

Agile – Scrum

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Agenda

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- Scrum Diagram
- Scrum Roles
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- Summary

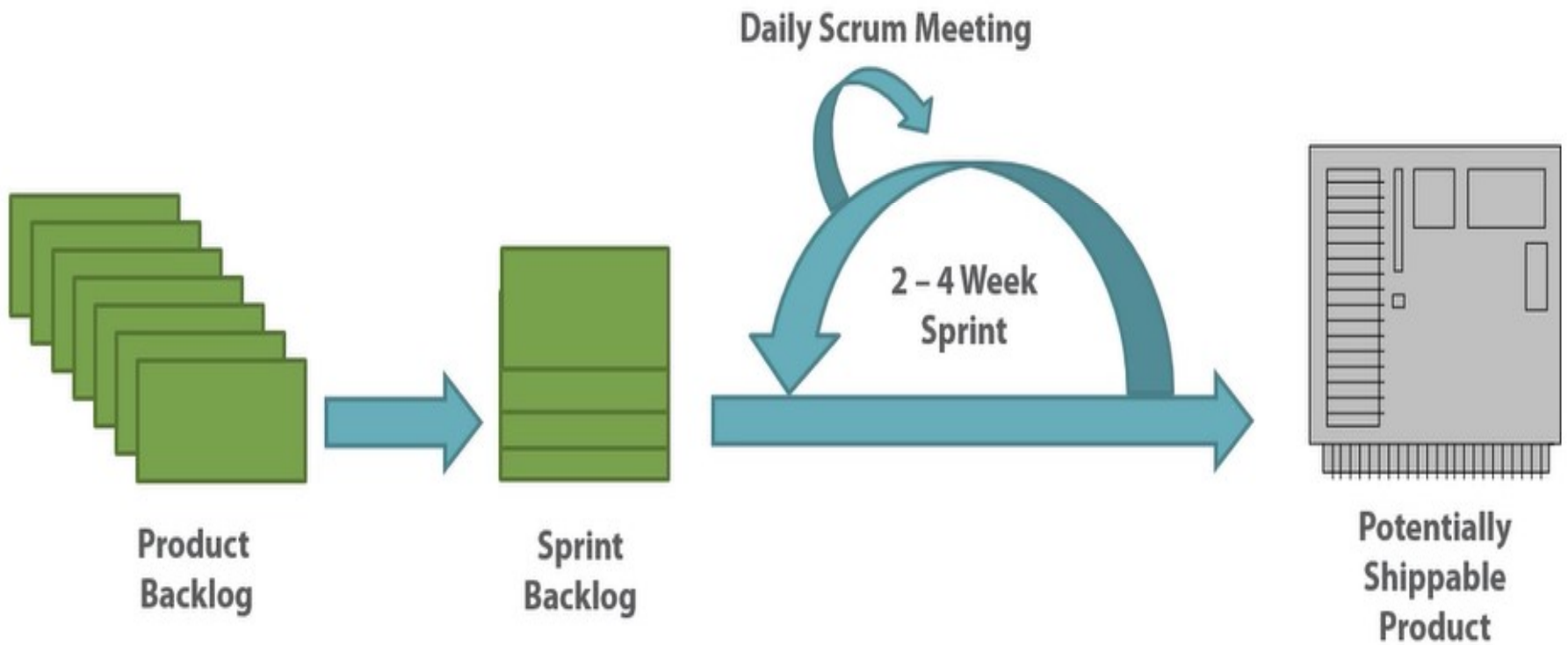
Definition of Scrum

- Scrum is an iterative and incremental agile software development framework for managing product development. It defines a flexible, holistic product development strategy where a development team works as a unit to reach a common goal.
- Scrum is an agile way to manage a software development project.
- Scrum relies on a self-organizing, cross-functional team. In that there are no overall team leaders who decide which person will be doing which task and how the problem will be solved. Those are issues that are decided by the team as a whole.

History of Scrum

- Ken Schwaber and Jeff Sutherland conceived the Scrum process in the early 1990s.
- Inherited the name scrum from the paper “The new Product Development Game” which was referred to the game rugby to stress the importance of teams.
- The research paper described that outstanding performance in the development of new, complex product is achieved when teams, small self-organizing units of people, are fed with objectives, not with tasks.
- In 2002, the highly successful certified scrum master programs and its derivatives were created and launched

Scrum Diagram



Scrum Diagram Description

- The product backlog is a prioritized feature list containing every desired feature or change to the product.
- When we have a sprint planning meeting, backlog items from the product backlog are selected to be implemented in the next sprint and placed into the sprint backlog.
- Once the sprint backlog has been identified from the product backlog, the team enters a 2-4 week sprint where they implement the items in the sprint backlog.
- Each day during the sprint, a brief meeting called a daily scrum is conducted.
- At the end of the sprint, the team should have a potentially shippable product that could go into production and give value to the end user.

Overview of Scrum

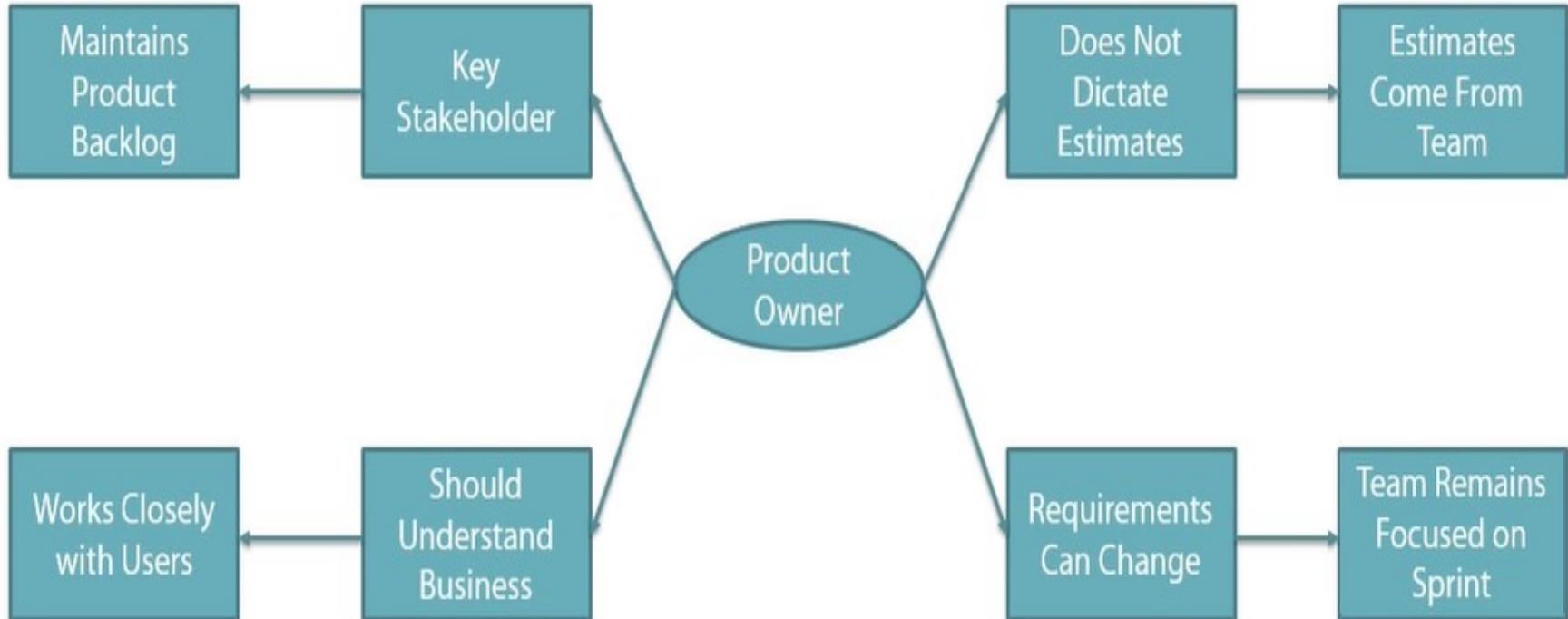
- Scrum is an agile process most commonly used for product development, especially software development.
- Scrum is a project management framework that is applicable to any project with aggressive deadlines, complex requirements, and a degree of uniqueness.
- In Scrum, projects move forward by a series of iterations called sprints. Each sprint is typically 2-4 weeks in length.

