Introduction to Agile

Neeraj Gupta, PMP, CSM
Project Manager

Agenda

- What is Agile?
- Agile Values & Principles
- Agile Methodologies
- Cost of change in agile
- All about Scrum
  - Scrum Framework
  - Roles
  - Ceremonies
  - Artifacts

What is Agile?

Agile Introduction

It’s Adaptive – there is no “specific or Agile Method”

Agile is mindset - not a framework / methodology which demands lot of cultural & mindset shift for organizations

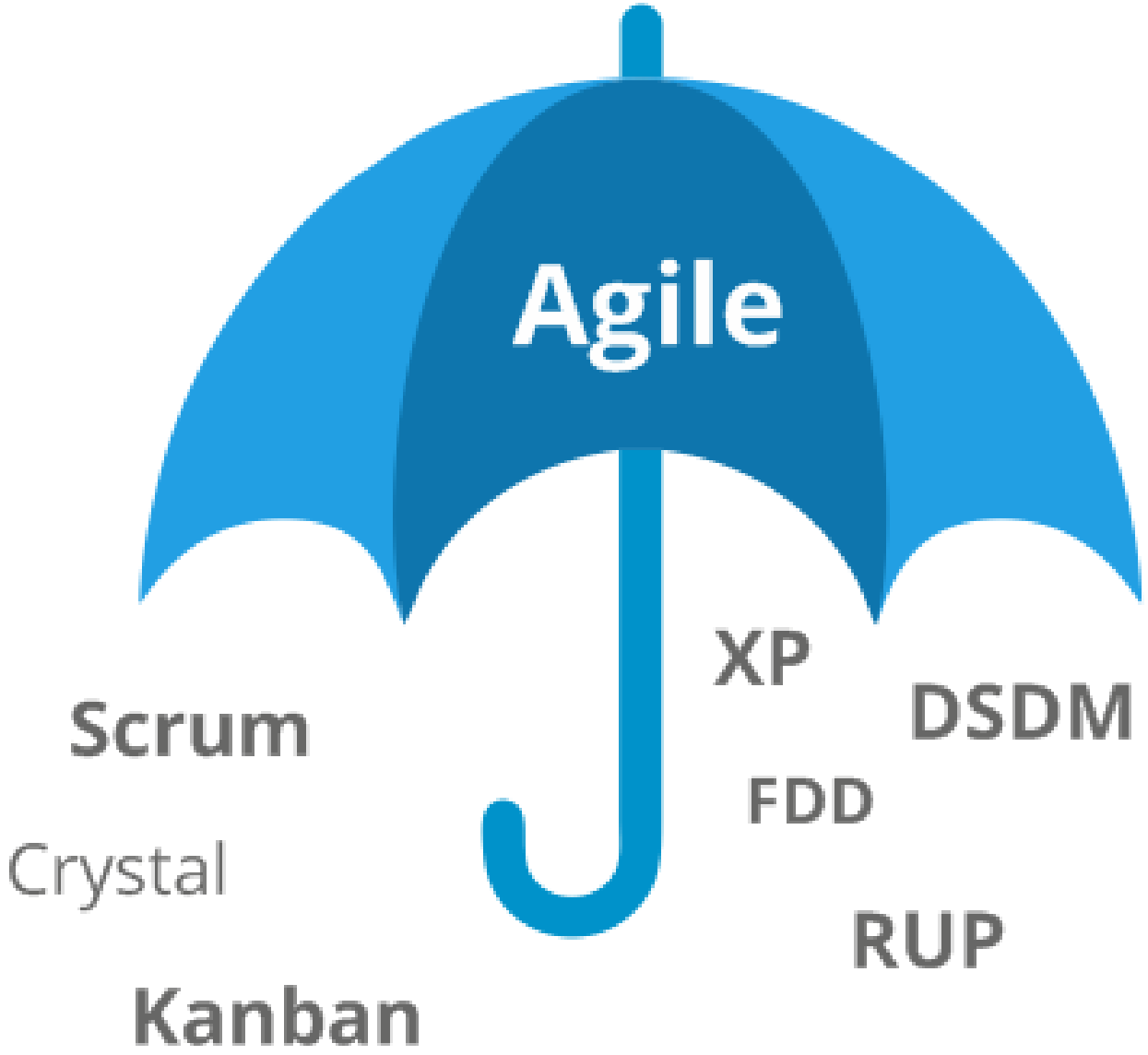
Agile teams focus on delivering business value to users by focusing on collaboration, transparency, responding to change and continuous learning.

