

Software Engineering Project Management

Chapter 7: SCRUM - II

[Up](#) | [Site Map](#)

Learning objectives text.

Course Materials

Online Course Material

Please select a subtopic to view its contents.

[Scrum II \(Part 1\)](#)

[Scrum II \(Part 2\)](#)

Additional Materials

There are no additional materials available at this time.

[Up](#) | [Site Map](#)

Software Engineering Project Management

Chapter 7: SCRUM - II

[Up](#) | [Site Map](#)

Scrum - II (Part 1)

Is Agile different than Scrum?

- Scrum is one of many in the agile process. You can think of agile as an umbrella term that encompasses other processes, such as Extreme Programming, Adaptive System Development, DSDM, Feature Driven Development, Kanban, Crystal and more
- Organisations that have made the switch to the Scrum agile process report the following benefits, all of which are related and build on each other:
 - Higher productivity
 - Higher quality
 - Reduced time-to-market
 - Improved stakeholder satisfaction
 - Increased job satisfaction
 - More engaged employees

Isnt Scrum just a fad?

- NO!!
- Scrum has been around a lot longer than you may think. The first paper on Scrum appeared in the Harvard Business Review in January 1986.
- In fact, a 2009 survey by SearchSoftwareQuality found that 56 percent of organisations were using an agile process on at least some of their projects.
-

Backlog Grooming

- Most Product Backlog Items (PBIs) initially need refinement because they are too large and poorly understood.
- Teams have found it useful to take a little time out of Sprint Execution every Sprint to help prepare the Product Backlog for the next Sprint Planning Meeting.
- In the Backlog Refinement Meeting, the team estimates the amount of effort they would expend to complete items in the Product Backlog and provides other technical information to help the Product Owner prioritize them.
- Large vague items are split and clarified, considering both business and technical concerns. Sometimes a subset of the team, in conjunction with the Product Owner and other stakeholders, will compose and split Product Backlog Items before involving the entire team in estimation.
- A skilled Scrum Master can help the team identify thin vertical slices of work that still have business value, while promoting a rigorous definition of done that includes proper testing and refactoring.
- Remember the term Epic from previous week!
- Agility requires learning to split large epics into user stories representing very small product features.
- Since most customers don't use most features of most products, it's wise to split epics to deliver the most valuable stories first. While delivering lower-value features later is likely to involve some rework, rework is better than no work.
- The Backlog Refinement Meeting lacks an official name and has also been called "Backlog Grooming", "Backlog Maintenance", or "Story Time".

Backlog Refinement Meeting

[Backlog refinement meeting video](#)

Copyright of <http://scrumtrainingseries.com/> it has been cited for educational purposes

What does a product backlog look like?

ITEM	DESCRIPTION	Wks	RESPONSIBLE	PRIORITY	PROGRESS	Comments
1	Write Project1 test program using TS5400	4	All	3	0%	
11	Install two LEDS to use them as reference on Project2 vision system	2	Carlos	9	0%	To be investigated
12	Investigate root cause Projects failures and fix it		David		20%	Sergio to report failures
14	Write operator interface for coke machine	1	Gustavo	2	85%	Equipment passed validation
15	Modify test software for Bench D (Final Tester) to integrate NGV/LH automatic switches dispenser machine	1	Gustavo	3	85%	Waiting access to production line to install machine
16	Write Software for the Gauges Calibration and Tester for Project3.	2	Gustavo	5	60%	On hold until programmer is defined.
17	Design functional test fixture for Project1	2	Gustavo	7	80%	
18	Windows basic training for technicians	1	Gustavo	10	0%	
19	Detect yellow LED on station E ABCDE	0.6	Gustavo	11	0%	
43	Project5 CAN 2284 test implementation	1	Ruben	3	50%	
44	Modify Project5 packaging station to print correct label for service parts	1	Ruben	4	0%	Define serial number by model and check data base.
45	Project6 preparing course to technicians	0.6	Ruben	9	50%	2-Sep
52	Setup Project5 units to KM or MILES according to model	1	Victor	6	0%	Investigate with Isabel

What makes a product backlog good?

