Scrum Foundations

Software development processes

Formalizes
- who participates in a project
- doing what, when and how

to develop a software product

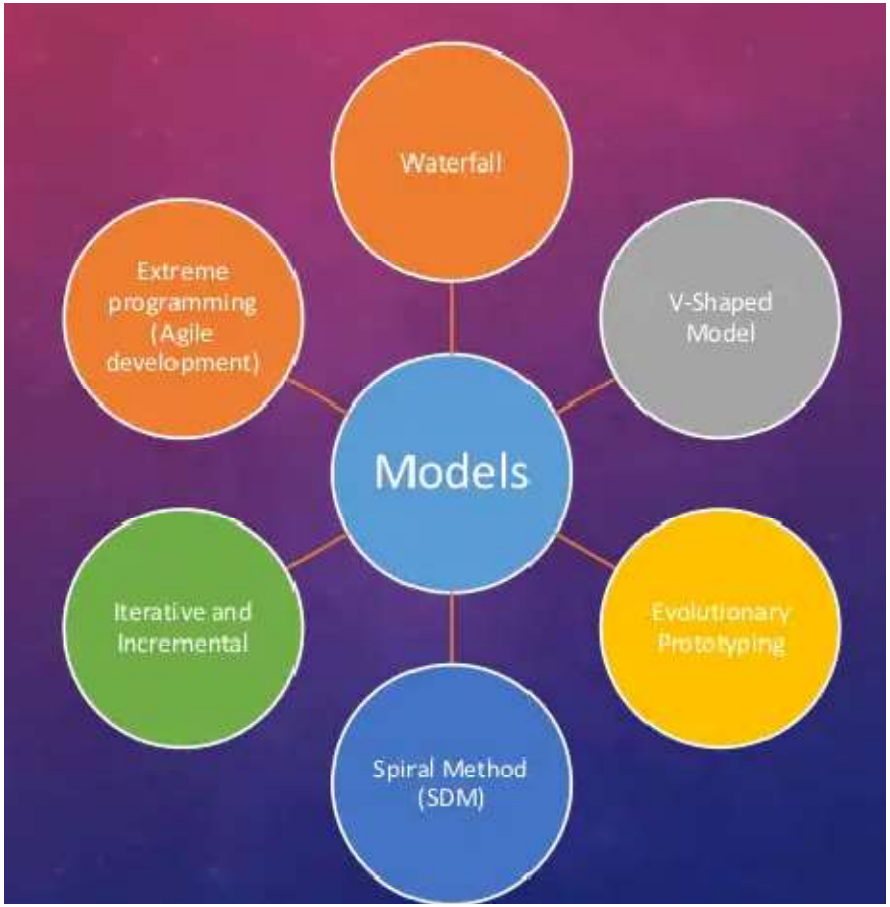
Common framework
- Phases (or stages)
- Activities
- Methods
- Tools
- Roles

https://melsatar.blog/2012/03/15/software-development-life-cycle-models-and-methodologies/

What is software development processes

- SDP (SDLC) is a splitting of software development work into distinct **phases** (or **stages**) containing activities with the intent of better planning and management
- Each process model follows series of steps unique to its type, in order to ensure success in process of software development.
- The SDP aims to produce a high-quality software that meets or exceeds customer expectations, reaches completion within times and cost estimates
- SDP models have been created by software development experts, universities, and standards organizations to solve some repeated issue or to enhance other models.

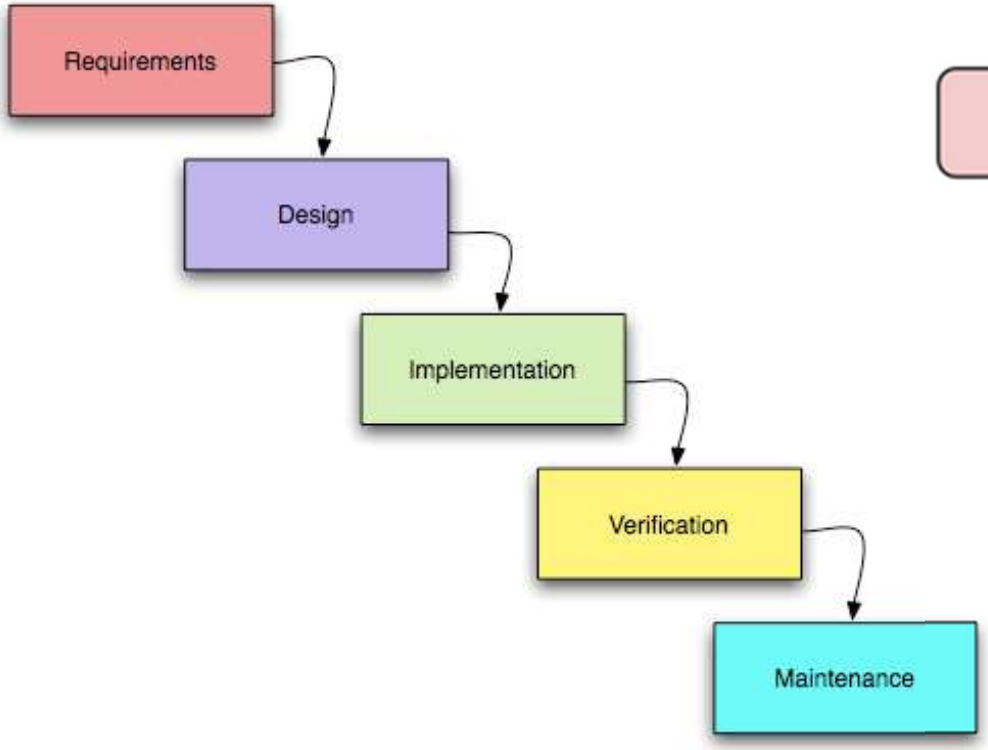
Main software development processes

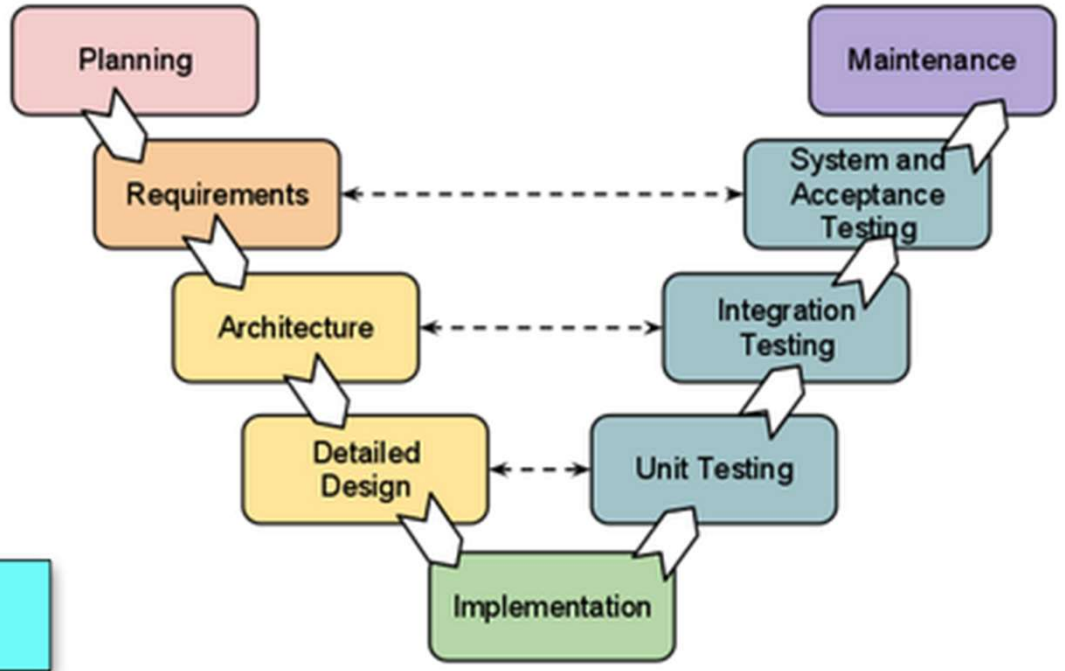


- Methodologies (Life Cycle Models)
  - Waterfall
  - V-Shaped Model
  - Evolutionary Prototyping Model
  - Iterative and incremental development
  - Spiral model
  - Agile