Agile is the umbrella term, there are many different agile methodologies that sit under the Agile banner

Agile Manifesto - Principles

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.
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-face conversation.	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.
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 Methodologies

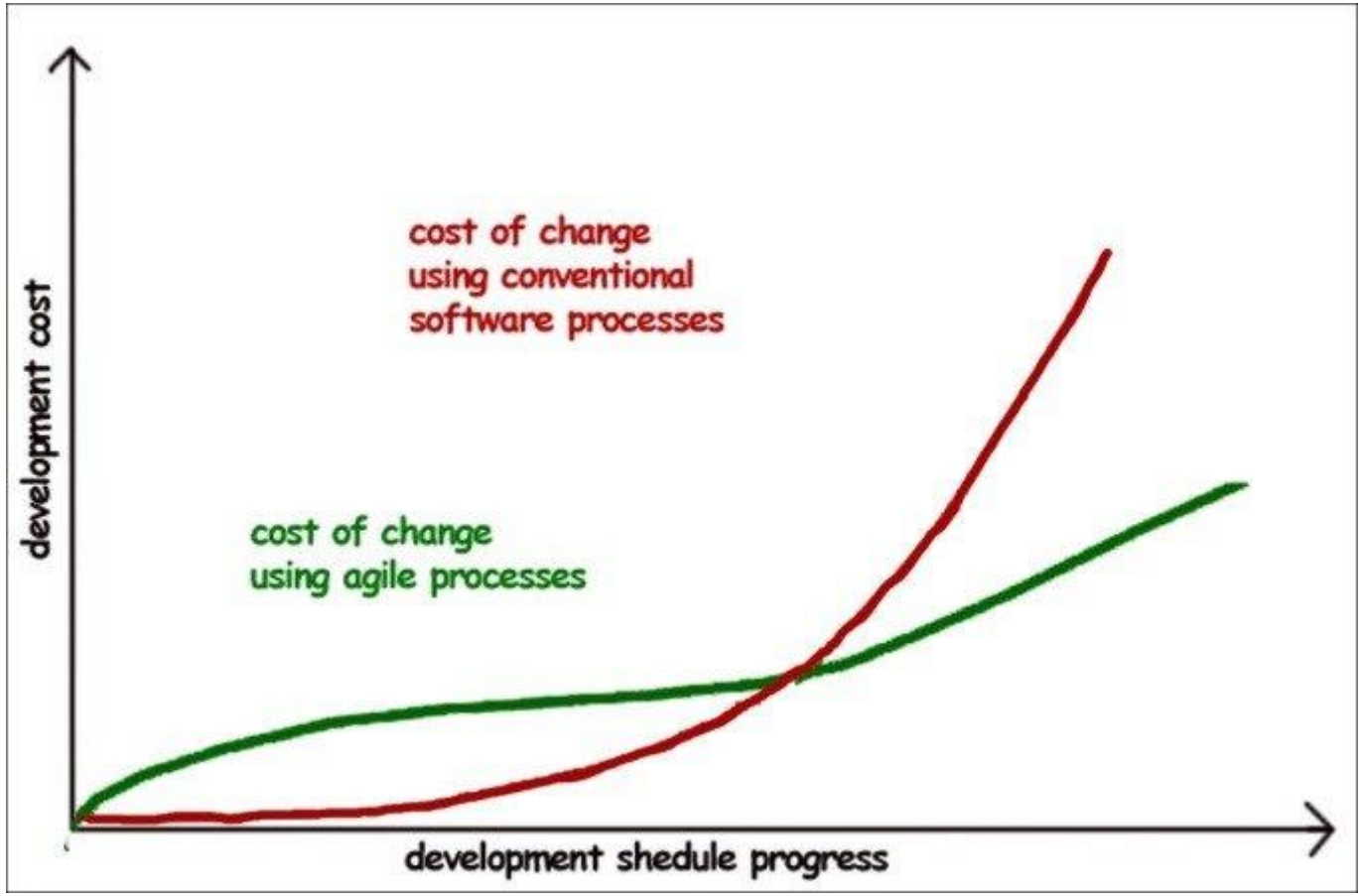


Agile Manifesto - Values

Individual & Interactions	OVER	Process & Tools
Working Prototypes	OVER	Comprehensive Documentation
Customer Collaboration	OVER	Contract Negotiation
Responding to Change	OVER	Following Plan

Agile Increases Cost of Project?

- Upfront planning in waterfall, consume major chunk of budget without producing any value
- Cost of change in traditional development methods increases as go deep into the project.
- In agile customer involvement, reduces the risk of delayed change.
- Frequent deliveries provides stakeholders chance to share early feedback.



Costly initially, gets cheaper as we progress

Scrum – An Introduction

We're losing the relay race

"The… 'relay race' approach to product development…may conflict with the goals of maximum speed and flexibility. Instead a holistic or 'rugby' approach—where a team tries to go the distance as a unit, passing the ball back and forth—may better serve today's competitive requirements."

Hirotaka Takeuchi and Ikujiro Nonaka, "The New New Product Development Game", *Harvard Business Review*, January 1986.

Scrum - Introduction

Scrum is an agile process that allows us to focus on delivering the highest business value in the shortest time.

It allows us to rapidly and repeatedly inspect actual working software (every two weeks to one month).

The business sets the priorities. Teams self-organize to determine the best way to deliver the highest priority features.

Every two weeks to a month anyone can see real working software and decide to release it as is or continue to enhance it for another sprint.

Scrum – An Empirical Process

Three pillars uphold every implementation of empirical process control: transparency, inspection, and adaptation.

Transparency

Significant aspects of the Scrum process must be visible to those responsible for the outcome, i.e. the scrum team

Inspection

Scrum users must frequently inspect Scrum artifacts and progress toward a Sprint Goal to detect undesirable variances.

Adaptation

If the Scrum determines that one or more aspects of a process deviate outside acceptable limits, the process must be adjusted.

Characteristics - Scrum

Self-organizing teams

Product progresses in a series of 2-4 week “sprints”

Requirements are captured as items in a list of “product backlog”

No specific engineering practices prescribed

Uses generative rules to create an agile environment for delivering projects

One of the “agile processes”

What is Scrum?