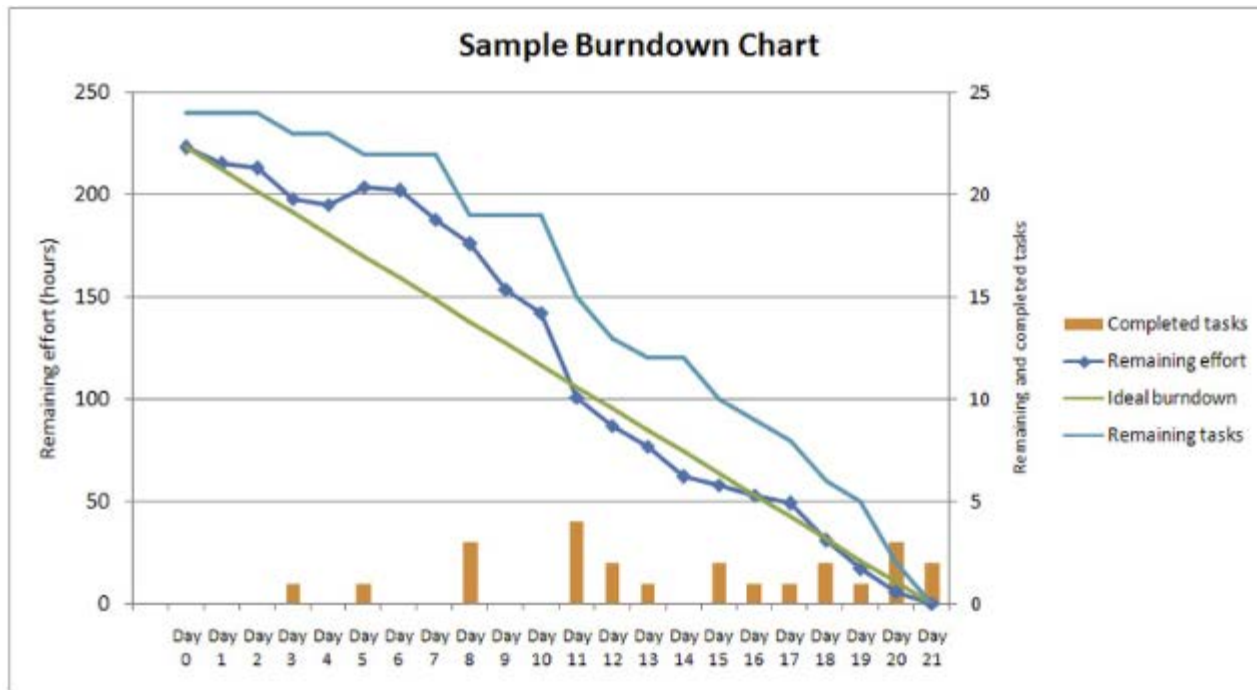
- The product backlog should be available for anyone to see.
- The backlog must be the single source of requests. It's important for the source of requests to be centralized because the entire list needs to be ordered.
- The product backlog is a living artifact and is never complete. It's very normal to identify new items, remove items that are no longer considered valuable and to morph existing items. The product backlog lives for as long as the product lives.

Common pitfalls

- It becomes tempting to use the backlog as a dumping ground of ideas to appease stakeholders.
- The Scrum guide suggests you spend no more than 10% of your team's time keeping the backlog in working order.
- Grooming your backlog ensures that it always exhibits the healthy characteristics that make the backlog a pleasure to work with. If you don't groom the backlog you'll run into difficulty planning and delivering backlog items.
- Having more than 1 backlog

Burndown chart

The sprint burndown chart is a publicly displayed chart showing remaining work in the sprint backlog. Updated every day, it gives a simple view of the sprint progress. It also provides quick visualisations for reference.



What happens if the team falls behind?

