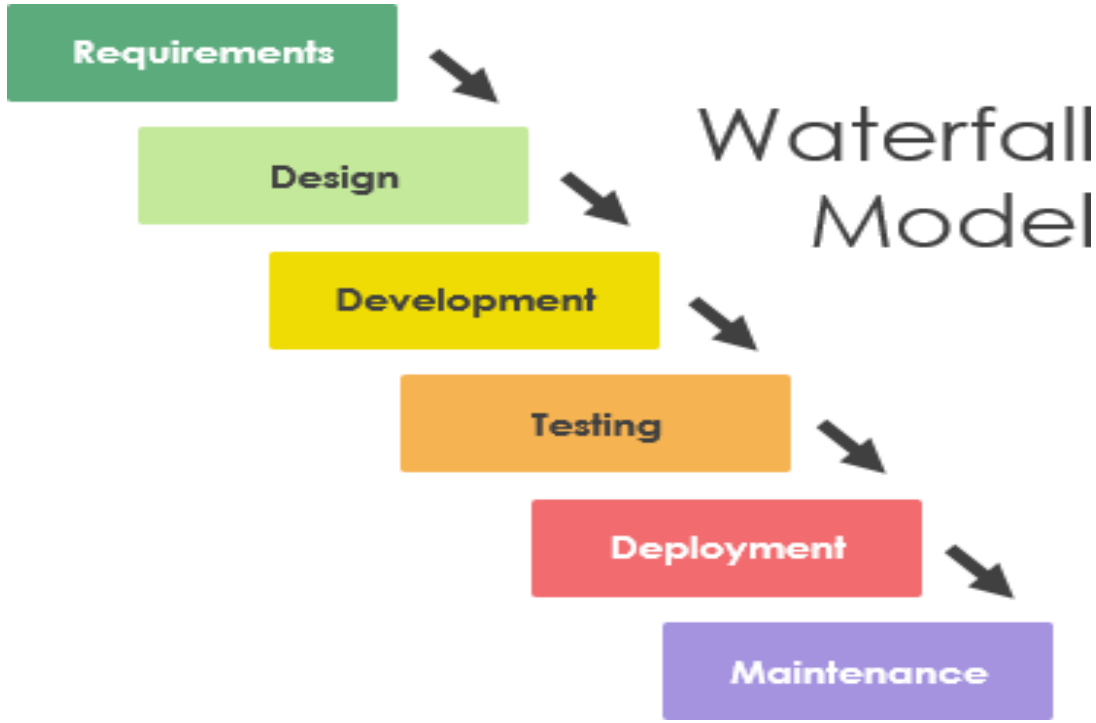
Agile Methodology & Scrum Framework

Outline

- Background of Software Devlopment Methodology
- What is Agile Methodology?
- Agile Manifesto Values, Principle
- Example using Traditional and Agile Work Distribution, Process Flow
- When to Choose Agile and when other
- Agile Umbrella
- Scrum Framework, Team, Roles,Scrum Workflow
- Product Backlog
- Sprint, Sprint Planning Meeting, Sprint Plan
- Daily Scrum, Sprint Review , Retrospective
- Conclusion

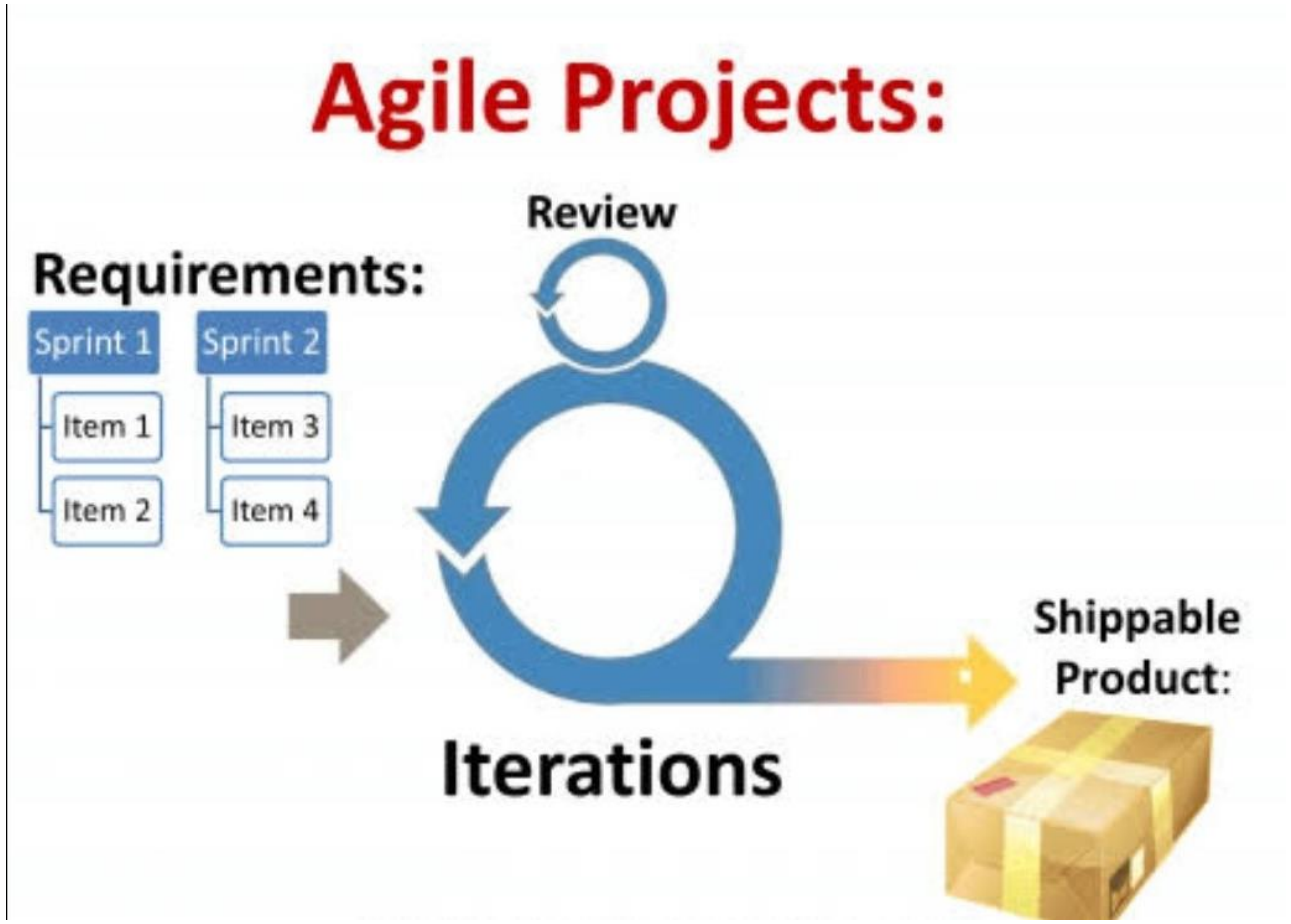
Background of Software Development Methodology

- The Software Development Life Cycle (SDLC) refers to a methodology with clearly defined processes for creating high-quality software.
- SDLC methodology focuses on the following phases of software development:



- What is Agile , Agile Methodology?

