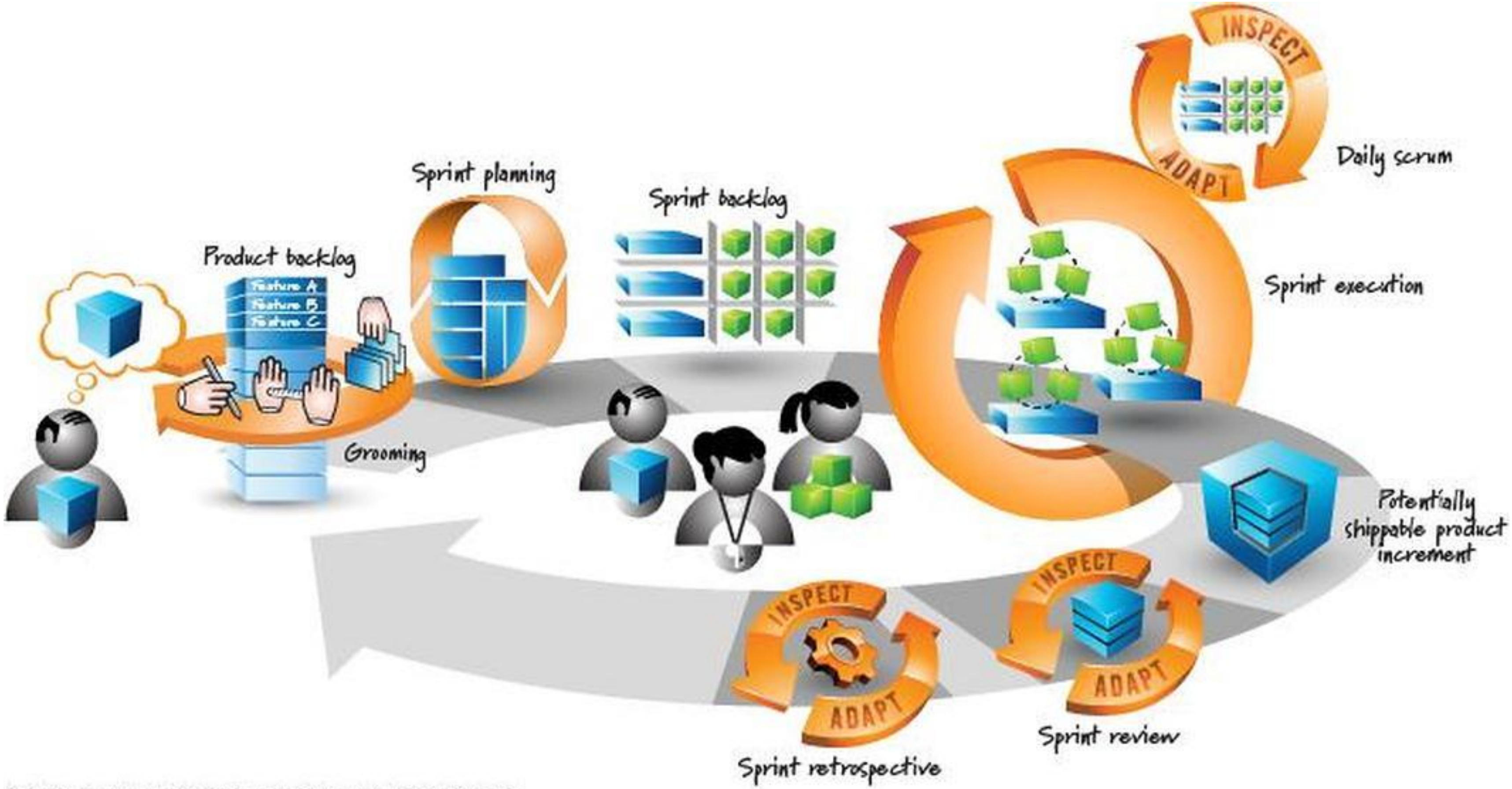
SCRUM FRAMEWORK
BASIC CONCEPTS

Systems Analysis and Design
Sharif University of Technology
Fall 1400-1401

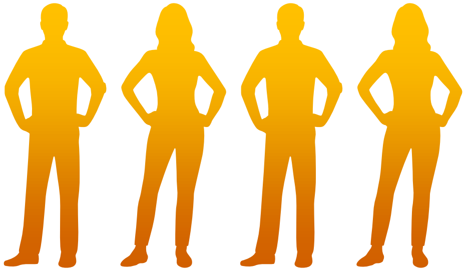
Scrum – Big Picture



Roles 3x

Product Owner

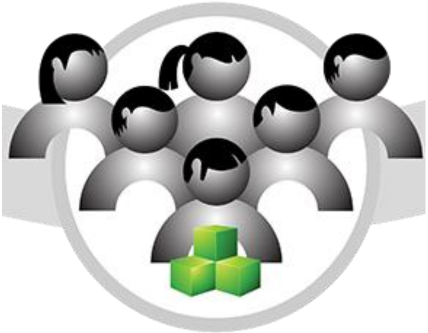
Scrum Master



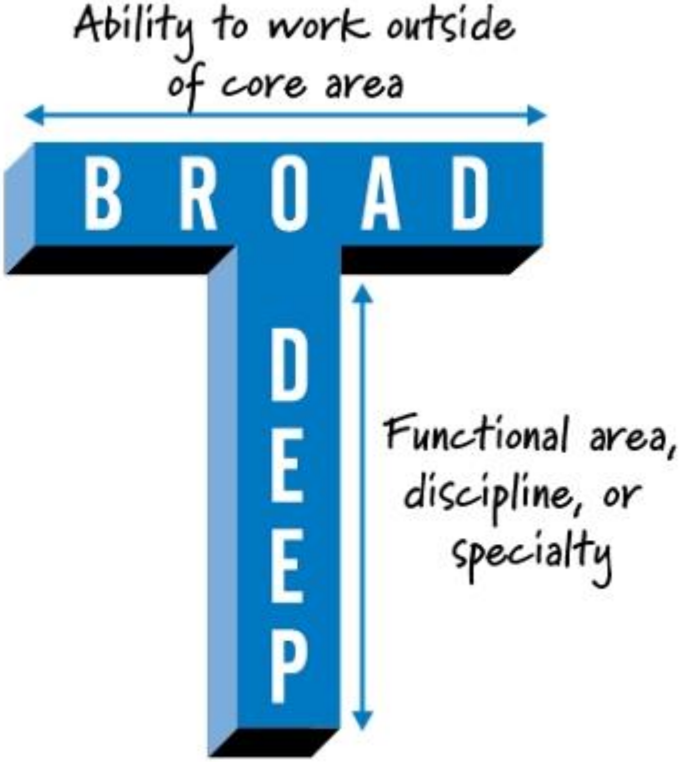
Development Team

Customer

Scrum Roles: Development Team



- Consists of members having the skills (T shape) to define, develop, test, deploy, maintain, and communicate the various aspects of the product.
- A cross-functional collection of various types of people.
- Members must collectively have all of the skills needed to produce good quality, working software.
- Self-organizes to determine the best way to accomplish the goal set out by the Product Owner.
- A typical Scrum team is about 5-9 members in size.


Ability to work outside of core area
BROAD
DEEP
Functional area, discipline, or specialty

Scrum Roles: Scrum Master (1)