Overview of Scrum contd..

- Scrum can be well described by splitting into 3 areas.
 - Roles
 - Product Owner
 - Scrum Master
 - Scrum Team
 - Ceremonies
 - Sprint Planning Meeting
 - Sprint Review Meeting
 - Sprint Retrospection
 - Daily Scrum
 - Artifacts
 - Product Backlog
 - Sprint Backlog
 - Burndown Chart

Scrum Roles

- Product Owner



Product Owner Description

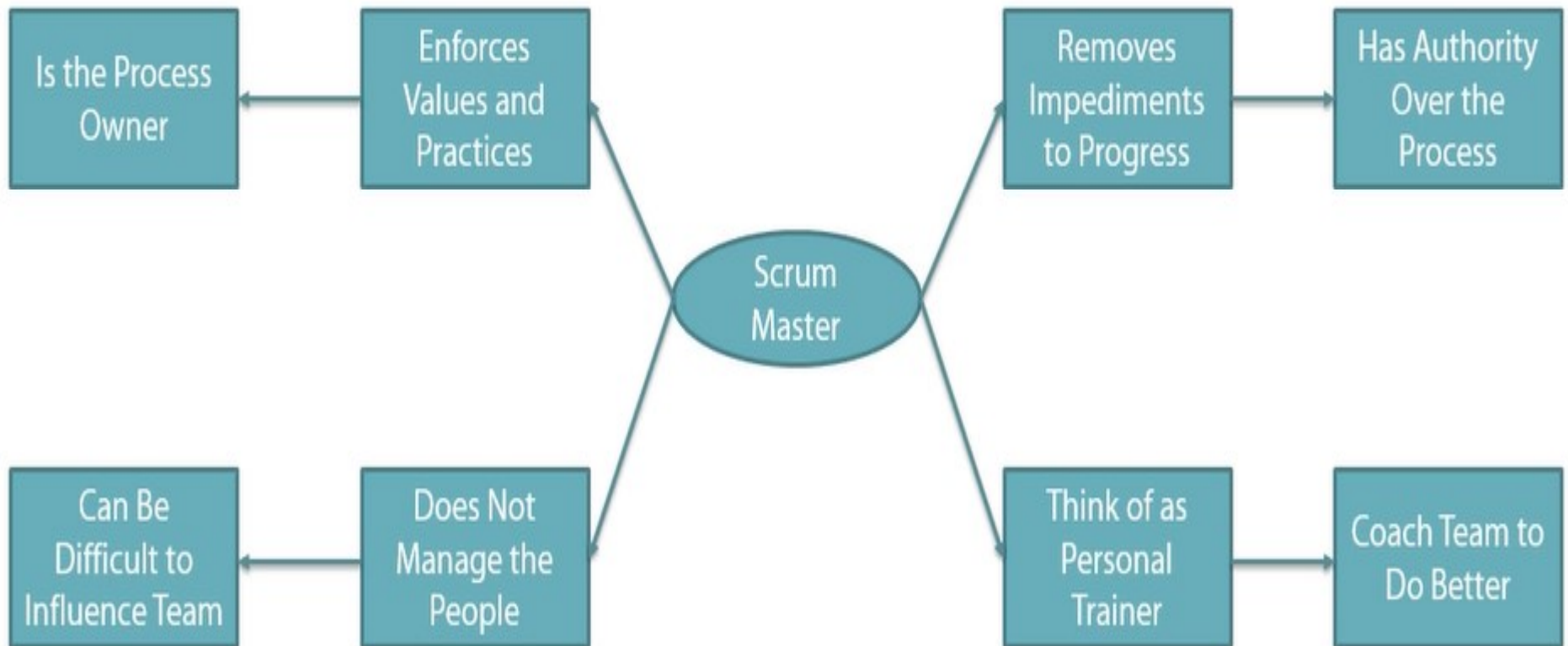
- Product owner is the project's key stakeholder, but it could also be a business analyst who works closely with the business and the users of the system.
- Part of the product owner's responsibilities is to have a vision of what he or she wishes to build, and convey that vision to the rest of the scrum team.
- The product owner works by maintaining the product backlog, which is a prioritized feature list for the product. The product owner is commonly a lead user of the system or someone from Marketing, Product Management, or anyone with a solid understanding of the users, the marketplace, the competition, and the future trends for the domain or type of system being developed. This could also be a business analyst who has excellent grasp of the business domain. The product owner prioritizes the product backlog during the sprint planning meeting.

Product Owner Description Contd..

- Development team selects the amount of work that they believe they can do during each sprint and how many sprints will be required.
- Requirements are allowed to change within Scrum, and this change is encouraged, but these changes should come outside the sprint and ready for the next sprint planning meeting.
- Once a team starts on a sprint, it should remain completely focused on delivering the work for that sprint.
- The product owner role requires an individual with certain skills, including availability to the team, business and domain knowledge, and good communication skills. Business and domain knowledge is important for agile product owners, because he or she is the decision-maker regarding what features the product will have. Communication is a large part of the product owner's responsibilities. The product owner role requires working closely with the key stakeholders throughout the organization, so he or she must be able to communicate different messages to different people about the product at any given time.