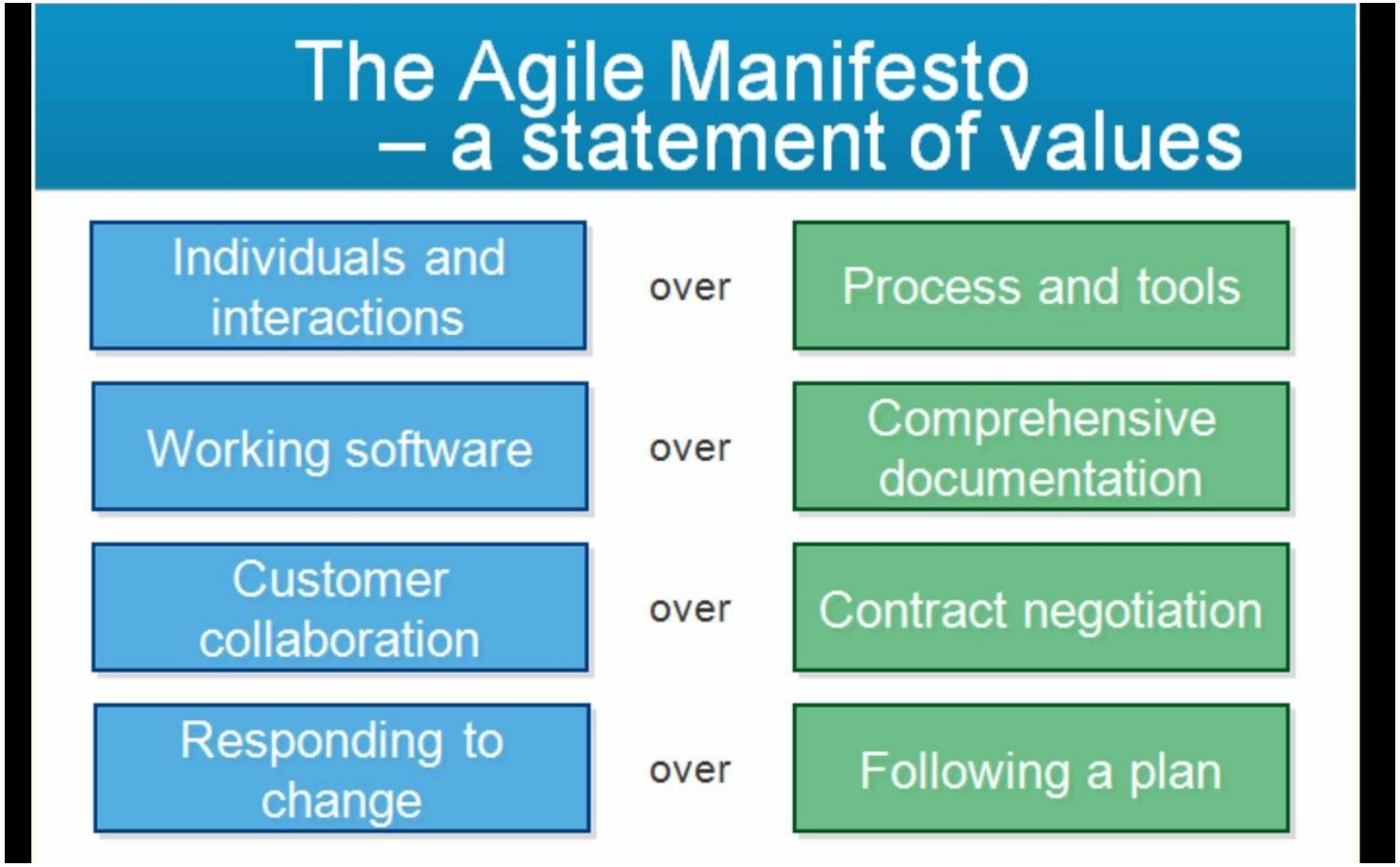
- Agile means Ability to move quickly ,easily and responding swiftly to the change.
- Similar to-Waterfall model, V-Model, Iterative model .
- Promotes continuous iteration of development and testing throughout the software development lifecycle of the project.
- Development and testing activities are concurrent unlike the Waterfall model .


Agile Projects:
Review
Requirements:
Sprint 1
Sprint 2
Item 1
Item 2
Item 3
Item 4
Shippable
Product:
Iterations

Agile Manifesto – Set of Rules, Policies , Aims

- Agile Manifesto is the foundation of most modern methodologies of project management.
- Developed in 2001 by a group of 17 software engineers The 'Agile Alliance'
- It was created to completely change the approach to problem-solving and project management.
- Testers and developers together called Development team.
- Cross functional Agile team.
- ***It has four core values supplemented by 12 principles.***

Four core values of Agile Methodology



12 Principles of Agile

1. **Customer satisfaction** through continuous delivery of the product
2. Divide **large chunks of work into smaller** and achievable tasks for quicker completion and easier integration of changes
3. Adhere to the **decided timeframe** for the delivery of a working product
4. All stakeholders must frequently **collaborate** to ensure that the project is going in the correct direction
5. Create a **supportive environment** to motivate team members and encouraging them to get the job done
6. Prefer **face-to-face communication** over other methods