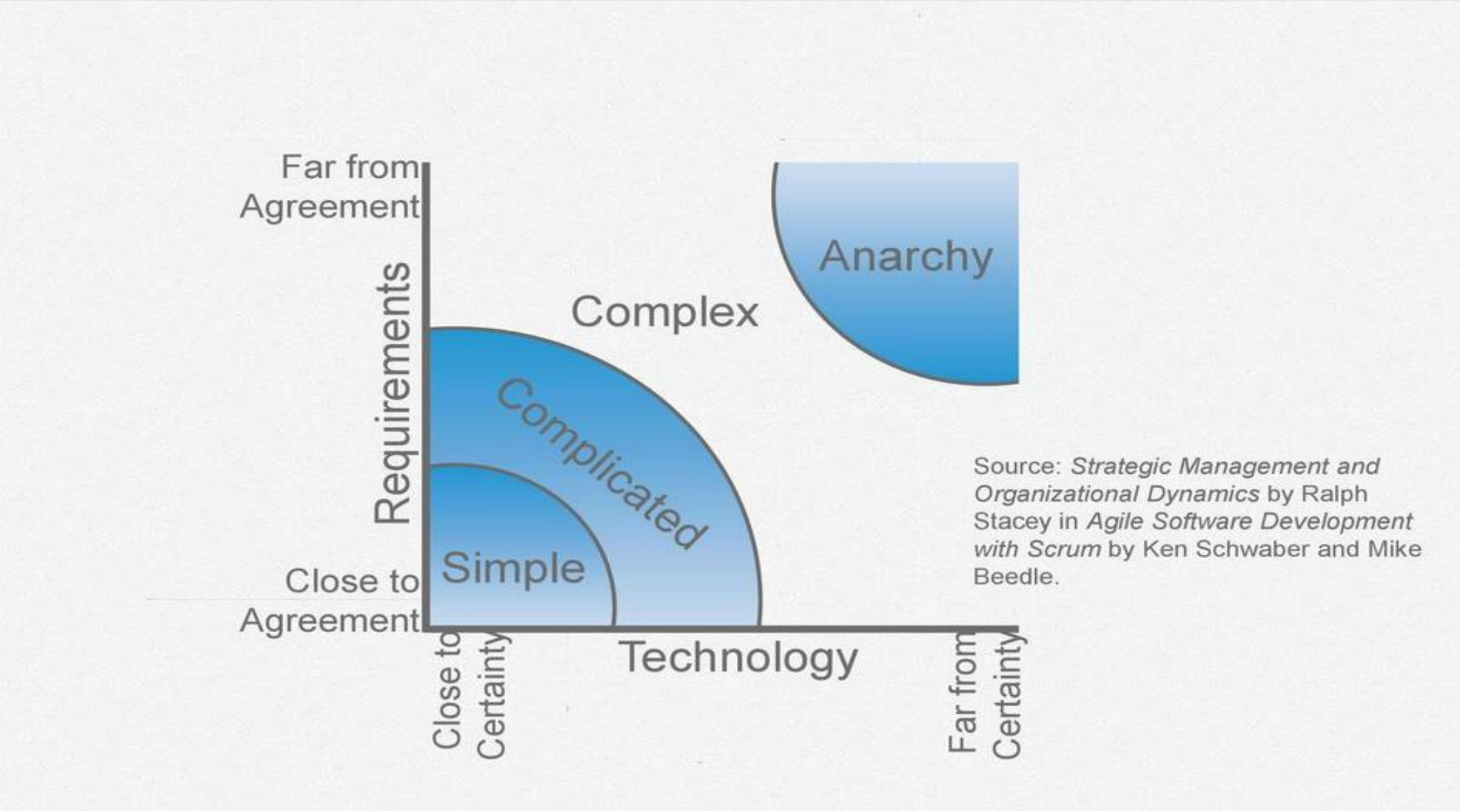
It is…

- A simple **framework** that can be understood and implemented in short time
- An approach to **managing complexity**
- A **collaborative** effort that enables an engaged **ongoing dialog**
- **Most popular** Agile Method used today
- Has **industry supported** standards (roles, tools, certification, etc.)
- A culture change for the **entire organization**