Scrum Roles

- Scrum Master



Scrum Master Description

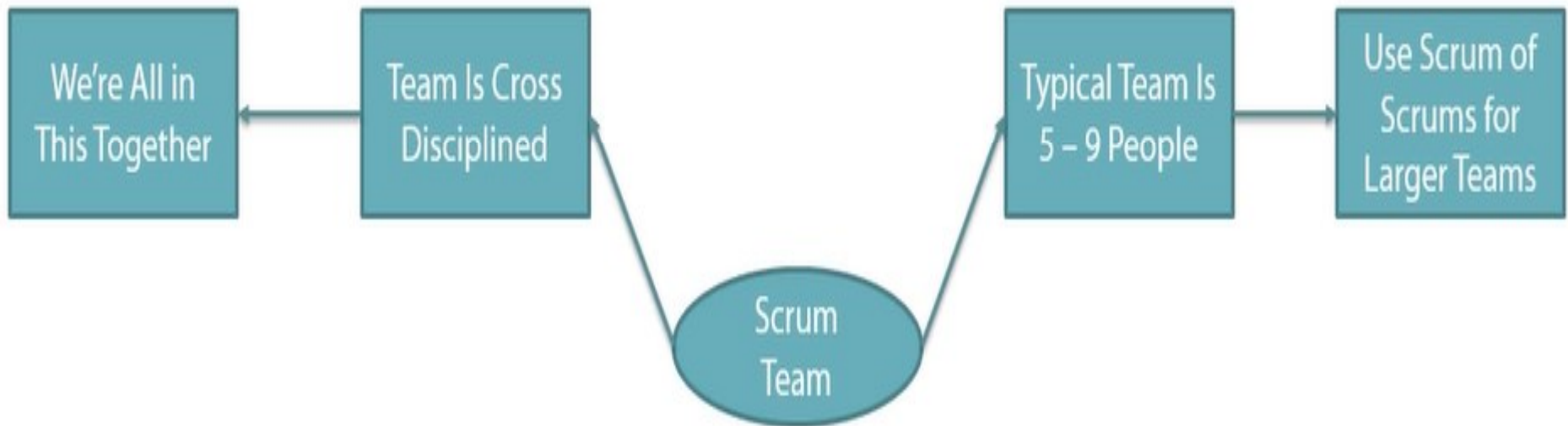
- The scrum master is like a coach for the team, helping the team do the best work they possibly can. The scrum master can also be thought of as a process owner for the team, creating a balance with the project's key stakeholder who is referred to as a product owner.
- The scrum master does anything possible to help the team perform at their highest level. This involves removing any impediments to progress, facilitating meetings, and doing things like working with the product owner to make sure the product backlog is in good shape and ready for the next sprint.

Scrum Master Description Contd..

- Scrum master role is commonly filled by former project manager or a technical team leader. People who are new to the scrum master role sometimes struggle with the apparent contradiction of the scrum master, who is both servant leader to the team and also someone with no authority as a team leader or manager.
- This contradiction disappears when we realize that although the scrum master has no authority over scrum team members directly, the scrum master does have authority over the process.
- The scrum master can say to the team, look, we're supposed to deliver potentially shippable software at the end of each sprint. We didn't do it this time. What we can do is make sure we do better on the next sprint. This is the scrum master exerting authority over the process. With authority limited to ensuring the team follows a process, the scrum master's role can be more difficult than that of a typical project manager. Project managers often have the fallback position of "do it because I say so". The times when a scrum master can say that are limited and restricted to ensuring that scrum is being followed.

Scrum Roles

- Scrum Team

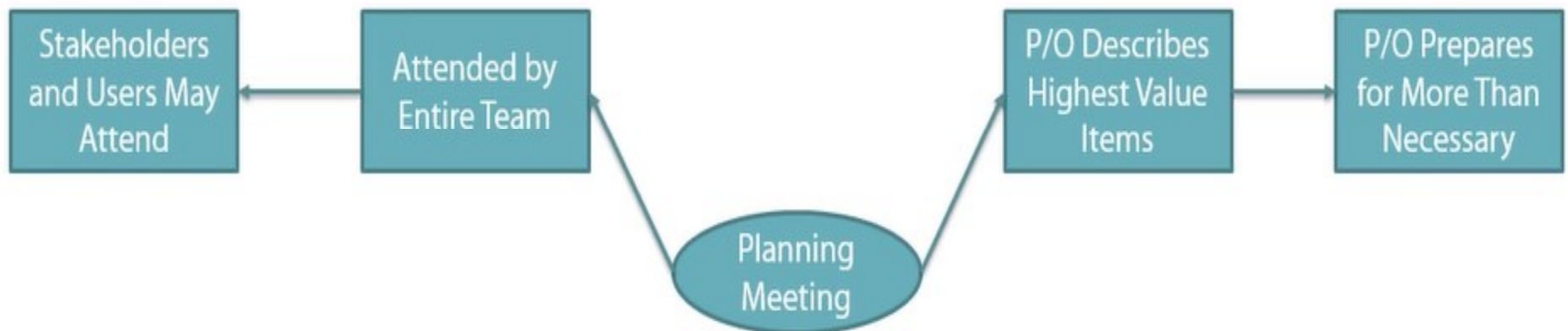


Scrum Team Description

- The team in a Scrum environment does not include any of the traditional software engineering roles such as programmer, designer, tester or architect.
- Everyone on the project works together to complete the set of work they've collectively committed to complete within the sprint.
- A typical scrum team is 5-9 people by having a large team. Scrum projects having a team of teams.
- Although it's not the only thing necessary to scale Scrum, one well-known technique is to use the Scrum of Scrums meeting. With this approach, each scrum team proceeds as normal, but each team identifies one person who attends the Scrum of Scrums meetings, to coordinate the work of the multiple scrum teams. These meetings are like the daily scrum meetings, but do not necessarily happen every day.