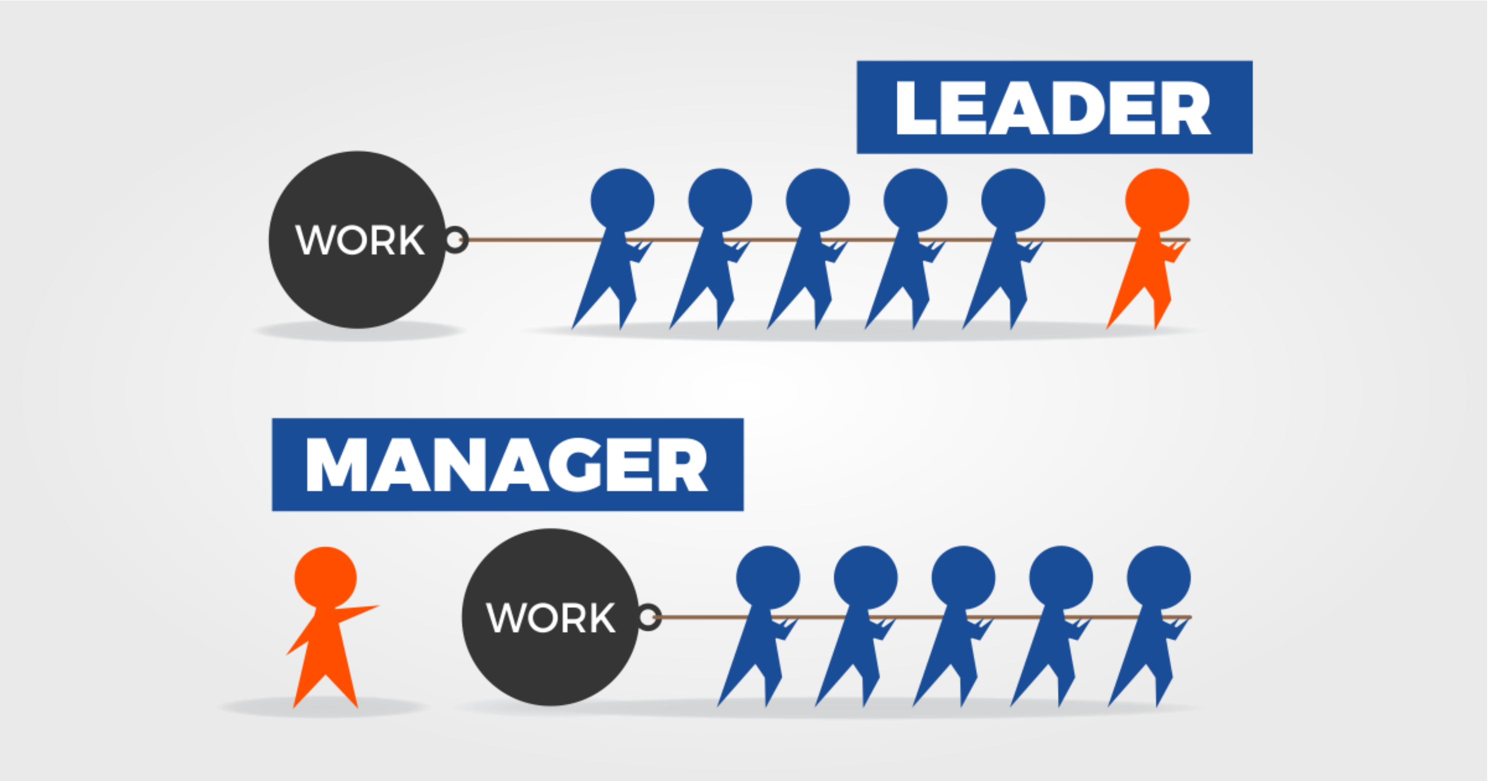
- As a Coach
  - The person responsible for making sure the team adhere to Scrum behaviors, rules, and guidelines.
  - Helps the Scrum team and the rest of the organization develop their own specific Scrum process.
  - Helps the organization through the challenging change management process that can occur during a Scrum adoption.
- As a Facilitator:
  - Helps the team resolve issues and make Scrum process improvements.
  - Protects the team from outside interference and takes a leadership role in removing impediments (when the team cannot resolve them).
  - Ensures everybody plays by the rules.

Scrum Roles: Scrum Master (2)

- Helps everyone involved understand and embrace the Scrum values, principles, and practices.
- Not only explains to the team how various tasks/activities are done but also explains it to the external stakeholders.
- Has no authority to exert control over the team
  - Functions as a leader, not a project manager or development manager.

Scrum Roles: Scrum Master (3)

- Leader vs Manager



Scrum Roles: Product Owner

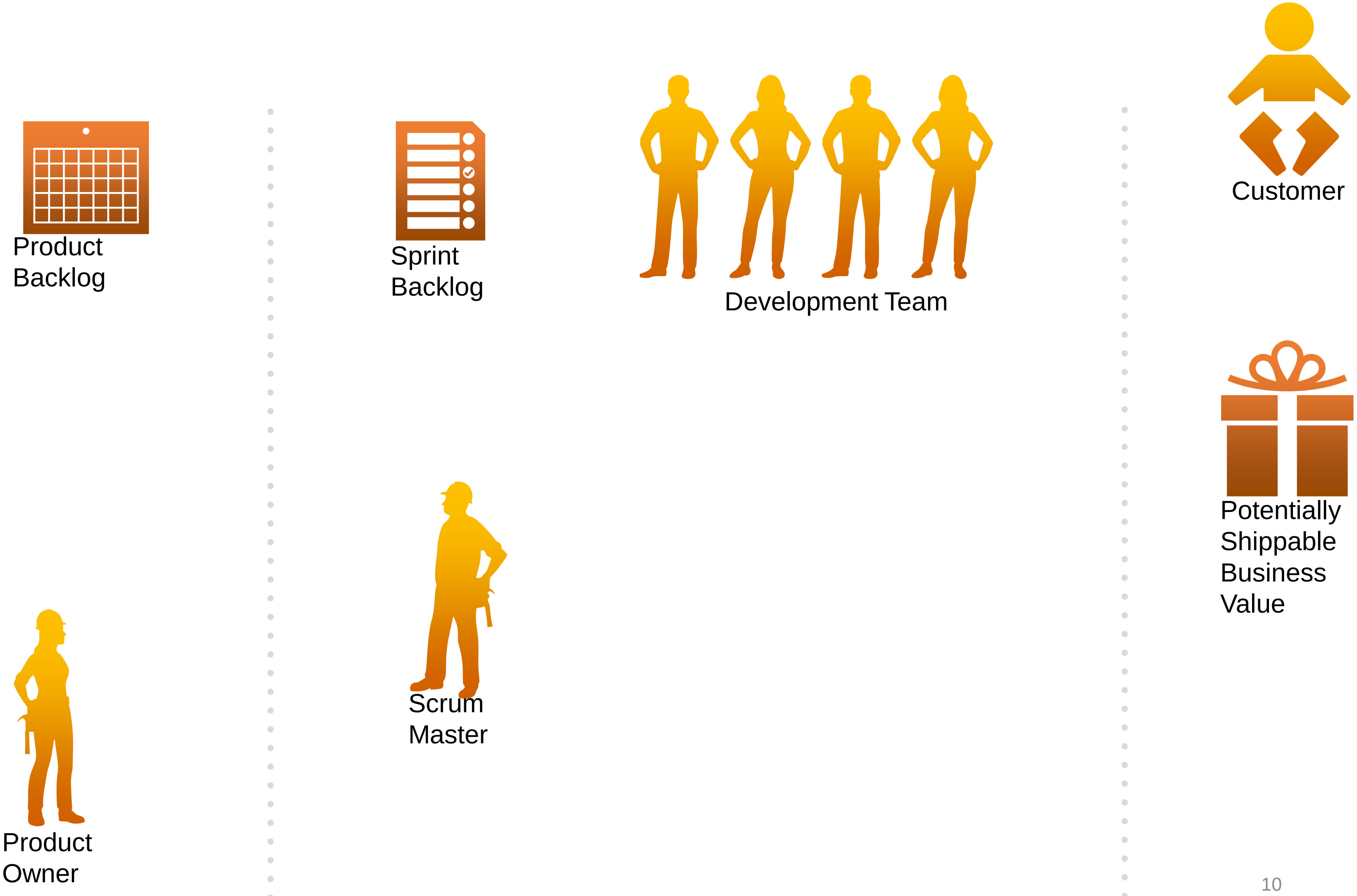
- Responsible for maximizing the value of the product.

- Knows the business and the customer. So he/she defines user stories that matter to the business and the customer, and holds off on other stories.
  - Has a vision of what he wants to create.

- Is the **only** person responsible for maintaining the product backlog.

- He/she ensures that the user stories adhere to the DoR in terms of how requirements are described.

Artifacts 3x



Product Backlog

Sprint Backlog

Development Team

Customer

Potentially Shippable Business Value

Scrum Master

Product Owner

Scrum Artifacts: Product Backlog

- A continuously evolving and ordered list of requirements and topics, required to ensure the optimal product value is achieved.

