Overview

Origins of Scrum

Principles

The Scrum Model

Roles

Artifacts

Ceremonies

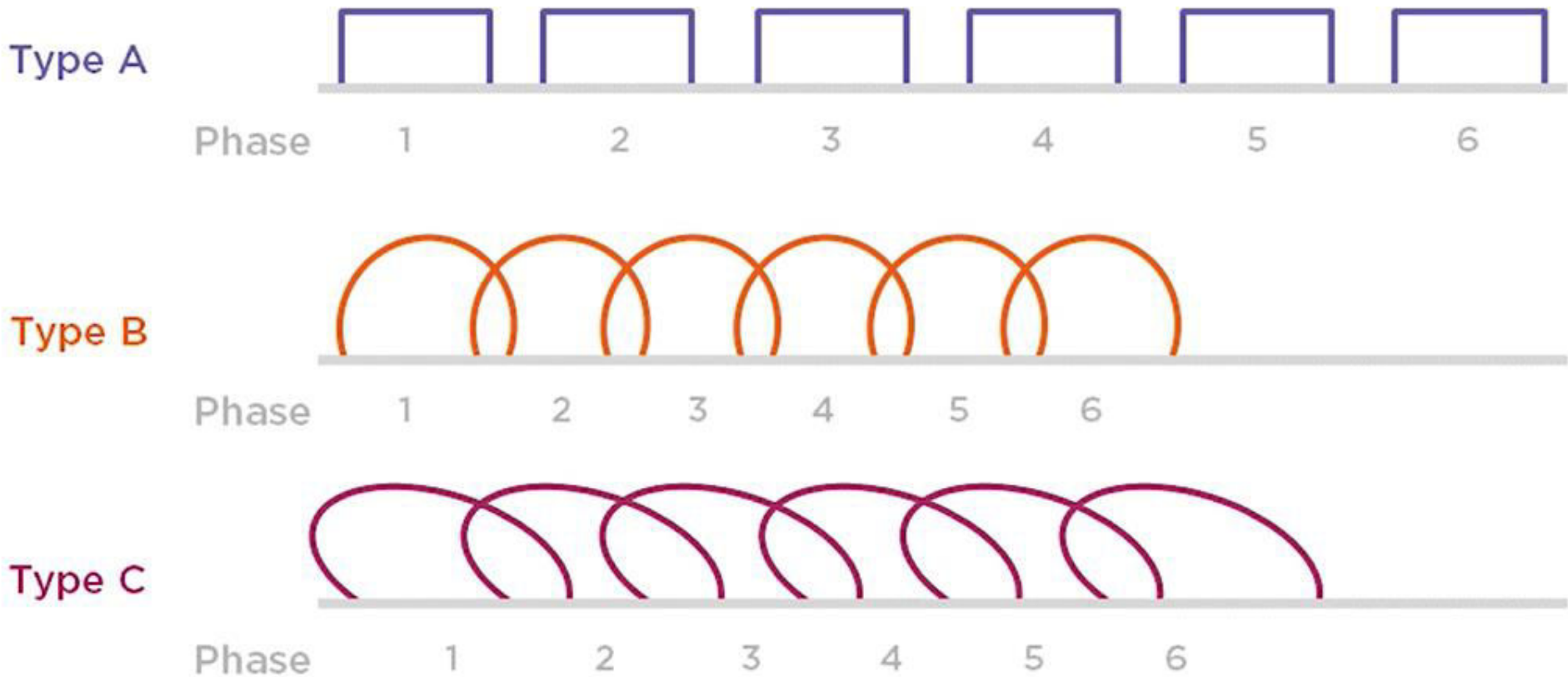
Activities

Origins of Scrum

How this got started

The New New Product Game

Sequential (A) vs. overlapping (B & C) phases of development



Lean Manufacturing: The Toyota Production System

Goals

- Design out overburden (Muri)
- Design out inconsistency (Mura)
- Eliminate waste (Muda)

Techniques

- Continuous improvement (Kaizen)
- Relentless reflection (Hansei)
- Production smoothing (Heijunka)
- Go see for yourself (Genchi Genbutsu)

Taiichi Ohno
Father of the Toyota Production System

Image source:
https://en.wikipedia.org/wiki/Taiichi_Ohno

Learning Organizations

Peter Senge, author of The Fifth Discipline advocates that learning organizations:

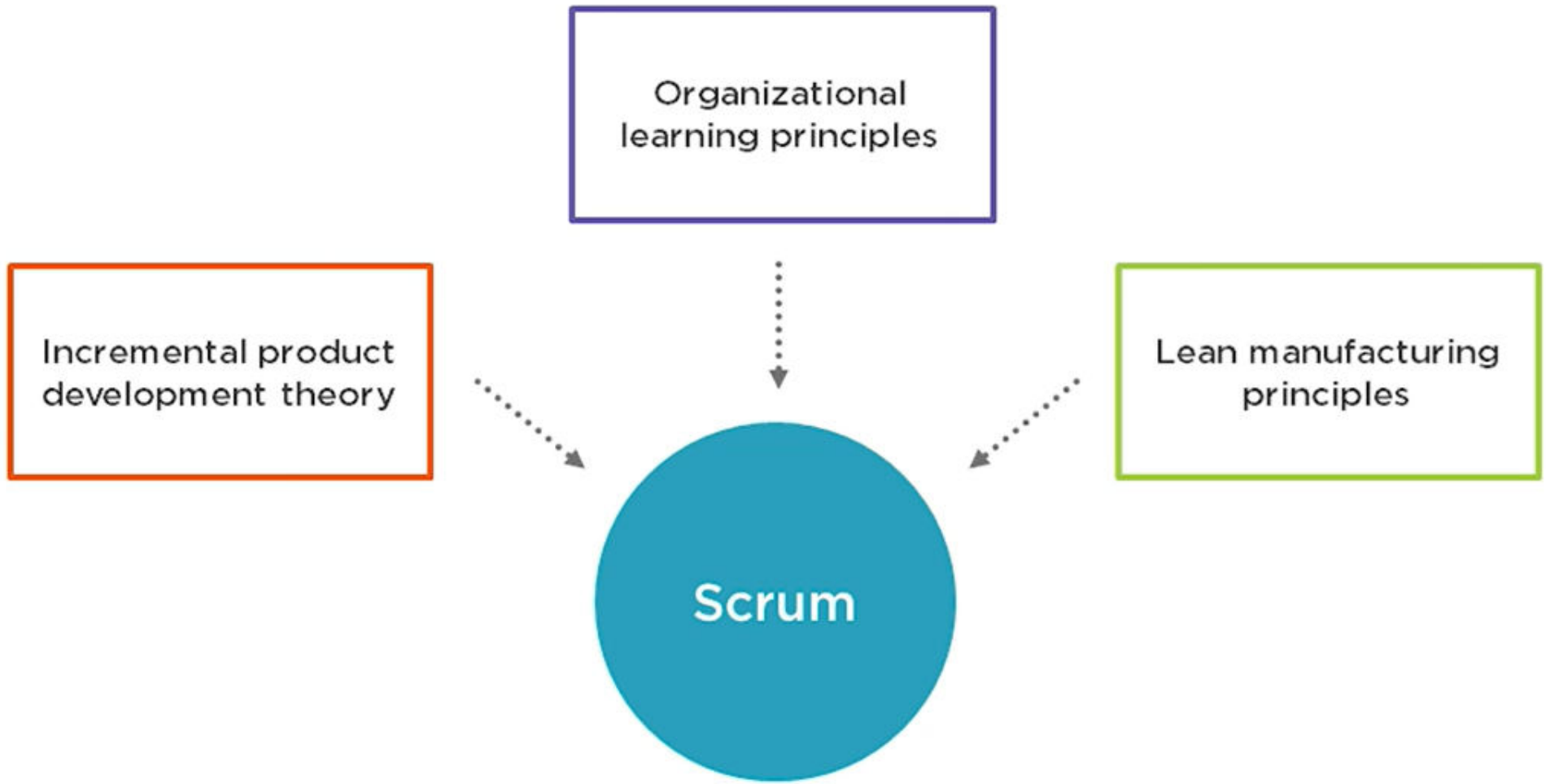
Are adaptive to their external environment