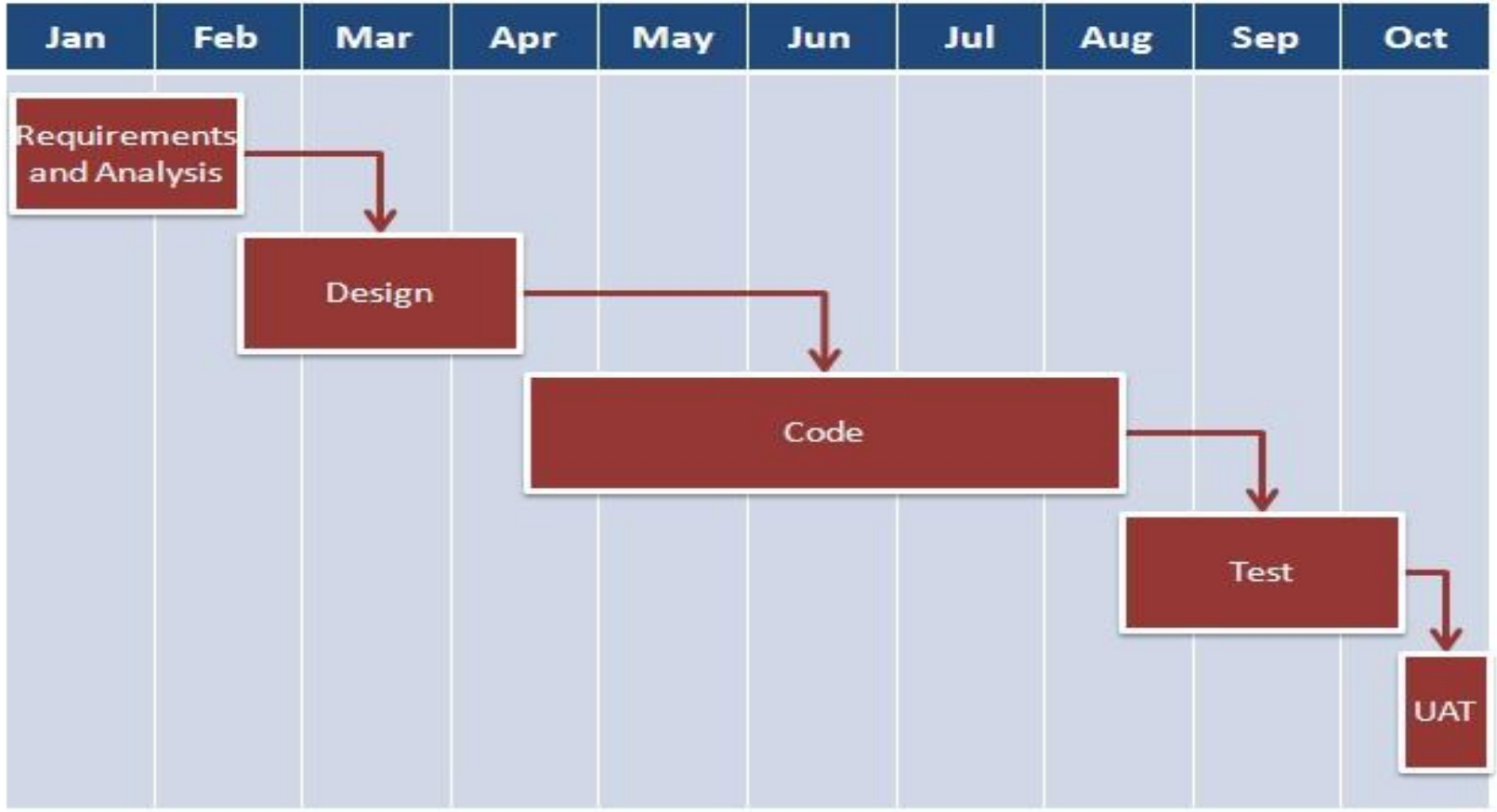
Continued principles of Agile

7. **Working software** is the primary measure of progress
8. Try to maintain a **constant pace of development**
9. **Maintain the quality** of the product by paying attention to technical details
10. **Maintain simplicity**
11. Promote **self-organization** in the team
12. Regularly reflect on your **performance for continuous improvement**

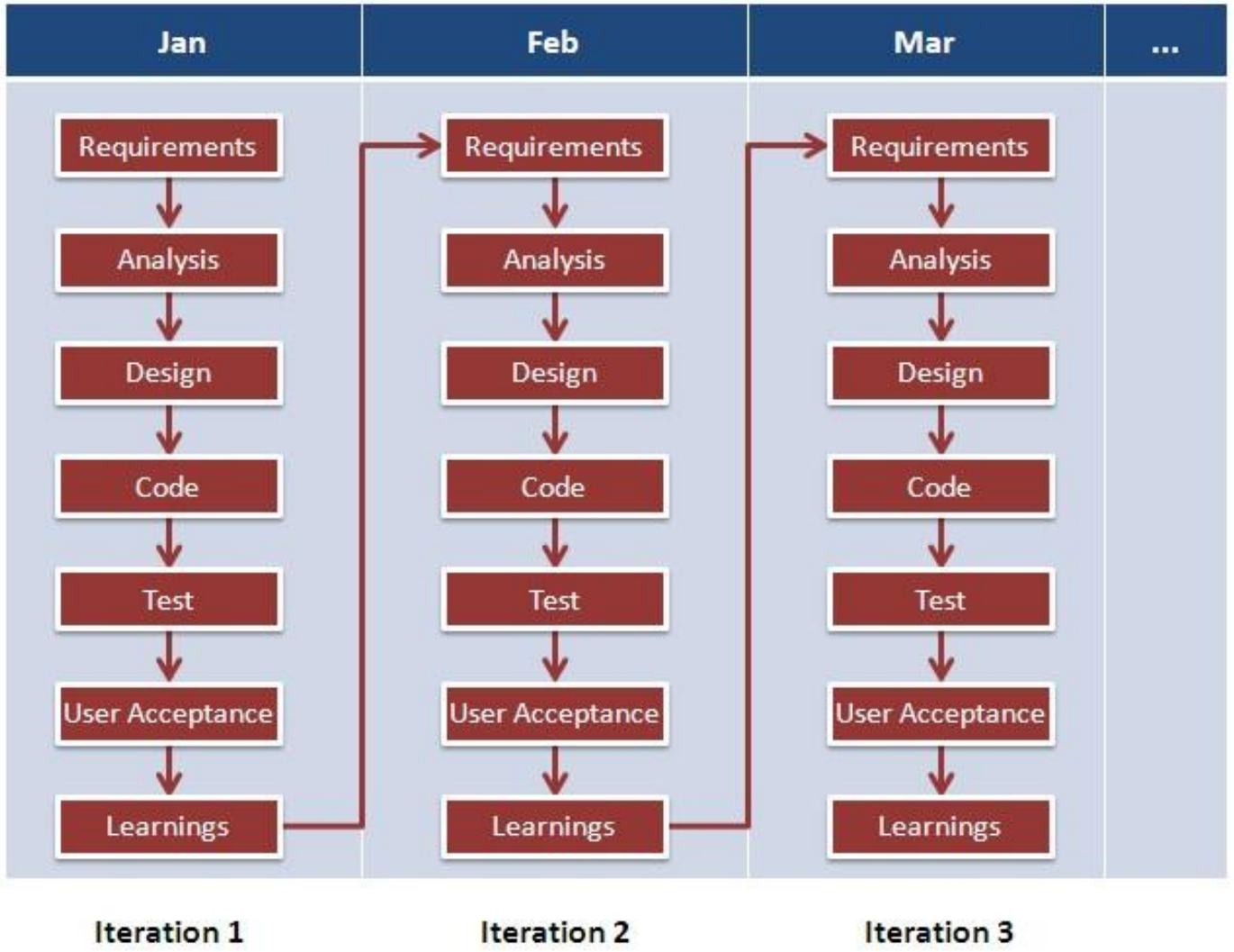
Consider an Example how it is executed in Traditional and Agile

- Example Google wants to come up with competing product to Ms Word
- The final product needs to be ready in 10 months of time.
- Let us see methodologies.