- If the team notices that it's falling behind, as shown by the burndown charts, it should bring this fact to the Scrum Master's attention rather than simply hoping it will catch up without any corrective action.
- If some amount of overtime isn't enough to correct the problem, the Scrum Master should investigate the possibilities of adding temporary team members.
-

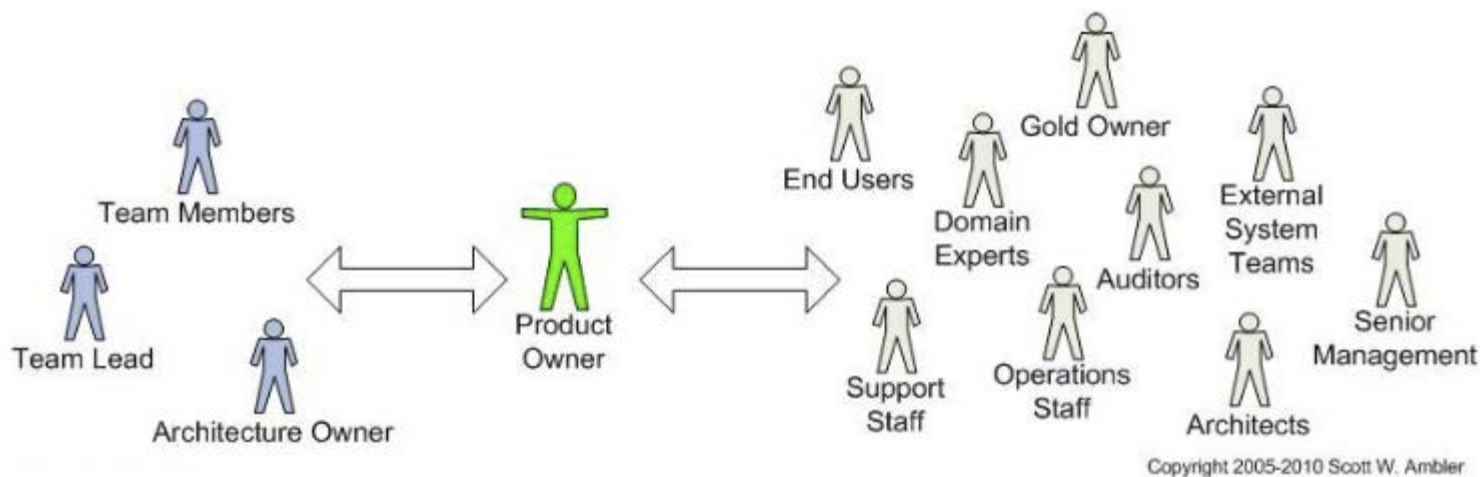
Supporting Cast

- Scrum team may borrow from outside as well- these are often referred to as supporting cast-
 - **Technical experts:** Sometimes the team needs the help of technical experts, such as build masters to set up their build scripts or an agile DBA to help design and test their database.
 - Technical experts are brought in on an as-needed, temporary basis, to help the team overcome a difficult problem and to transfer their skills to one or more developers on the team.
 - **Domain experts:** The product owner represents a wide range of stakeholders, not just end users, and in practice it isn't reasonable to expect them to be experts at every single nuance in your domain. As a result the product owner will sometimes bring in domain experts to work with the team, perhaps a tax expert to explain the details of a requirement or the sponsoring executive to explain the vision for the project.
 - **Independent tester:** Effective agile teams often have an independent test team working in parallel that validates their work throughout the lifecycle. This is an optional role, typically adopted only on very complex projects (or at scale).

Disclaimer: Some of these notes have been based on the material from

<http://www.ambysoft.com/essays/agileRoles.html> for academic purposes, the copyright is held by the ambysoft website.

Product owner representing stakeholders



Acknowledgement: <http://www.ambysoft.com/essays/agileRoles.html>

What if the team identifies an additional task?