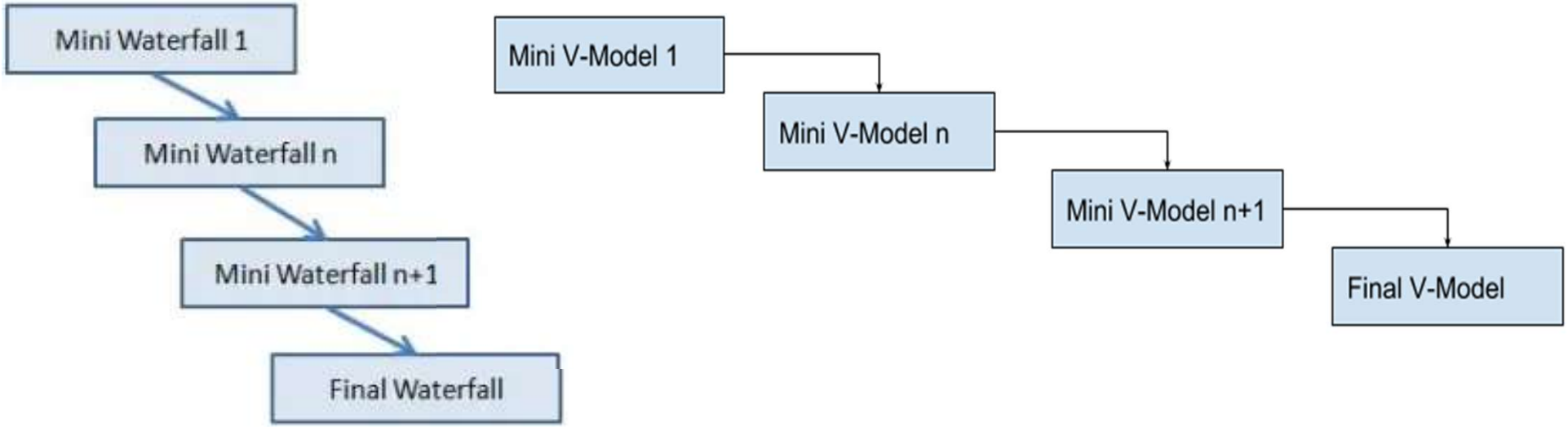
Specific development process

Sequential Models: Waterfall, V-Shaped

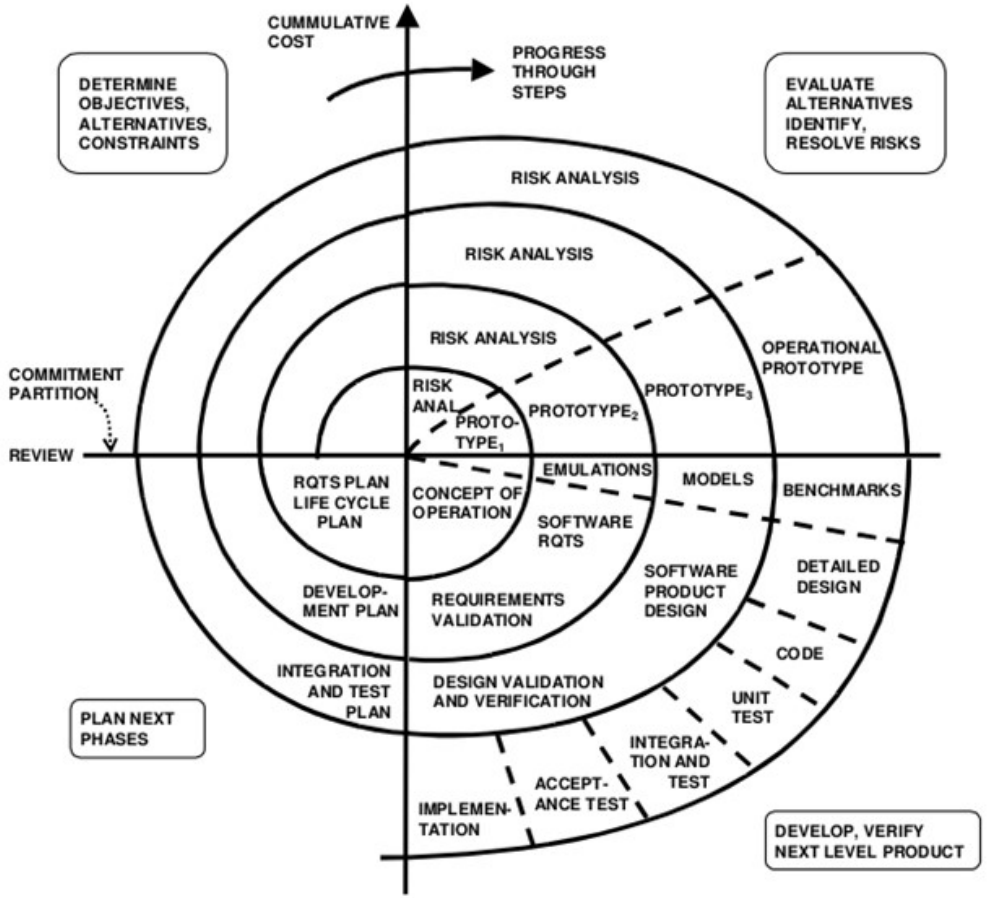




Iterative and Incremental Model

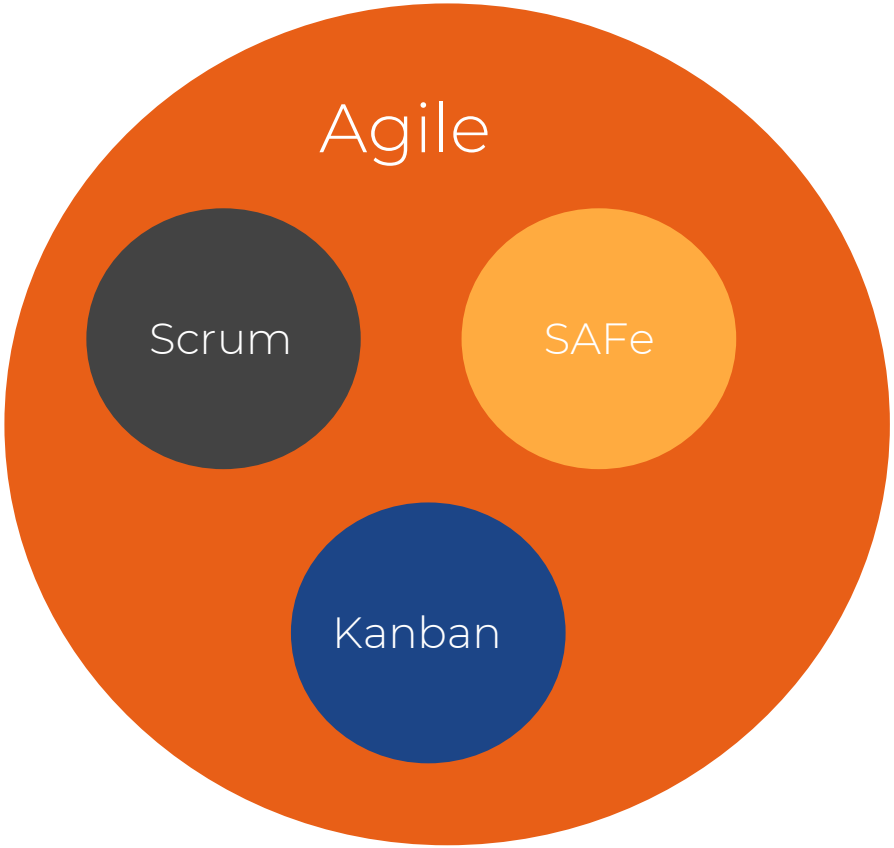


Sequential & Iterative Models: Spiral Model



Better Ways Of Working

- Scrum
- Extreme Programming
- DSDM
- Adaptive Software Development
- Crystal
- Feature Driven Development
- Pragmatic Programming

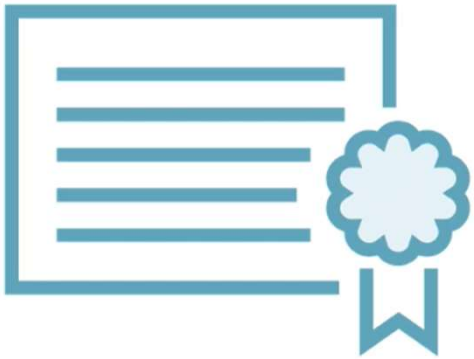


The Agile Manifesto (March 2001)

Kent Beck
Mike Beedle
Arie van Bennekum
Alistair Cockburn
Ward Cunningham
Martin Fowler
James Grenning
Jim Highsmith
Andrew Hunt

Ron Jeffries
Jon Kern
Brian Marick
Robert C. Martin
Steve Mellor
Ken Schwaber
Jeff Sutherland
Dave Thomas

The values of Agile Manifesto



http://agilemanifesto.org/

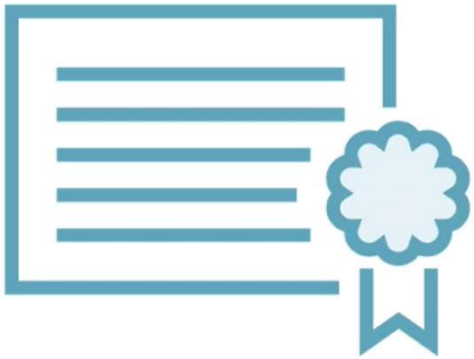
Individuals and interactions
over processes and tools

Working software
over comprehensive documentation

Customer collaboration
over contract negotiation

Responding to change
over following a plan

Agile Manifesto (1)



http://agilemanifesto.org/

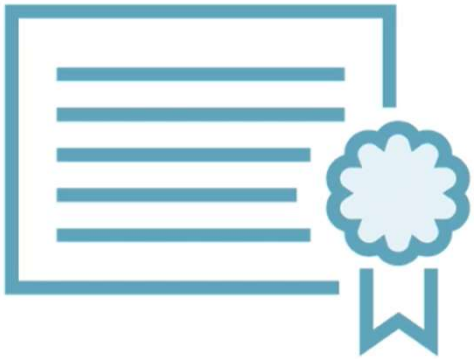
Our highest priority is to **satisfy the customer** through early and continuous delivery of valuable software.

Welcome **changing requirements**, even late in development. Agile processes harness change for the customer's competitive advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Business people and developers must **work together** daily throughout the project.

Agile Manifesto (2)



http://agilemanifesto.org/

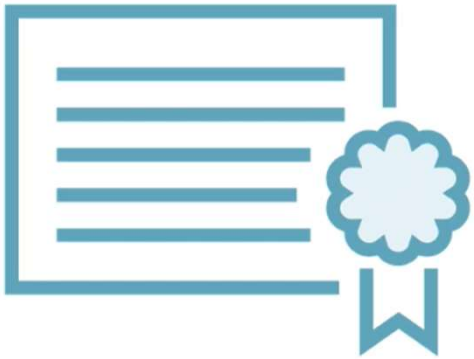
Build projects around **motivated individuals**. Give them the environment and support they need and trust them to get the job done.

The most efficient and effective method of conveying information to and within a development team is **face-to-faceconversation**.

Working software is the primary measure of progress.

Agile processes promote **sustainable development**. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

Agile Manifesto (3)



http://agilemanifesto.org/

Continuous attention to **technical excellence** and good design enhances agility.

Simplicity---the art of maximizing the amount of work not done--is essential.

The best architectures, requirements, and designs emerge from **self-organizing teams**.

At regular intervals, the team reflects on how to **become more effective**, then tunes and adjusts its behavior accordingly.

Agile is not prescriptive

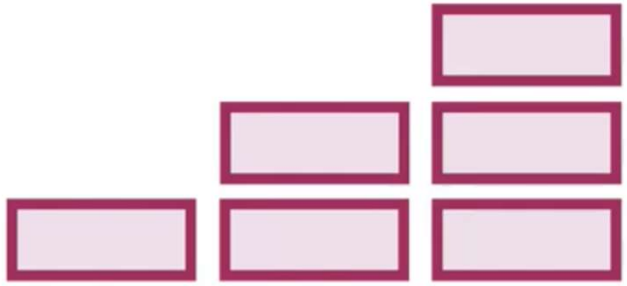
Agile

is a philosophy

Scrum

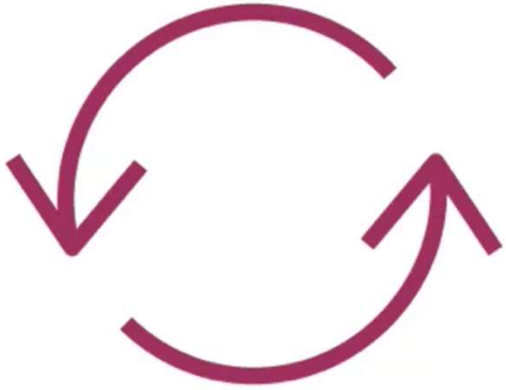
is a framework

Incremental Versus Iterative



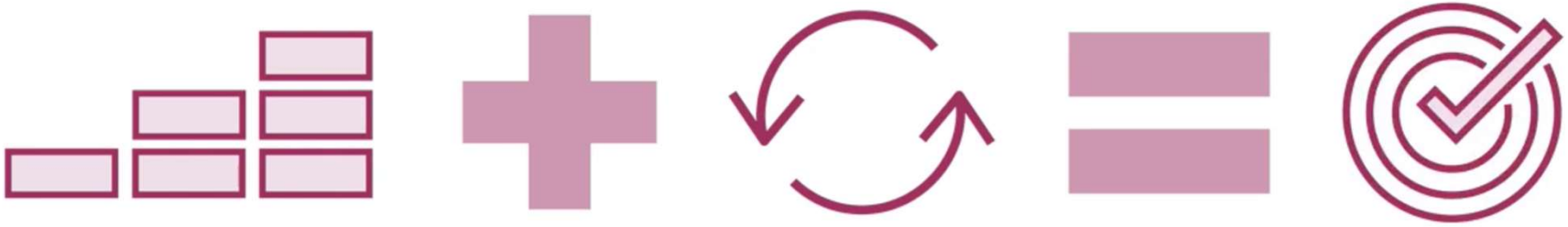
Incremental

Small increments of a project are delivered piece by piece until the entire project is complete



Iterative

Clear feedback is elicited after each increment and incorporated into the next increment