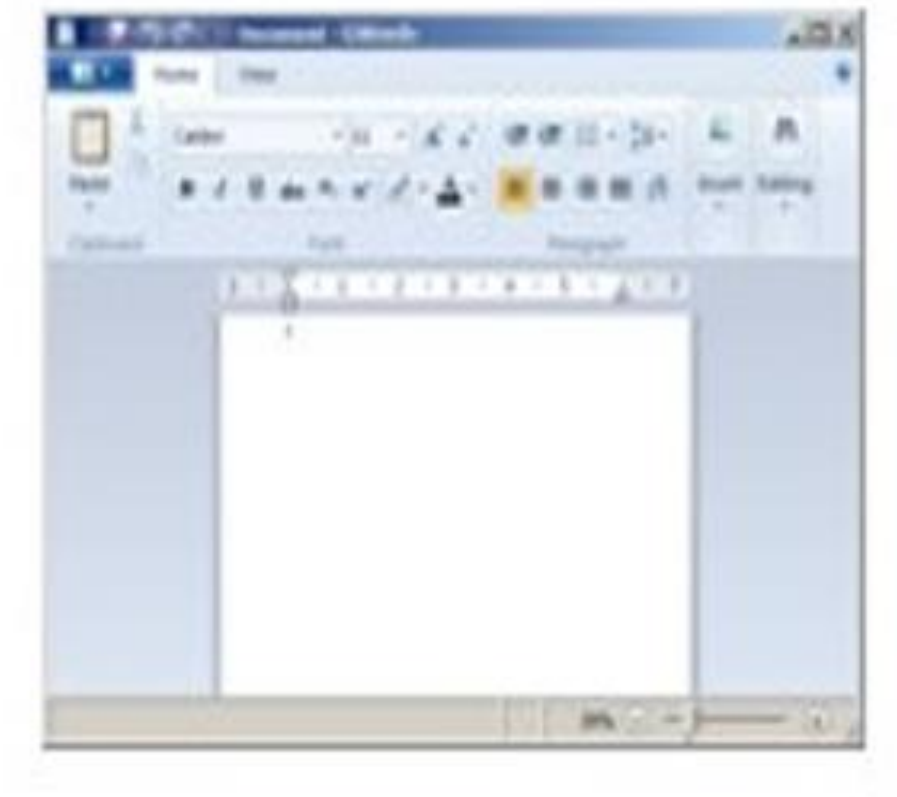
Work Distribution chart in Waterfall



Work Distribution chart in Agile Model



Delivery of Product using Waterfall



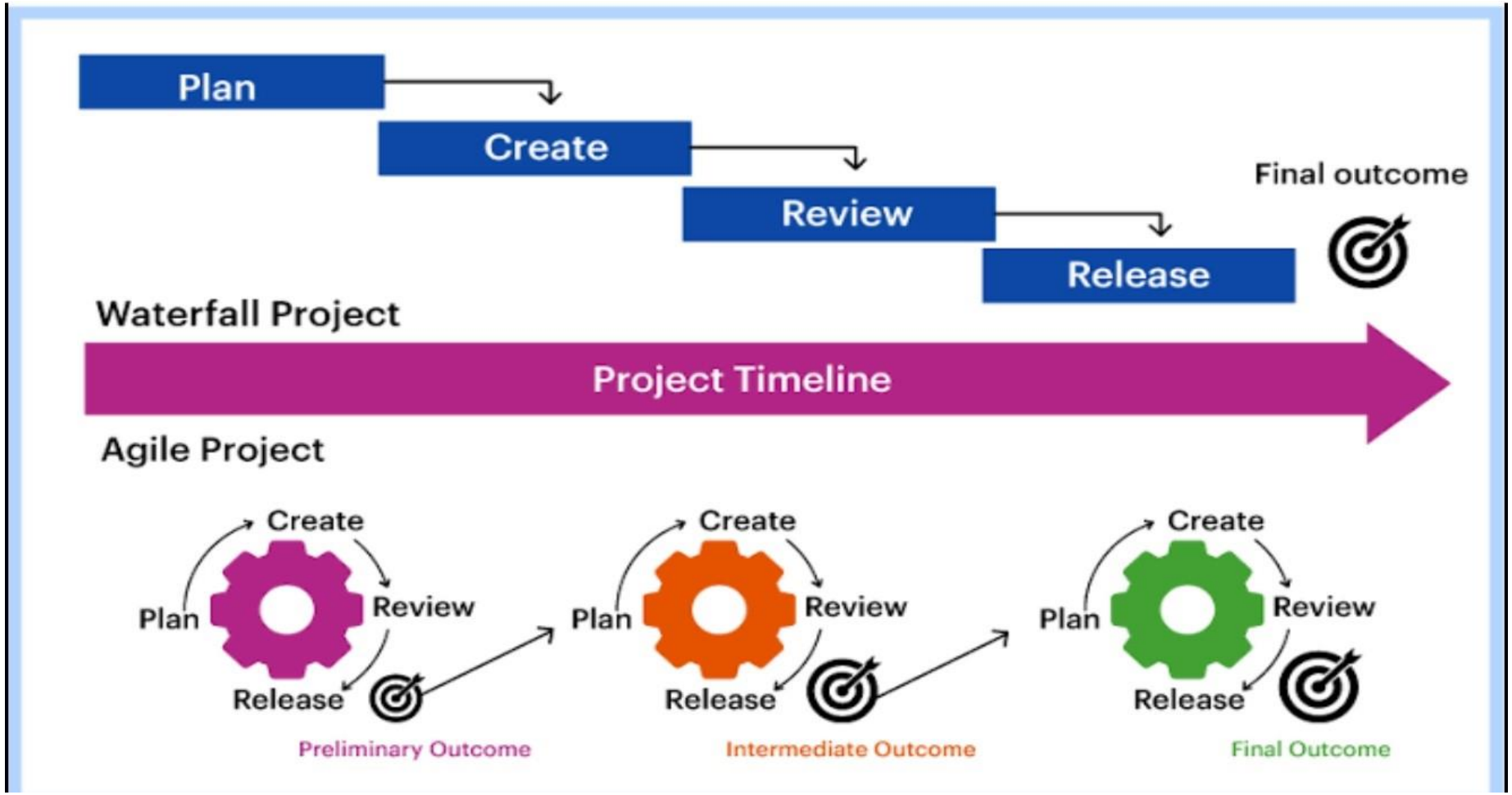
Delivery of Product using Agile

Iteration 1

Iteration 2

Iteration 3

Process Model Work Flow



What makes Agile Different?

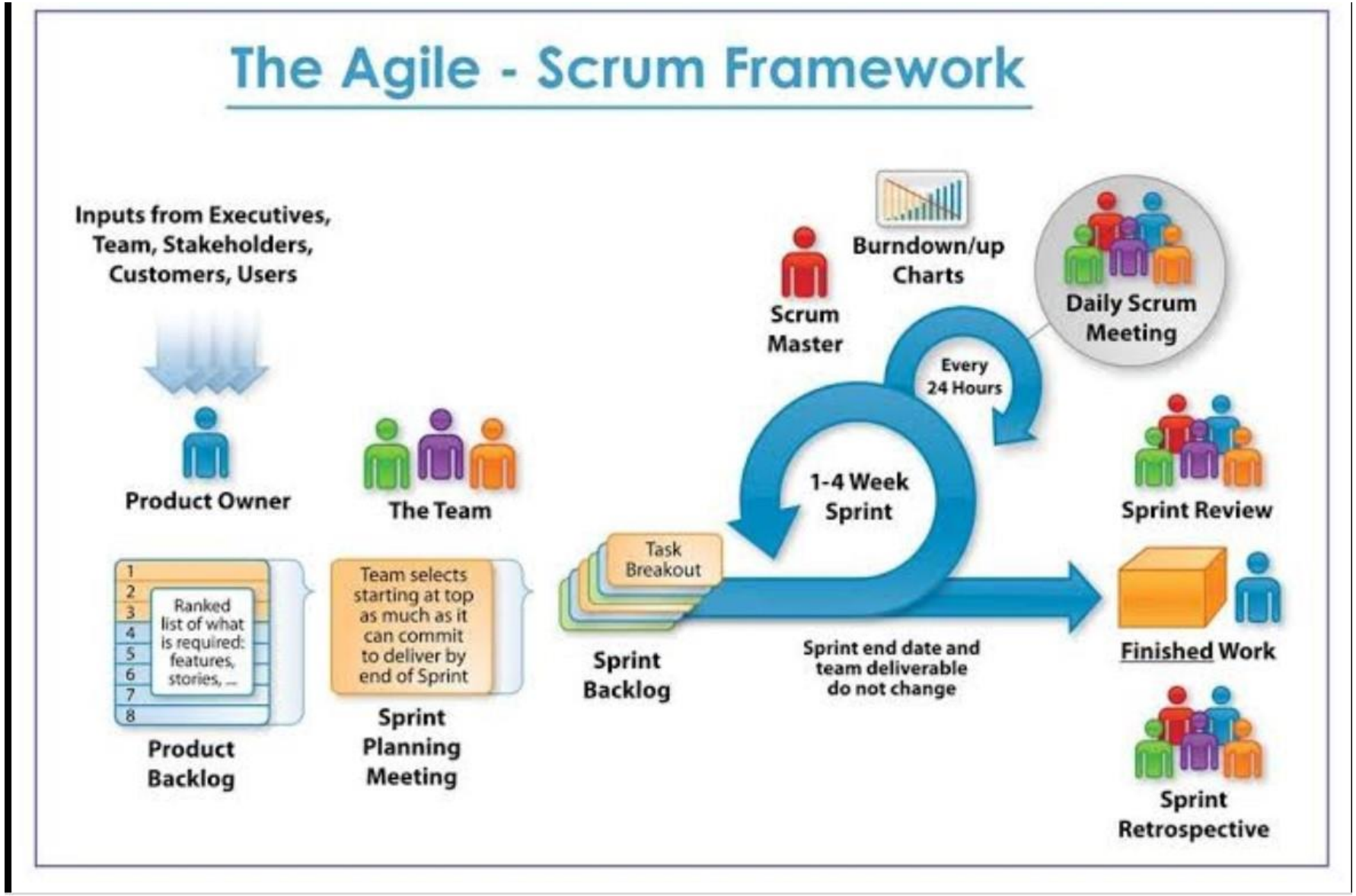
- Empirical Model
- Multiple Iterations
- Customer Interaction and feedback after every Iteration.
- Changes and Corrections is possible early after feedback from delivery in every iteration
- Continuous Improvement
- Collaborative method

When Agile? When Traditional?