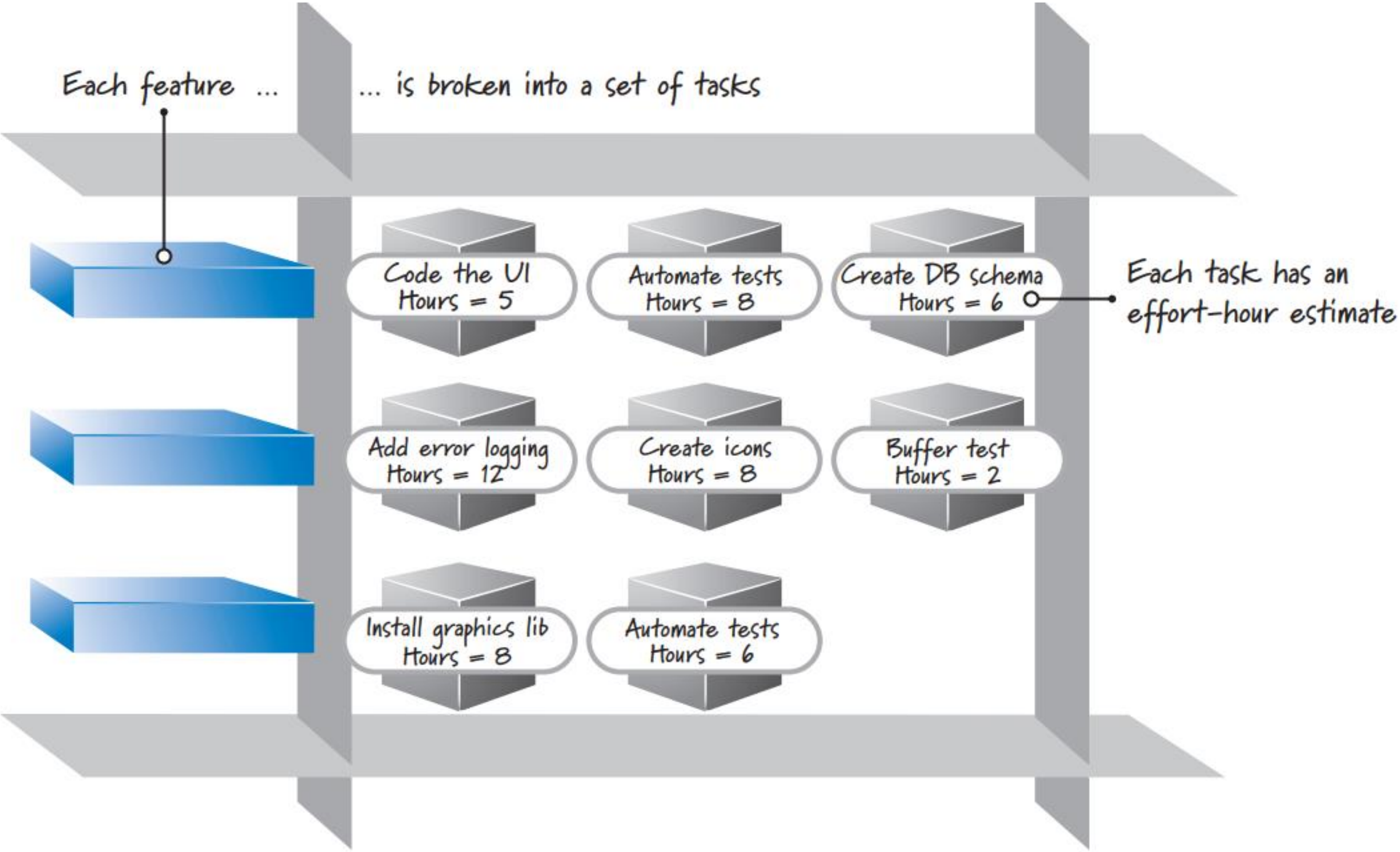
- The product backlog is a single source of truth for modifications to the product.

- All modifications are on a single list to ensure everyone has the same view on what modifications are desired.

Scrum Artifacts: Sprint Backlog

- A set of product backlog items that have been selected for the Sprint.
- Also contains tasks required for delivering the new feature at the end of a Sprint (for example, activities, such as develop, build, review, and test).
- Contains an internal prediction of the Development team only for the next increment.

Scrum Artifacts: Sprint Backlog

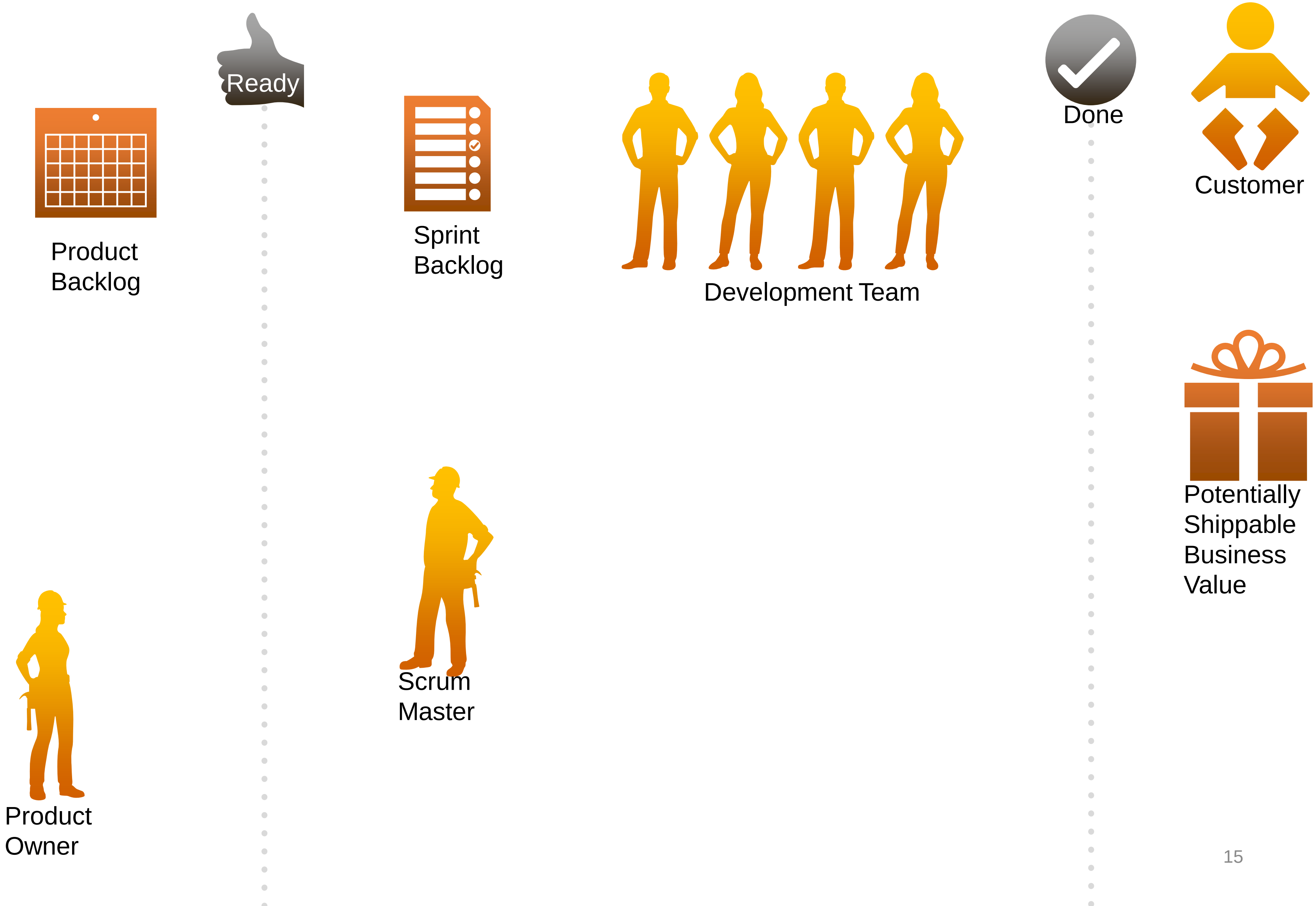


Scrum Artifacts: Potentially Shippable Product

- The product increment, which is delivered at the end of each Sprint.

- If the business requires, this artifact can be shipped to production straight away as it does not have any outstanding tasks.