Incremental and Iterative Delivery

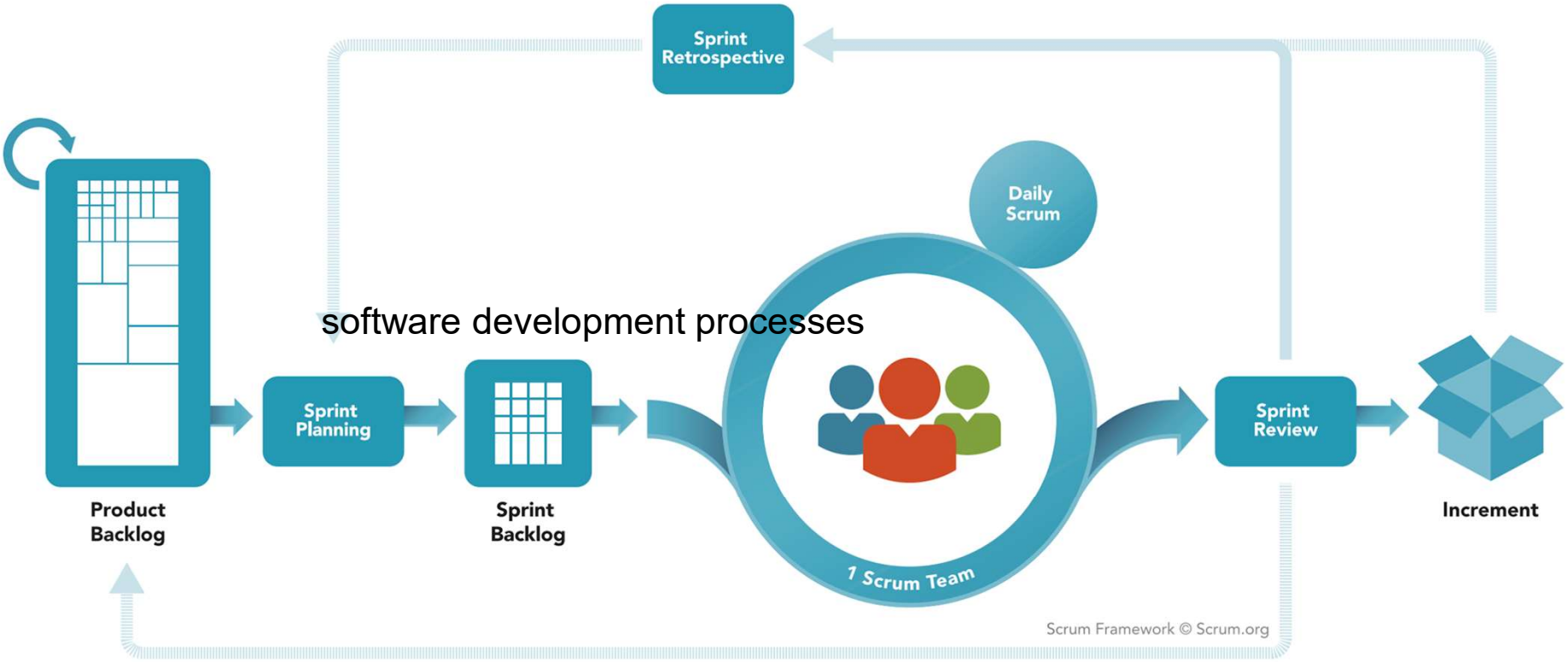
Breaks a larger project into smaller deliveries

Can reduce the overall effort

Reduces the impact of costly mistakes

Incorporates feedback along the way

SCRUM FRAMEWORK



software development processes

Scrum.org

The Roots of Scrum

Empirical Process Control

Prevalent in the manufacturing space

Toyota Production System

Early Scrum was heavily influenced by the TPS

Predates the Agile Manifesto

Scrum appears in the 1990

The New Product Development Game (1986)

Resaltan las ventajas competitivas aparecidos en la industria japonesa gracias a nuevos modelos de desarrollo de producto basados en la innovación y la rapidez a la hora de lanzar sus productos al mercado. En estos casos se observaba una mayor interacción de equipos multidisciplinarios de elite que trabajaban en proyectos de inicio a fin

utilizan como metáfora el juego del rugby, haciendo referencia a la melé (scrum), donde un equipo unido de quince jugadores tiene como objetivo común hacer avanzar el balón hacia el campo contrario

Un enfoque de ‘carrera de relevos’ en el desarrollo de productos … puede entrar en conflicto con los objetivos de máxima velocidad y flexibilidad. En su lugar, un enfoque holístico o estilo ‘rugby’ – donde un equipo intenta ir a la distancia como una unidad, pasando la pelota hacia adelante y hacia atrás -pueden servir mejor a los actuales requisitos competitivos”.

Hirotaka **Takeuchi** y Ikujiro **Nonaka**, *Harvard Business Review*, Enero 1986.

The Roots of Scrum

Empirical Process Control

Prevalent in the manufacturing space

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Predates the Agile Manifesto

The manifesto was written in 2001, but Scrum appears in the 1990

Scrum Is a Framework, Not a Process

Process

Step-by-step guidance

Repeatable from project to project

Framework

Definition of key tasks and routine

Non-prescriptive

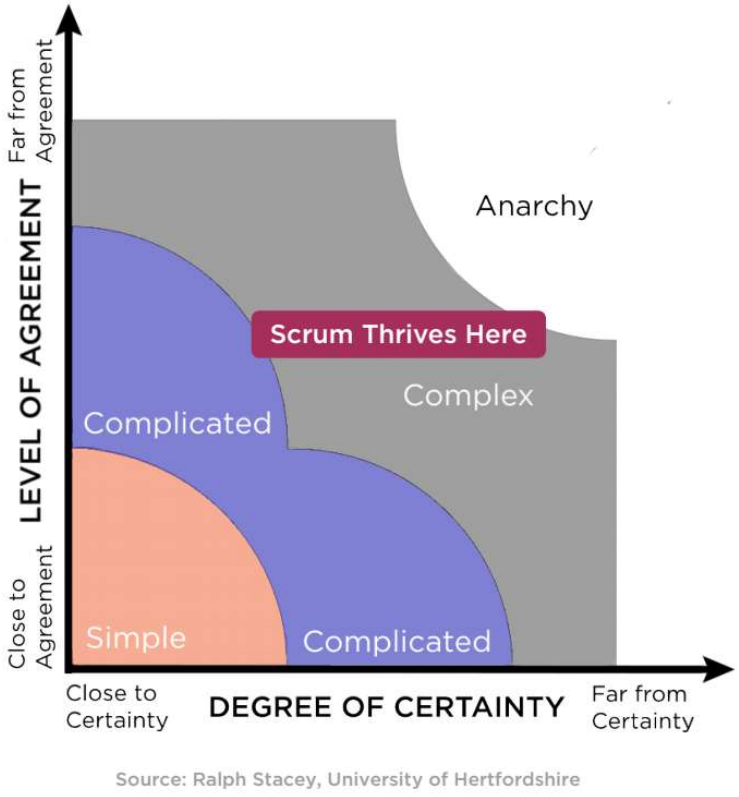
Your Scrum is not my Scrum

Scrum Framework  Your Environment  Your Process

Scrum does not solve your problems

Scrum enables *you* to solve your problems

When Should We Use Scrum?



Source: Ralph Stacey, University of Hertfordshire

- The Stacey Matrix is a decision aid
- Zone indicates where Scrum helps
- Scrum thrives in the Complex zone
- Complexity needs leadership

Ideal Environment for Scrum

Well Suited

High amount of complexity

Aggressive deadlines

High level of risk

Not Well Suited

Priorities change daily

Team composition changes regularly

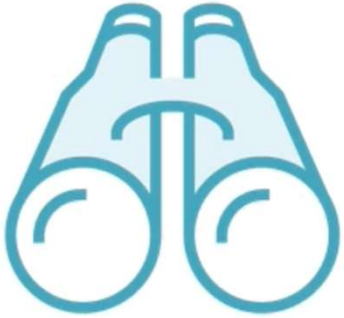
Transparency is not encouraged

Empiricism

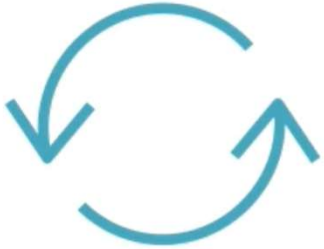
Knowledge comes only, or primarily, from experience.

- Wikipedia (Empiricism)

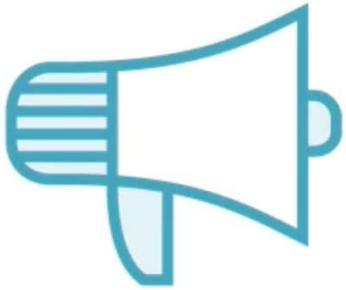
Three Pillars of Empiricism



Inspect

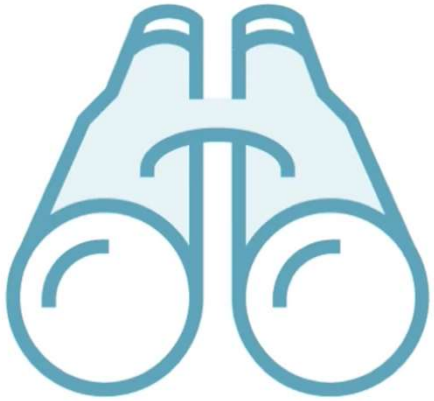


Adapt



Transparency

Inspect

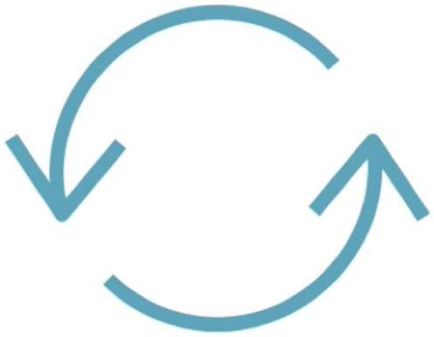


Inspect both the project and the process

Look for variances

Strike the right balance

Adapt

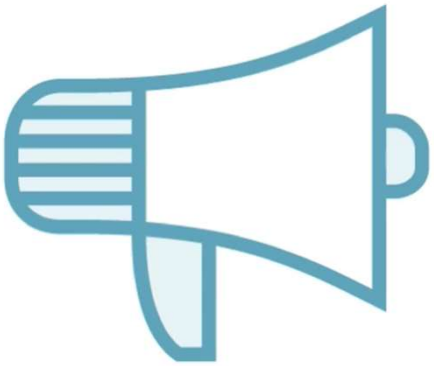


Reduce what isn’t working, increase what is

Introduce changes at the right time

Adapt the process to serve the project

Transparency



Make your pace and progress visual

Encourage openness across the team

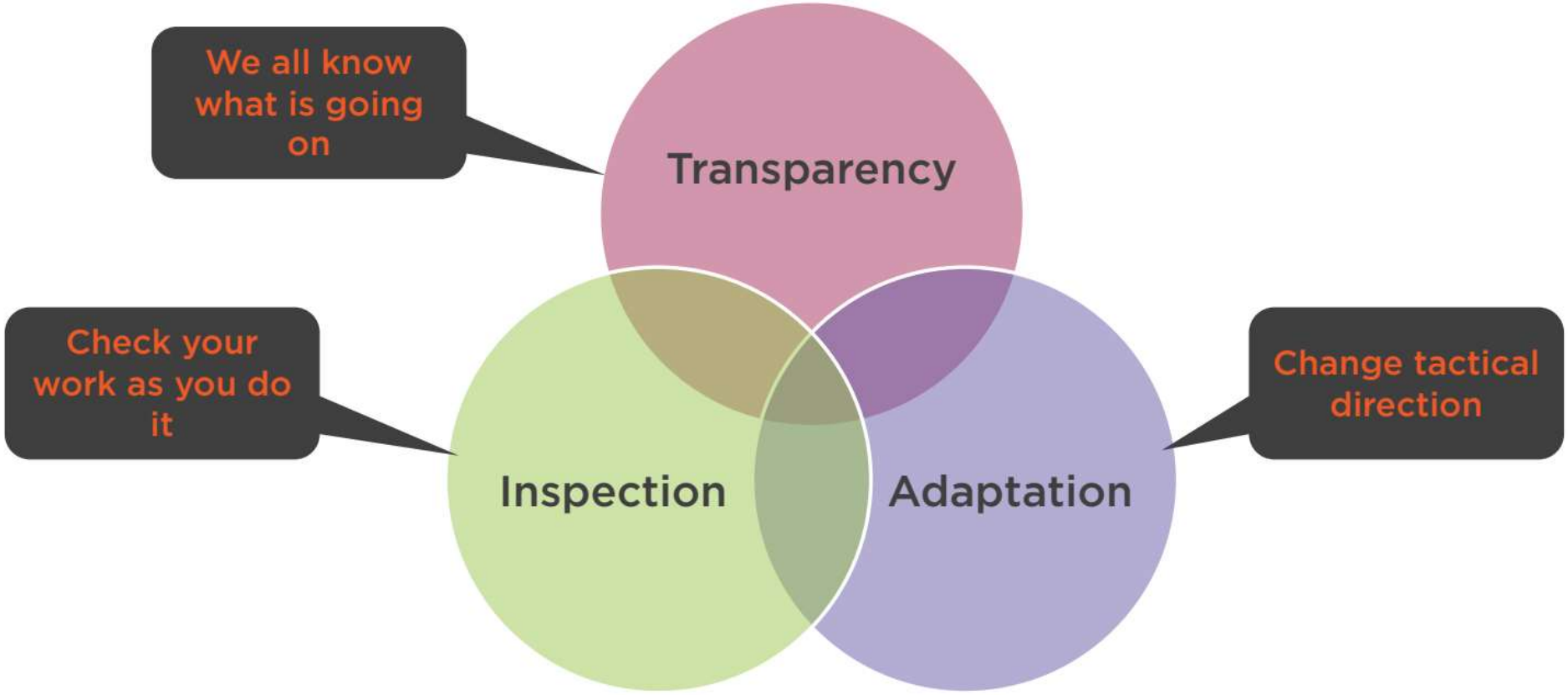
Share clear status across team boundaries