Scrum Ceremonies

- Sprint Planning Meeting

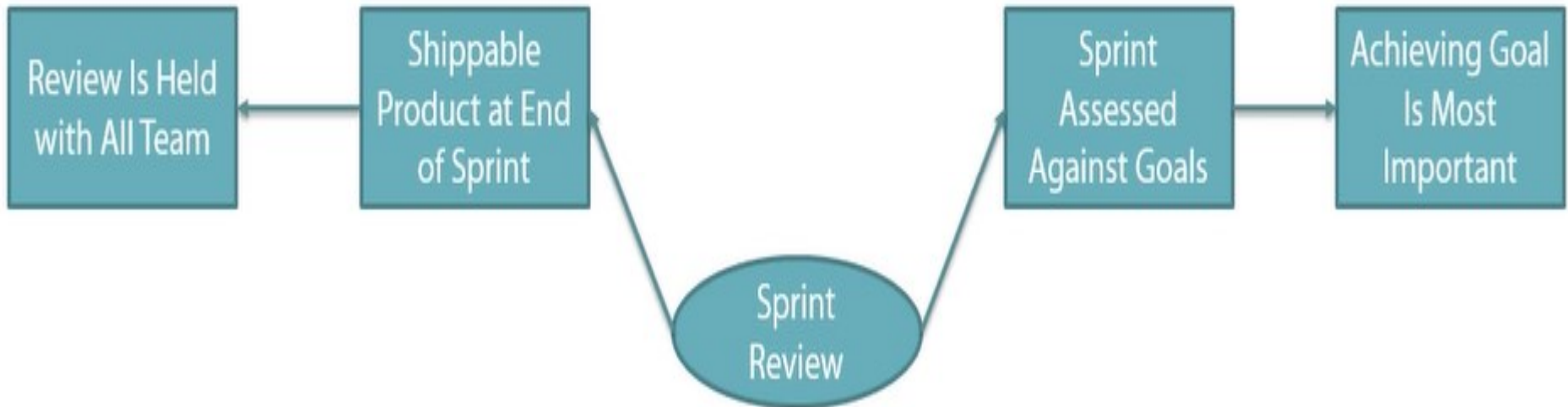


Sprint Planning Meeting Description

- The sprint planning meeting is attended by the product owner, scrum master, and the entire scrum team.
- Outside stakeholders and users may attend if they are invited by the team, but generally they won't be attending this meeting.
- During the sprint planning meeting, the product owner describes the highest priority features to the team. The team should then ask enough questions so they can turn a high-level user story of the product backlog into a more detailed set of tasks for the sprint backlog.
- The product owner doesn't have to describe every item being tracked in the product backlog. A good guideline is for the product owner to come to the sprint planning meeting prepared to talk about two sprint's worth of product backlog items. This means that if the team are likely to finish what they thought they would get done in one sprint, the product owner is prepared with details of additional work and priorities.
- Each sprint is required to deliver a potentially shippable product by the end of it. This means that at the end of each sprint the team has to produce a coded, tested, and usable piece of software.

Scrum Ceremonies

- Sprint Review Meeting

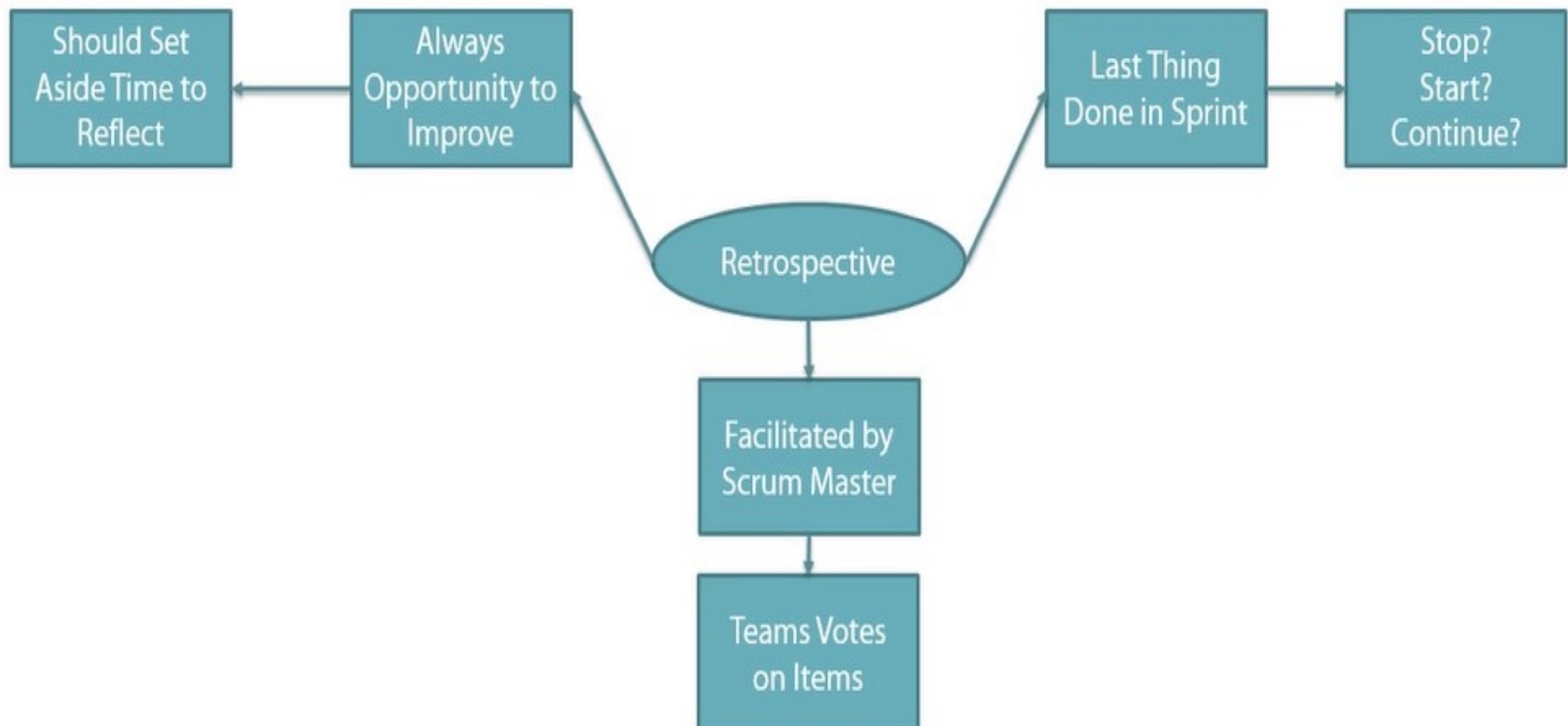


Sprint Review Description

- At the end of each sprint, a sprint review meeting is held, and during this meeting the scrum team shows what they have accomplished during the sprint.
- Typically this takes the form of a demo of the new features. This meeting should be quite brief and not take up too much of everyone's time, as it'll also be attended by product customers and management whose time can be limited.
- Participants in the sprint review typically include the product owner, the scrum team, the scrum master, management, customers, and developers from other products. During the sprint review, the product is assessed against the sprint goal determined during the sprint planning meeting.
- Ideally the team has completed each product backlog item brought into the sprint, but it's more important that they achieve the overall goal of the sprint.

Scrum Ceremonies

- Sprint Retrospection



Sprint Retrospection Description

- No matter how good a scrum team is, there is always opportunity to improve. This improvement area/points are discussed during the end of each sprint and generally called as sprint retrospective meeting.
- Entire team, including scrum master and product owner discuss how they are doing and find ways to improve.
- During a retrospective meeting, the team should answer the following questions.
 - What should we start doing,
 - what should we stop doing, and
 - what should we continue doing?
- The scrum master can facilitate the sprint retrospective meeting by asking everyone to just shout out ideas during the meeting. After an initial list of ideas has been brainstormed, teams will normally vote on specific items to focus on during the next sprint.

