sprint Burndown Chart



The red line indicate the rate of progress that we planned for

The blue line indicate the actual rate of progress

Sprint Burndown Chart



If the blue line goes below the red line, the rate of progress is less than that what we planned for.

If the blue line rises above the red line, the progress is greater.

Sprint Burndown Chart

- Similar to the *product burndown chart*, the sprint burndown chart shows the amount of work remaining across time, and the progress of the project team during the sprint.
- It is important that the Sprint completion date does not change!

Sprint Ends Earlier

- What to do if the sprint ends earlier?
  - more work is added from the Product Backlog prioritised in order of importance by our product owners.
  - Find something that fit in the remaining time to complete within Sprint
  - Refine code, housekeeping.
  - Slack Time
    - Holiday?

Sprint Falls Behind

- What to do if the Sprint falls behind?
  - some of the lowest priority tasks are removed to meet the date.
  - Scope creep? Poor estimation? Team?
  - For scope, scheduling, or resource issues? Seek Product Owner for decision-making
  - Impediments hampering progress? Remove them…

Scrum Flow

Sprint Review & Retrospective: Increment

Sprint Review

- At the *end of each Sprint*, the Scrum Team and stakeholders review the output of the Sprint.
  - Time-boxed 1 hour per week duration
  - Facilitated by the Product Owner and attended by Scrum Master and Scrum Team, Stakeholder /Sponsors, Customers.
- The goal of this meeting is to get feedback from the Product Owner or other stakeholders.
  - This feedback may result in changes to the freshly delivered functionality. But it may just as likely result in *revising or adding items to the Product Backlog*.

Sprint Review: Process

- The Team demonstrates the Increment with focus on the Sprint Goal
- The Product Owner reviews and accepts the delivered Increment.
  - identifies what has been done and what hasn't been done

Sprint Review: Process

- After the demonstration the Product Owner and stakeholders tell their impressions and clarify their requirements (user stories) if a requirement was not implement right.
- New requirements in the Product Backlog, and a new prioritisation of existing Product Backlog items may happens

What is an Increment?

- Team is required to build an increment of product functionality every Sprint.
- Must be thoroughly tested, well-structured, and well-written code that has been built into an executable and that the user operation of the functionality is documented, either in Help files or in user documentation.
- This is the definition of a “Done" increment.

Definition of “Done”

- Definition of “Done” to the team
  - high enough quality to be shippable
  - Product Owner could choose to release it immediately
- Fully tested and all completed Product Backlog items continue to work together

Sprint Retrospection Meeting

- After the Sprint Review and before the next Sprint Planning, the Scrum Team meets for the Sprint Retrospective.
  - Time-boxed to an hour a week duration
  - Facilitated by the Scrum Master and attended by the Product Owner and Scrum Team

Sprint Retrospection Meeting

- The team identifies what went well and not so well, and identifies potential improvements. Plans for improving things in the future.
  - how the last Sprint went in regards to people, relationships, process and tools
- The Scrum Master encourages the Scrum Team to identify ways to improve the process