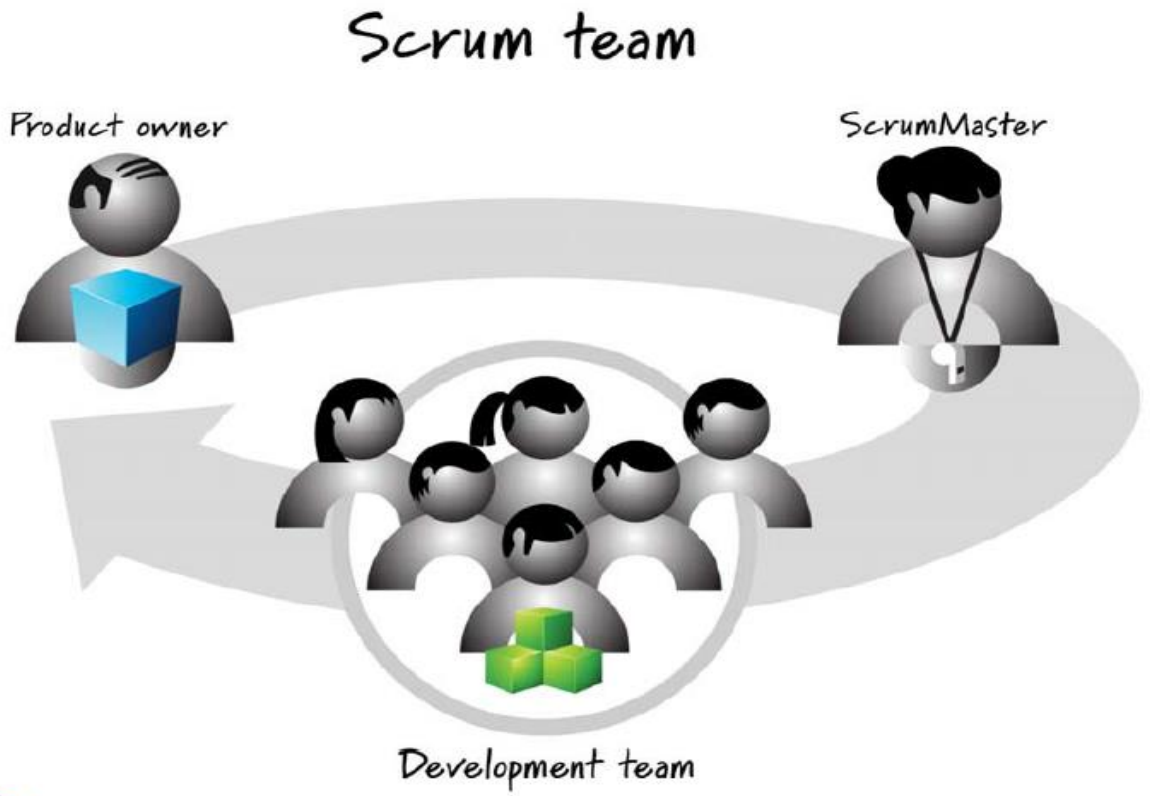
If the Product Requirements are completely clear at Beginning use Traditional Approach else Agile


Agile umbrella
Agile
Scrum
Crystal
Kanban
XP
DSDM
FDD
RUP
and few more...

- **Framework** - Standard way to build and deploy applications.
- **Scrum** is a process framework manage complex products since 1990s.
- Scrum (n): A framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.
  - Lightweight
  - Simple to understand
  - Difficult to master
- Not a process, technique, or definitive method.
- It is a framework that employ collection of various processes and techniques.
- Focus is on continuous improvement of product, team, working environment.


The Agile - Scrum Framework
Inputs from Executives, Team, Stakeholders, Customers, Users
Product Owner
The Team
Scrum Master
Burndown/up Charts
Daily Scrum Meeting
Every 24 Hours
1-4 Week Sprint
Sprint Review
Task Breakout
Sprint Backlog
Sprint end date and team deliverable do not change
Finished Work
Sprint Retrospective
1
2
3
4
5
6
7
8
Ranked list of what is required: features, stories, ...
Product Backlog
Team selects starting at top as much as it can commit to deliver by end of Sprint
Sprint Planning Meeting