Scrum Ceremonies

- Daily Scrum

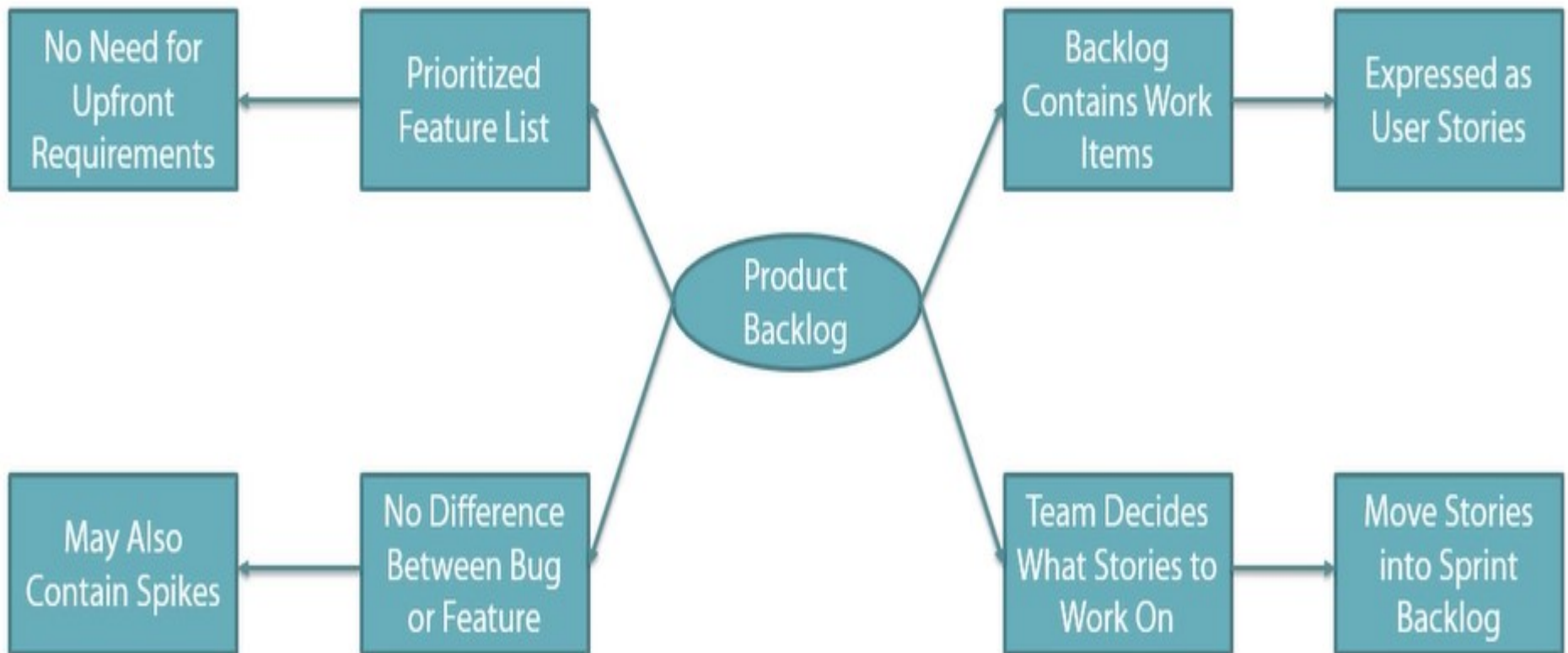


Daily Scrum Description

- The daily scrum meeting is held every day, preferably in the morning. It allows the team to understand where everyone else is within the sprint.
- Everyone stands in a circle during the meeting. By making everyone stand up, it ensures that their updates are brief, as standing up for too long is uncomfortable.
- The team has to answer three questions.
 - What did you achieve yesterday
 - What will you achieve today
 - Is there anything blocking you?
- If anything is blocking you, then you can work with the scrum master to resolve the blocking issue to enable you to continue.

Scrum Artifacts

- Product Backlog



Product Backlog Description

- The product backlog in Scrum is a prioritized feature list containing short descriptions of all the functionality desired in the product. When applying Scrum, it's not necessary to start a product with a lengthy up front effort to document all the requirements like in Waterfall.
- A scrum team and its product owners will begin by writing down everything that they can think of for the backlog prioritization.
- The scrum product backlog is then allowed to grow and change as more is learned about the product and its customers.

Product Backlog Description Contd.

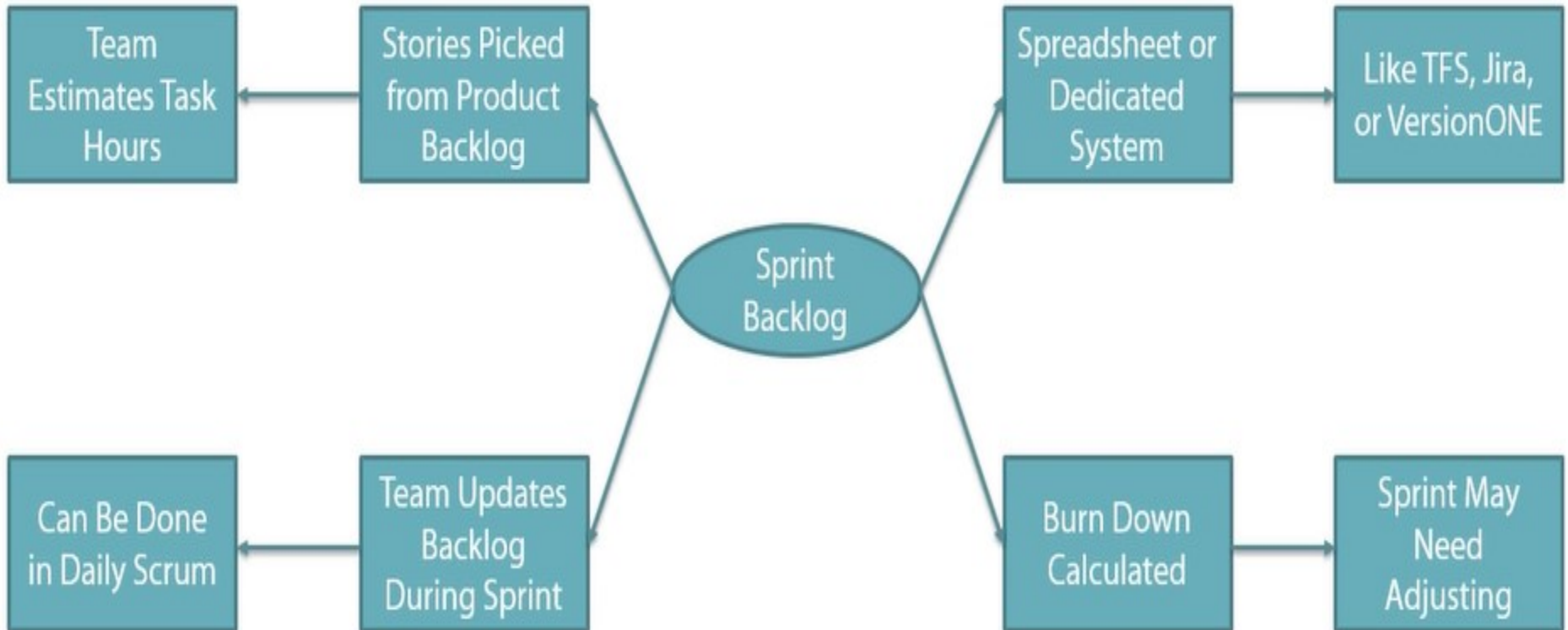
- A scrum backlog comprises the following different types of items:
 - Features: The main way for a scrum team to express features on the product backlog is in the form of user stories, which are short, simple descriptions of the desired functionality told from the perspective of the user.
 - Bugs: No difference between a bug and a new feature. Each describe something different that the user wants, so bugs are also put into the product backlog.
 - Technical work: Technical work and knowledge acquisition activities also belong in the backlog. Ex. Upgrade all developers workstations to Windows-10.
 - Knowledge acquisition: Research about new feature of Java-8. Helps to make team knowledge up-t-date.