States 2x



Ready

Product Backlog

Sprint Backlog

Development Team

Done

Customer

Potentially Shippable Business Value

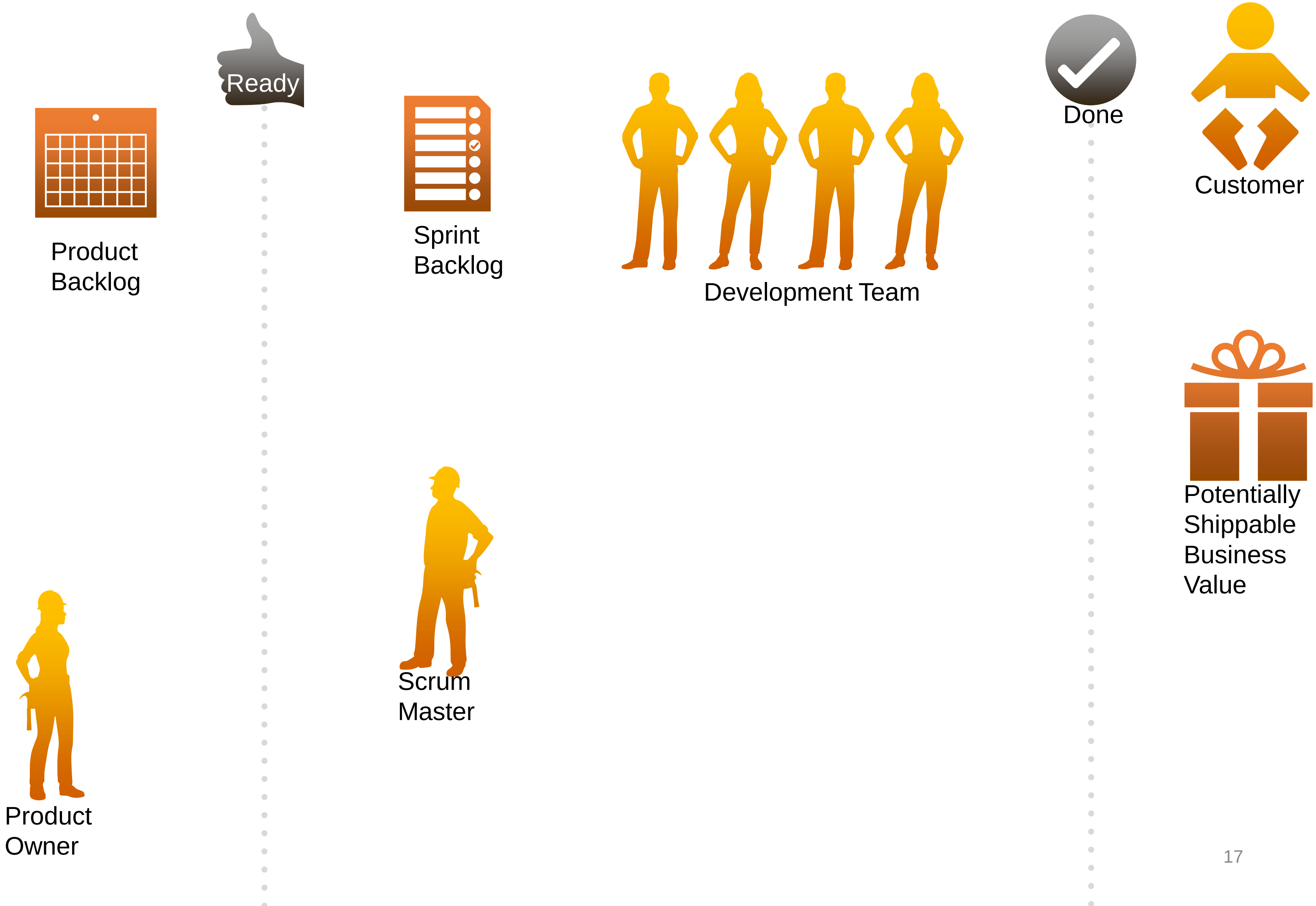
Scrum Master

Product Owner

Scrum States: Definition of Ready (DoR)

- A list of rules describing standards that must be adhered by user story in order to be accepted by the Development team (Grooming result).
- Ensures requirements are clear from its inception and additional conversations during the Sprint activity are kept to an absolute minimum.
- Eliminates the need for discussions as much as possible.

States 2x



Ready

Product Backlog

Sprint Backlog

Development Team

Done

Customer

Potentially Shippable Business Value

Scrum Master

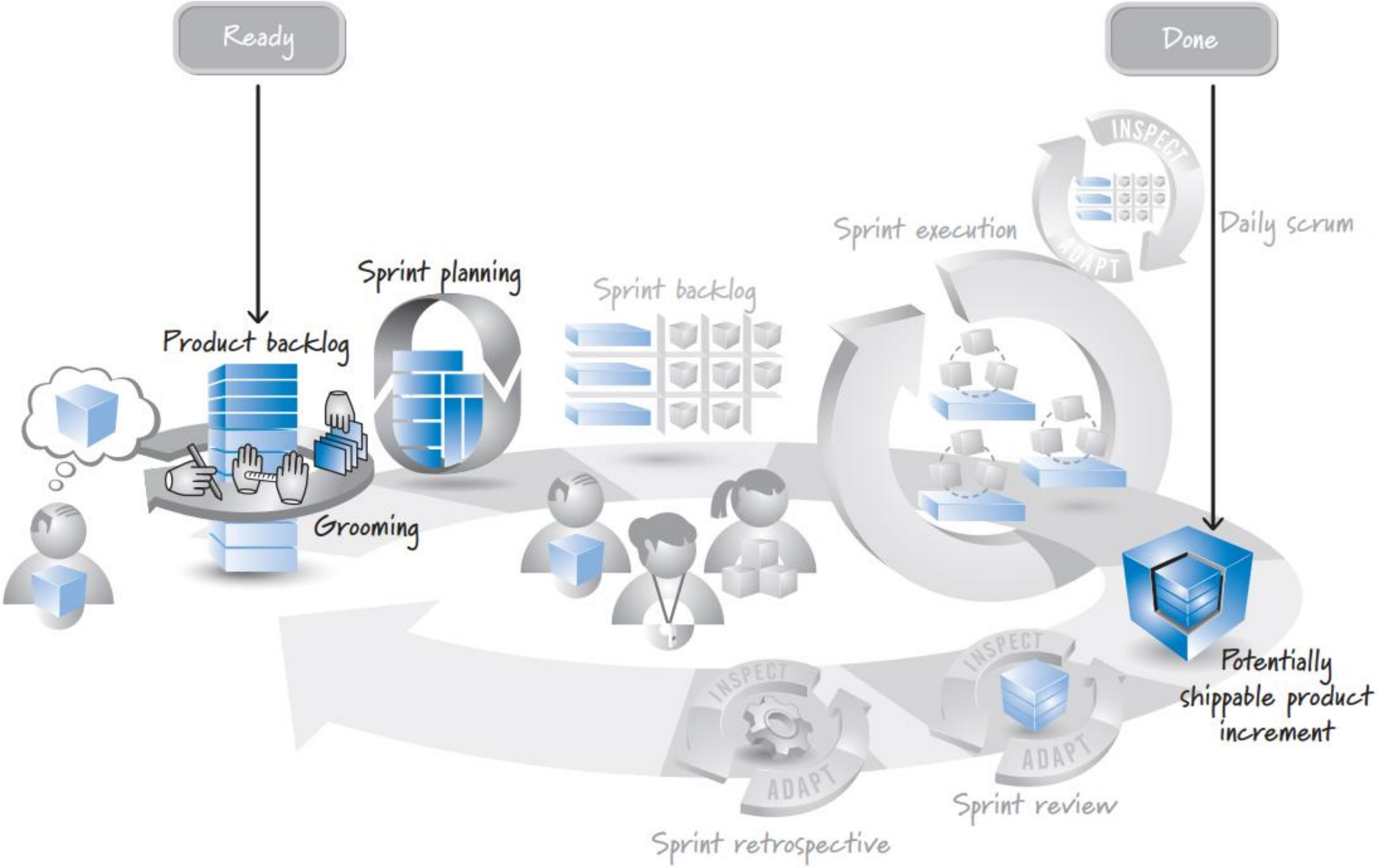
Product Owner

Scrum States: Definition of Done (DoD):

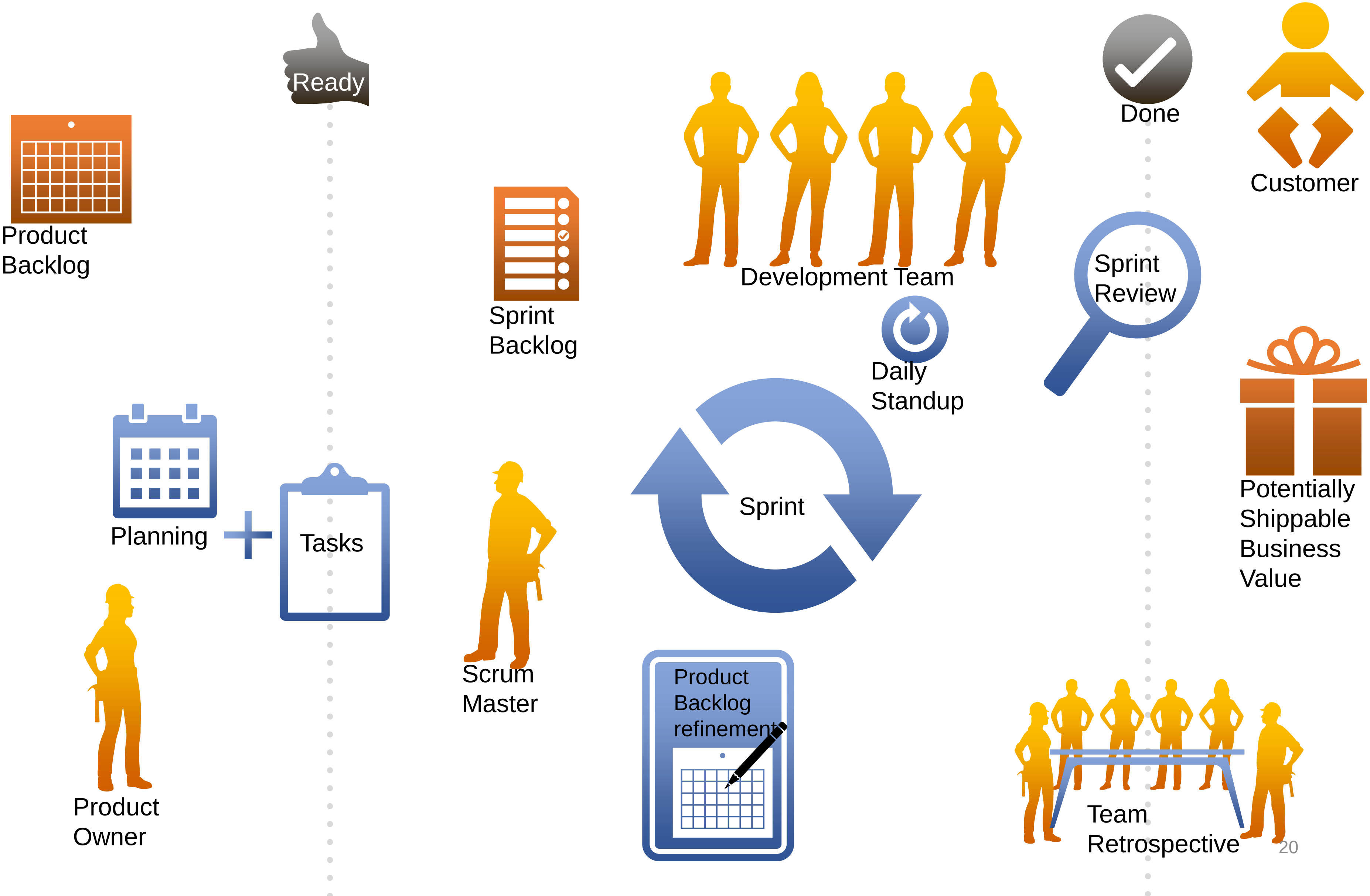
- A list of criteria describing which topics need to be addressed in order for a product to be considered "potentially shippable".