How Scrum is Driven by Empiricism

Empirically Driven Decisions
Make decisions based only on what has occurred

Lagging Indicators
Use indicators driven from historical metrics

Scrum Implements the Empirical Process



Scrum Elements

Roles

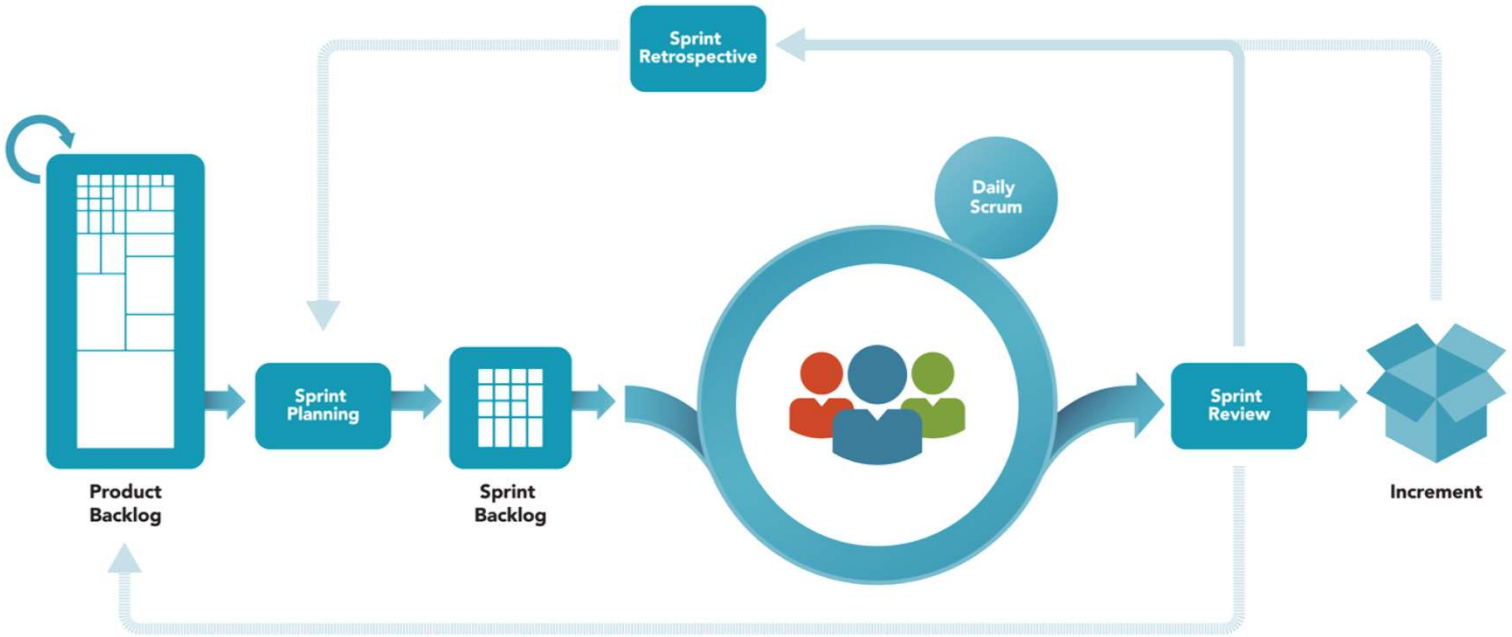
- Product Owner
- Development Team
- Scrum Master

Artifacts

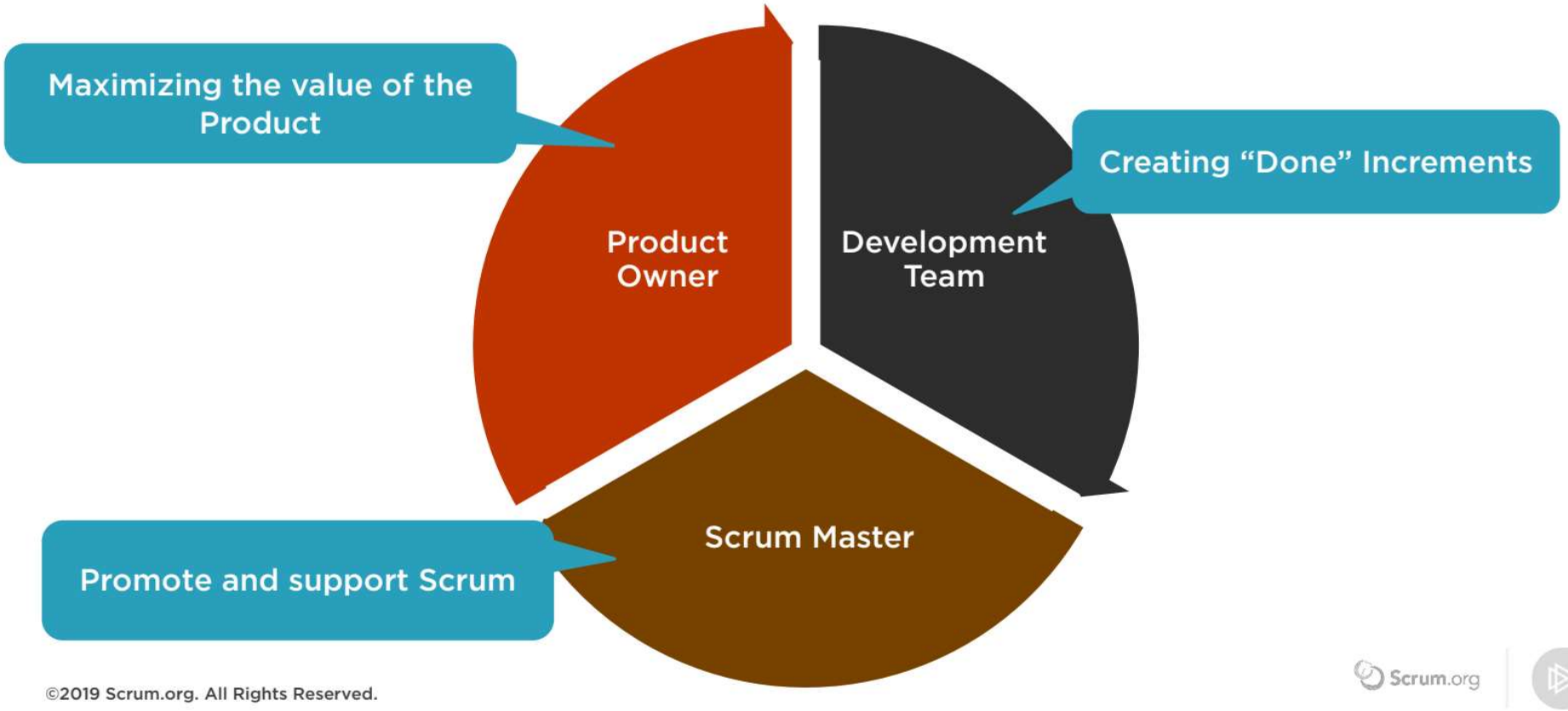
- Product Backlog
- Sprint Backlog
- Increment

Events

- Sprint
- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective



Roles: Each One Has a Specific Responsibility



Events: Each One Has a Specific Purpose

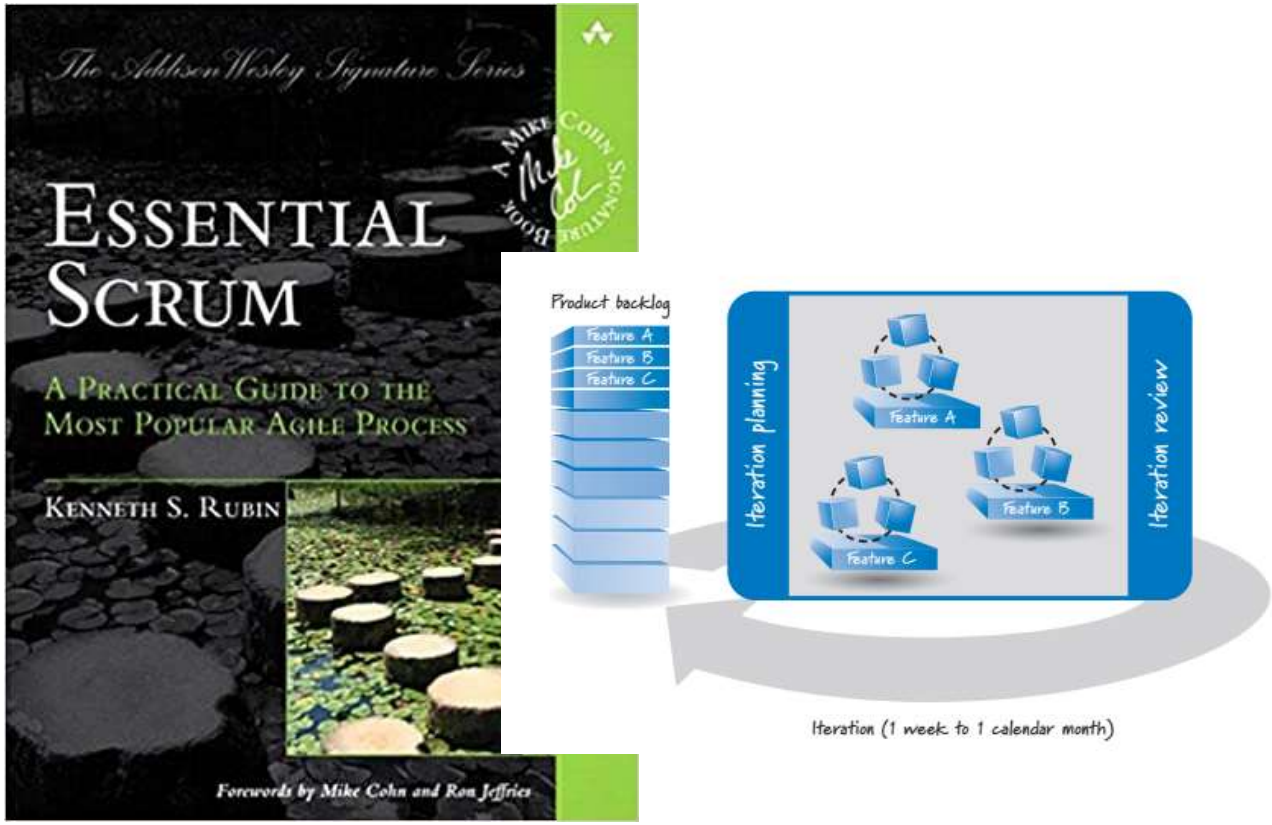
Sprint Planning	• From: Product Backlog • To: Sprint Goal, Sprint Backlog
Daily Scrum	• From: Daily Progress, Sprint Backlog • To: Updated Daily Plan
Sprint Review	• From: Sprint, Increment • To: Updated Product Backlog
Sprint Retrospective	• From: Past Sprint • Improvements For Next Sprint
Sprint	• Container Event • One month, or less, in duration