Product Backlog Description

- During the sprint planning meeting, product owner prioritized product backlog and describes the top items to the team.
- The team then determines which items they can complete during the next sprint and moves items from the product backlog to the sprint backlog.
- In doing so, they expand each product backlog item into one or more sprint backlog tasks so they can more effectively share work during the next sprint.

Scrum Artifacts

- Sprint Backlog

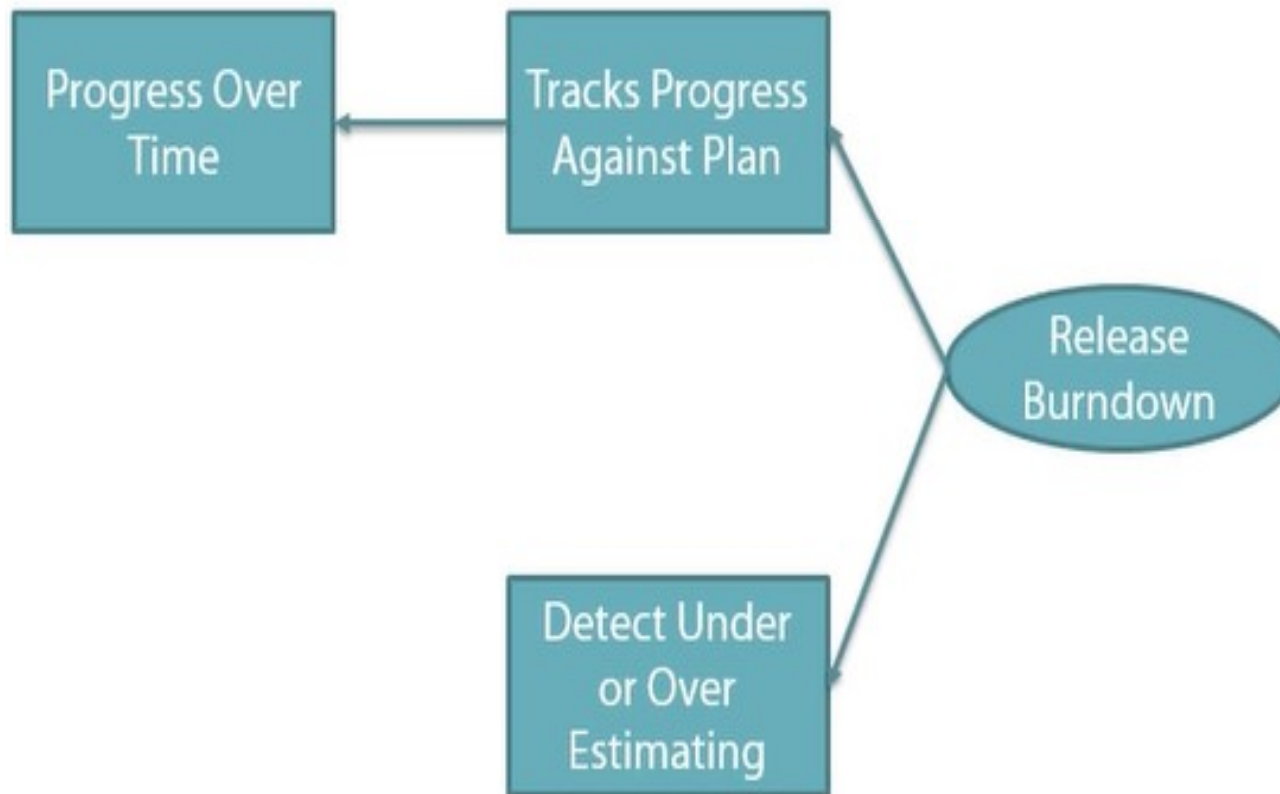


Sprint Backlog Description

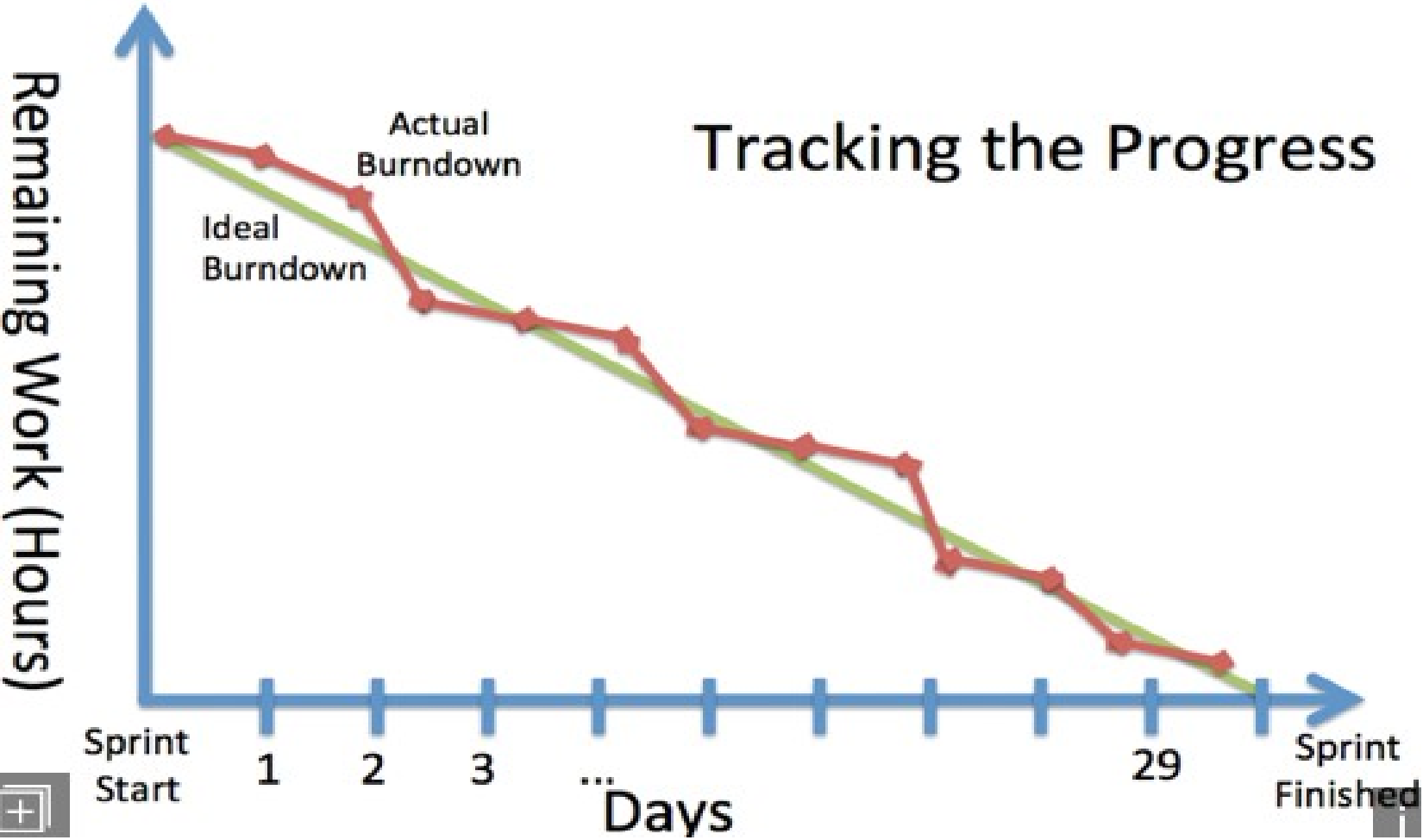
- The sprint backlog is a list of tasks identified by the scrum master to be completed during the sprint.
- During the sprint planning meeting, the team selects some number of product backlog items, usually in the form of user stories, and identifies the tasks necessary to complete each story.
- Team estimate how many hours each task will take for someone on the team to complete.
- It's important that the team selects the items and the size of the sprint backlog. Because there are other people committing to completing the tasks, they must be the people to choose what they are committing to during the sprint. The sprint backlog can be maintained as a spreadsheet, or it can be of any tracking system tool or any number of software products designed specifically for Scrum or Agile. Ex. Rally, Jira, and VersionONE.