Continually enhance their capability to change/adapt

Develop collectively as well as individual learning

Use the results of learning to achieve better results

Deriving Scrum



Enter the Scrum Masters

Jeff Sutherland

Ken Schwaber

Co-presented Scrum as a formal practice at OOPSLA in 1995.
Today, there are more than 5000 certified Scrum Masters
in the US, Europe and India.

Image sources: https://en.wikipedia.org/wiki/Jeff_Sutherland, https://www.scrum.org/team/ken-schwaber

Recommended Books By Ken Schwaber

The Enterprise and Scrum

Agile Project Management with Scrum

Scrum Used Beyond Software Development as a Project Management Methodology

Jeff Sutherland's wife is a Unitarian minister who uses Scrum to manage her church.

His brother-in-law and son use it in NPR daily production.

Principles

Characteristics of Scrum

Scrum Promotes These Principles

- Small working teams
- Embracing changing requirements
- Deliver finished work frequently
- Small batches
- Enable releasing product whenever required

Characteristics of Scrum

Activities are time boxed

All project metrics, reports and deadlines are prominently displayed

Multi-disciplinary and self-organizing teams

No specific engineering practices prescribed

Characteristics of Scrum

Product progresses in a series of Sprints

Requirements are captured as items in a Product Backlog

Continuously test product as it is created

Scrum is Used By

Microsoft	Intuit
Yahoo	Nielsen Media
Google	First American Real Estate
Electronic Arts	BMC Software
High Moon Studios	Ipswitch
Lockheed Martin	John Deere
Philips	Lexis Nexis
Borland	Sabre
Capital One	BBC

Scrum Is Used For

Software development

Fixed-price projects

Financial applications

ISO 9001-certified applications

Embedded systems

24x7 systems with 99.99% uptime requirements

Large scale content development

Some of the largest applications in use

The Joint Strike Fighter

Video game development

FDA-approved, life-critical systems

Satellite-control software

Websites

Handheld software

Mobile phones

Network switching applications

ISV applications

The Scrum Framework

The high level view

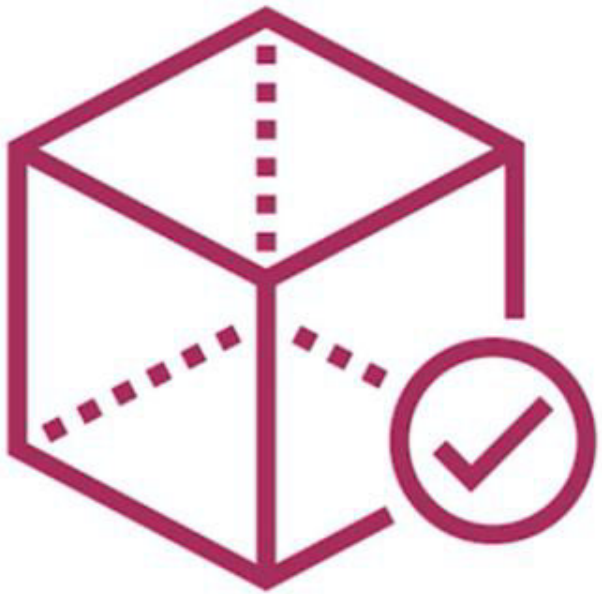
What Is It?