- Containing restraints, such as code, unit plus coverage tested, functionally tested, performance tested, user acceptance tested, reviewed, and documented (based on nature of product, technology in use, product organization, etc).

- The team only delivers that part of the product which adheres to criteria in the list.


Ready
Done
INSPECT
ADAPT
Sprint execution
Daily scrum
Sprint planning
Sprint backlog
Product backlog
Grooming
Potentially shippable product increment
INSPECT
ADAPT
INSPECT
ADAPT
Sprint review
Sprint retrospective

Events 6x



Ready

Product Backlog

Sprint Backlog

Development Team

Done

Customer

Sprint Review

Daily Standup

Planning

Tasks

Scrum Master

Sprint

Potentially Shippable Business Value

Product Owner

Product Backlog refinement

Team Retrospective

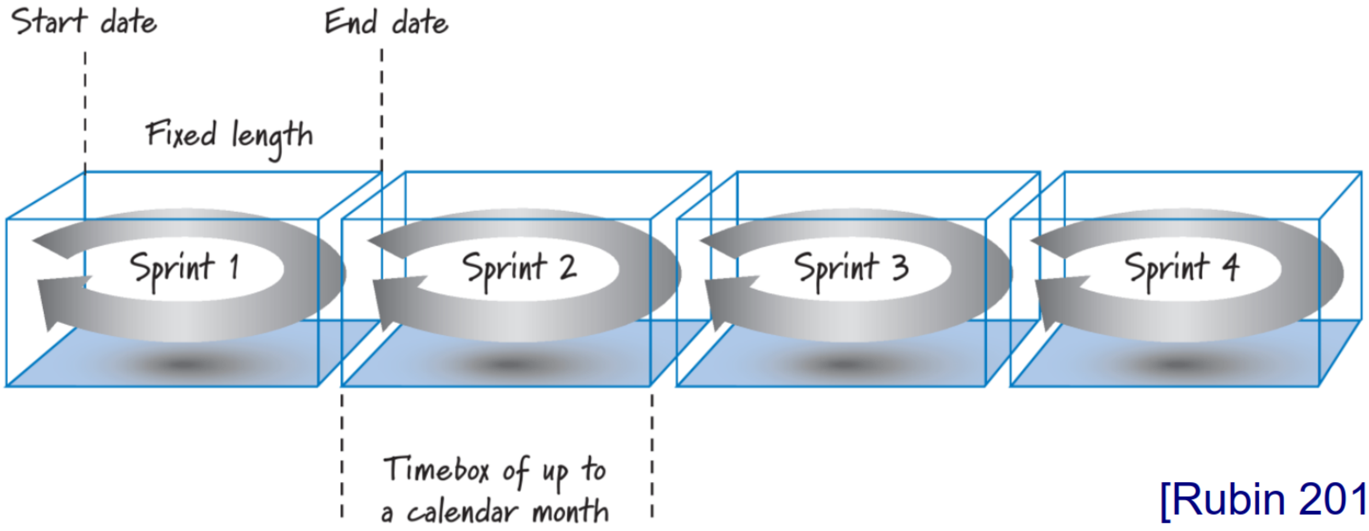
Scrum Events: The Sprint

- A predefined amount of time during which activities on the Sprint backlog are performed.
- Sprints are often defined per week or every two weeks, but longer duration is also used (1 mouth at most).
- Shortening a Sprint results in shorter backlog refinement, poker, and retrospective sessions as the number of topics to discuss will become much lesser as well.

Scrum Events: The Sprint

- Sprints are timeboxed: fixed start and end dates, they should all be of the same duration.

- Each sprint has a goal and scope which are not permitted any changes, unless absolutely necessary.



[Rubin 2012]

Scrum Events: The Daily Stand up

- Every day, the team comes up to the Scrum Board where each member will explain
    1. What did I accomplish since the last daily scrum?
    2. What do I plan to work on by the next daily scrum?
    3. What are the obstacles that are preventing me from making progress?

- Impediments, blocking team members from progressing, are also raised in this standup.

- A standup should never take more than 15 minutes of time.

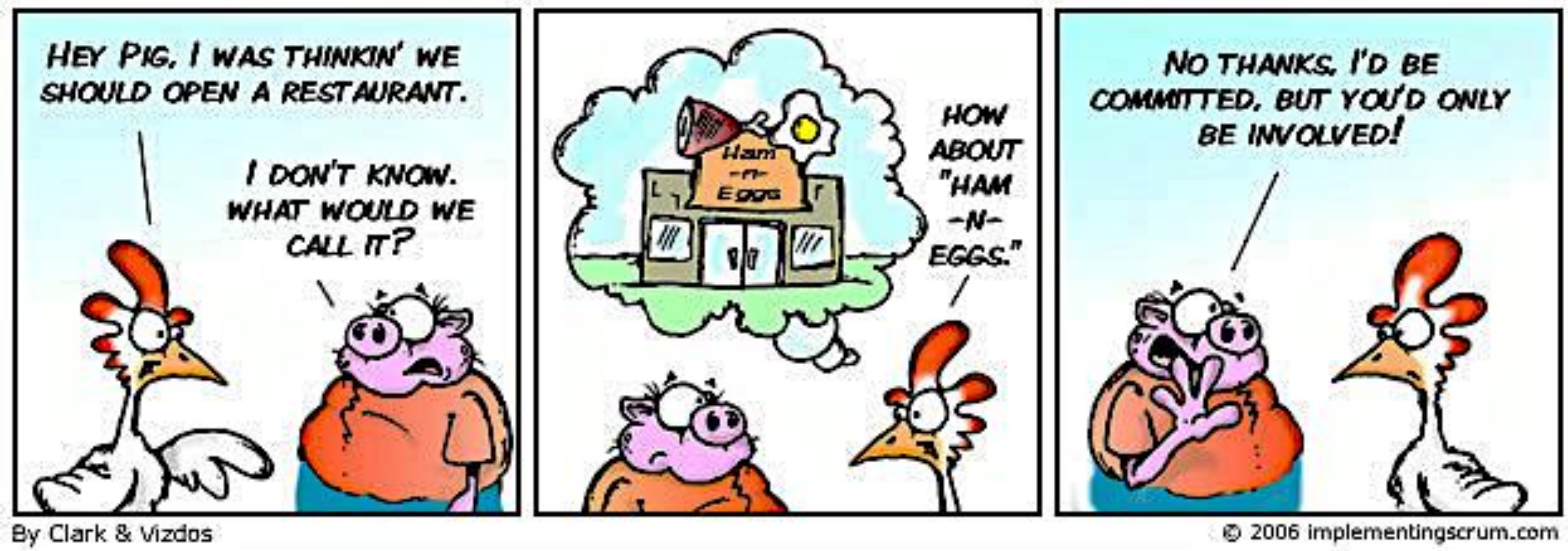
Scrum Events: The Daily Stand up

Rules

- The daily scrum is an inspection, synchronization, and adaptive daily planning activity that helps a self-organizing team do its job better.
- The daily scrum is not a problem-solving activity.
  - Rather, many teams decide to talk about problems after the daily scrum and do so with a small group of interested people.
- The daily scrum is not a traditional status meeting.

Scrum Events: The Daily Stand up
Rules

- At the daily scrum, only the pigs should talk; the chickens, if any, should attend as observers.


HEY PIG, I WAS THINKIN' WE SHOULD OPEN A RESTAURANT.
I DON'T KNOW. WHAT WOULD WE CALL IT?
Ham -n- Eggs
HOW ABOUT "HAM -N- EGGS."
NO THANKS, I'D BE COMMITTED, BUT YOU'D ONLY BE INVOLVED!
By Clark & Vizdos
© 2006 implementingscrum.com

Scrum Events: The Planning Poker Session

- At the start of each Sprint (and often during the backlog refinement session), the team plays Planning Poker in order to quantify the amount of work that is required to fulfill a new activity.

- A sizing is agreed by the entire team and a '*common view*' is established on the topics at hand.

- Sizing will become more reliable over time, so the team starts to exhibit a specific burn rate, defining how fast the team is performing.

Scrum Events: The Sprint Review (Product Demo)

- Each Sprint closes off with a product demo for the team, Product Owner, and the business/customer.