Scrum Artifacts

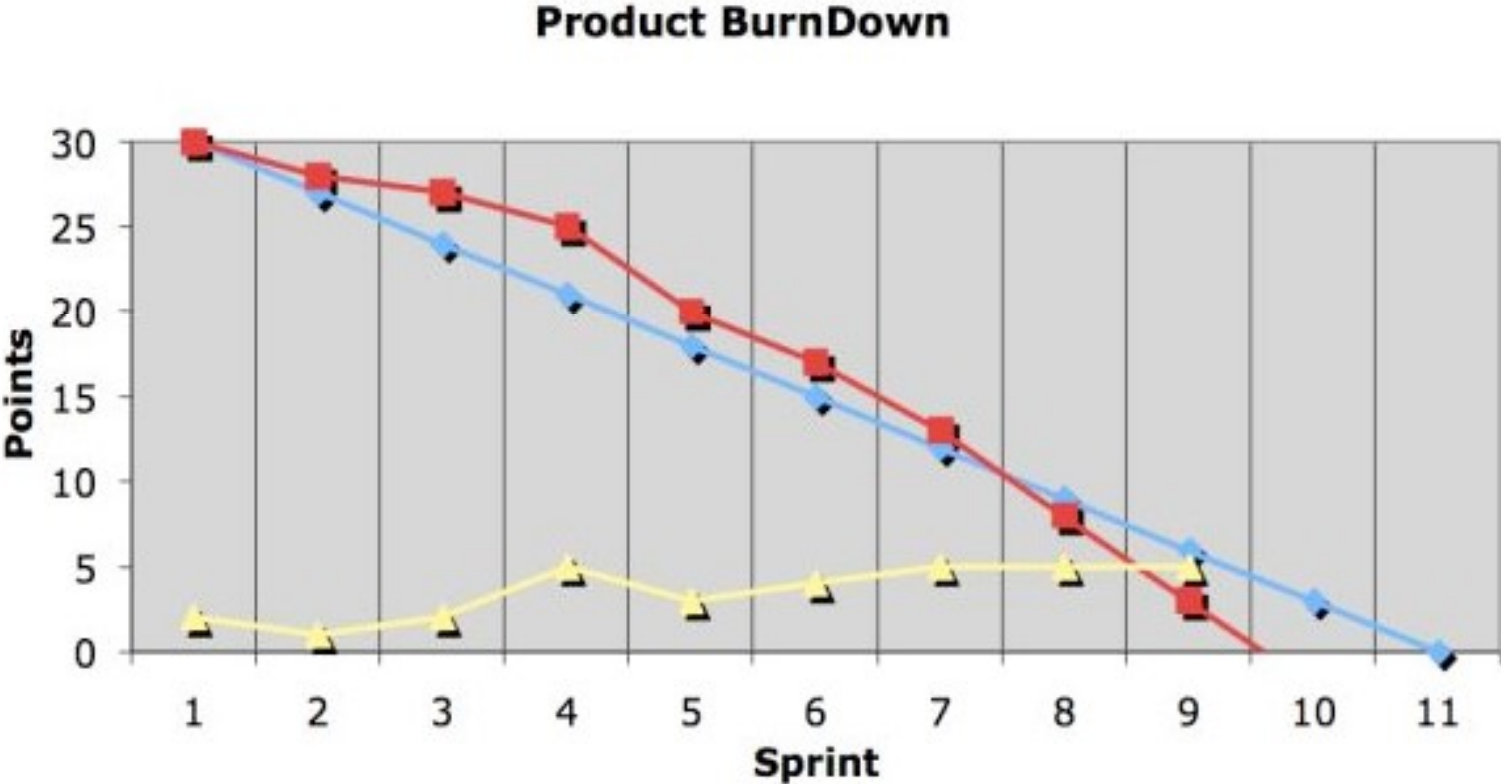
- Burn Down Chart



Burn Down Chart Description



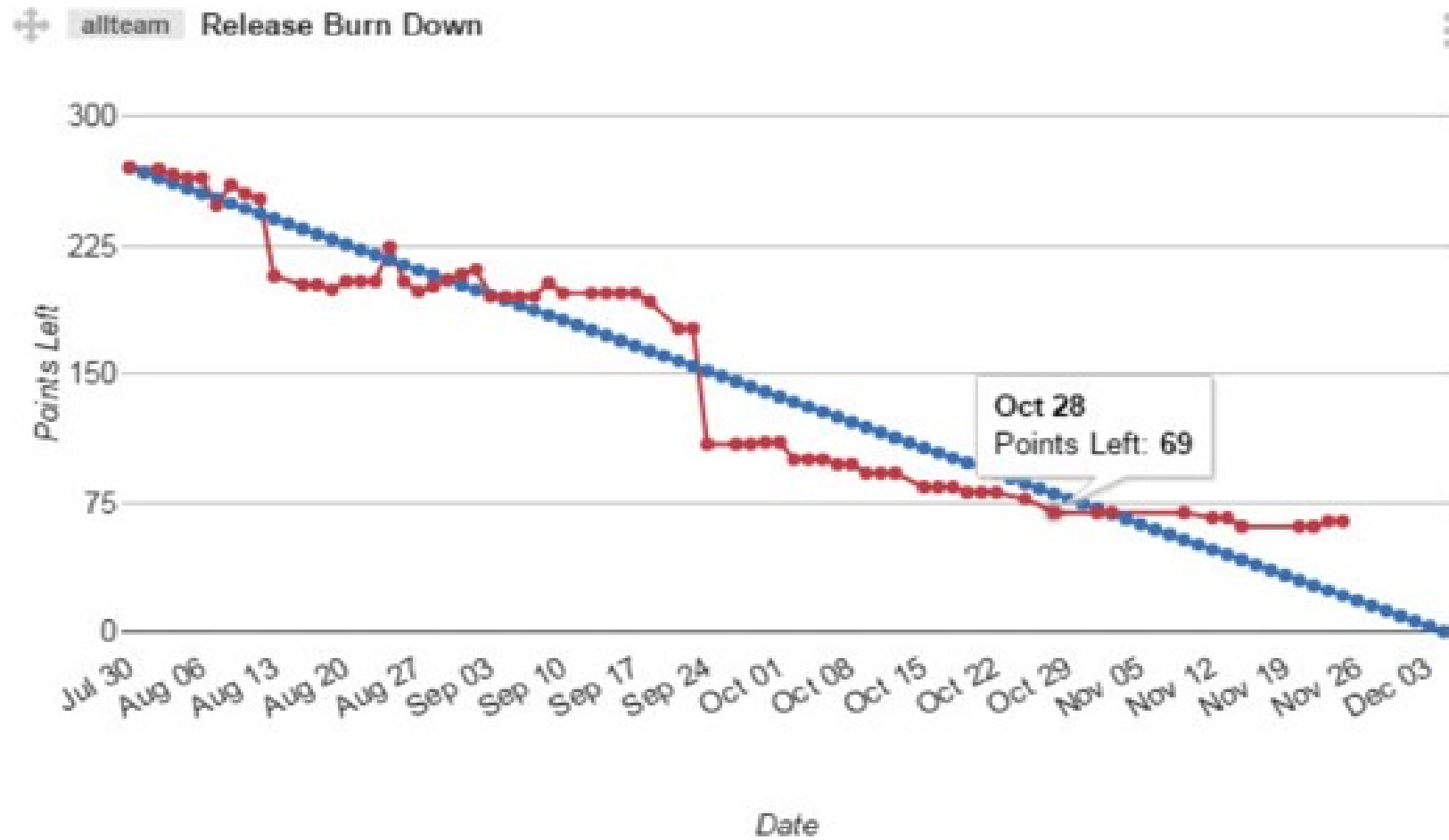
Burn Down Chart Description Cond.



Estimated Burndown Real Burndown Velocity



Burn Down Chart Description Cond.



Burn Down Chart Description Cond.

- Once each day, the estimated work remaining in the sprint is calculated and graphed by the scrum master, resulting in a sprint burndown chart.
- The team does its best to pull the right amount of work into the sprint, but sometimes too much or too little work is pulled in during the planning. In this case, the team needs to add or move new tasks.
- The team tracks its progress against a release plan on a release burndown chart. The release burndown chart is published at the end of each sprint by the scrum master. The horizontal axis of the burndown chart shows the sprints and the vertical axis shows the amount of work remaining at the start of each sprint.

Burn Down Chart Description Cond.

- Work remaining can be shown in whatever unit the team prefers, story points, ideal days or team days.
- The burndown chart is an essential part of any agile project, and is a way for the team to clearly see what is happening and how progress is being made during each sprint.
- One issue that may be noticed in the burndown chart is whether or not the actual work line is above or below the ideal work line, and this depends on how accurate the original estimates were. This means that if your team constantly overestimates time requirements, the progress will always appear ahead of schedule. If they constantly underestimate time requirements, they will always appear behind schedule.

XP vs Scrum

SCRUM	EXTREME PROGRAMMING
<p>Scrum teams work in iterations which are called sprints, and these sprints are generally between 2 and 4 weeks in length.</p>	<p>Extreme Programming teams work in iterations, and these iterations are 1-2 weeks in length.</p>
<p>Scrum team doesn't allow any changes to current sprint until they are finished. The team will continue as planned to the end of the sprint, and then do any pre-planning as necessary for the next sprint.</p>	<p>With Extreme Programming, teams are much more amenable to change in their iteration. If a change is required, the team will hold another planning session and adjust their iteration accordingly.</p>