- If the new task introduces a delay in project completion or impacts the sprint, it must be entered into the Sprint backlog by the Scrum Master and treated like any other task.
 - Confirmation of the new task may be requested of the Product Owner.
- The daily Scrum isn't considered a problem-solving session.
- The daily Scrum is a communication session if there are issues that need more attention, interested parties should meet outside the daily Scrum.
-

Larger SCRUM teams

- In very large projects, things change slightly - a larger team needs to be sub-divided into smaller teams.
- The best way to do is to work around the architecture of the system and each smaller team is responsible for its subsystem.
- Additional roles get introduced -
 - **Architecture owner:** leads their sub-team through initial architecture envisioning for their sub-system
 - **Integrator:** responsible for building the entire system from its various subsystems. These people often work closely with the independent test team, if there is one, who will want to perform system integration testing regularly throughout the project.
- At a larger scale it isn't sufficient to simply focus on project leadership and allow self-organisation to address the technical aspects of project management.
- Across the entire project/program the technical aspects of project management, such as dependency management, contract management, resource tracking, vendor management become critical. The project management team sometimes called the program management team, is comprised of the team leads from the various sub-teams.
- This team is likely to have a short coordination meeting each day, referred to as a "scrum of scrums" in the Scrum methodology, where current status is shared and issues are identified.

Sprint Review Meeting

- This comes after the sprint execution.
- The meeting should feature a live demonstration, not a report.
- After the demonstration, the Product Owner reviews the commitments made at the Sprint Planning Meeting and

- declares which items he/she now considers done. For example, a software item that is merely "code complete" is considered not done, because untested software isn't shippable.
- Incomplete items are returned to the Product Backlog and ranked according to the Product Owners revised priorities as candidates for future Sprints.
- The Sprint Review Meeting is the appropriate meeting for external stakeholders (even end users) to attend.
- It is the opportunity to inspect and adapt the product as it emerges, and iteratively refine everyone's understanding of the requirements.
- New products, particularly software products, are hard to visualize in a vacuum.
 - Many customers need to be able to react to a piece of functioning software to discover what they will actually want. Iterative development, a *value-driven* approach, allows the creation of products that couldn't have been specified up front in a *plan-driven* approach.

Sprint Review Meeting

[Sprint Review Meeting video](#)

Copyright of <http://scrumtrainingseries.com>; cited for educational-purposes

Sprint Retrospective Meeting

- Each Sprint ends with a retrospective. At this meeting, the team reflects on its own process. They inspect their behaviour and take action to adapt it for future Sprints.
- Dedicated Scrum Masters will find alternatives to the stale, fearful meetings everyone has come to expect. An in-depth retrospective requires an environment of psychological safety not found in most organisations. Without safety, the retrospective discussion will either avoid the uncomfortable issues or deteriorate into blaming and hostility.
- A common impediment to full transparency on the team is the presence of people who conduct performance appraisals.

Sprint Retrospective Meeting

[Sprint Retrospective Meeting video](#)

Copyright of <http://scrumtrainingseries.com>; cited for educational-purposes

List of meetings (SCRUM)

Here is a list of all the meetings-

1. Sprint planning meeting
2. Daily Scrum meeting
3. Spring review meeting (end meetings) and,
4. Sprint Retrospective meeting (end meetings)



[Up](#) | [Site Map](#)

Software Engineering Project Management

Chapter 7: SCRUM - II

[Up](#) | [Site Map](#)

Scrum - II (Part 2)

Extensions

Apart from the usual meetings listed on slide 25, there are some extra ones as follows-

1. Backlog refinement (grooming)
2. Scrum of Scrums - let us talk about this.

Scrum of Scrums

- The Scrum of Scrums (meeting) is a technique to scale Scrum up to large development groups (over a dozen people), which allows clusters of teams to discuss their work, focusing especially on areas of overlap and integration.
- Each daily scrum within a sub-team ends by designating one member as an "ambassador" to participate in a daily meeting with ambassadors from other teams, called the *Scrum of Scrums*.
- Depending on the context, ambassadors may be technical contributors, or each team's Scrum Master.

