



# AGILE PROJECT MANAGEMENT FOUNDATIONS

# CHAPTER OUTLINE

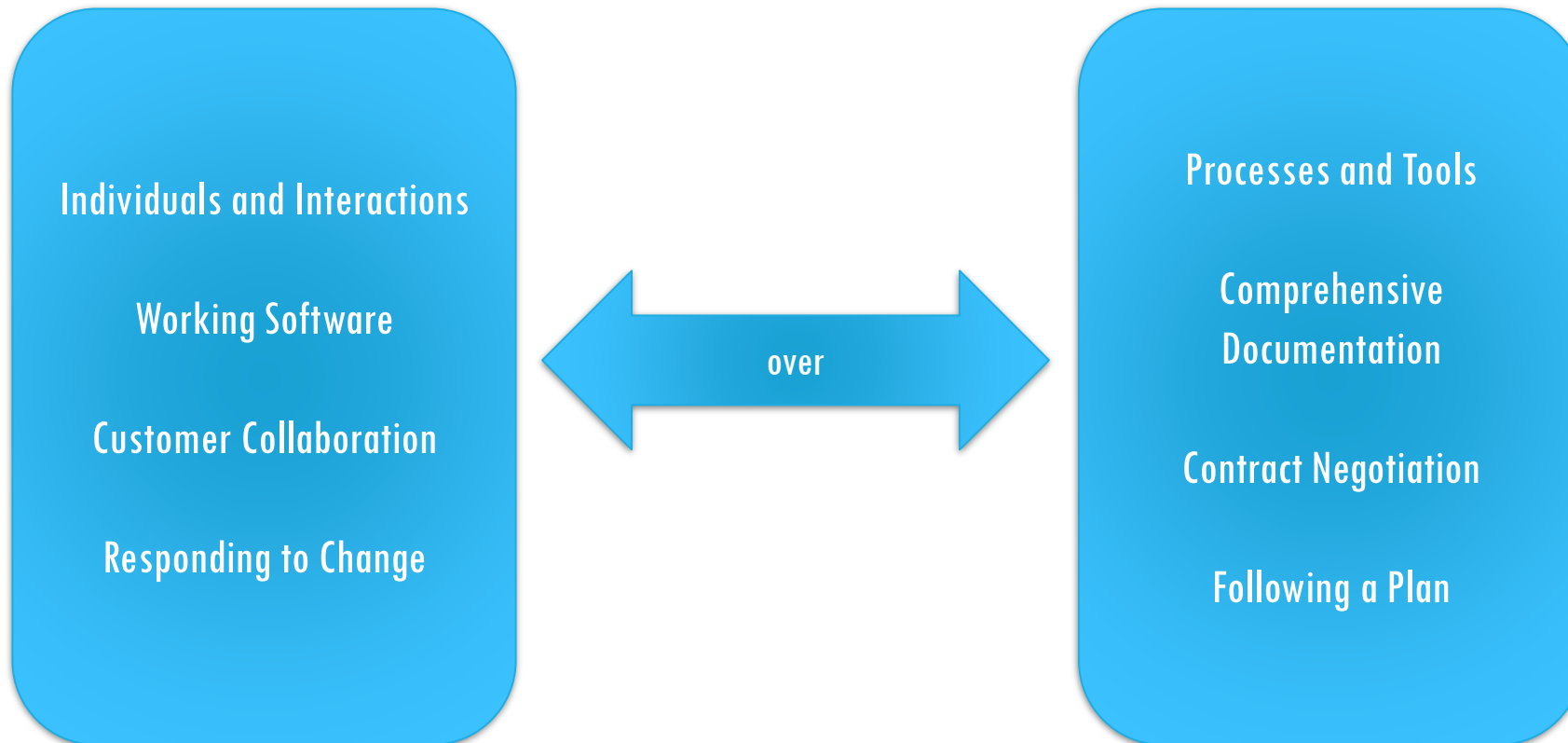
- Agile Project Management Introduction
- The Agile Project Life Cycle
- Managing Agile Project Teams
- Managing Communications in Agile Projects

# AGILE PROJECT MANAGEMENT INTRODUCTION

- Competitive environments, the increasing pace of technological change, and increasing uncertainty necessitates organizations to become more adaptive – more agile.
- Oftentimes, traditional project management approaches don't fit the bill because they require most of the work to be determined up front, which makes plans difficult to adjust.
- In contrast, agile approaches are more flexible in allowing frequent iterations and obtaining rapid and frequent feedback from customers.
- Agile is not a methodology per se but rather a philosophy that puts forth a set of principles.
  - Methodologies such as Crystal, Kanban, Scrum, and eXtreme Programming implement these principles set out by the Agile Manifesto.
- Further, organizations are increasingly managing IS projects by using a **DevOps** approach, where, based on agile principles, engineers from both development and operations collaborate throughout the system's life cycle from design to development to operations and support.