Artifacts: Each One Contains Specific Information

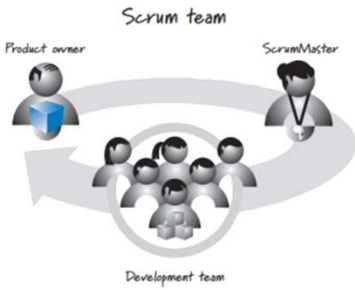
Product Backlog	• Holds the requirements for the product • Managed by the Product Owner
Sprint Backlog	• Holds all work for the Sprint Goal • Managed by the Development Team
Increment	• Working addition to the product • Potentially releasable

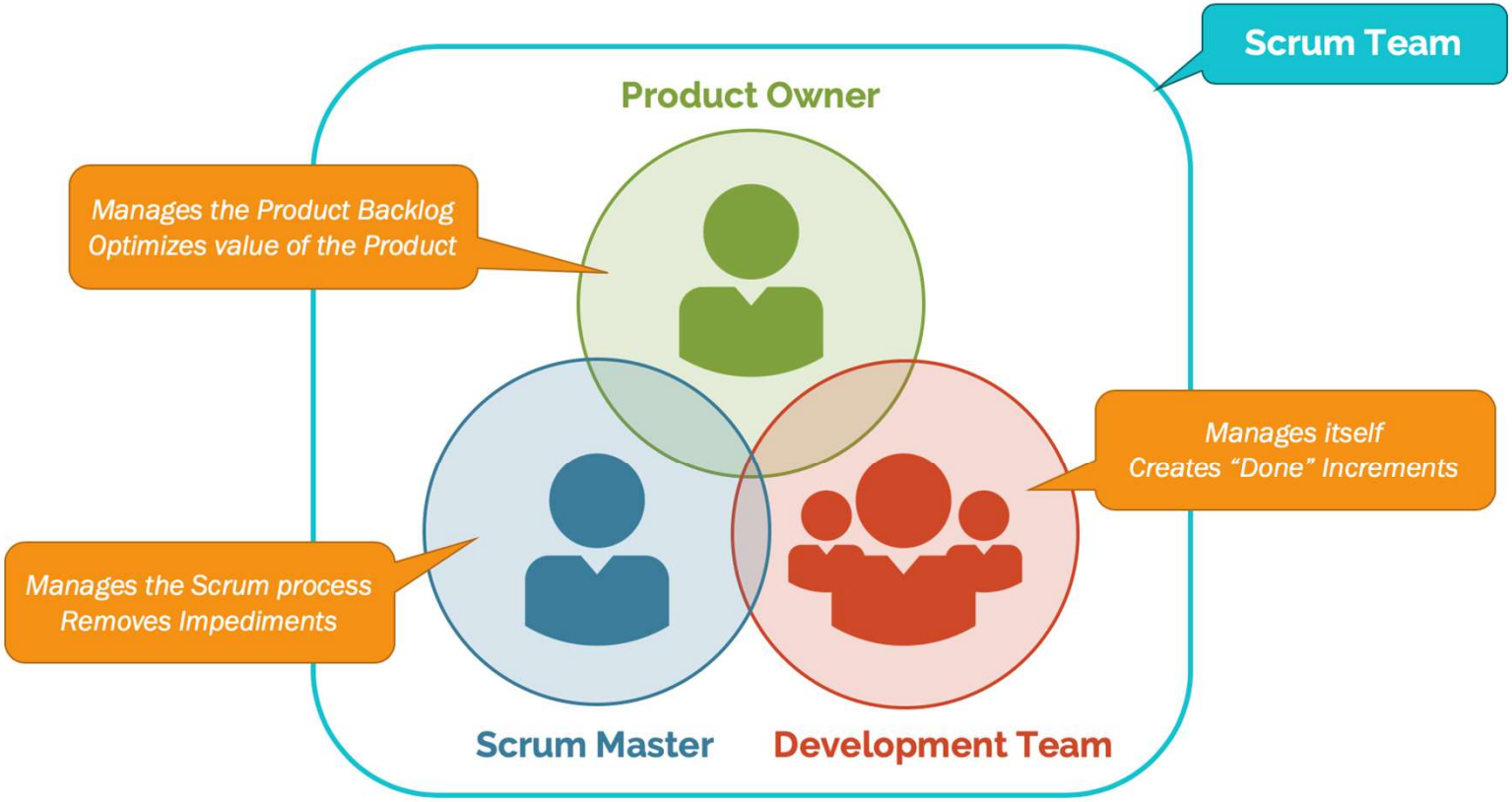
Essential Scrum (2012)

Kenneth S. Rubin
Essential Scrum. A Practical Guide to the Most Popular Agile Process (2012, Addison-Wesley Professional)

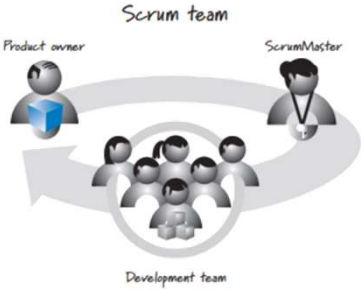


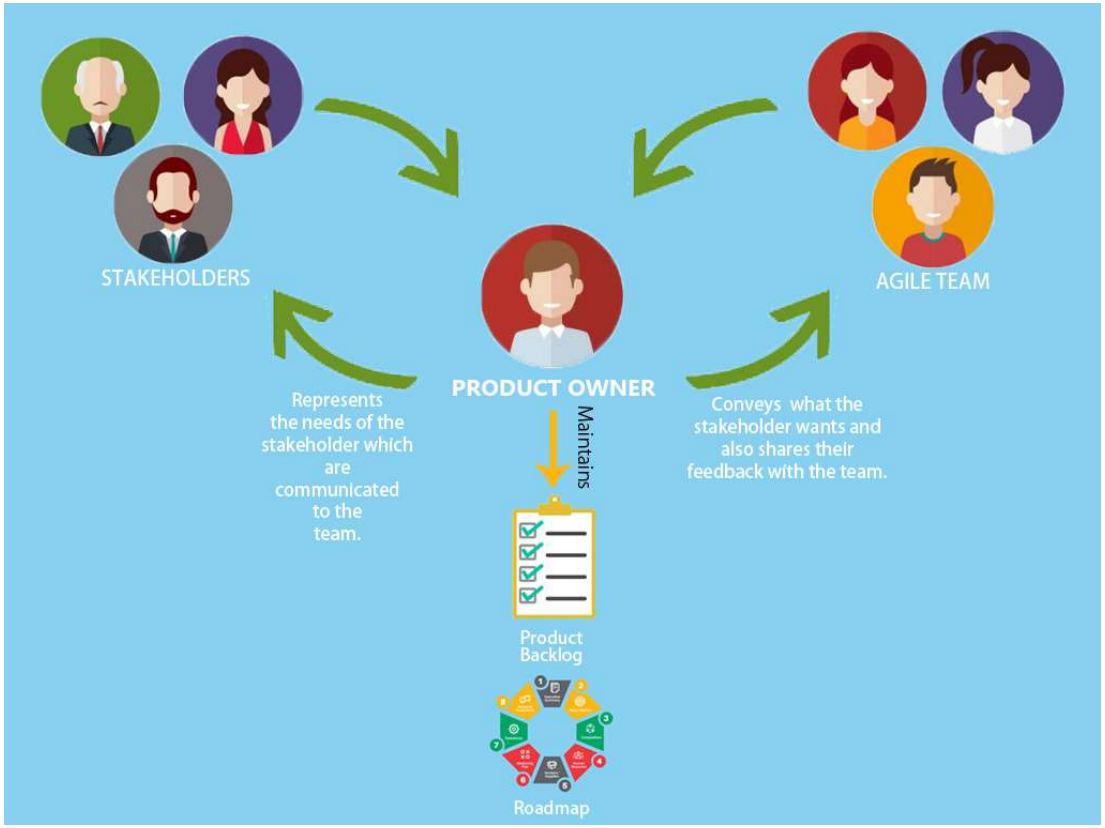
Roles


Scrum team
Product owner
ScrumMaster
Development team


Scrum Team
Product Owner
Manages the Product Backlog
Optimizes value of the Product
Manages itself
Creates "Done" Increments
Manages the Scrum process
Removes Impediments
Scrum Master
Development Team

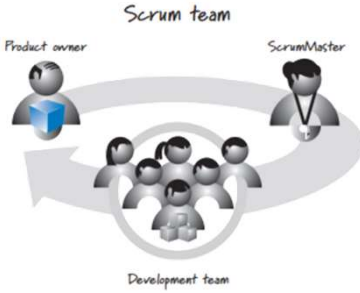
Product Owner

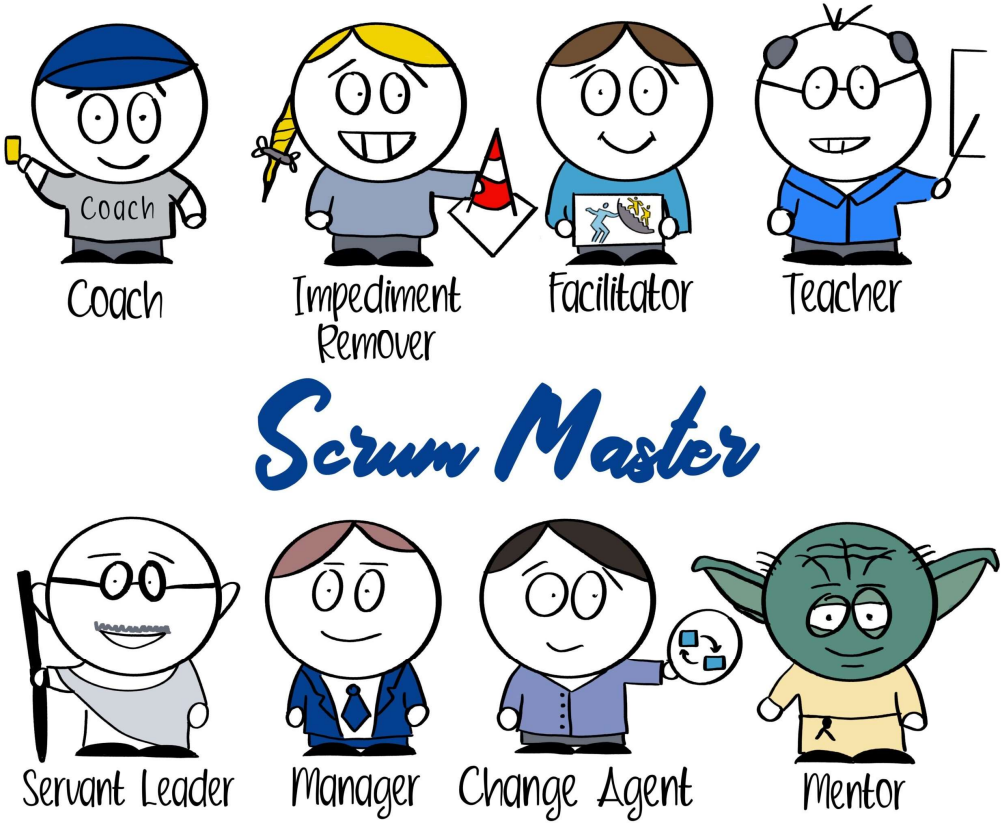


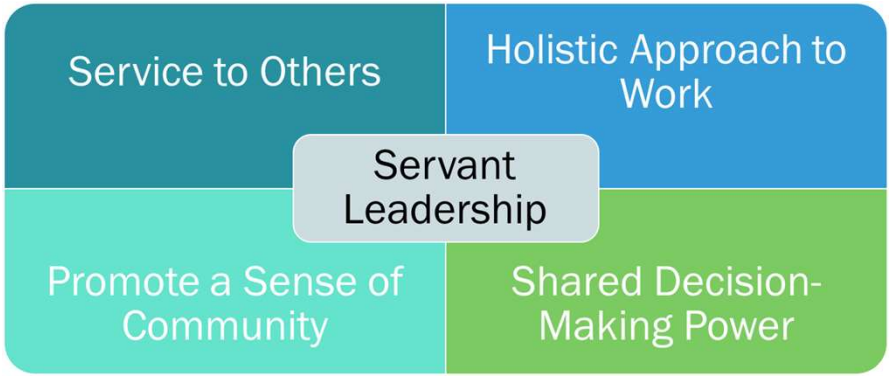


- Responsable de la visión de producto y la gestión económica de su desarrollo
- Nexo de conexión entre equipo de desarrollo y stakeholders, clientes y usuarios
- Decide que características y funcionalidades ha de tener el sistema en desarrollo y el orden en que deben ser implementadas (Product Backlog) y las valida
- Participa activamente en el equipo Scrum