Sprint Retrospection Meeting

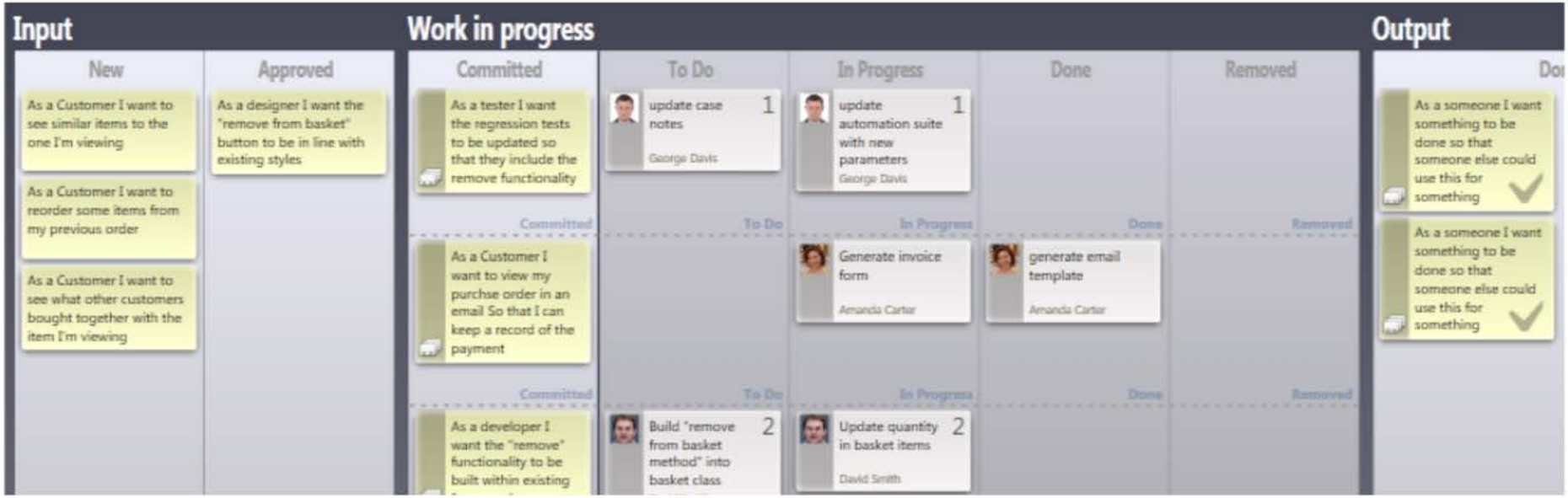
- The Team should identify and prioritise the major items that went well, and those items that, if done differently, could make things even better.
- By the end of the Sprint Retrospective, the Team should have identified actionable improvement measures that they will implement and prepare for the next Sprint.