A project management technique

One of the Agile practices

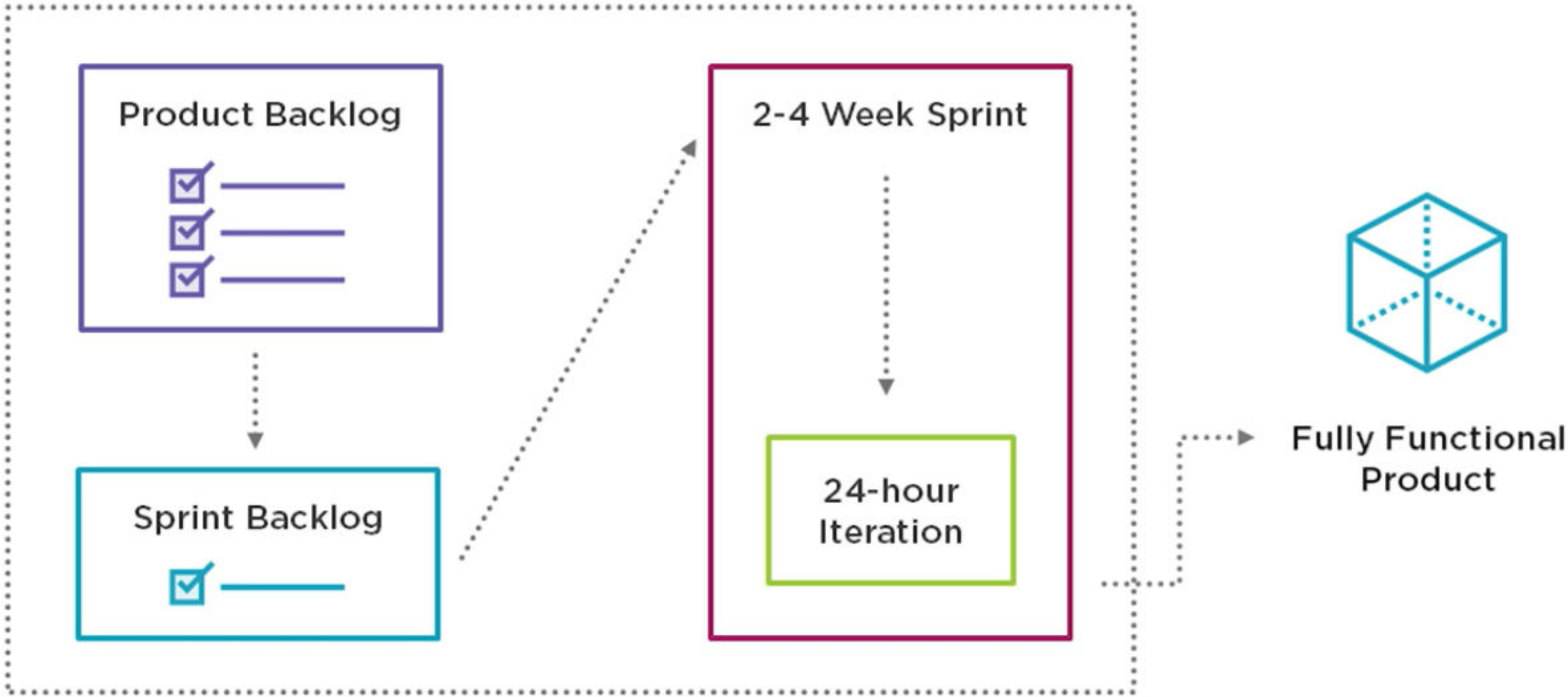
An effective way to deliver products

Scrum in a Nutshell



1. Schedule a demo with the customer
2. Make product to show at demo
3. Get feedback form the demo and use it to guide the next development work

Scrum


Product Backlog
Sprint Backlog
2-4 Week Sprint
24-hour Iteration
Fully Functional Product

Roles

Who does what and why

Scrum Has These Roles

Scrum Lore: Chickens and Pigs

Chickens	Pigs
Managers	Team Members
Executives	Scrum Masters
Anyone on another team	Product Owner

Pigs have skin in the game. Chickens don't.

Product Owner

Is responsible for the profitability of the product (ROI)

Defines the features of the product

Prioritizes features

Decides on a release date and content

Can change features and priority of each iteration

Accepts or rejects iteration results

The Scrum Team

Typically 5-9 People

- Can be fed with 2 large pizzas

Cross-functional

- Programmers, testers, user experience designers, etc.

Members should be full-time

- May be exceptions (e.g. database administrator, graphic designer)

Teams are self-organized

- Teams pull work

Membership changes only between sprints

Scrum Master

- Represents management to the product
- Responsible for enacting Scrum values and practices
- Ensure that the team is fully functional and productive
- Removes impediments
- Facilitates team meetings
- Enable close cooperation across all roles and functions
- Shield the team from external interferences

Scrum Masters Contend With:

Waterfall expectations of inattention

The illusion of command and control

The pain of transparency

Belief in magic

Artifacts

Things produced by and used in Scrum

Scrum Artifacts

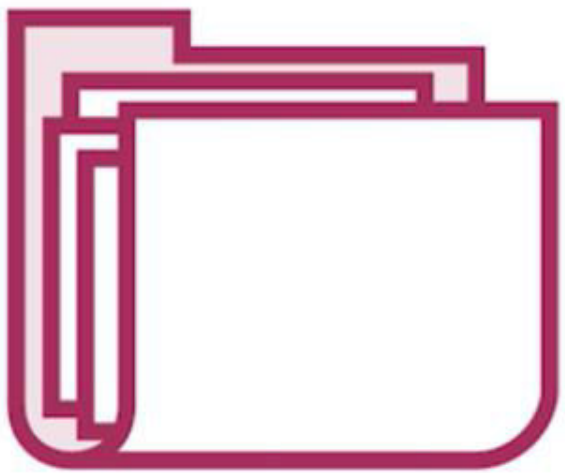
Product Backlog

Sprint Backlog

Sprint Burndown Chart

Scrum Team Velocity

Product Backlog



A prioritized complete list of desirements

All potential features of the product

The single source of truth for requirements

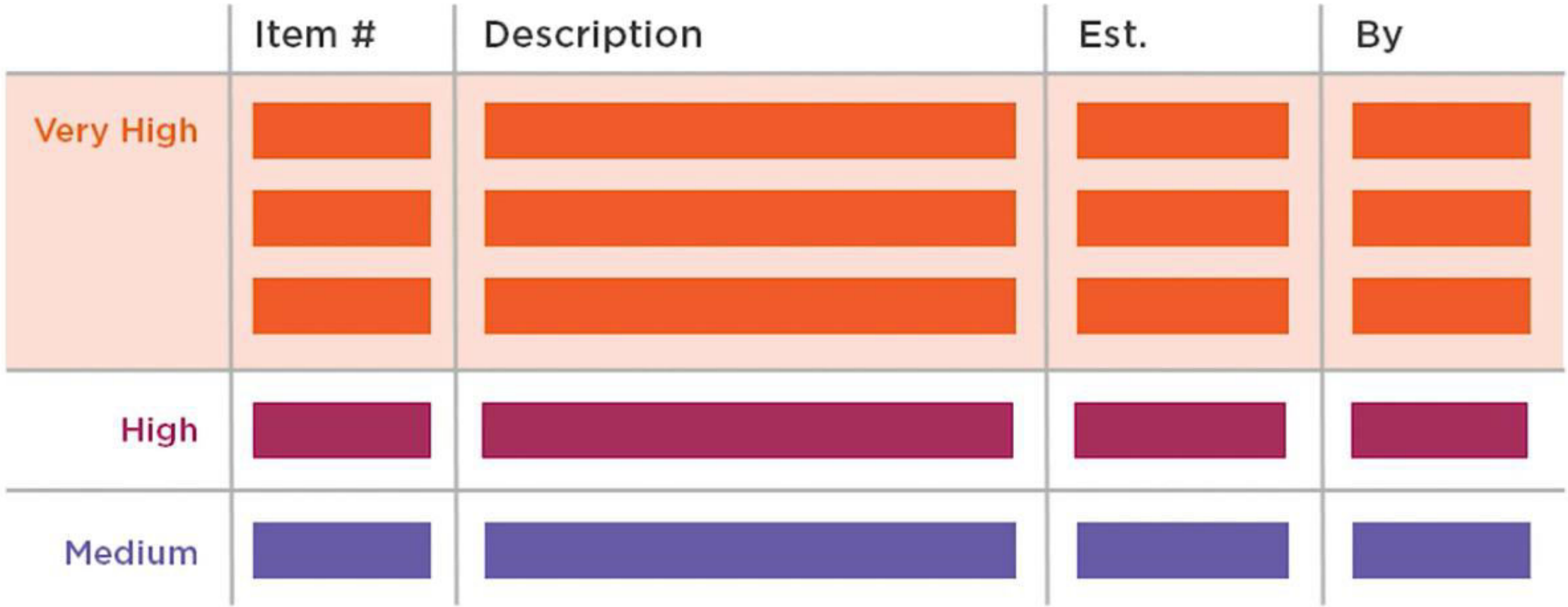
Managed by the product owner

- Created by

- Prioritized by

Reprioritized for each sprint

A Product Backlog



Items in the Product Backlog

Features definitions	Bugs / Defects
Constraints	Use cases
User actions or stories	Desirements
Behaviors	Training events
Other activities	

Product Backlog Item

Unit of deliverable work

Has measurable business value

Estimated by the team

May reference other artifacts

- Large specification
- Mockups
- Architecture Models
- Etc.