- A way to provide and receive feedback from all stakeholders and inject this feedback into the product during the next Sprint.

- Attending the product demo is essential for improving collaboration, the next product backlog, and the product!

Scrum Events: The Team Retrospective

- After every Sprint, the team evaluates what went well and what went not-so-well, thus could improve.

- This is an important aspect of Scrum to continuously improve on the *way of working*.

Scrum Events: The Backlog Refinement Session

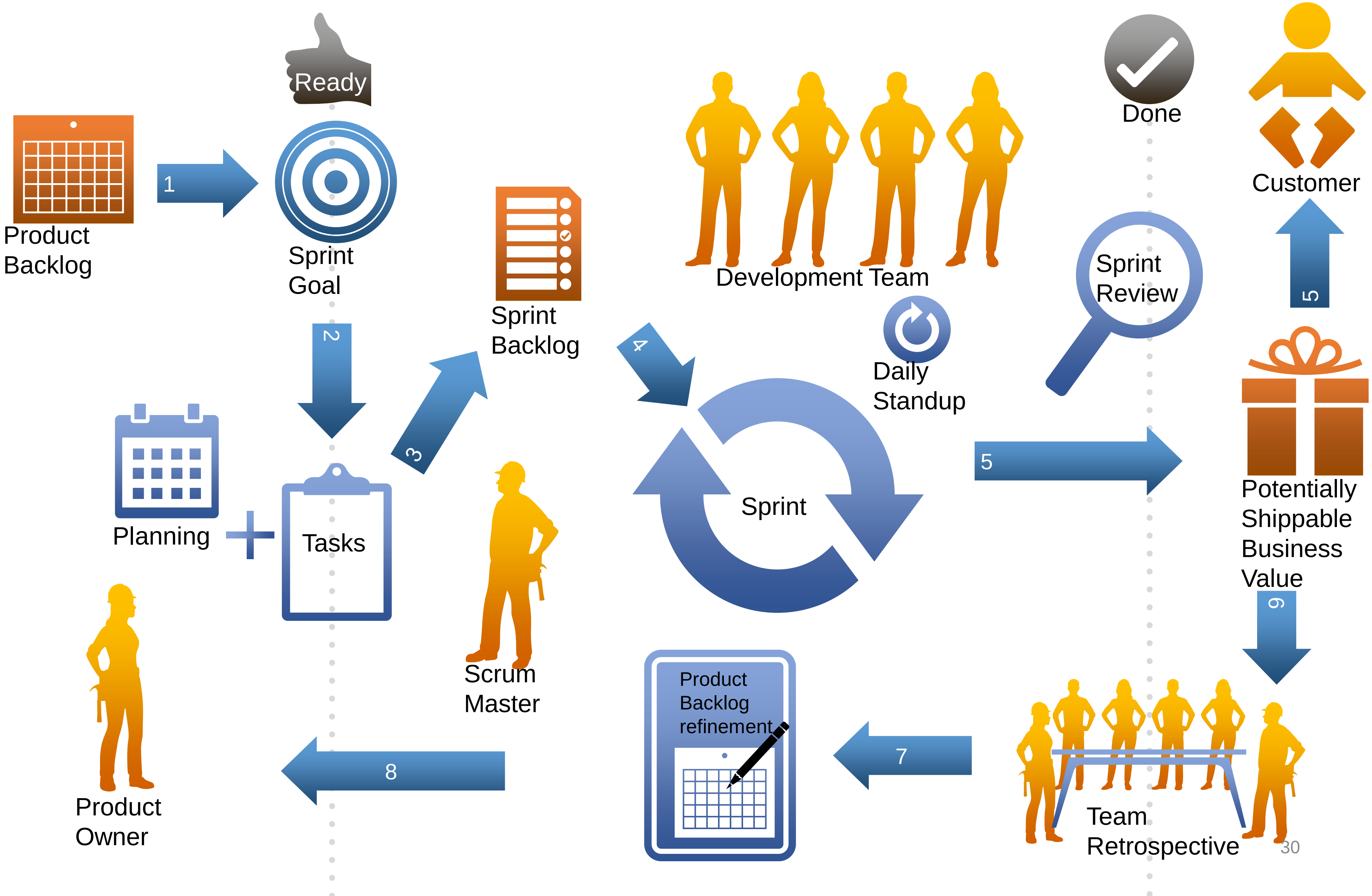
- Used to anticipate and define what user stories are expected in the next Sprint.

- Communicate uncertainties if user stories are unclear.

- Usually takes place towards the end or in the middle of the current sprint.

- leaving room for *business* and *Product Owner* to improve user stories where required before next sprint.

The Scrum Flow



Product Backlog

1

Ready

Sprint Goal

2

3

Sprint Backlog

Planning

Tasks

Scrum Master

Product Owner

4

Development Team

Daily Standup

Sprint

5

Done

Sprint Review

Customer

5

Potentially Shippable Business Value

6

Team Retrospective

7

Product Backlog refinement

8

Scrum Flow

1. Together with Product Owner, the team defines the goal for the next Sprint.

2. The team performs a Planning Poker session to determine the number of stories for the Sprint.

3. PBIs that fit the Sprint and adheres to the rules of DoR, such as tasks are clear enough to be fully processed by the team, are added to the Sprint backlog.

4. The Sprint starts and engineers will work uninterrupted on agreed tasks. The Product Owner is **not allowed to update** tasks/user stories in the middle of the Sprint.

Scrum Flow

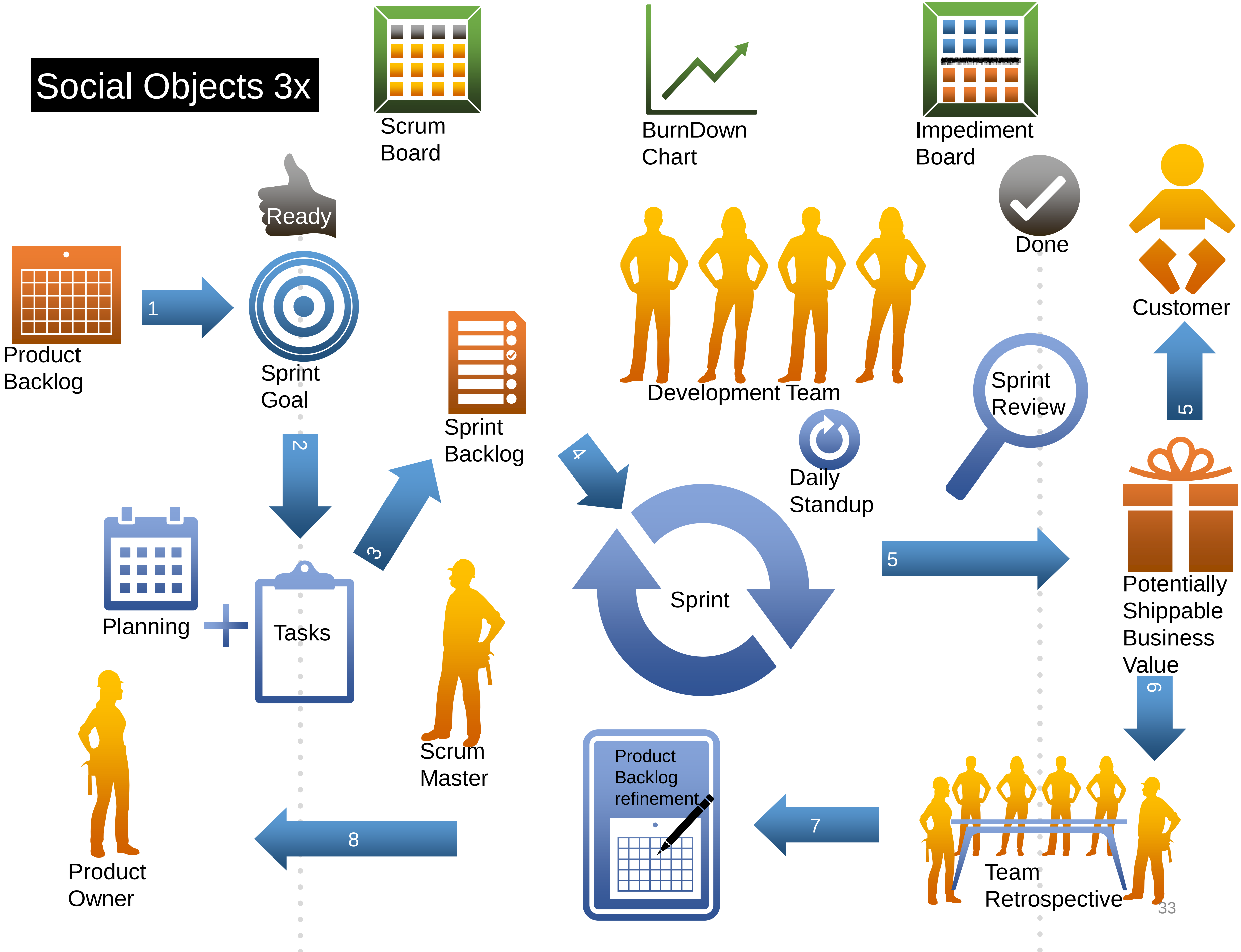
5. At the end of the Sprint, the updates are demonstrated to the customer.