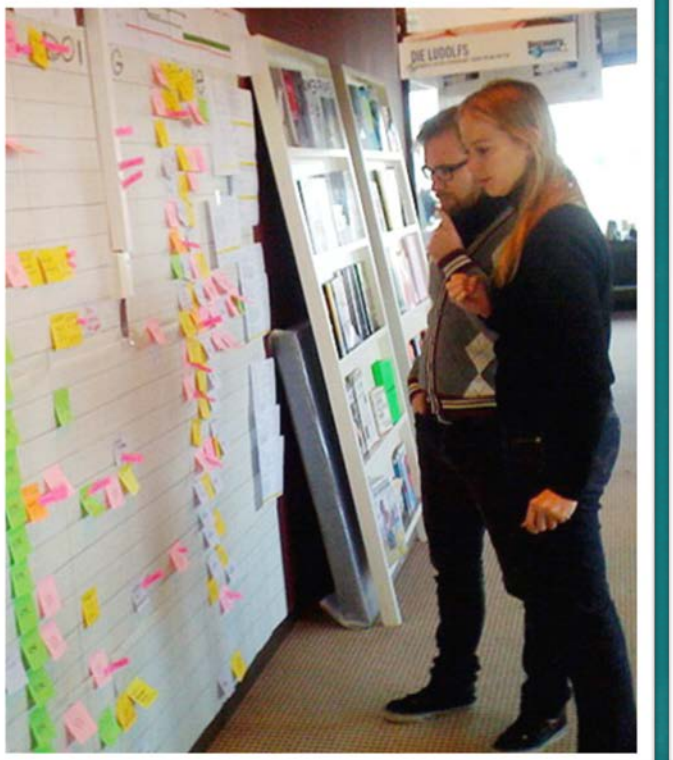
Scrum Flow

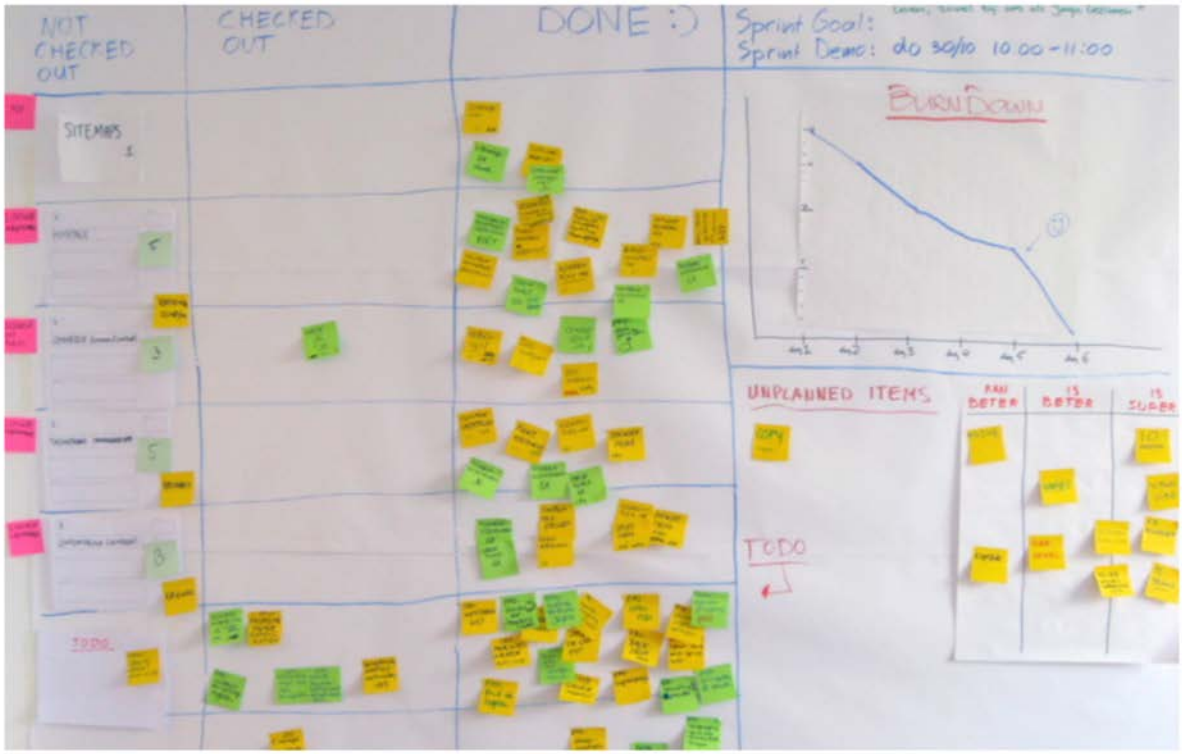
Scrum Task Board

Scrum Task Board

Story	To Do	In Process	To Verify	Done
User Story ID: 2 As a .. , I should be able to … so that … 8 points	**Code …** 8 hrs **Code …** 16 hrs **Code …** 4 hrs	**Code …** 6 hrs	**Code …** **Code …**	**Code …**
User Story ID: 5 As a .. , I should be able to … so that … 8 points	**Code …** 8 hrs **Code …** 8 hrs	**Code …** 4 hrs	**Code …**	**Code …** **Code …**


Input
New
Approved
As a Customer I want to see similar items to the one I'm viewing
As a Customer I want to reorder some items from my previous order
As a Customer I want to see what other customers bought together with the item I'm viewing
As a designer I want the "remove from basket" button to be in line with existing styles
Work in progress
Committed
To Do
In Progress
Done
Removed
As a tester I want the regression tests to be updated so that they include the remove functionality
update case notes
George Davis
update automation suite with new parameters
George Davis
As a Customer I want to view my purchse order in an email So that I can keep a record of the payment
Generate invoice form
Amanda Carter
generate email template
Amanda Carter
As a developer I want the "remove" functionality to be built within existing
Build "remove from basket method" into basket class
Update quantity in basket items
David Smith
Output
As a someone I want something to be done so that someone else could use this for something
As a someone I want something to be done so that someone else could use this for something




NOT CHECKED OUT
CHECKED OUT
DONE :)
Sprint Goal:
Sprint Demo: do 30/10 10.00-11:00
BURNDOWN
UNPLANNED ITEMS
TODO

Read

- SCRUM: The Story of an Agile Team
  - http://net.tutsplus.com/articles/editorials/scrum-the-story-of-an-agile-team/
- 24 Common Scrum Pitfalls Summarized
  - http://www.agileadvice.com/2011/12/05/referenceinformation/24-common-scrum-pitfalls-summarized/