Contains criteria for successful completion

Defining “Done”

Pair with someone you don’t know well. Share short answers to the following for 4 minutes:

What does “done” mean in your current project?

What issues do you see with this definition of done?

- How would you address them?

What technical problems do you see with this approach?

- How would you rectify them?

Sprint Backlog

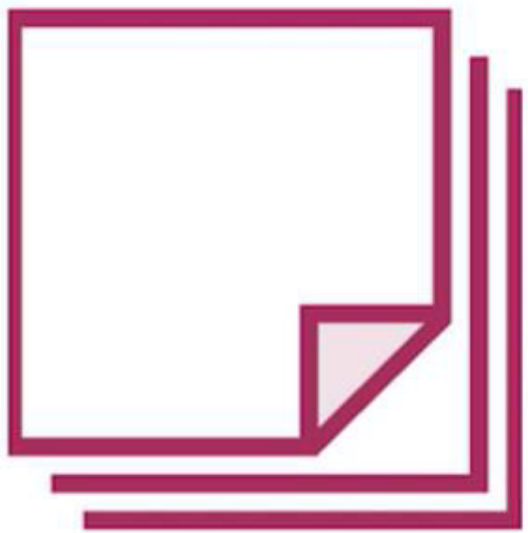
Created by the Scrum Team

List of activities the team commits to for a single Sprint

Drawn from the Product Backlog Items

Often thought of as a to-do list for the team

Sprint Backlog Item



Represents a single deliverable or activity

Estimated in ideal hours

Managed by a single Scrum Team member

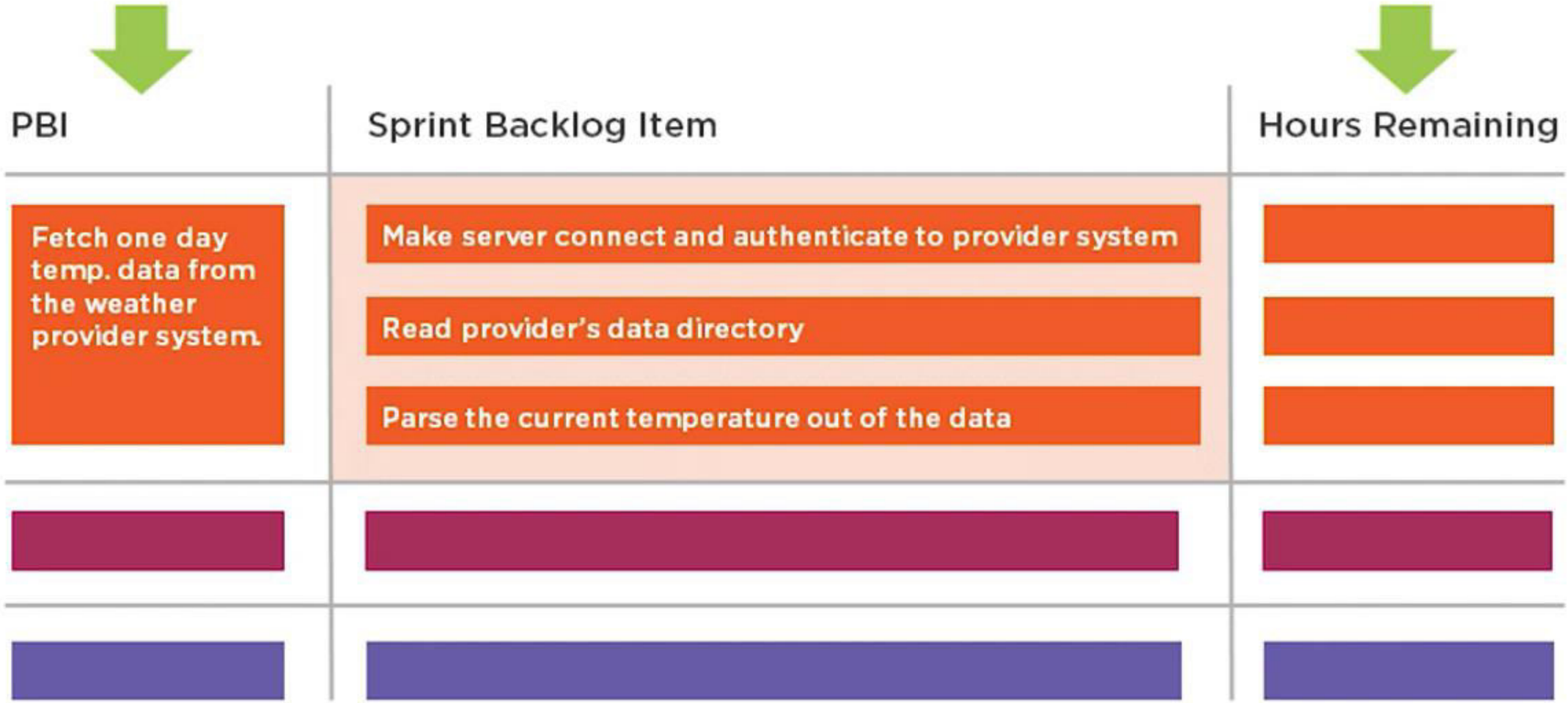
- The work may be done by others on the Scrum Team

- Reportable each day of the Sprint

Ideally no more than 2 days of work

No minimum size

A Simple Sprint Backlog



The Sprint Backlog

Individuals sign up for work of their own choosing

- Work is never assigned

Estimated work remaining is updated daily

Any team member can add, delete or change the sprint backlog

Work for the sprint emerges

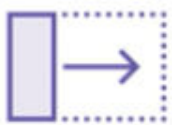
If work is unclear, define a sprint backlog item with more time and break it down later