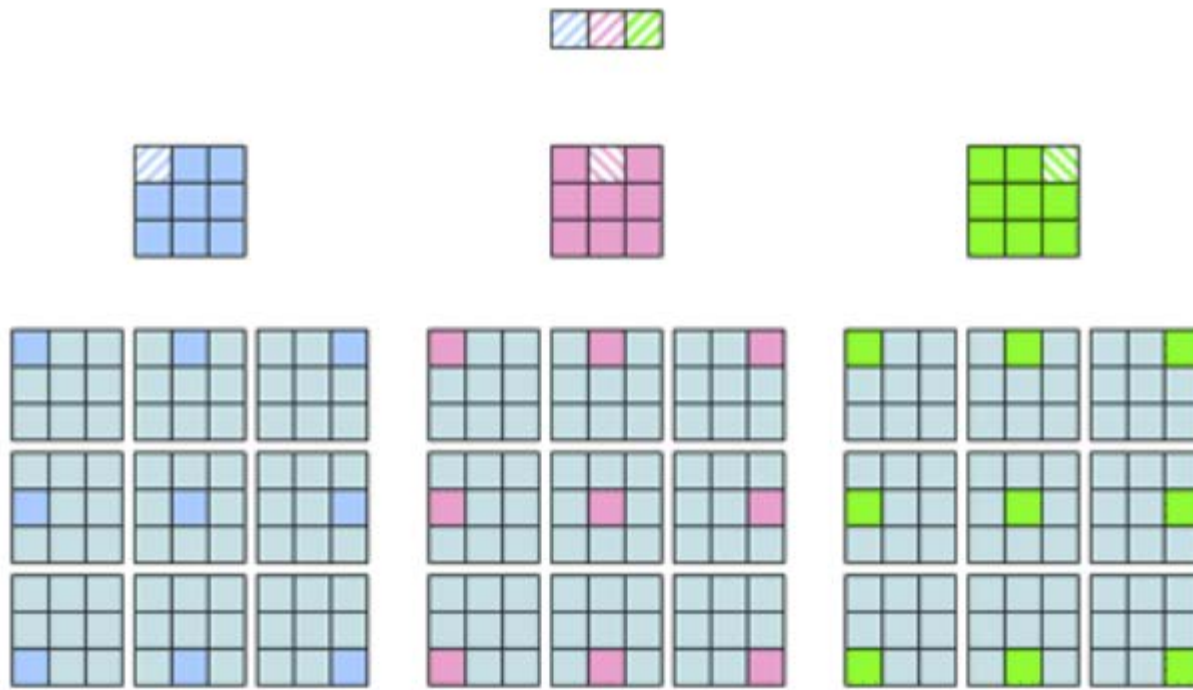
Scrum of Scrums agenda

The following four questions are asked...

1. What has your team done since we last met?
 2. What will your team do before we meet again?
 3. Is anything slowing your team down or getting in their way?
 4. Are you about to put something in another team's way?
- Resolution of impediments is expected to focus on the challenges of coordination between the teams, and may entail agreeing to interfaces between teams, negotiating responsibility boundaries, etc.
 - The Scrum of Scrums will track these working items via a backlog of its own, where each item contributes to improving between-team coordination.

Scrum of Scrums of Scrums!

- The illustration below shows how a Scrum of Scrums approach allows Scrum to scale up (in this case to 243 people).
- Each cell represents one person on a Scrum team.
- The bottom of this illustration shows teams with nine developers on them.
 - One person from each team (the differently colored cell) also participates in a Scrum of Scrum to coordinate work above that team.
 - Then from those nine-person teams, another person is selected (this time shown with diagonal lines) to participate in what is called a *Scrum of Scrums of Scrums*.



Reference: <http://www.mountangoatsoftware.com/agile/scrum/team/>

Scrum Artefacts

1. Product Backlog
2. Sprint Backlog
3. Product Increment
4. Burndown chart

Product Increment

- The increment (or *potentially shippable increment, PSI*) is the sum of all the Product Backlog items completed during a sprint and all previous sprints.
- At the end of a sprint, the Increment must be done according to the Scrum Team's criteria called *Definition of Done (DoD)*.
- The increment must be in a usable condition regardless of whether the Product Owner decides to actually release it.
-

Definition of Done (DoD)

- The exit-criteria to determine whether a product backlog item is complete.
- In many cases the DoD requires that all regression tests should be successful.
- The definition of "done" may vary from one Scrum team to another, but must be consistent within one team.
- [DoD discussion](#)

Sashimi

- One of the ingredients of Scrum is a practice known as sashimi.
- Sashimi is a Japanese delicacy consisting of thin slices of raw fish. Each slice is complete in itself, a complete taste similar to the way every other slice tastes!