# THE AGILE MANIFESTO

**We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:**



**That is, while there is value in the items on the right, we value the items on the left more.**

The agile manifesto is a declaration specifying the aims of agile approaches, emphasizing a focus on individuals and interactions, working software, customer collaboration, and responding to change, over processes and tools, comprehensive documentation, contract negotiation, and following plans.

Figure A1.1 The agile manifesto. *Source:* Beck et al. (2001).

# THE PREDICTIVE VS AGILE PROJECT MANAGEMENT LIFE CYCLE

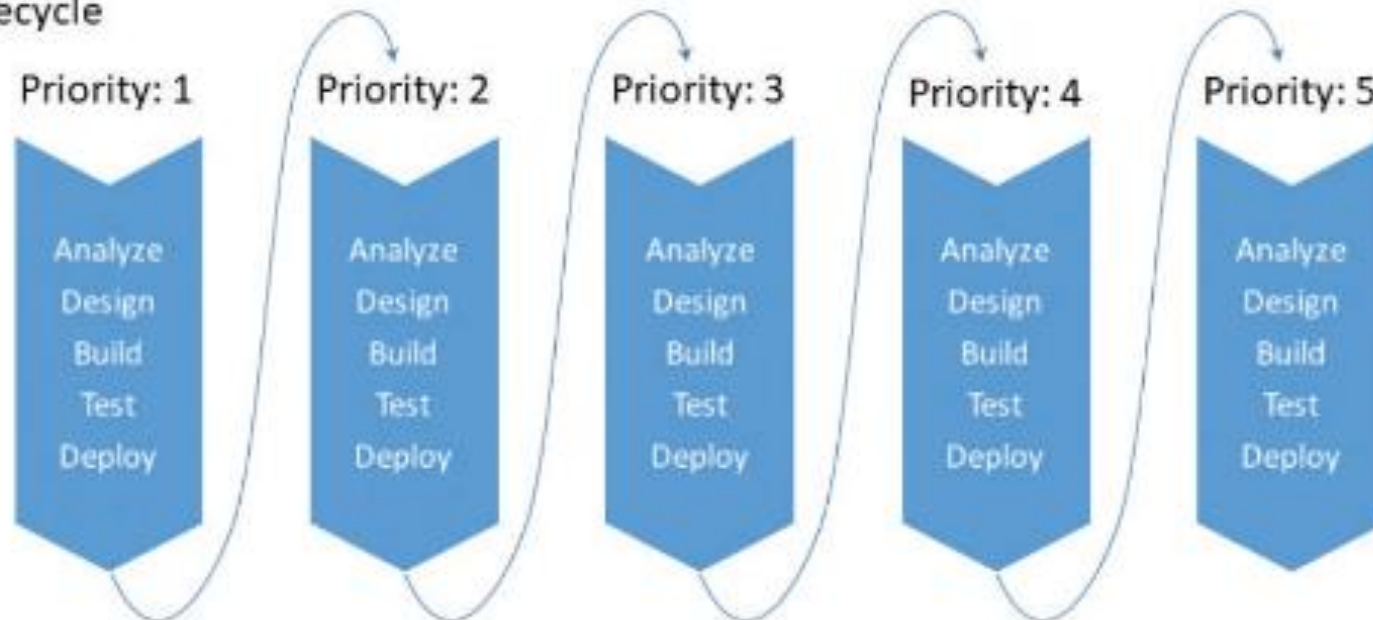
- Any project needs to balance time, costs, and scope to deliver a product with a specified performance or quality.
- **Predictive:** In predictive life cycles, project teams go through the stages of analyzing, designing, building, testing and deploying the system based on the requirements.
- **Scope** is defined early in the project and the requirements drive time and costs, as well as the resulting quality. In an agile approach, requirements are assumed to vary and change.
- **Agile:** In an agile approach, requirements are assumed to vary and change. Typically, the intended features of the finish product are prioritized; the team then starts working on the most important feature, and so on.
- **Iterations** are key to the agile process. An **iteration** is a development phase (typically timeboxed) in which all work pertaining to a specific deliverable is performed.

# PREDICTIVE VS. AGILE

Predictive lifecycle



Agile lifecycle



# PREDICTIVE VS. AGILE

- In each iteration, the team performs processes related to analyzing, designing, building, testing, and deploying for each feature before moving on to the next priority feature.
- Typically, the iterations take the form of timeboxes of equal duration (such as 7 or 14 days) with the goal of each iteration being the delivery of a working feature.
- Depending on the project, a hybrid approach may be used.
  - That is, some teams may use agile approaches to build the software but then use predictive approaches for later phases.
  - The choice of a life cycle depends on the needs of a particular project, such as the size or scope of the IS project, the timeline or duration of the project, and the number of people involved in the project.
- There are different methodologies under the agile umbrella such as Crystal, Kanban, Scrum, and eXtreme Programming.