Scrum Master

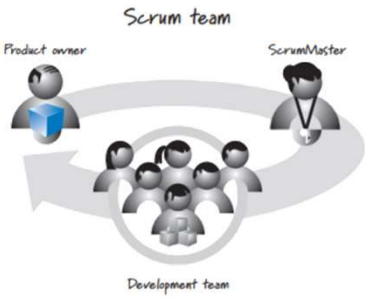






https://www.scrum.org/resources/what-is-a-scrum-master

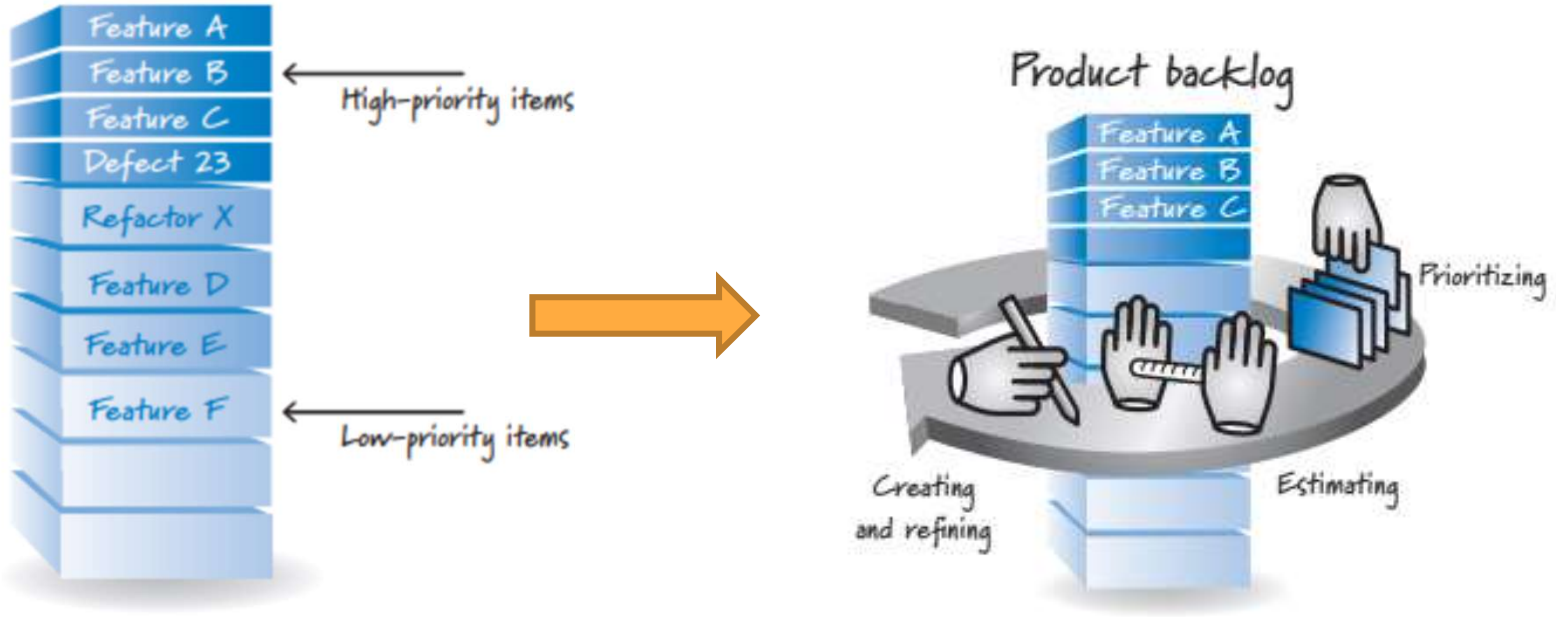
Development Team



5-9 members

Events & Artifacts

Product Backlog



Product backlog grooming

Sprints

Fixed timebox in which to work

Often defined in 1 to 4 weeks

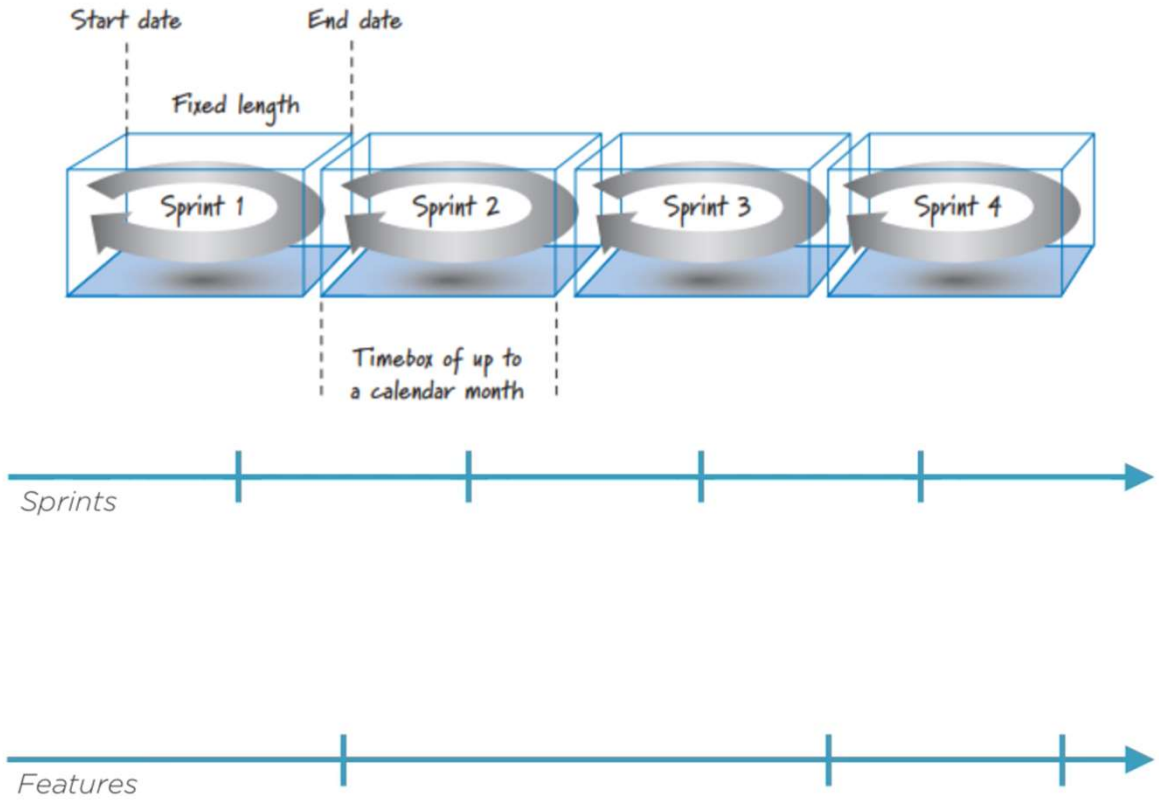
Preselected batch of work

Team attempts to complete all work

Review at completion

Incorporate feedback into the next sprint

Feature Increments Versus Sprint Increments



Feature Increments Versus Sprint Increments

Feature Increments

Features not sized consistently

Feedback comes unevenly

May not receive feedback on all features

Sprint Increments

Feedback occurs more regularly

Encourages stakeholders to give more frequent feedback

Easier to coordinate

How Long Should a Sprint Be?

As short as 1 week in duration

The Scrum Guide™ places no lower limit on sprint lengths

2 weeks in duration

The most common sprint duration for Scrum teams

As long as 30 days in duration

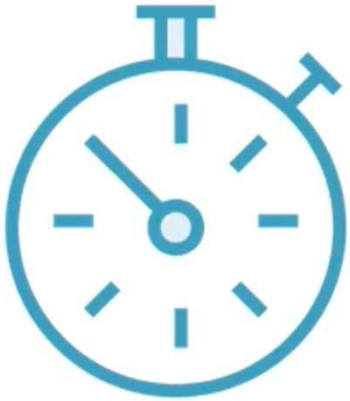
The Scrum Guide™ defines this as the upper limit