Update work remaining as more becomes known

Sprint Burndown Chart

Shows work remaining for the Sprint

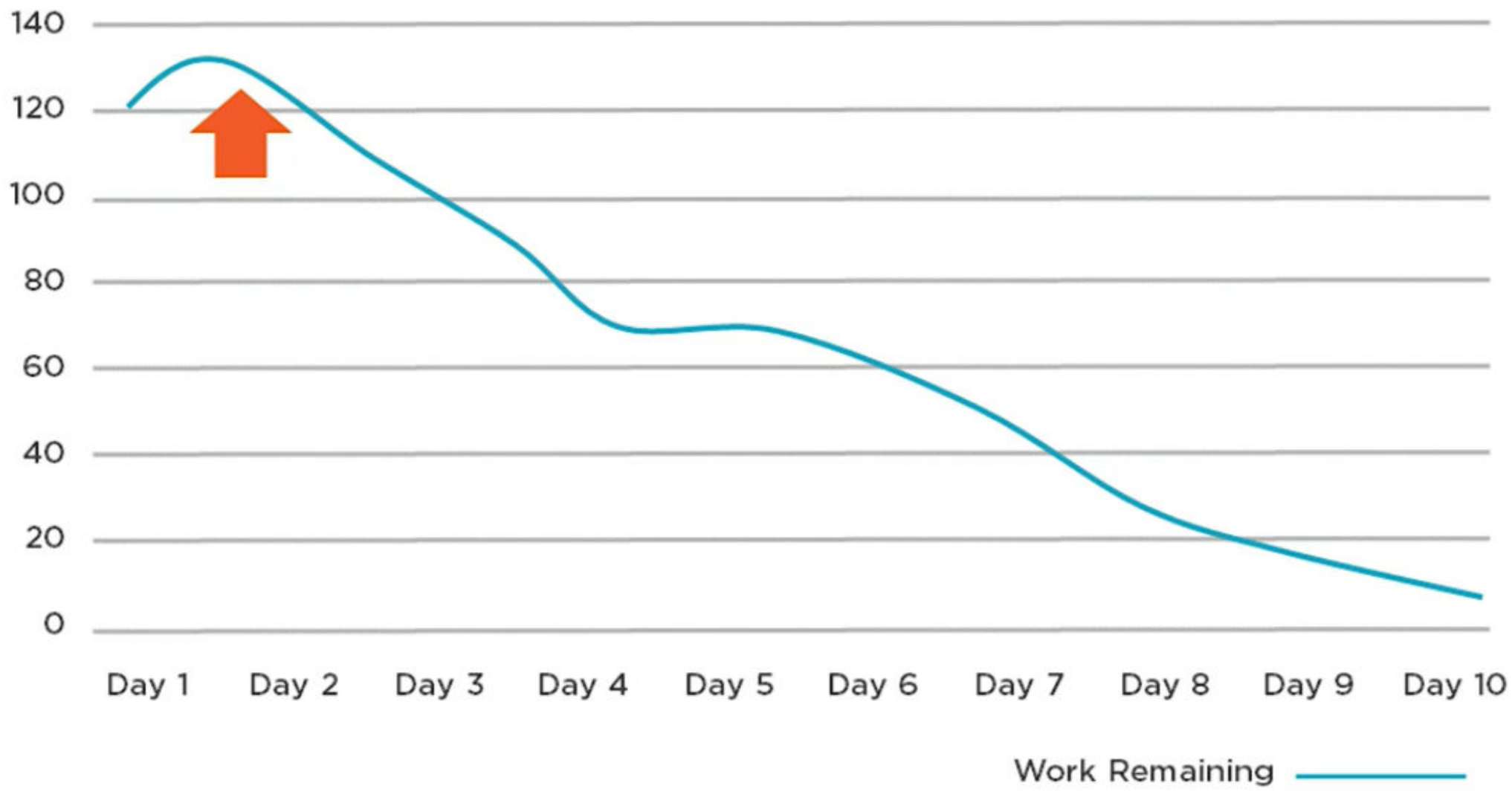
Updated daily



Used by Team Members to adjust activities

Used by Scrum Masters as the tactical project management tool

Sprint Burndown Chart



Scrum Team Velocity

A measure of how much value a team delivers

- Per Sprint

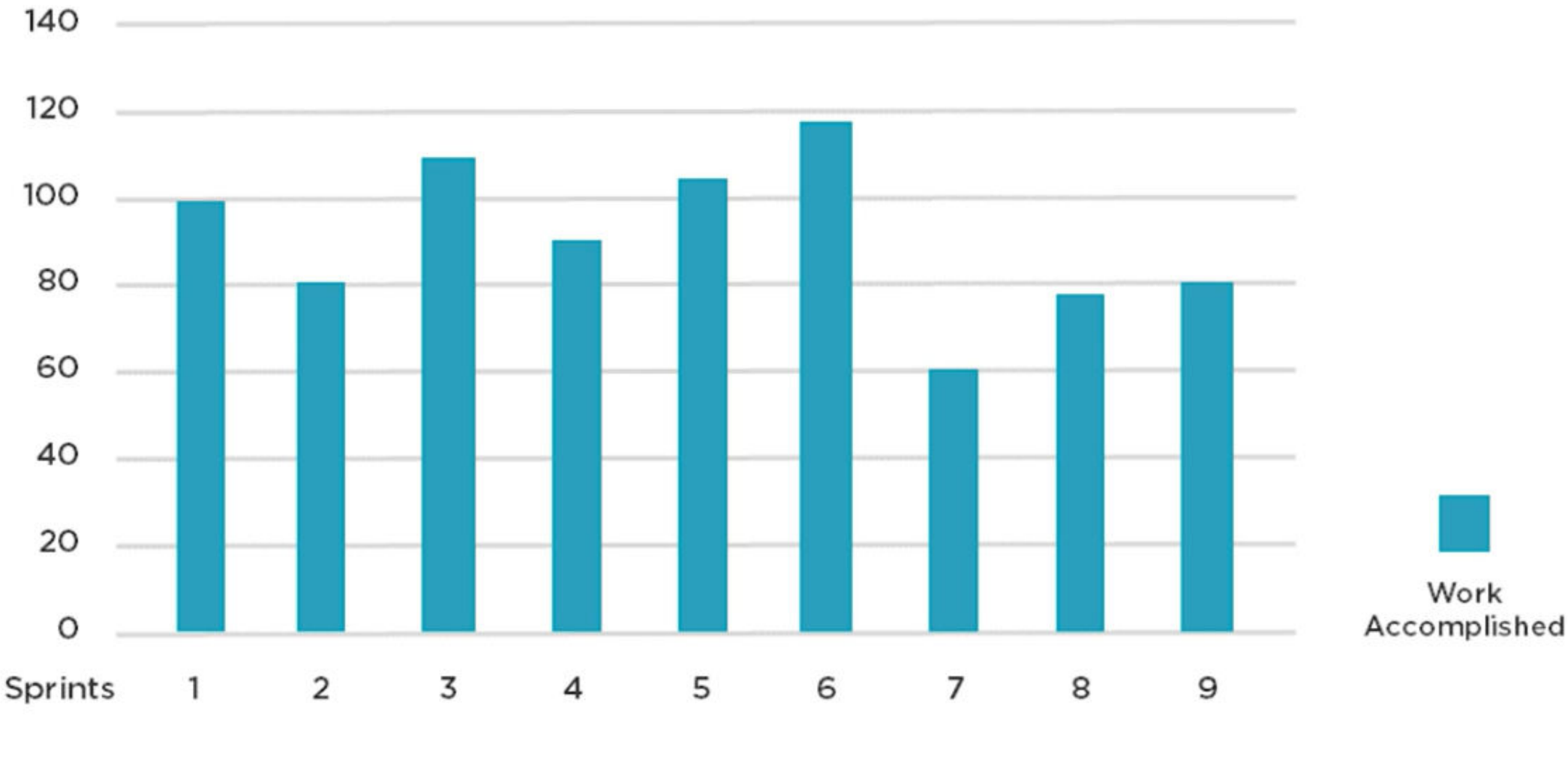
- Over time

Used to inform the Team when pulling work

Used by Product Owner to plan releases and future work

Will vary significantly from one Sprint to another

Scrum Team Velocity



Ceremonies

Because it's a better word than meetings

Scrum Ceremonies

The Sprint Planning Meeting

The Daily Scrum

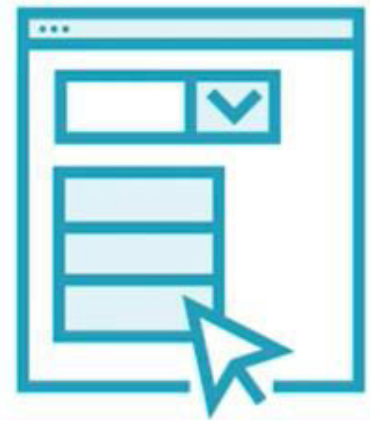
The Sprint Review

The Sprint Retrospective

Sprint Planning Meeting: What Gets Done

Sprint goals
are created

The Sprint Backlog
is created



A Burndown chart
is initialized

Sprint Goals

1. High level descriptions of the work to be accomplished in the Sprint

2. Agreed to by the Team and Product Owner

Examples of Sprint Goals

Make the application run on SQL server in addition to Oracle.

Integrate population data for growth studies.

Decrease upstream payloads by 30%

Support more technical indicators than company ABC with real-time, streaming data.

Sprint Planning Meeting

Who is there?

Product Owner

- Brings the estimated, prioritized Product Backlog
- Defines Done for any ambiguity
- Answers any other questions about the work

Scrum Master facilitates the discussion

Team created the Sprint Backlog

Sprint Planning Meeting

Often first thing on Monday after the last Sprint

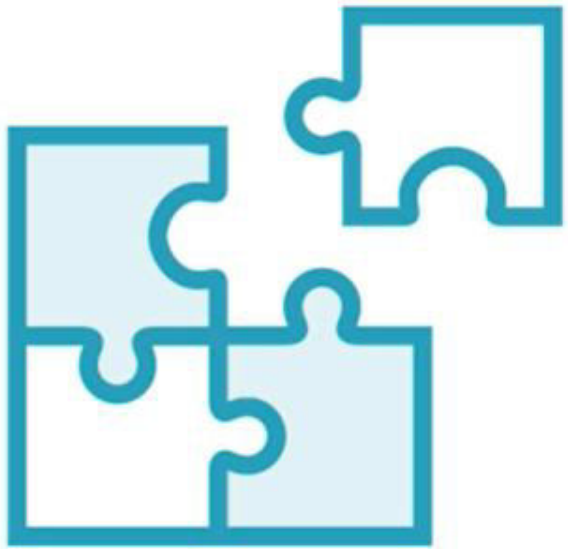
Time boxed to less than 2 hours

Team selects items from the product backlog they can commit to completing

Team discusses details of implementation