It is not…

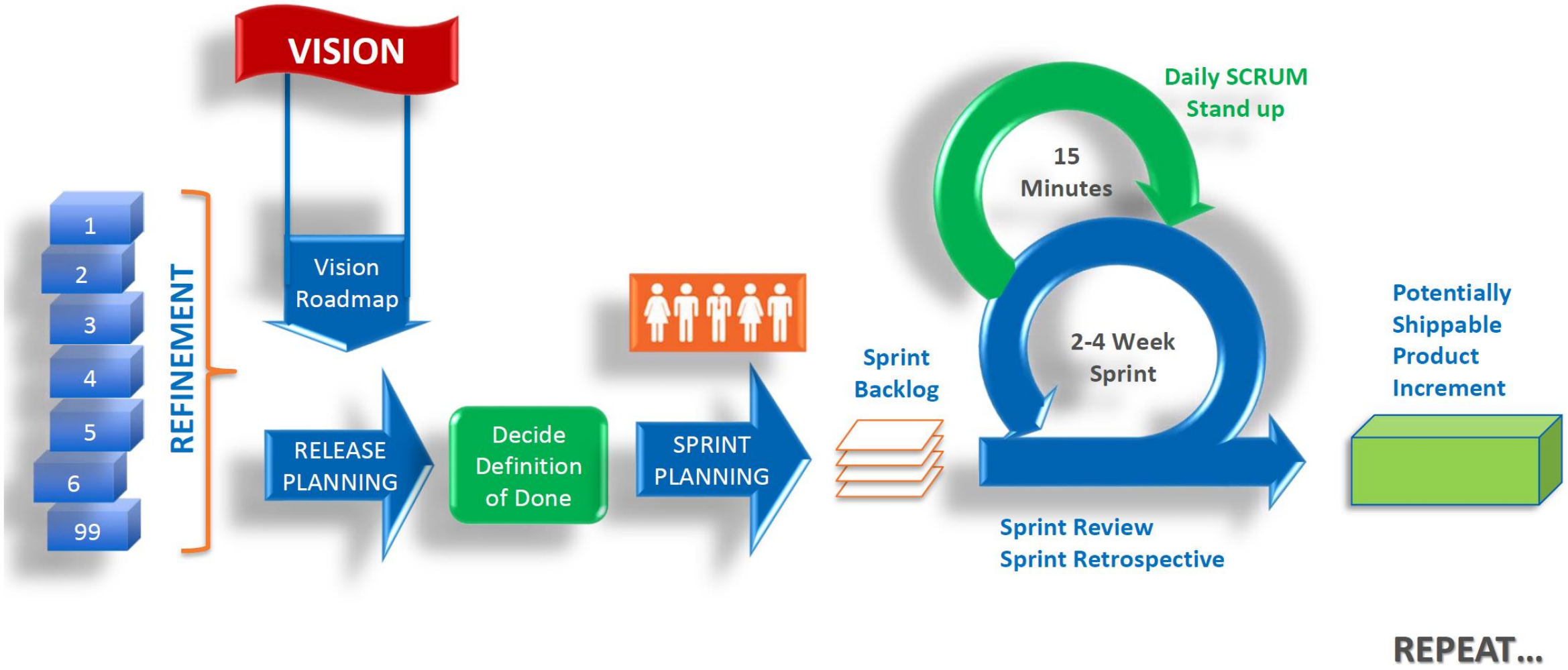
- A **methodology**
- A license to do **NO documentation** (some documents still need to be created)
- A silver bullet for all that **ails software development**
- A framework which provides **detailed plans** for every contingency

Scrum - When to go?



Scrum – Framework

Scrum - Process

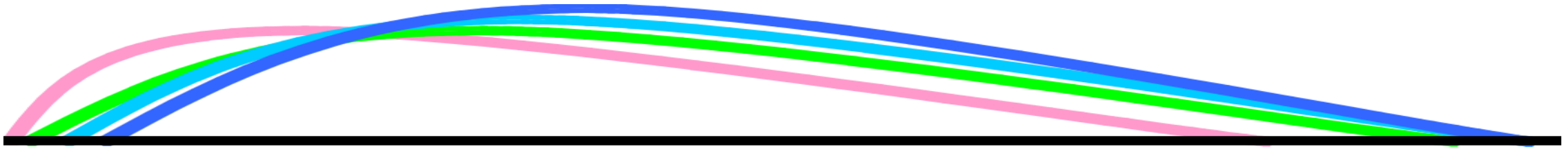


Sequential vs. Overlapping Development

Requirement | Designing | Coding | Testing | Deployment

Rather than doing all of one thing at a time...

...Scrum teams do a little of everything all the time



Sprints

- Scrum projects make progress in a series of “Sprints”
- Typical duration is 2–4 weeks or a calendar month at most
- A constant duration leads to a better rhythm i.e. all Sprint should be of same size.
- Once team committed to Sprint goal, No change should be allowed during the Sprint
- Requirements are analyzed, designed, coded, and tested during the sprint
- Deployment to Staging, UAT, production can be planned after the Sprint a Product Owner decides.