Shorter Sprints Versus Longer Sprints

Shorter Sprints

Easier but more frequent planning

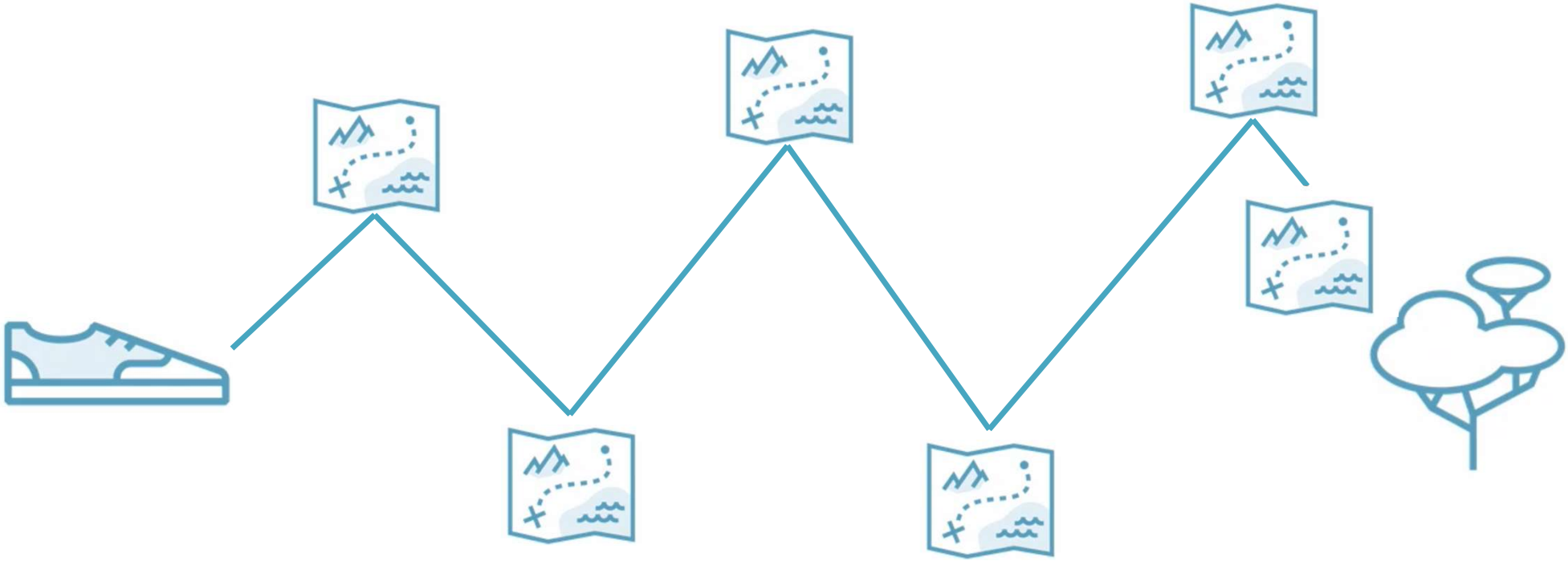
Better ability to reduce risk

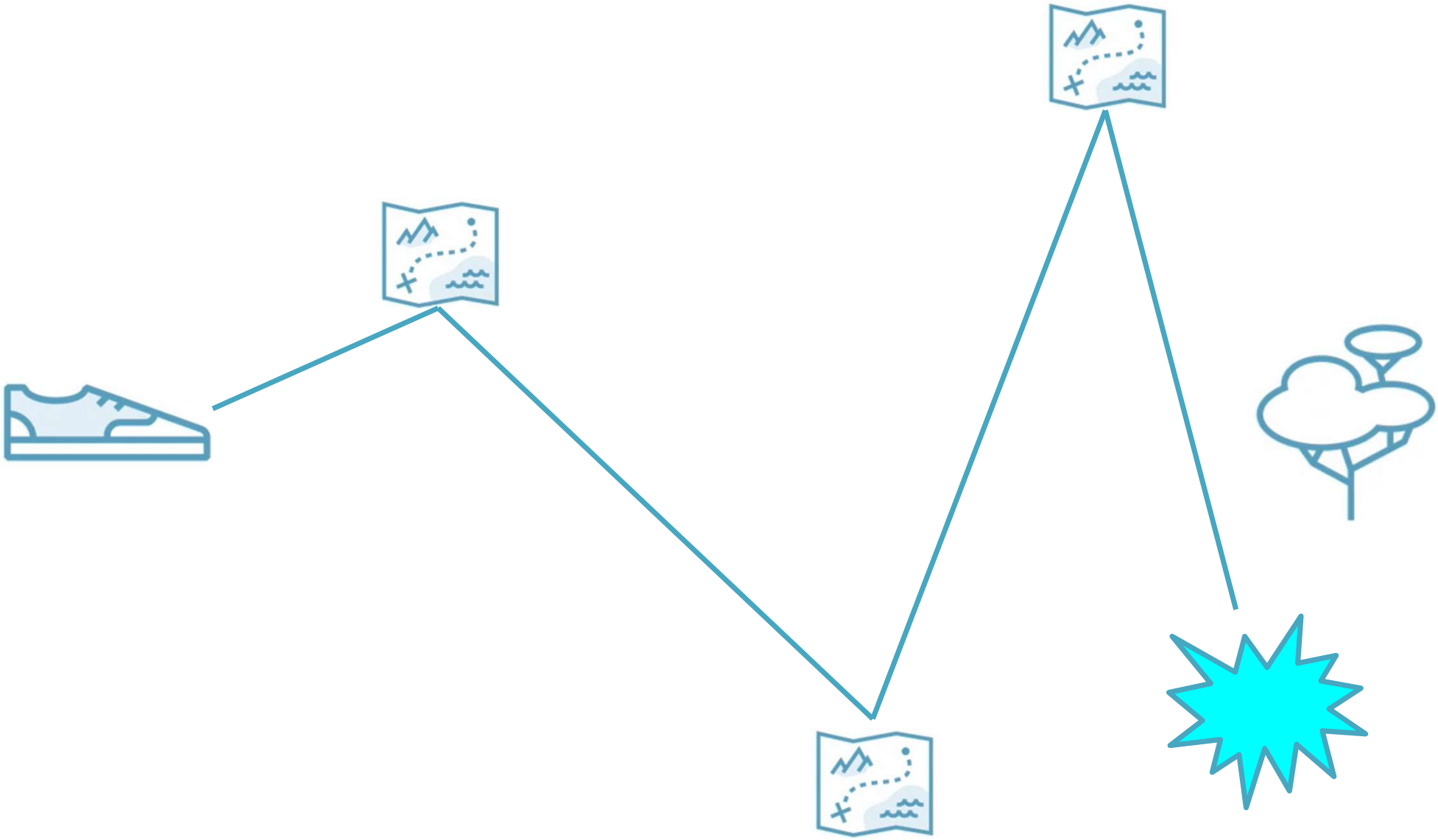


Longer Sprints

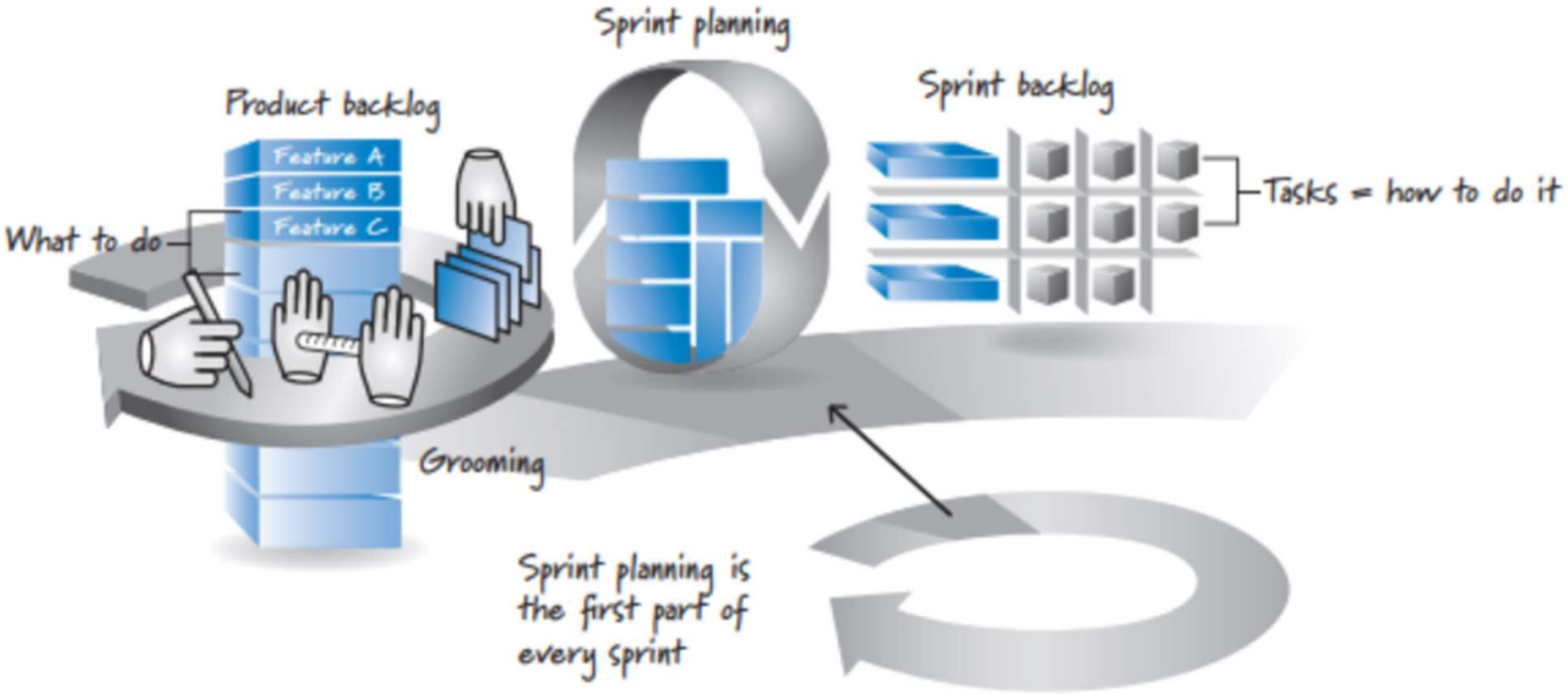
More difficult but infrequent planning

Will incur more risk

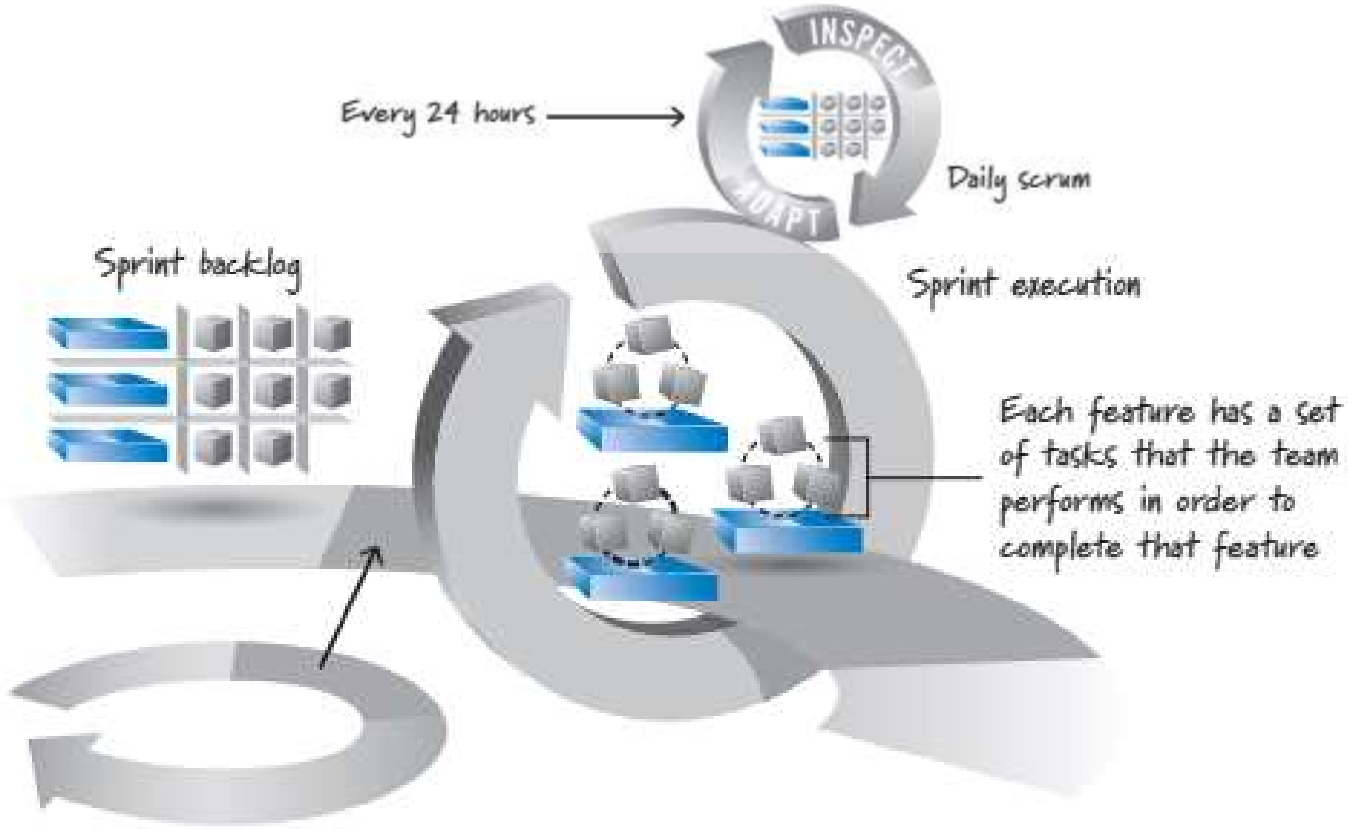




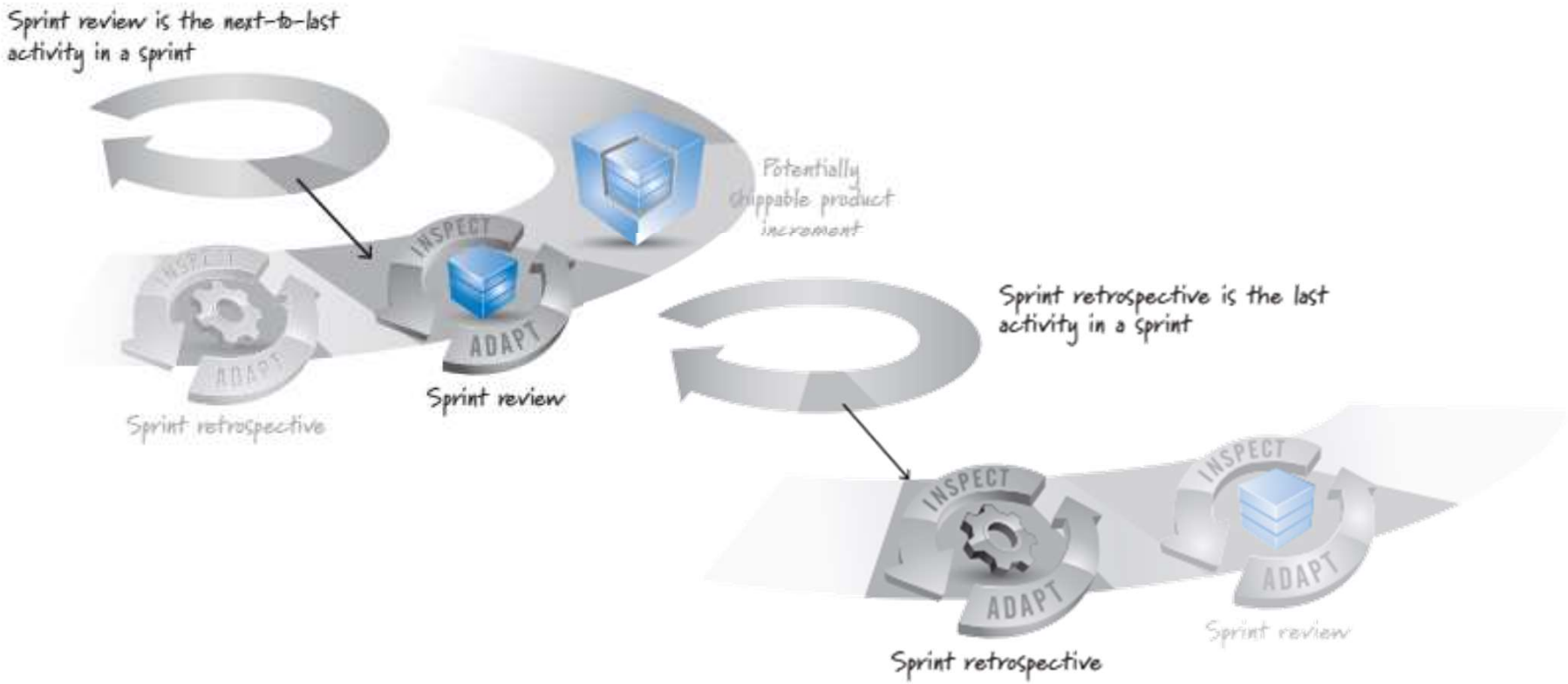
Sprint Planning



Daily Scrum


Every 24 hours
INSPECT
ADAPT
Daily scrum
Sprint backlog
Sprint execution
Each feature has a set of tasks that the team performs in order to complete that feature

Sprint review & retrospective



Share Understanding of Done

"**Done** means it's live in production and my customers use it."

≠

"**Done** means I've finished coding it and it's ready to be tested."

Creating a Definition of Done

Attainable

Realistically represents the capabilities of your team

Collaborative

Created by both stakeholders and the development team working together

Flexible

Subject to change as the team finds better ways to work

DoD Example

Attainable

All the code uploaded to GitHub

Collaborative

At least 2 reviewers on each pull request