6. The Sprint review (a retrospective) is performed allowing the process to improve.

7. A product backlog refinement is conducted to help the Product Owner to get user stories to a state where they adhere to DoR. This activity can also be performed in the middle of a Sprint if required.

8. The Product Owner adds updated stories to the product backlog.

Social Objects 3x



Scrum Board

BurnDown Chart

Impediment Board

Ready

Done

Customer

Product Backlog

1

Sprint Goal

Sprint Backlog

Development Team

Sprint Review

5

2

4

3

Daily Standup

Planning

+

Tasks

Sprint

5

Potentially Shippable Business Value

6

Scrum Master

Product Backlog refinement

7

8

Team Retrospective

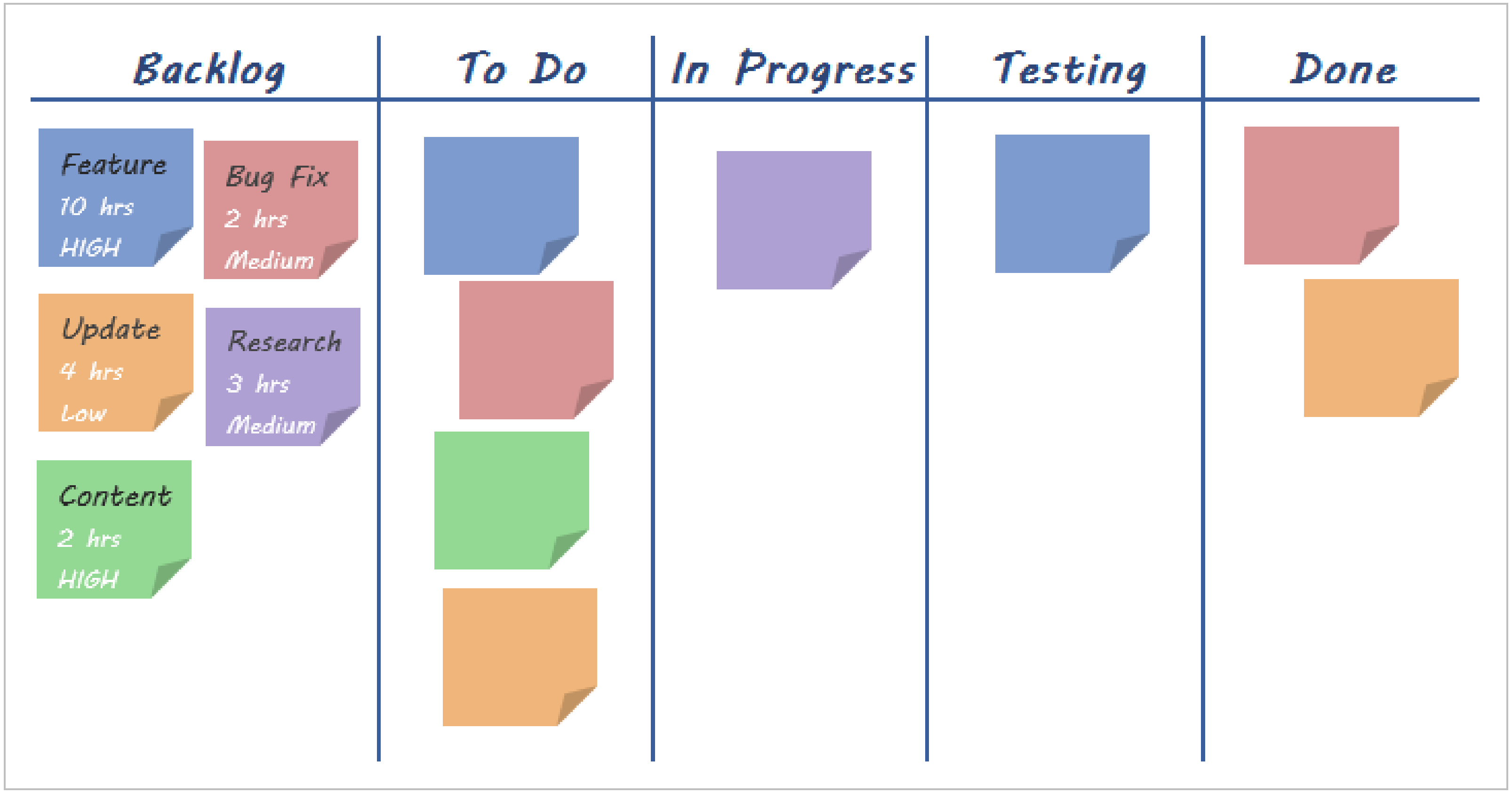
Product Owner

Social Objects: Scrum Board

- A board that lists the various activities for the current Sprint to be completed.

- e.g: Kanban board, where activities move from left to right over the board from “To do”, “Doing”, “Done” or “Impeded”, or ….

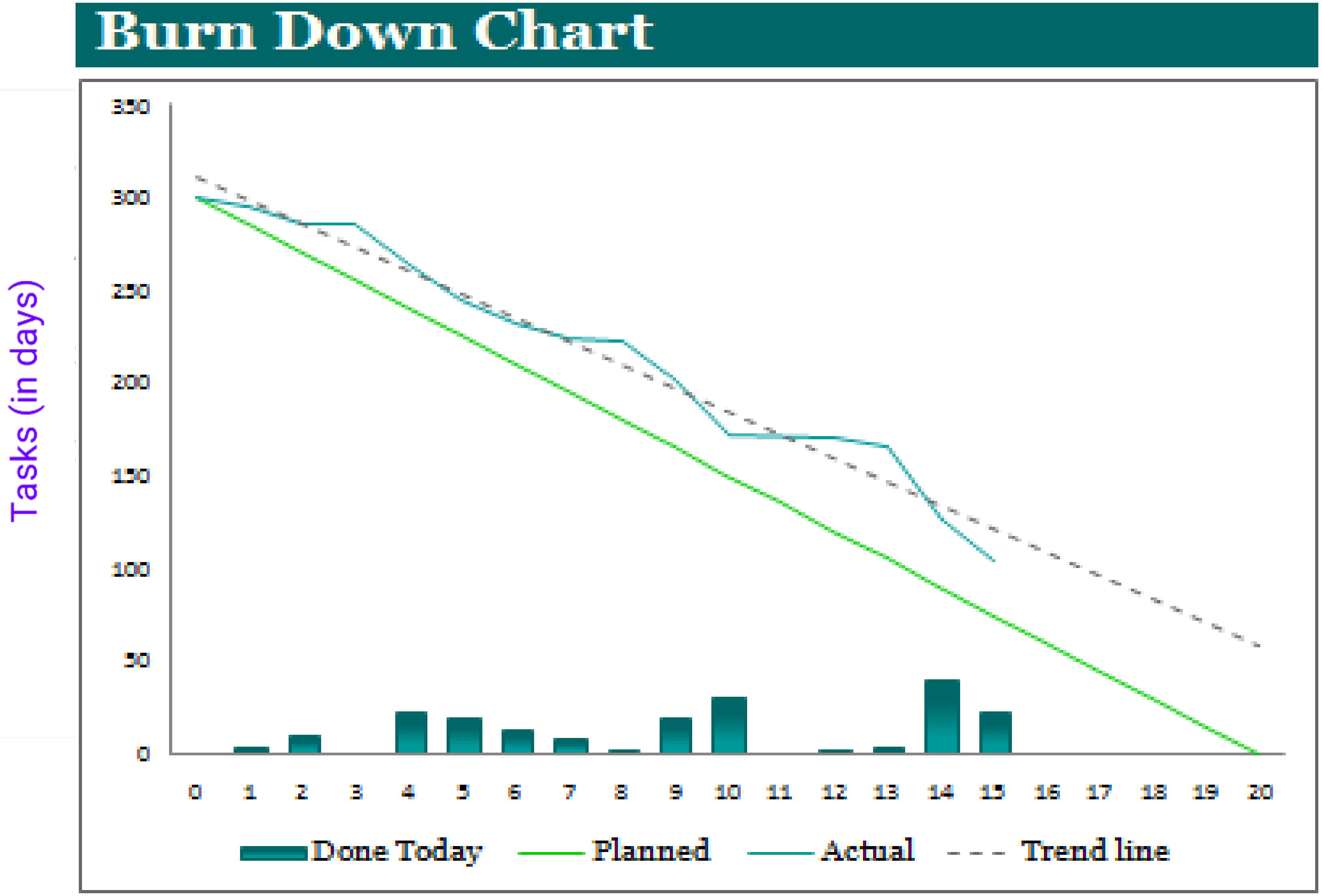
Social Objects: Scrum Board



Social Objects: Burn Down Chart

- During a Planning Poker session features are assigned velocity points.
- Points for all features of a Sprint delivery added to Burn Down chart.
- Whenever a feature is implemented, the “burned” points are deducted from the total. The aim for each sprint is “0” burned points left.
- First it’s difficult but over time estimations becomes more reliable.
- Outlines burn rate for running the Sprint over times. Team can steer on making the required progress to burn all points for the Sprint.