Scrum Team



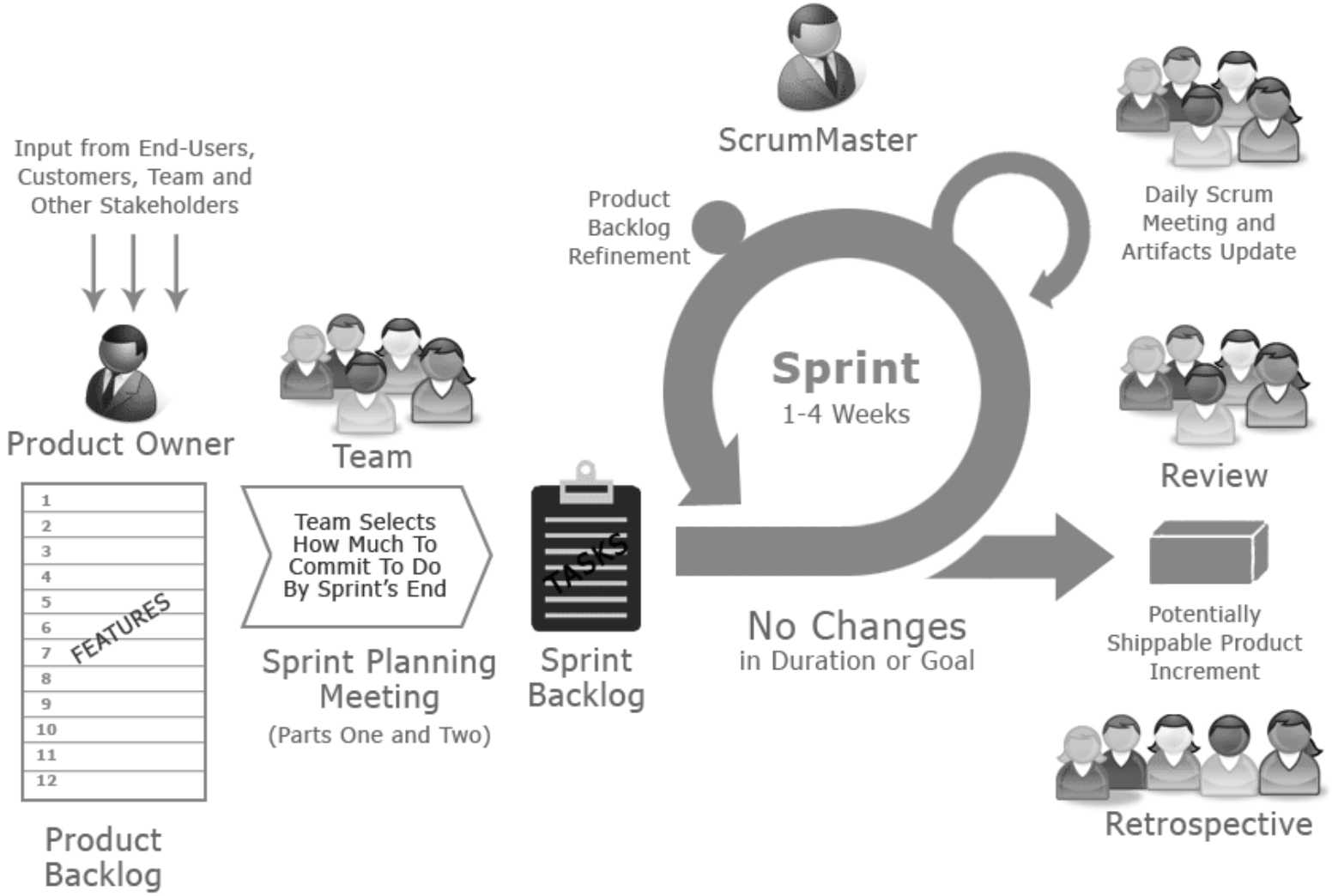
Overview of Scrum Roles

Empowered central point of product leadership

Coach and facilitator helping everyone understand and embrace Scrum values, principles, and practices

Self-organizing team that is cross-functionally diverse and sufficiently staffed to meet the agreed upon definition of done

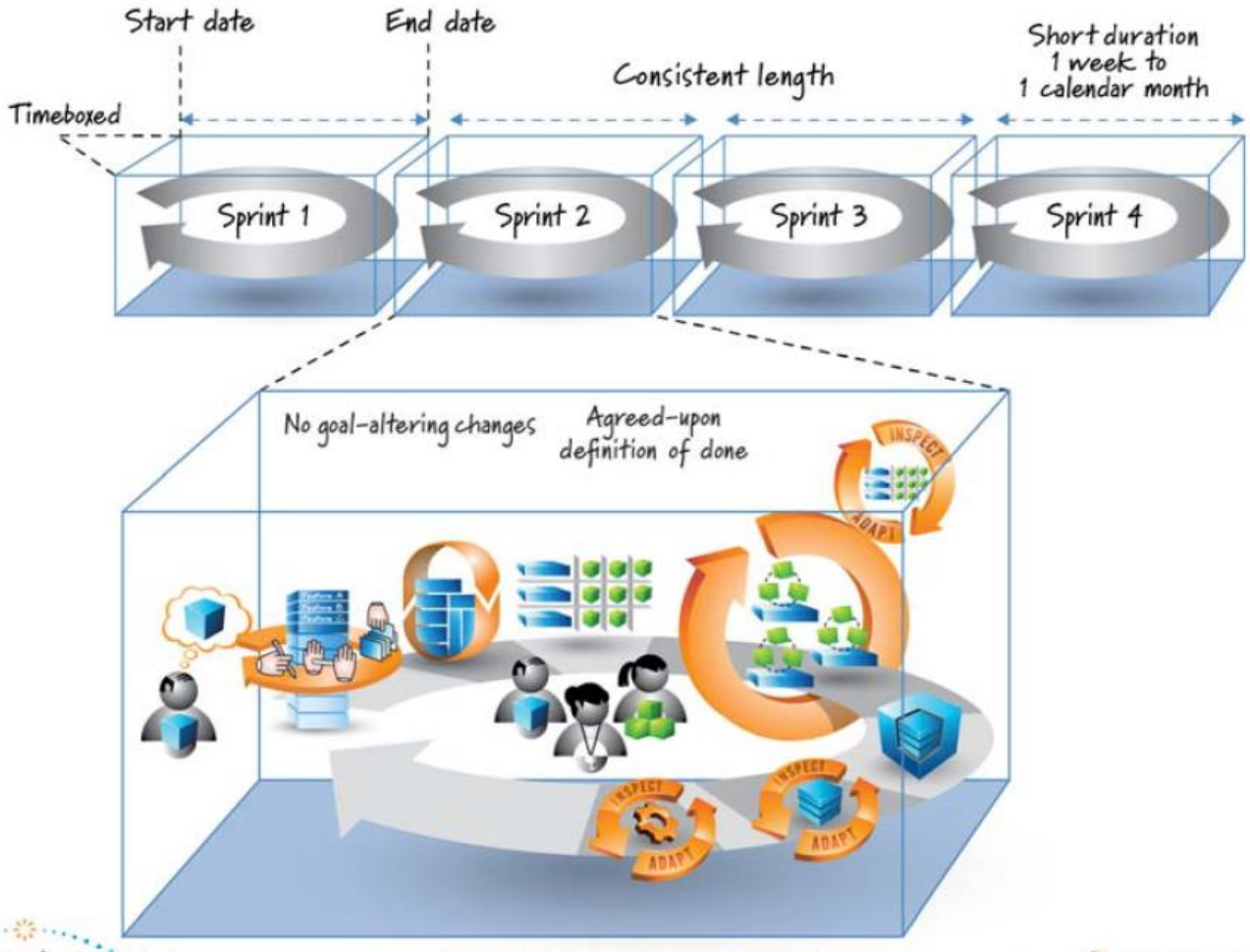
		Who is involved	What
1	Product backlog	Product Owner, Scrum Master, Dev Team, Stakeholders	Priortise List of Features /Requirements
2	Sprint	Product Owner , Scrum Master, Dev Team	Fix duration, Sprint Goal
	Sprint Planning Meeting	Product Owner , Scrum Master, Dev Team	Userstories (Features to be developed)are created by Product Owner Output: In Usecase , User stories,PBI
4	Sprint Backlog	Product Owner , Scrum Master, Dev Team	Specific Features to be delivered in 2 weeks
5	Daily Scrum or Standup	Product Owner , Scrum Master, Dev Team	Execution, plan discussion
6	Sprint Review Meeting	Product Owner , Scrum Master, Dev Team, Stakeholders	End of Sprint ,Team work , Delivered features,Feedback
7	Sprint Retrospective	Product Owner , Scrum Master, Dev Team	Evaluation of Team work , Discuss issue , improvements, Empirical Change


Input from End-Users, Customers, Team and Other Stakeholders
Product Owner
Team
1
2
3
4
5
6
7
8
9
10
11
12
FEATURES
Product Backlog
Team Selects How Much To Commit To Do By Sprint's End
Sprint Planning Meeting
(Parts One and Two)
TASKS
Sprint Backlog
ScrumMaster
Product Backlog Refinement
Sprint
1-4 Weeks
No Changes
in Duration or Goal
Daily Scrum Meeting and Artifacts Update
Review
Potentially Shippable Product Increment
Retrospective

Product Backlog and PBIs

As an admin, I want to A	3
As a survey taker, I want to B	5
As a survey taker, I want to C	5
As an executive, I want to D	2
As an admin, I want to E	2