Plan sprint durations around how long you can commit to keeping change out of the sprint

Elements of Scrum

Roles - 3

- Product owner
- ScrumMaster
- Scrum Team

Ceremonies - 4

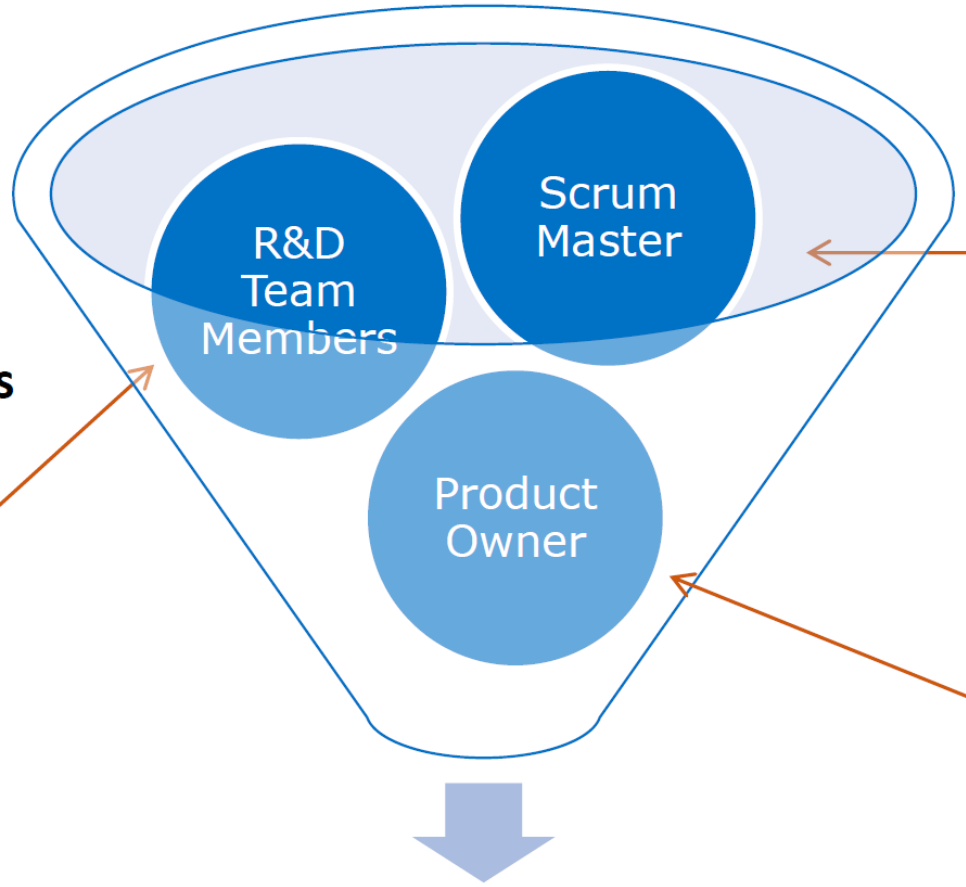
- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting

Artifacts - 3

- Product backlog
- Sprint backlog
- Burndown charts

Scrum Team – Who are part of it?

- Business/Systems Analysts
- Developers
- QAs
- DBAs
- UI/UX Designers



- Anyone not in an authoritative role.
- An authority on the process but not the team's boss
- Drives the process

- Is part of the team
- Should have some decision making authority
- Should not be the Scrum Master