<p>In Scrum, the product owner prioritizes the product backlog, but the team determines the sequence in which they will develop the backlog items. The backlog will be prioritized, which does give steer to the team to work on the high-value items first, but the order for these high-value items to be implemented is picked by the team.</p>	<p>In Extreme Programming, the teams work in a strict priority order as set out in the planning sessions, and tend not to deviate from that order.</p>

XP vs Scrum Contd..

SCRUM	EXTREME PROGRAMMING
<p>Scrum does not prescribe any engineering practices for the developers, as it is more of a lightweight project management framework.</p>	<p>Extreme Programming, on the other hand, is a very engineering-based methodology that defines many engineering practices like test-driven development, pair programming, and continuous integration. Extreme Programming comes with many rules that can be hard for new teams to adopt.</p>

- Ideally, what tends to happen is teams adopt scrum, as it is a lightweight framework for managing agile project, and then introduces different engineering practices from Extreme Programming as deemed necessary.

Summary

- In this module, we took a look at the Scrum product framework. Scrum is an iterative development framework where value is delivered to the customer and users regularly.
- Scrum can be split into three main areas, roles, ceremonies, and artifacts. In Scrum there are three main roles. These are the product owner, scrum master, and the scrum team. Scrum also contains a series of ceremonies. These are the sprint planning meeting, the sprint review meeting, the sprint retrospective, and the daily scrum. Scrum also defines a series of artifacts. These are the product backlog, the sprint backlog, and the release burndown chart.
- XP is an engineering-led methodology that contains many rules. Teams are sometimes put off by this as it can be hard to adopt and follow. Scrum, on the other hand, is a more lightweight product management framework that doesn't contain any engineering practices. What is quite common is for a team to adopt Scrum, as it is more lightweight in nature, and then pick various engineering disciplines from Extreme Programming that suit the team, like test-driven development and continuous integration.