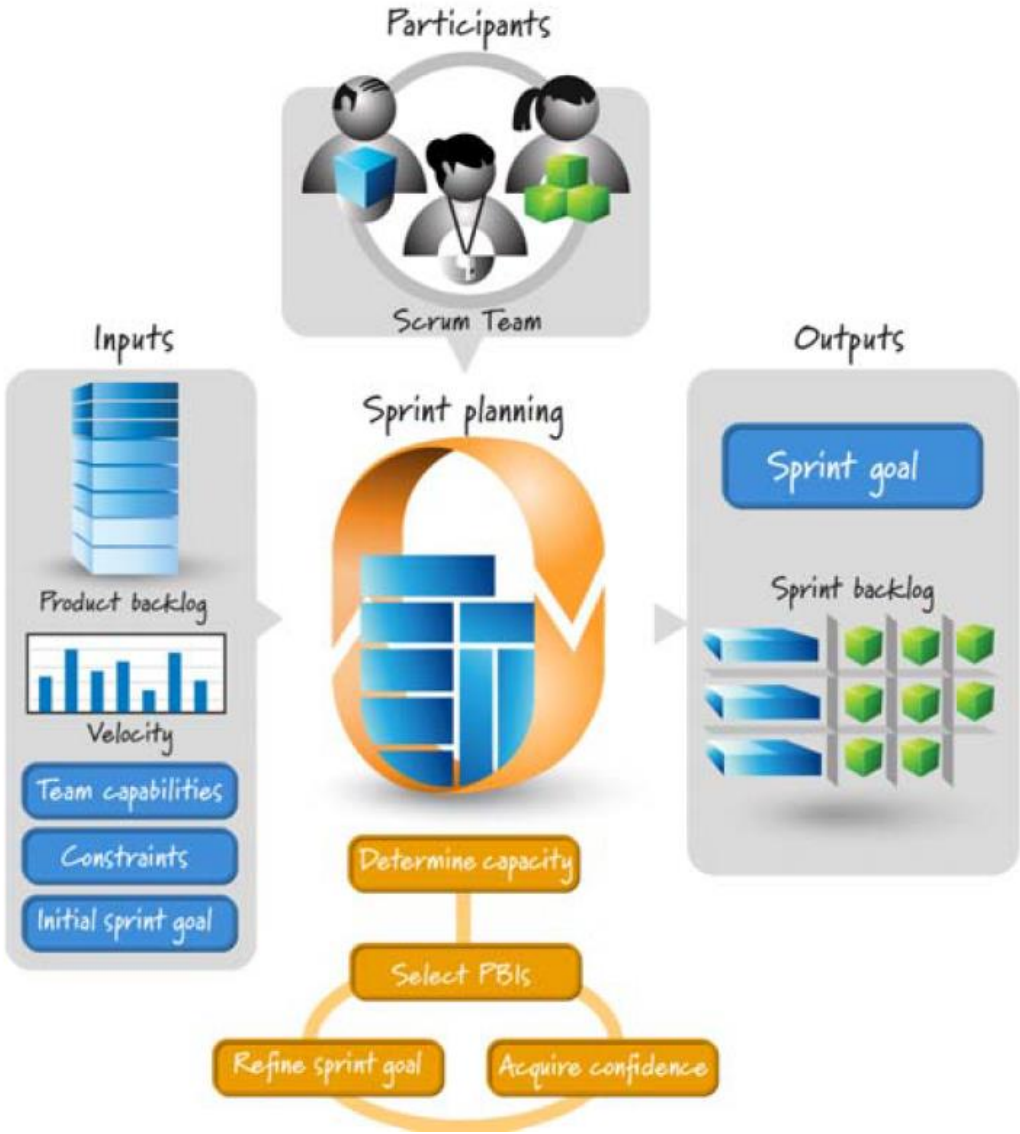
Sprints



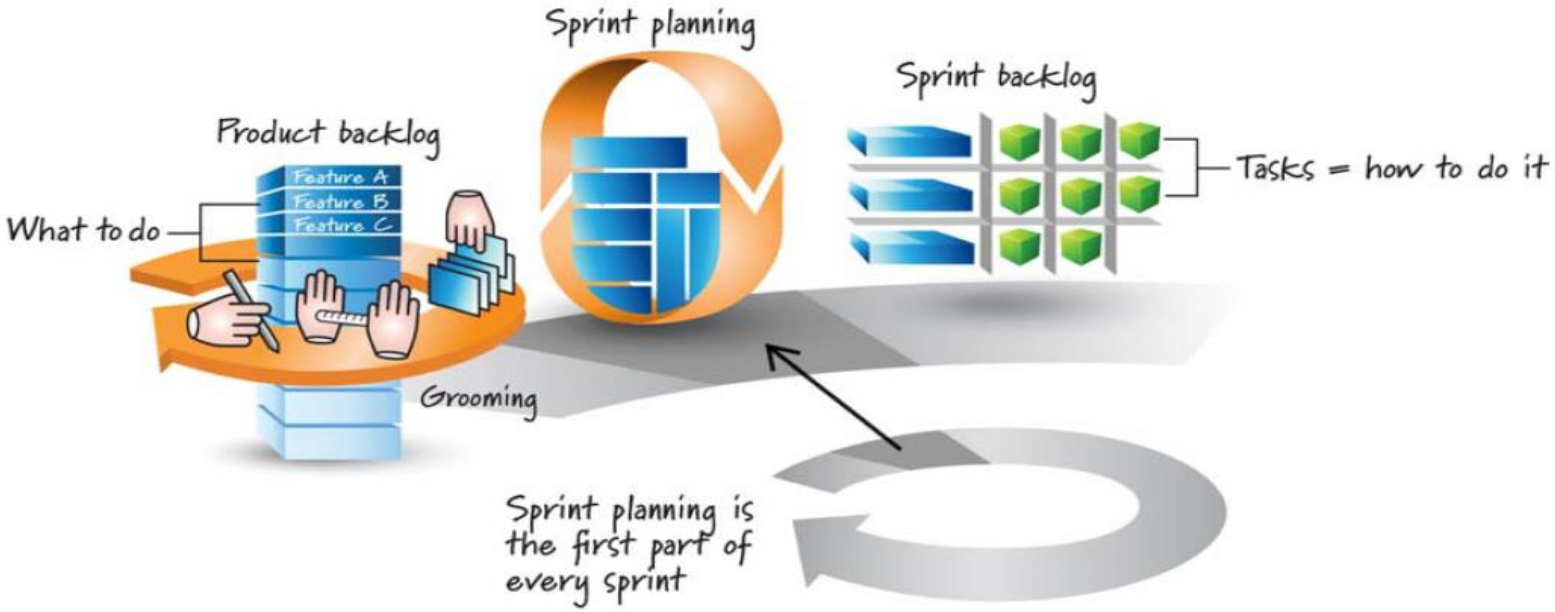
Sprint

- Product development is divided into iterations called “Sprints”
- Sprints are Time boxed to fixed length of 1 – 4 weeks.
- Every iteration should attempt to build a potentially shippable (properly tested) product increment.
- Sprint time duration is decided by the team based on their requirements and capabilities.
- Duration once finalized should not be modified.

Sprint Planning Meeting

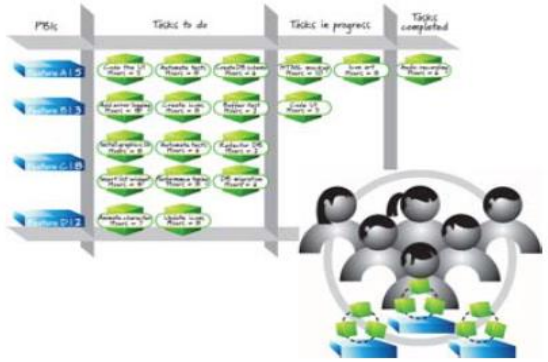


Sprint Planning



Sprint Length	Sprint Planning Time Box
2 weeks	4 hours
3 weeks	6 hours
4 weeks	8 hours

What is the Daily Scrum



Common Approach

- What did I accomplish since the last daily scrum?
- What do I plan to work on by the next daily scrum?
- What obstacles are preventing me from making progress?