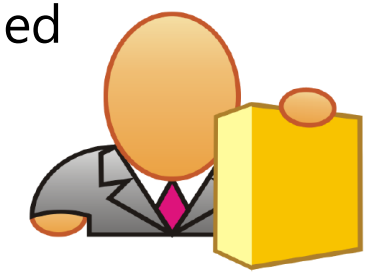
The Scrum Team

The Development Team

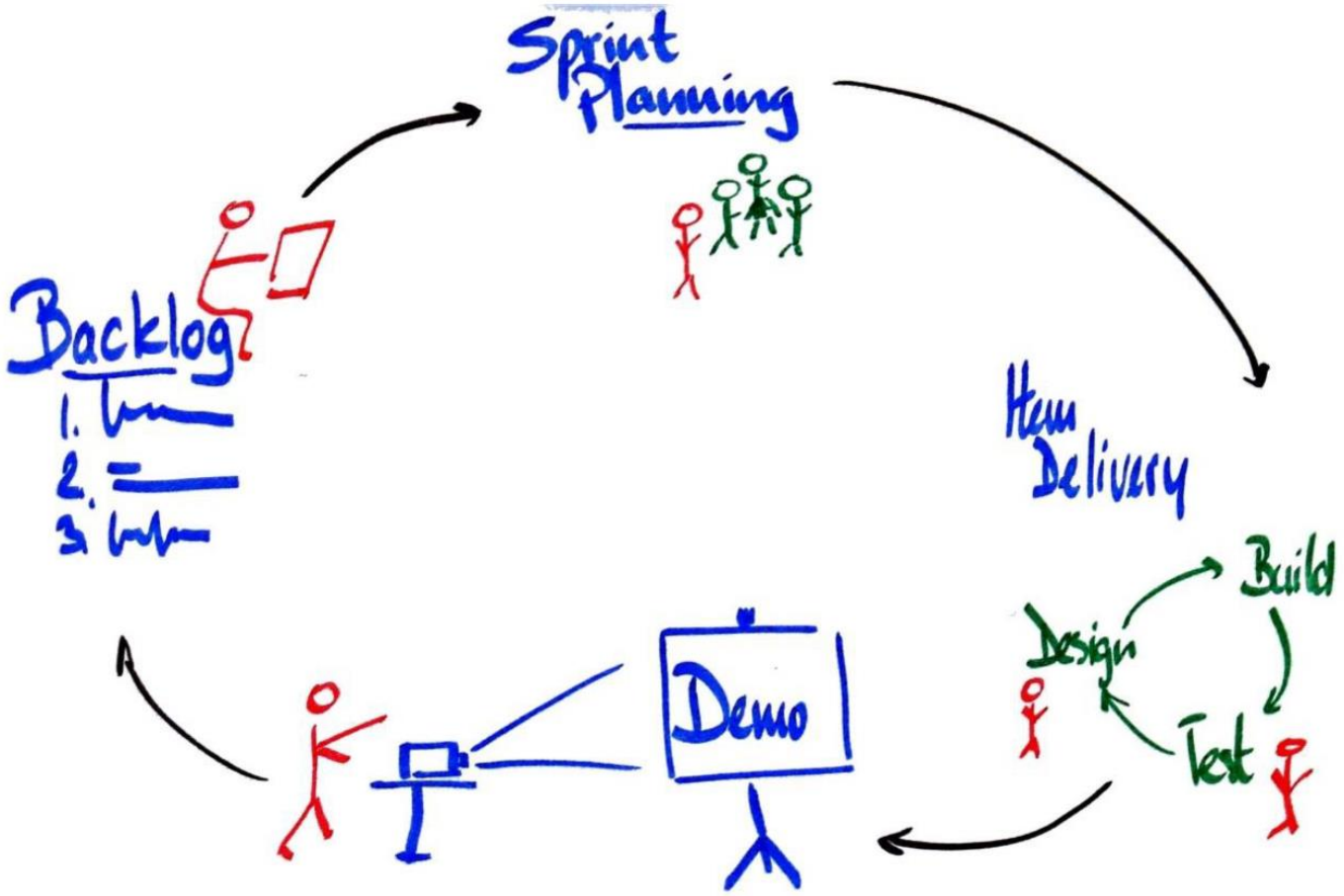
- Typically 5-9 people recommended by Scrum, may be adjusted according to requirement.
- Advisable to be cross-functional i.e. Programmer, tested, BA etc.
- Should be working full time and committed to Sprint Goal.
- Team should be self organizing
- Membership could only change between the Sprints i.e. no member shall be allowed to leave / join the team during the Sprint.