Scrum Master brings food

Creating the Sprint Backlog



Team selects first PBI on top of list they can commit to completing

Team identifies all tasks to be completed to deliver PBI

Team estimates all tasks identified in ideal hours

Does the set of SBIs fit into the Sprint?

1. If Yes, add the SBIs to the Sprint Backlog

2. If No, discard the PBI or negotiate what can be delivered from the PBI

Repeat from 1 until Sprint backlog is full

The Daily Scrum

Team focuses together once per day

Time boxed, typically 15 minutes

Ideally in morning, to set direction for day

Standing up rule helps time box rule

Same time each day

Ideally, same place each day

Scrum Master facilitates

Daily Scrum: Each Team Member Answers

What did you do yesterday?

What will you do today?

What impediments are in your way?

It is common to update the Sprint Backlog and Sprint Burndown chart at the Daily Standup.

Impediments Belong to the Scrum Master

The _____ team hasn't returned my call

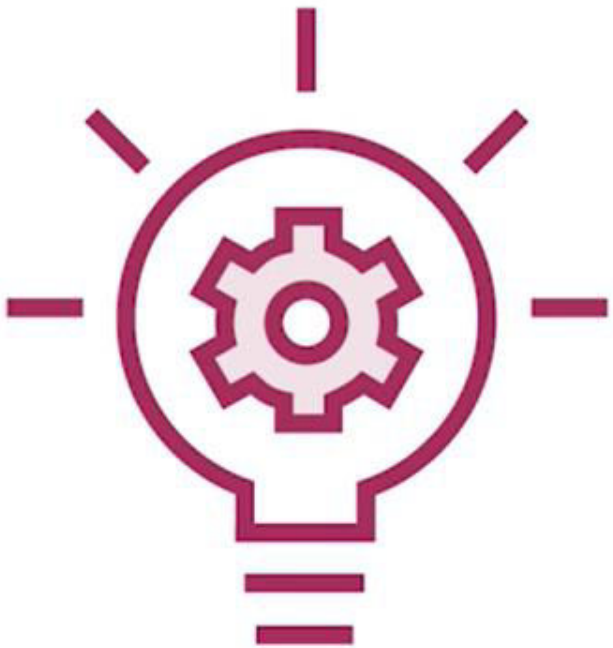
The _____ server is down and I can't _____

I need to control library to _____

No one can sign the contract to get the _____

The _____ we ordered isn't here yet

The Sprint Review



Team presents what it accomplished during the sprint

Typically takes the form of a demo of new features or underlying architecture

Informal: 2 hour prep time

Whole team participates

Invite the world

Feedback informs future work

Sprint Review Rule #1

Show your work!

The Sprint Retrospective

This is the Kaizan part (Continuous Improvement)

Discuss what is and is not working

Typically 15–30 minutes

Done after every Sprint Review

Whole team participates

- Scrum Master
- Product Owner
- Team
- Possibly customers and others

Sprint Retrospective

What will we start doing...

What will we stop doing...

What will we continue doing...