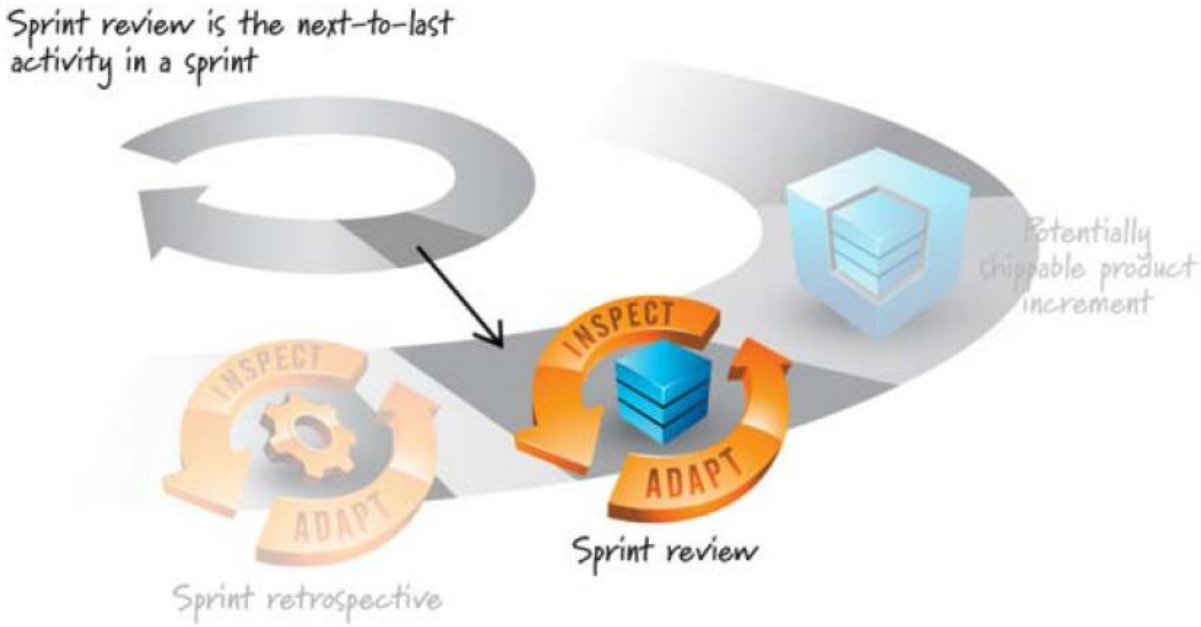
Every day

15 minutes

August

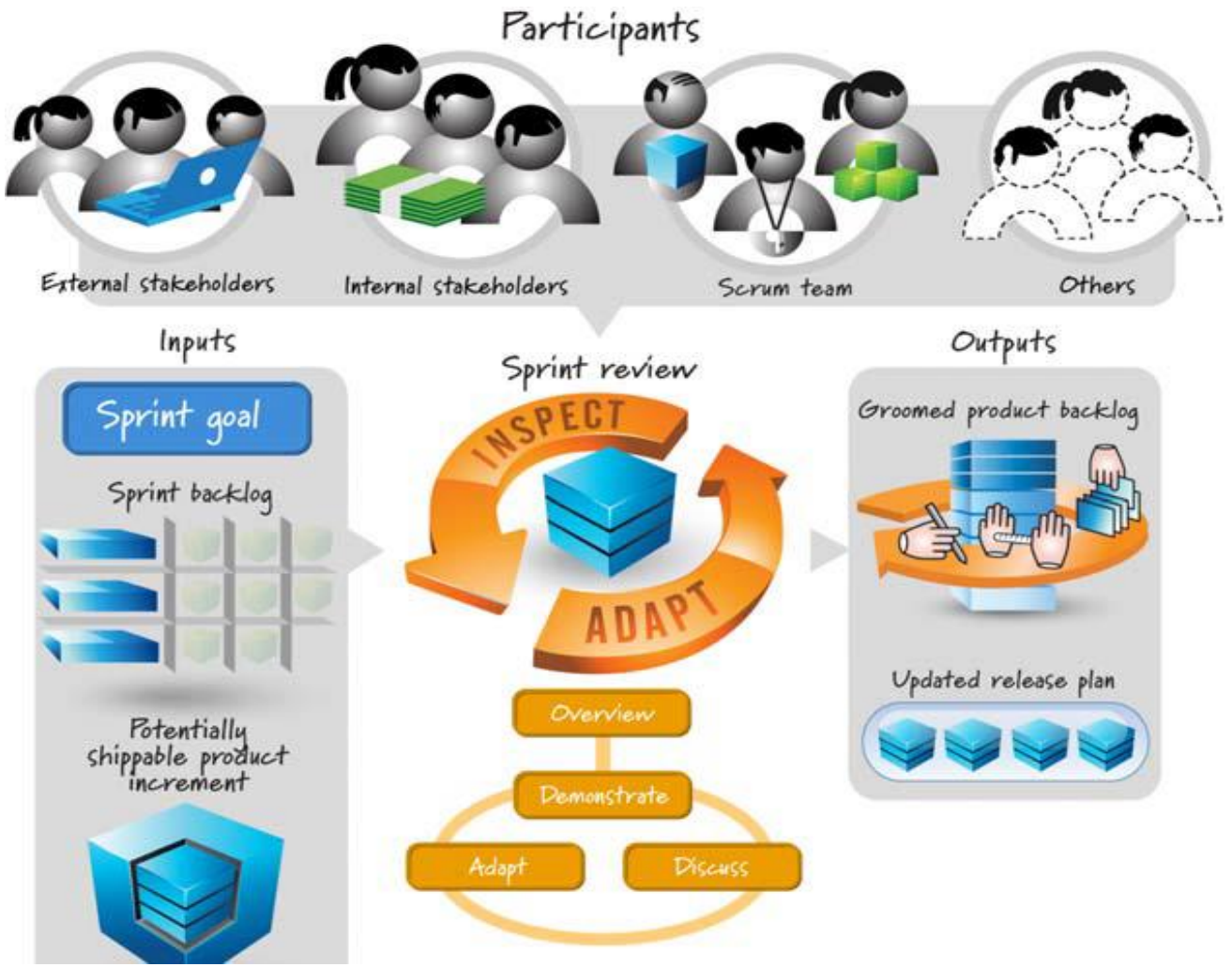
S	M	T	W	TH	F	S
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

The Sprint Review Overview



Give everyone with input into product development an opportunity to inspect and adapt what has been built so far

Timeboxed to be no more than 1 hour per week of sprint duration


Participants
External stakeholders
Internal stakeholders
Scrum team
Others
Inputs
Sprint goal
Sprint backlog
Potentially shippable product increment
Sprint review
INSPECT
ADAPT
Overview
Demonstrate
Adapt
Discuss
Outputs
Groomed product backlog
Updated release plan

Sprint Retrospective Overview

- What is working?
- What isn't working?
- What should we change?

60 to 90 minutes or timeboxed to be no more than 45 minutes per week of sprint duration

Conclusion

- Thus an Agile's Scrum Framework is most preferred method w.r.t Customer satisfaction , Quality product development and systematic and disciplined utilization of resources in all forms.

Thank You!