- Scrum uses the sashimi technique to require that every slice of functionality created by the developers be complete. All of the requirements gathering and analysis, design work, coding, testing, and documentation that constitute a complete product are required to be completed in every Sprint and must be visible in the Sprint increment of functionality.
- Every increment must consist of potentially shippable functionality, completely tested and documented.
- When a stakeholder or the Product Owner sees a piece of functionality demonstrated, he or she can assume that it is complete. The Product Owner bases his or her view of progress on this belief. When any increment is not complete, all incomplete work must be identified and restored to the Product Backlog as incomplete work.

Backlog Refinement Meeting

[Backlog refinement meeting video](#)

Copyright of <http://scrumtrainingseries.com/> it has been cited for educational purposes

ScrumBut (or Scrum But)

- A ScrumBut (or Scrum But) is an exception to the "pure" Scrum methodology, where a team has changed the methodology to adapt it to their own needs.
- It is not considered a good practice.
- Organisations that are try to implement Agile may turn to Scrum. But unless they make the shift and become Agile, implementing Scrum won't let them achieve the success that Agile is known for.
- Such organisations that implement Scrum without making that shift are called - "Scrum-buts" because they're implementing Scrum "but with tweaks for their unique situation."
-

ScrumBut symptoms

1. If your team reports its status to the ScrumMaster at the stand-up, you may be a Scrum-but.
2. If your developers keep getting ahead of your testers, you may be a Scrum-but.
3. If you're falling behind on the regulatory documentation, you may be a Scrum-but.
4. If failing a customer demo demoralizes your Scrum team, you may be a Scrum-but.
5. If your team members are afraid to try new ideas because they might fail, you may be a Scrum-but.
6. If your retrospectives focus on who rather than what, you may be a Scrum-but.

Reference: <http://www.scrumalliance.org/community/articles/2013/february/you-may-be-a-scrum-but>

Other important SCRUM terms

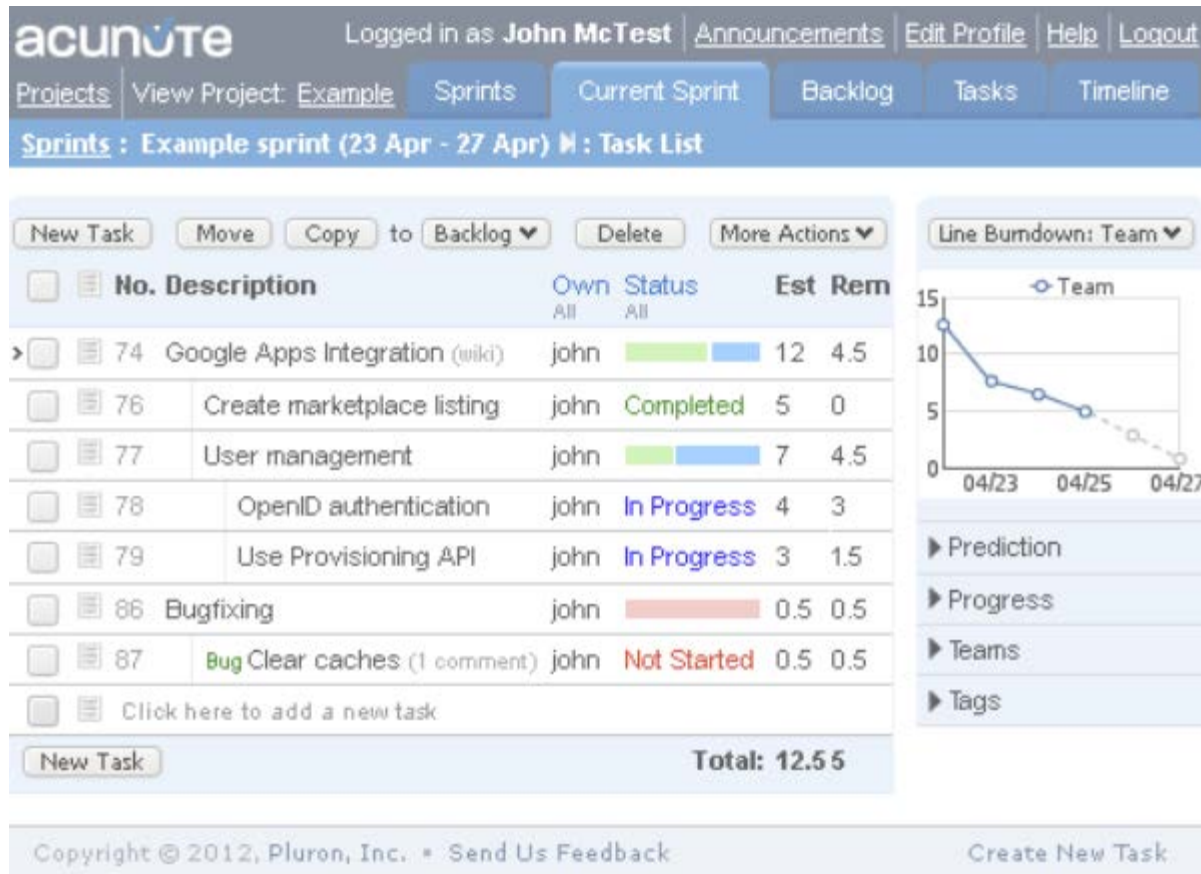
- These will be covered during forthcoming tutorial sessions:
 - Spike
 - Tracer Bullet
 - Abnormal Termination
 - Scrum-ban