Activities

How we go about it

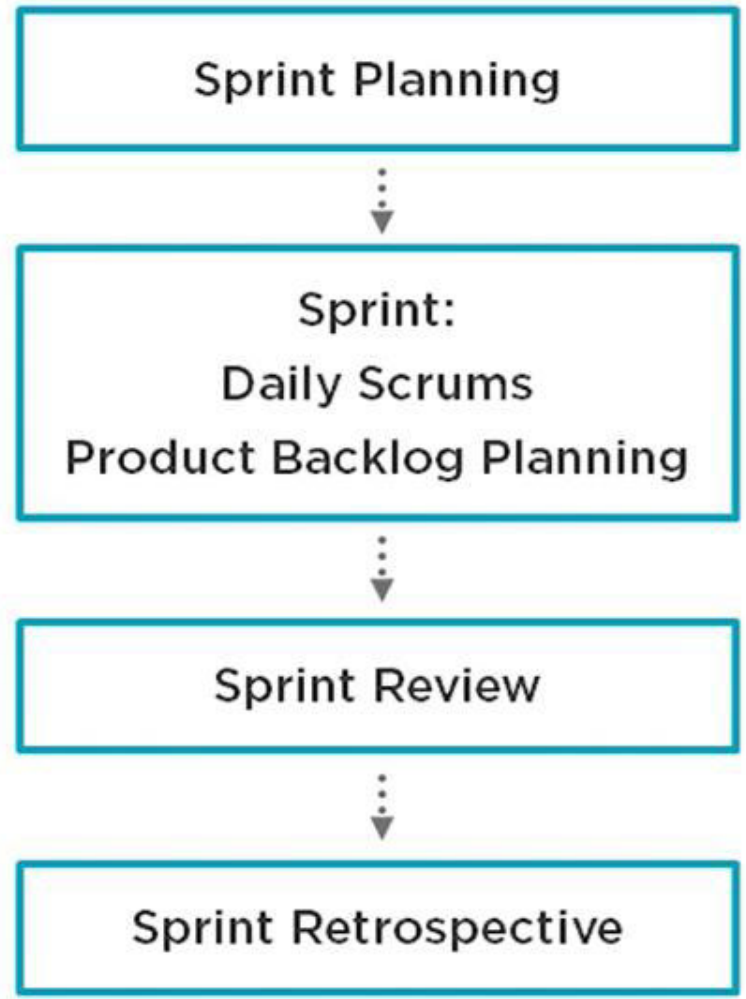
Scrum Process

Product Backlog Planning

The Sprint

Product Backlog Planning

- Typically 5-15% of the Team's time
- Happens continually during Sprint
- Is facilitated by the Product Owner
- Account for it when planning Sprint



Product Backlog Planning

Used to build the Product Backlog

Centers around estimating Product Backlog Items

Often elicits overall system approach or architecture

Must be facilitated well to avoid digression

The Sprint

Scrum projects make progress in a series of "sprints"

- Analogous to Extreme Programming iterations

Typical duration is 2–4 weeks or a calendar month at most

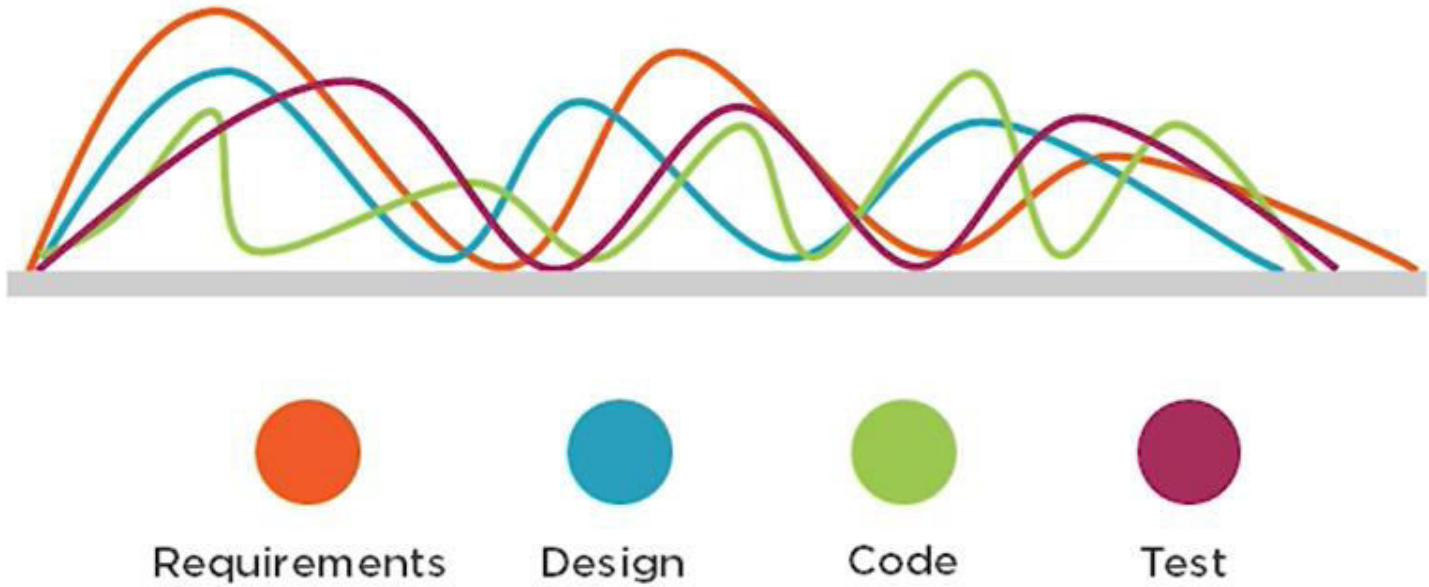
A constant duration leads to a better rhythm

Product is designed, coded, and tested during the sprint

The Sprint

Non-sequential execution is key

Do a little of everything rather than all of one thing



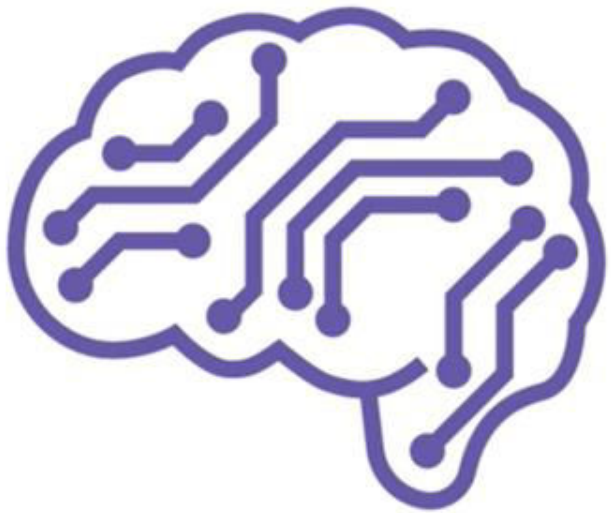
Goals Don't Change In the Sprint

- Sprints are sacrosanct
- Commit to keeping change out of the sprint
- Even a high change environment can commit to a single plan for only 2 weeks
- Plan sprint durations around a willingness to commit