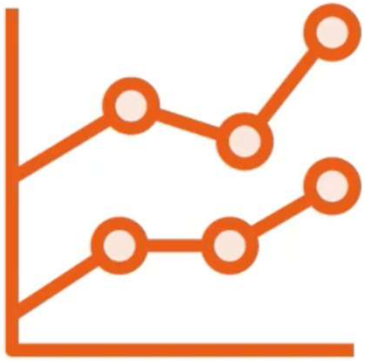
Flexible

DoD will evolve with the bootcamp

Potentially shippable product increment

Always leave the product in a releasable state at the end of each sprint.

Advantages of Potentially Shippable



Better business value

Recoup cost sooner or lessen overall investment

Reduced risk

Create a product that is ready to ship at any moment

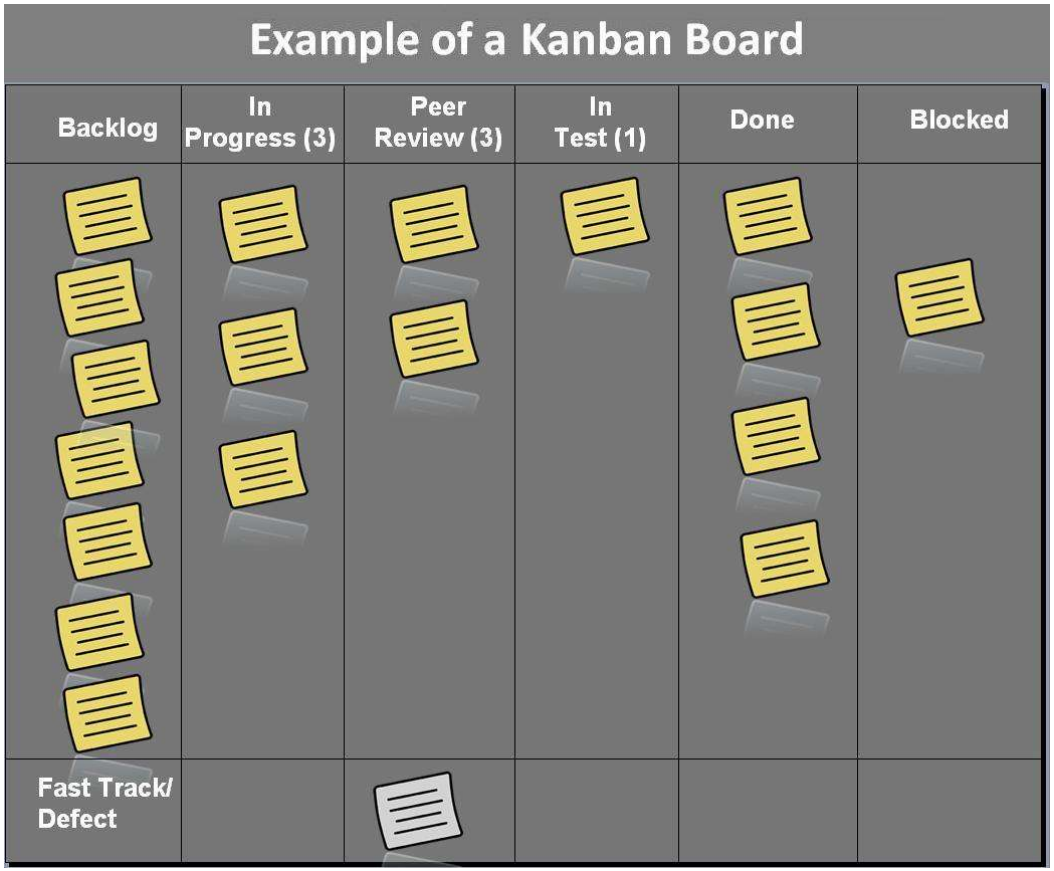
More transparency

Convey the team's true status to project stakeholders

Kanban -> Scrumban

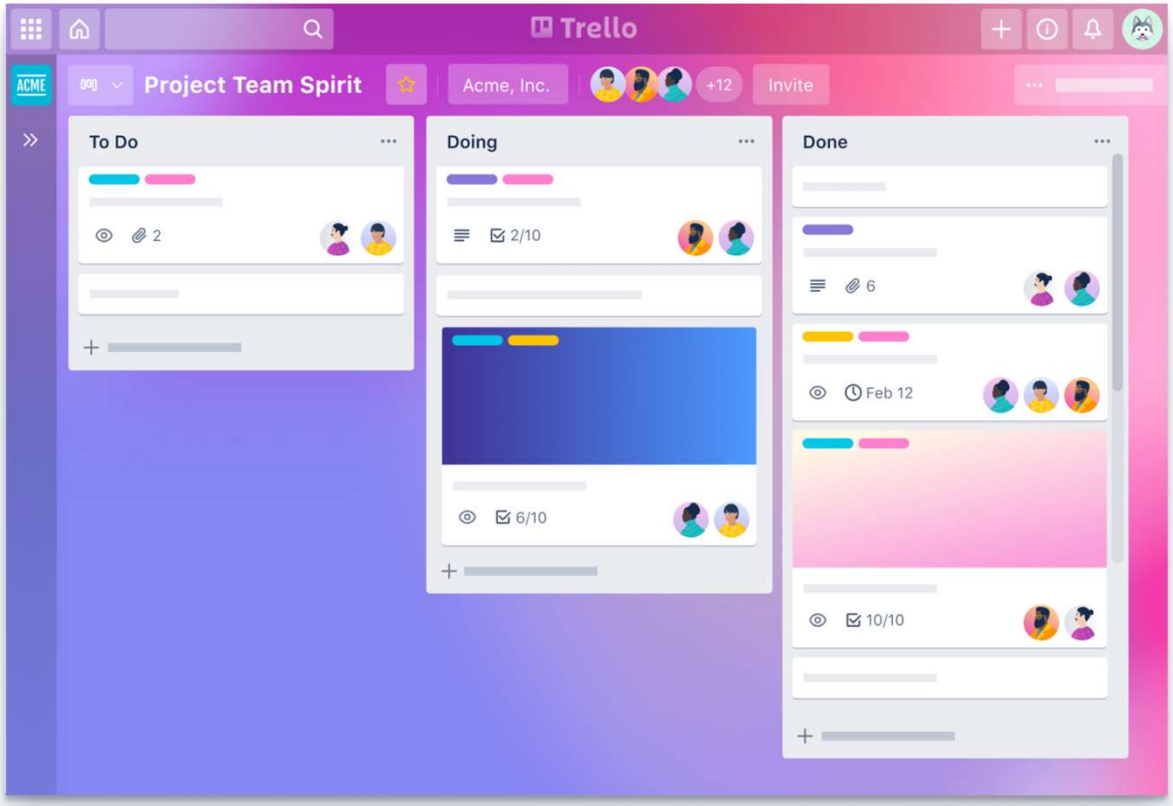
Kanban (Japanese: 看板, meaning signboard or billboard) is a lean method to manage and improve work across human systems.

Originated in lean manufacturing, which was inspired by the Toyota Production System.



Trello

Iniciar sesión | Registrarse



https://trello.com/

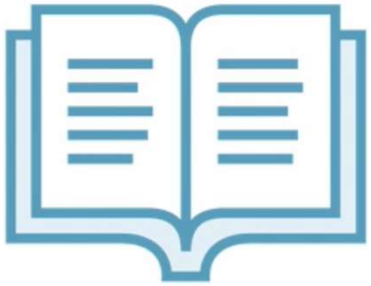
Únete a más de 1 millón de equipos de todo el mundo que utilizan Trello para obtener más y mejores resultados.

Google Fender SQUARESPACE COSTCO WHOLESALE

The Five Values of the Scrum Framework

Learning More

Agile Manifesto
www.AgileManifesto.org



Scrum Guide
www.ScrumGuides.org