# SCRUM—KEY TERMS

- **Scrum:** Widely used agile methodology that uses short sprints to deliver software at regular intervals.
- **Sprint:** Iteration that lasts for one to two weeks and consists of a sprint planning meeting, daily stand-ups, a sprint demo, and a sprint retrospective.
- **Sprint planning meeting:** Meeting during which the team jointly decides on which feature to implement during the sprint.
- **Daily stand-ups:** Fifteen-minute stand-up meetings used to discuss issues faced during the previous day and goals for the current day.
- **Sprint review:** Meeting during which the team presents the work completed during the sprint.
- **Sprint retrospective:** Meeting during which the team discusses the sprint, identifies positive and negative aspects of the process, and agrees on changes to the process for the next sprint.



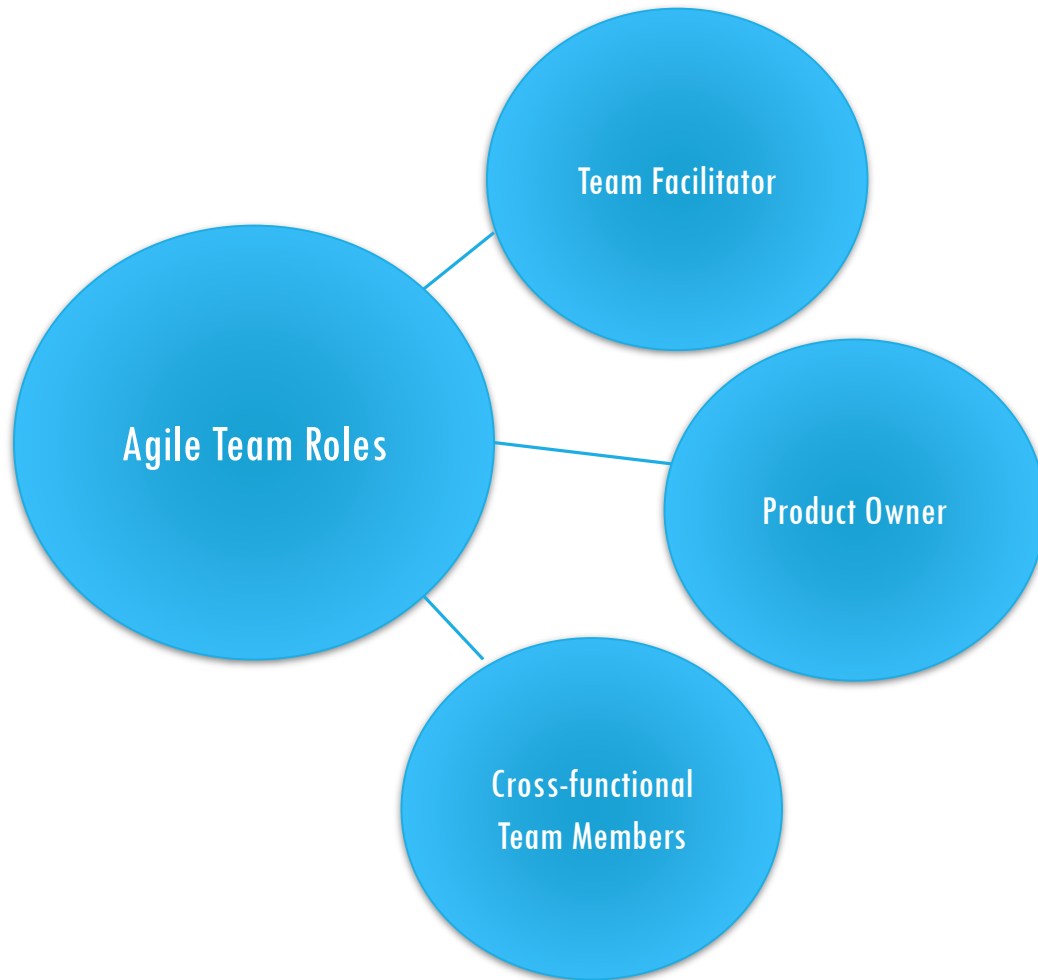
# SCRUM—KEY TERMS

- **Product owner:** The key stakeholder of the project who conveys the vision of the end product to the team and guides the team on the priority of features to deliver.
- **Scrum master:** Facilitator aiding the Scrum team in being effective.
- **Scrum team:** Team of five to seven cross-functional members who are jointly responsible for delivering the product on time and at the expected quality at the end of each spring.
- **Servant leader:** Refers to leaders who focus on serving the team and helping the team members succeed by listening, coaching, and facilitating collaboration within the team, between teams, and across the organization