Product Owner

- Team Member who is accountable for the Business and value of the Team's Work Results
- Be the primary interface with the Stakeholders, and can be a Subject Matter Expert (SME)
- Have a vision for the Product, its Releases, and the Sprints
- Responsible for maximizing the value of the product; define and prioritize the features of the product according to market value
- Maintain and groom a prioritized Backlog of Product Backlog Items on regular basis
- Ensuring that the Product Backlog is visible, transparent, and clear to all, and shows what the Scrum Team will work on next
- Determine what product the team will build, and drive the team as a sustainable pace
- Guides product development i.e. adjust features and priority every Sprint, as needed
- Seek guidance from the development team
- Has final say on the work product; can accept or reject work results (Sprint)



Product Owner in Every Step of Scrum



Be the primary interface with the Stakeholders, and can be a **Subject Matter Expert (SME)**

- Acting as **Product Owner** during Spring Planning, Sprint Demo and Backlog Grooming
- Acting as **Team Member** during Sprint Cycle.

Scrum Master

- Represents management to the project
- Responsible for enacting Scrum values and practices
- Removes impediments
- Ensure that the team is fully functional and productive
- Enable close cooperation across all roles and functions
- Shield the team from external interferences
- Similar as a referee in soccer / rugby.

A Scrum Master Can be from any number of team roles: Project Manager, Team Lead, Dev Lead, QA, etc.

Scrum Ceremonies

- **Sprint (or Iteration) Planning** : Held at the beginning of each sprint for the team so commit Product Backlog Items to the Sprint Backlog
- **Daily Stand up / Daily Scrum** : A 15 Minute time boxed event for the Team to inspect, adapt and transparently synchronize on the Sprint Goal
- **Sprint Review (through Demo) Demo)**: Feedback mechanism for stakeholders to see working product increments and for the Product Owner to inspect and adapt on the Product
- **Sprint Retrospective** : an inspect and adapt mechanism for the Development team regarding their Process

Entire Scrum team is responsible to perform all the ceremonies

Daily Scrum / Stand up

- Parameters
  - Daily
  - 15-minutes
  - Stand-up, preferred
- Not for problem solving
  - Whole world is invited
  - Only team members, ScrumMaster, product owner can talk
- Helps avoid other unnecessary meetings

Daily Scrum – 3 Questions

1. What did you do Yesterday?
2. What will you do today?
3. Any Issue / Impediments?

These are not status the update for Scrum Master / Product Owner

These are commitments in front of peers

Scrum Artifacts

- **Product Backlog** :
  - Single Set of Requirement and Truth , Owned by Product Owner
  - Ordered List, everything that potentially be in Product, constantly changing
- **Sprint Backlog** :
  - Looks like same as product backlog, collected the agreed upon sprint tasks
  - Ideally, team members themselves sign ups the tasks
  - Owned by working team, can edit / add / delete the tasks from the Sprint in consultation with Product Owner
- **Burndown Chart**:
  - A tool widely used in Scrum showing work remaining with respect to available time in Sprint
  - It shows how well team is targeting to achieve Sprint Goals
  - Updated on every change in sprint backlog i.e. when tasks moves to close state.

User Stories & Story Point Estimation

User Stories
Who (often called role) and what
Why (optional)
Easy to understand
Short
Indicates measures of success

User Story Examples

- As a smart phone user, I want to be able to install the application.
- As a smart phone user, I want to be able to uninstall the application.

- As a business owner, I want to be able to accept credit cards.
- As a business owner, I want to be able to receive confidential customer feedback.

Story Points

Story points are a measure of size

Is one story larger or smaller than another

Planning Poker

1. Create a scale and generate voting cards for each member
   - (1, 2, 5, 10, 50, 100)
2. One person in the group describes a story (Moderator)
   - (e.g. I just bought a puppy, it is two weeks old, and I want to train it to tell me when it needs to go out and avoid accidents)
3. Group may ask questions about the story
4. Group votes
5. High and low votes explain their reasoning
6. Group revotes and repeats process above if wide range
7. Moderator eventually helps group settle on a number
   - (can be any number e.g. 7)

Questions?