SCRUM tools

There are many...

- [Acunote](#)
- [CA Agile Vision](#)
- [Redmine](#)
- These are not free however you can download Acunote for a 30-day free trial! (except Lite version of Redmine)
- There are also open-source packages [<http://www.blog.daxx.com/index.php/7-free-agile-project-management-tools-for-your-scrum-teams/>] dedicated to management of products under the Scrum process.

Acunote



[Acunote video demonstraton](#)

Video is copyright of YouTube and the owner - it has been cited for educational purposes.

Limitations

- Hybridisation of Scrum is common as Scrum does not cover the whole product development lifecycle; therefore, organisations find the need to add in additional processes to create a more comprehensive implementation.
- For example, at the start of the project, organisations commonly add process guidance on requirements gathering and prioritization, initial high-level design, and budget and schedule forecasting.
- However, the Scrum framework does not explicitly allow for extension points of such a kind; consequently, achieving a more comprehensive software life cycle requires extending the framework rather than instantiating it.

Certifications

1. Scrum Alliance
 - Scrum Alliance provides four certifications for Scrum practitioners: CSM (Certified ScrumMaster), CSPO (Certified Scrum Product Owner), CSD (Certified Scrum Developer), and CSP (Certified Scrum Professional). Courses are required for initial certifications of CSM, CSPO, and CSD.
2. Scrum.org
 - Scrum.org provides four families of assessments: free Open Assessments (the Scrum Open and the Developer Open), PSM Assessments (PSM I and PSM II), PSD Assessment (PSD I) and PSPO Assessments (PSPO I and PSPO II). Those who achieve a minimum passing score will receive certification, after taking PSM, PSD, or PSPO assessments.

Lesson Number 7

- Scrum Master is not the master of everyone!
- [A satirical look at Scrum](#)

Acknowledgement: YouTube videos copyright is held by the YouTube website and the owner, it has been cited for educational purposes.

References

- Agile for dummies- Wiley Inc.
- <http://www.ambyssoft.com/essays/agileRoles.html>
- www.agilelearninglabs.com
- <http://scrumtrainingseries.com/>
- <http://www.solutionsiq.com/>

Suggested Reading

None in the prescribed textbook, but reading this lecture and going through associated video resources should suffice.

[Up](#) | [Site Map](#)