On Scaling Scrum

Moving Up to the Big Time

Scaling Up with Scrum of Scrums



A meeting with Scrum Masters and organizational leaders

Used to coordinate the work of multiple Scrum Teams

Needs executive sponsorship, ideally attendance

Executives may own team impediments

MUST have people in attendance who can make resource decisions

May not be needed daily

Scaling Up: Answer 4 Questions

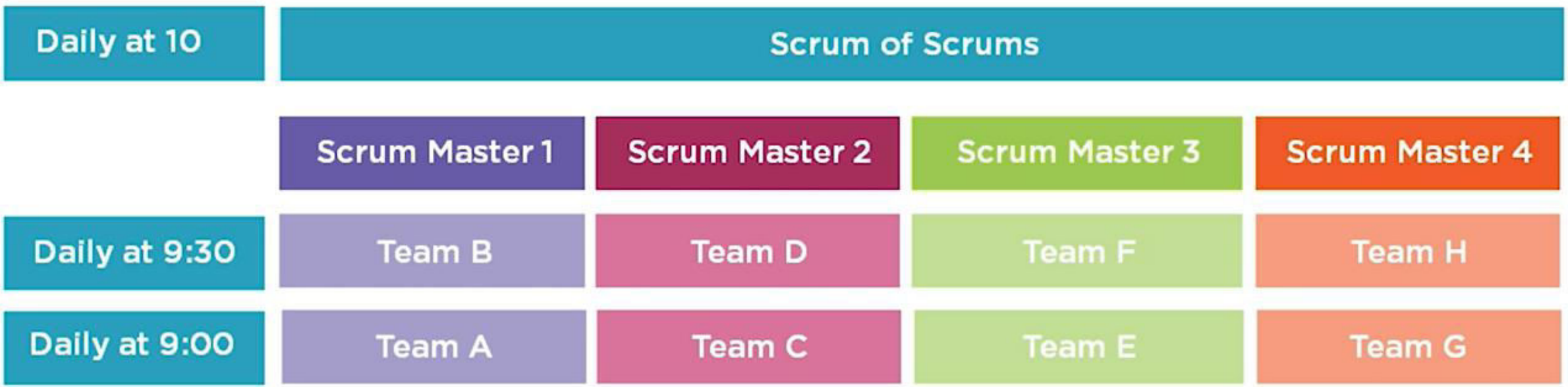
1. What has your team done since we last met?

2. What will your team do before we meet again?

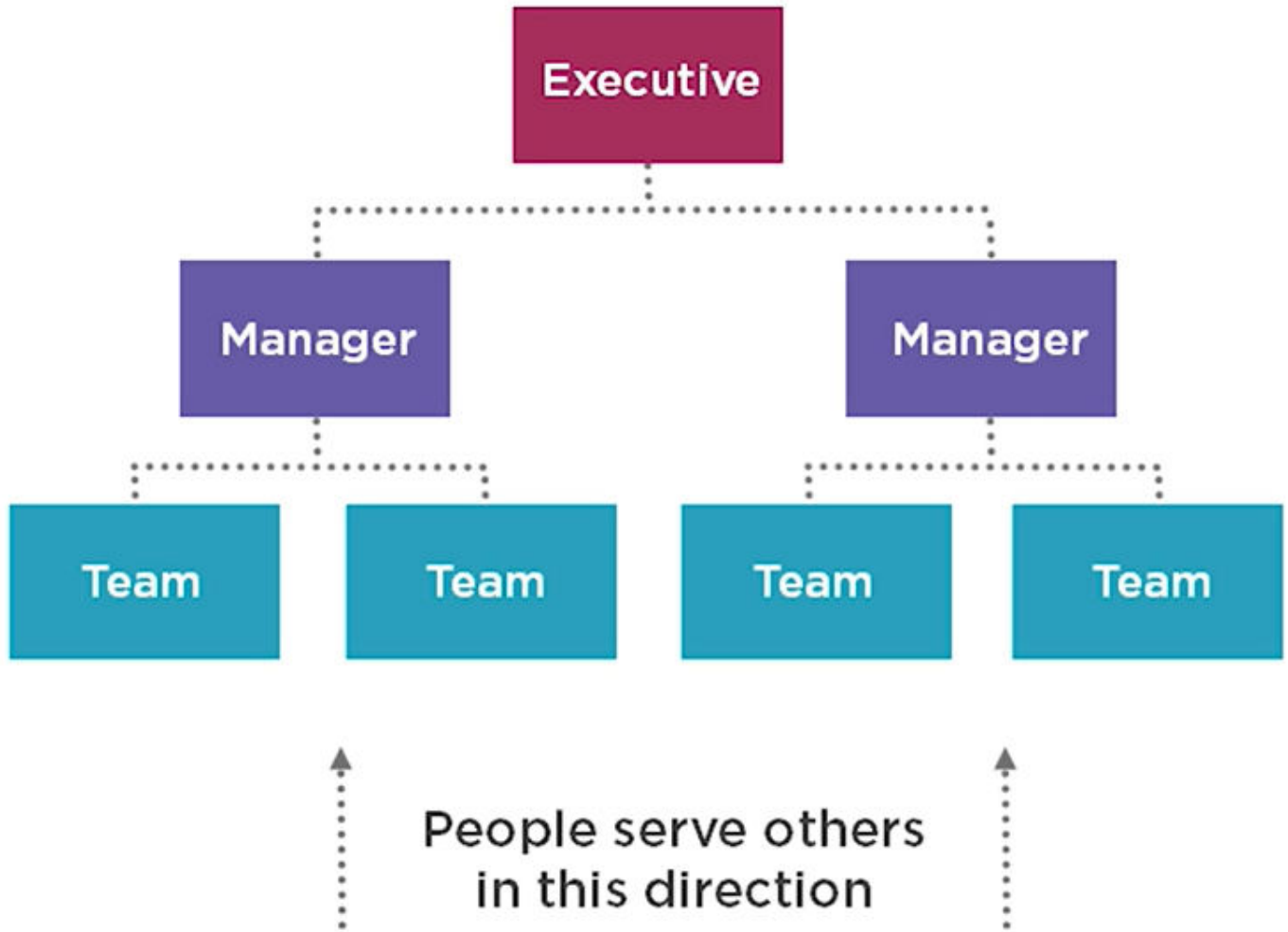
3. Is anything slowing your team down or getting in their way?

4. Are you about to put something in another team's way?

A Scrum of Scrums Model



This Changes the Executive Service Model



Required to Start

1. A Product Backlog exists

2. Full-Time Scrum Master is identified

3. Scrum Team agrees to demonstrate working software in no more than 30 days

4. Set the Appointment

5. Stakeholders invited to demonstration

Summary of My Experiences

Fewer defects

Higher product development throughput

Quicker market response

Sustainable pace and enjoyable workplace

Make the right thing sooner

References

Agile Project Management with Scrum by Ken Schwaber

Agile Software Development with Scrum by Schwaber and Mike Beedle

The Enterprise and Scrum by Ken Schwaber

The Fifth Disciple: The art and practice of the learning organization by Peter Senge

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Agile Estimating and Planning by Mike Cohn

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