Social Objects: Burn Down Chart



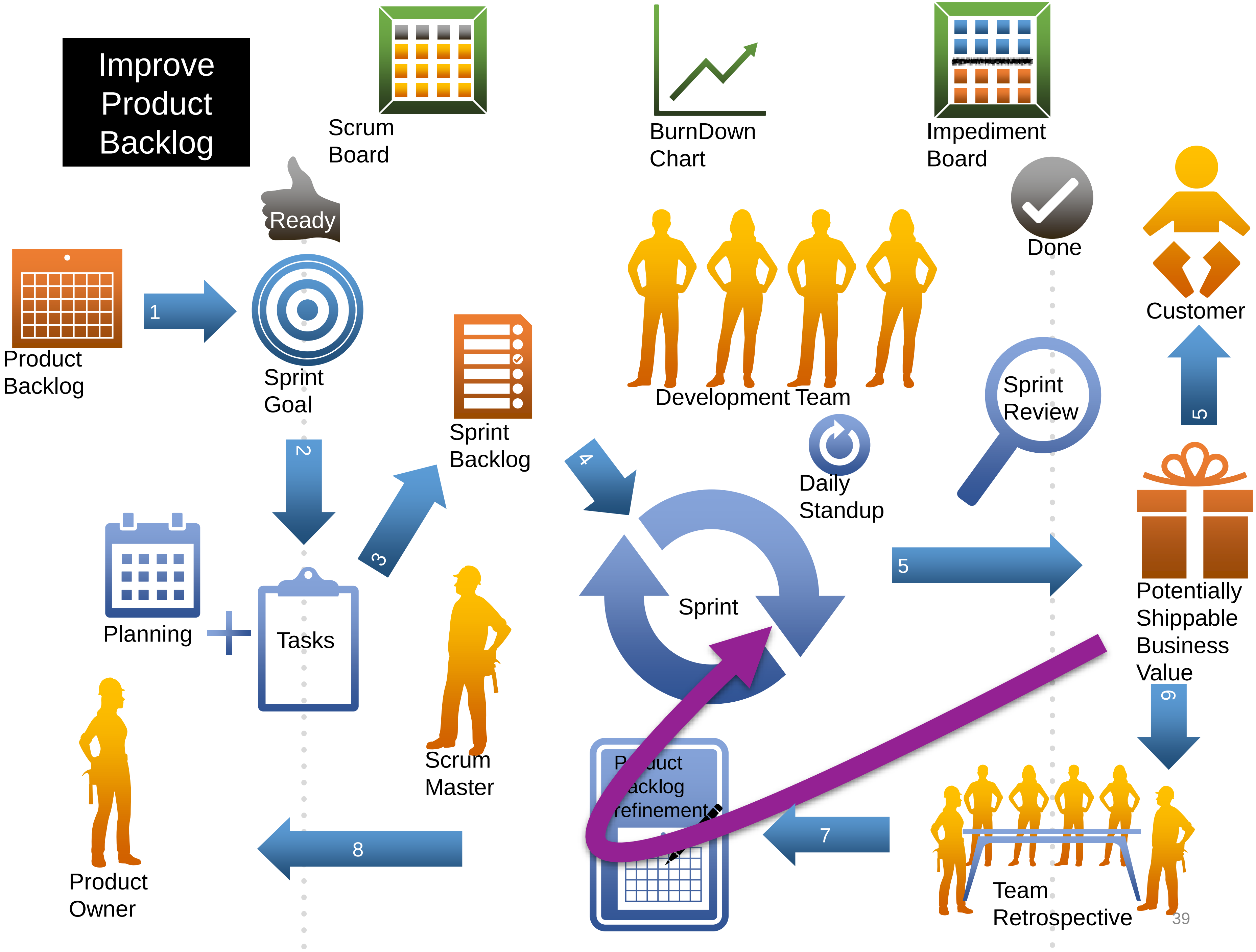
Social Objects: Impediment Board

- This board contains all (external) topics which prevent the team from doing its work.

- Typically, the Scrum Master ensures impediments are handled.

- e.g: “not enough desks”, “team divided over multiple locations slows us down”, and “network is down several times a day”.

Improve Product Backlog



Scrum Board

BurnDown Chart

Impediment Board

Ready

Done

Customer

Product Backlog

1

Sprint Goal

Sprint Backlog

Development Team

Sprint Review

Daily Standup

2

3

4

5

Sprint

5

Planning

+

Tasks

Scrum Master

Potentially Shippable Business Value

6

Product Owner

8

Product Backlog refinement

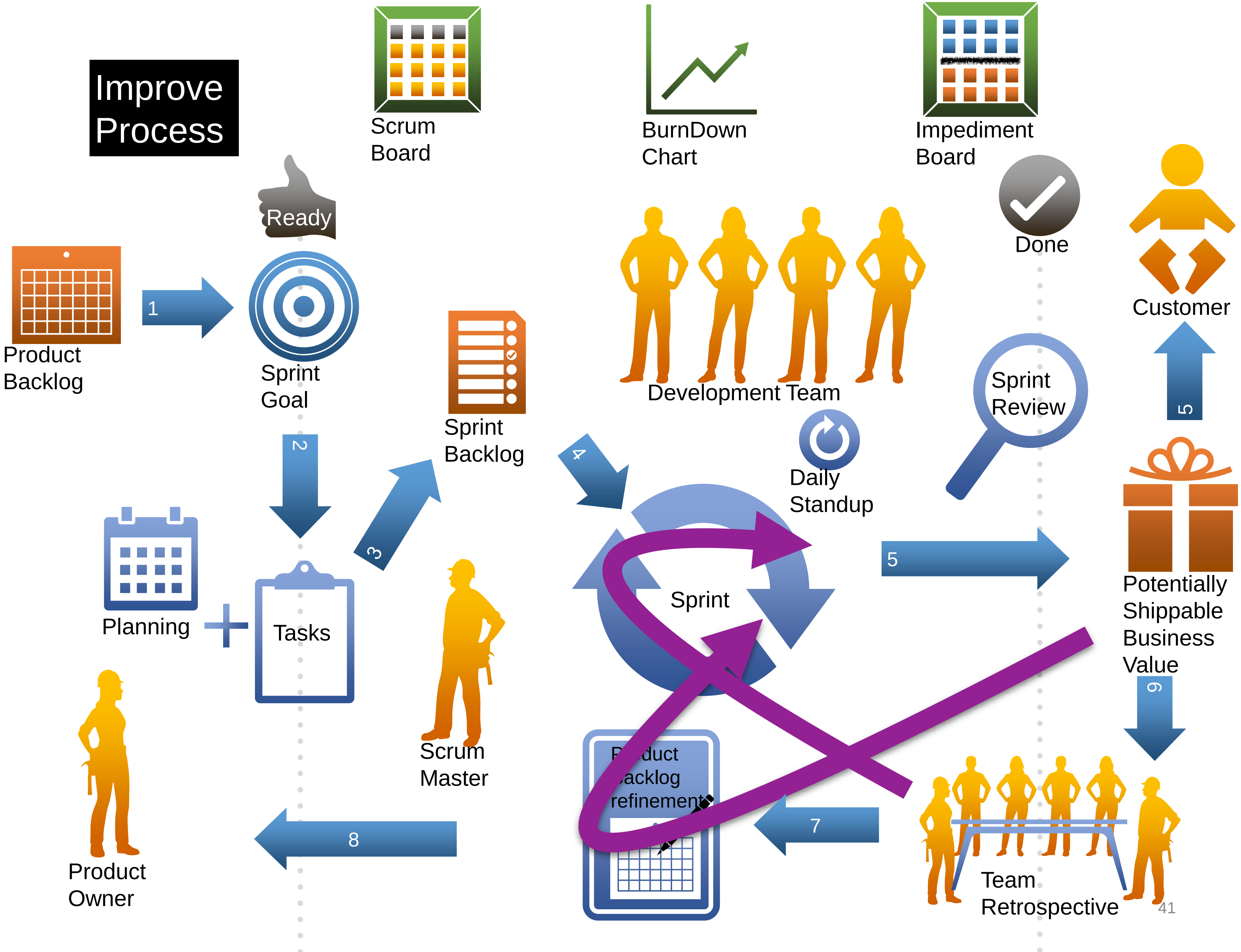
7

Team Retrospective

Improvement Cycle: Improve Product Backlog

- The backlog, product, and collaboration are improved over time during each of the product demo sessions.

Improve Process



Scrum Board

BurnDown Chart

Impediment Board

Ready

Product Backlog

1

Sprint Goal

2

Sprint Backlog

3

Planning

Tasks

Development Team

Done

Customer

Sprint Review

Daily Standup

4

Sprint

5

5

Potentially Shippable Business Value

6

Scrum Master

Product Owner

8

Product Backlog refinement

7

Team Retrospective

Improvement Cycle: Improve Process

- The process is improved over time during each retrospective in which topics for improvement are discussed.