# MANAGING AGILE PROJECT TEAMS

- It's not only important to use agile methodologies but it's also important to manage a team that has an agile mindset.
- For example, agile teams should understand the value of early and continuous delivery and how to timebox as a method to minimize distractions and focus on the tasks that have the highest priority.
- Ideally, project team member should be 100 percent dedicated to the team (which is oftentimes not feasible in real-world projects).
- Agile teams are also cross-functional (i.e., designers, developers, testers), which allows teams to have the skillset needed to produce the finished product.
- They rarely need to see outside people.

# AGILE TEAM ROLES



Three distinct roles in agile teams

- The agile mindset
- 3-9 collocated members dedicated to the project
- These are self-organizing teams that manage their own process and work together towards successful project completion.
- Cross-functional teams (in Scrum called Scrum team)
- Product owner (often with business background)
- Team facilitator (in Scrum called Scrum Master)
- Servant leader

# MANAGING COMMUNICATION IN AGILE PROJECTS

- Collocated & Distributed Teams
- Agile teams require close collaboration, daily standups, dedicated space, and minimal interruptions
- Collocation is typically regarded as essential
- However, Agile is practiced among distributed teams
- Distributed teams require communication technology such as always-on videoconferencing (fishbowl window), repositories, etc.
- Problem of time zones still remains

# DAILY STANDUPS IS:

- A. Fifteen-minute stand-up meetings used to discuss issues faced during the previous day and goals for the current day.
- B. Development phase (typically timeboxed) in which all work pertaining to a specific deliverable is performed.
- C. Iteration that lasts for one to two weeks and consists of a sprint planning meeting, daily stand-ups, a sprint demo, and a sprint retrospective.
- D. Meeting during which the team jointly decides on which feature to implement during the sprint.
- E. Meeting during which the team discusses the sprint, identifies positive and negative aspects of the process, and agrees on changes to the process for the next sprint.

# SPRINT IS:

- A. Fifteen-minute stand-up meetings used to discuss issues faced during the previous day and goals for the current day.
- B. Iteration that lasts for one to two weeks and consists of a sprint planning meeting, daily stand-ups, a sprint demo, and a sprint retrospective.
- C. Development phase (typically timeboxed) in which all work pertaining to a specific deliverable is performed.
- D. Meeting during which the team jointly decides on which feature to implement during the sprint.
- E. Meeting during which the team discusses the sprint, identifies positive and negative aspects of the process, and agrees on changes to the process for the next sprint.

# SCRUM MASTER IS

- A. A leader who focuses on serving the team and helping the team members succeed by listening, coaching, and facilitating collaboration within the team, between teams, and across the organization.
- B. Team of five to seven cross-functional members who are jointly responsible for delivering the product on time and at the expected quality at the end of each sprint.
- C. Facilitator aiding the Scrum team in being effective.
- D. The key stakeholder of the project who conveys the vision of the end product to the team and guides the team on the priority of features to deliver.

# SCRUM IS

- A. Declaration specifying the aims of agile approaches, emphasizing a focus on individuals and interactions, working software, customer collaboration, and responding to change, over processes and tools, comprehensive documentation, contract negotiation, and following plans.
- B. Approach to managing IS projects, where, based on agile principles, engineers from both development and operations collaborate throughout the system's life cycle.
- C. A leader who focuses on serving the team and helping the team members succeed by listening, coaching, and facilitating collaboration within the team, between teams, and across the organization
- D. Widely used agile methodology that uses short sprints to deliver software at regular intervals.



# LET'S REVIEW

- Scrum is a widely used agile methodology that uses short sprints to deliver software at regular intervals. Other types of agile methodologies include: Crystal, Kanban, Scrum, and eXtreme Programming.
- In agile teams there are typically three roles, the product owner, cross-functional team, and the team facilitator. In Scrum, specifically, the three roles are called product owner, Scrum master, and Scrum team.
- While agile teams are typically collocated, there are distributed agile teams. Always-on videoconferencing (fishbowl window), document repositories, etc. are used for communication and collaboration. However, there's still the problem with differences in time zones.
- Increasing uncertainty necessitates organizations to become more adaptive – more agile
- Agile is not a methodology per se but rather a philosophy that puts forth a set of principles.
- Proposed in the early 2000's, *The Manifesto for Agile Software Development* (the agile manifesto) specifies the aims of agile approaches.
- In each iteration in an agile life cycle, the team performs processes related to analyzing, designing, building, testing, and deploying for each feature before moving on to the next priority feature.