Chapter 13: Agile Development Methods

# Solutions to End of Chapter Questions

1. *What was the Agile Manifesto? Why was it created?*

A group of software developers came together in 2001 to propose a new way of developing software “by doing it and helping others do it.” This ended up being called the Agile Manifesto. The value statements of the Agile Manifesto are expanded upon in a set of twelve Agile Principles.

1. *Summarize the value statements of the Agile Manifesto.*

* Individuals and interactions over process and tools
* Working software over comprehensive documentation
* Customer collaboration over contract negotiation
* Responding to change over following a plan

1. *What are the key benefits organizations that adopt Agile methods report experiencing?*

* Ability to manage changing priorities
* Business/IT alignment
* Project visibility
* Delivery speed/time to market
* Team morale
* Increased team productivity
* Project risk reduction
* Project predictability

1. *Which Agile method is most widely used in practice?*

According to Figure 13-4, Scrum is used 58 percent of the time. The next highest is ScrumBan at 10 percent.

1. *What is the development cycle called in Scrum? How much time does it take? How does this contribute to the success of Scrum projects?*

The development cycles in the Scrum development process are called sprints.

1. *What element of Scrum compiles all the necessary features in the new software?*

The product owner is responsible for maximizing return on investment by identifying product features, translating these into a prioritized list, deciding which should be prioritized for the next Sprint, and continually refining the list.

1. *What is the purpose of the product owner role in Scrum? How does this role contribute to the Scrum process?*

The person designated as product owner is typically a representative of the business area for which the system is being developed. The product owner is the “holder of business value,” determining what needs to be done and setting priorities.

1. *What is the purpose of the role of ScrumMaster in Scrum? Compare and contrast this role with that of a traditional project manager.*

The ScrumMaster monitors the team’s progress and performance with an eye toward removing obstacles and impediments to progress.

1. *What is meant by self-organizing teams? How does this characteristic contribute to the Scrum process?*

In Scrum, the development team is not told by others what they should be doing or how they should work. Instead, the team is free to organize itself as it sees fit and to take on and deliver chunks of work in frequent increments.

1. *Explain the purpose and structure of a user story. Why is the user story an effective way to capture a feature of the new software?*
2. *What is an epic? What is the difference between an epic and an implementation size user story?*

A user story is a short, simple description of a feature that is told from the perspective of a person who desires the new or enhanced feature in the new system.

First, we know the point of view of the person in the story. We also know what that user is trying to achieve or their goal in using the system. Finally, we know why the user has the need to achieve that goal, helping us to understand the importance of this user story.

1. *User stories are sometimes compared to a “vacation photo.” Explain this comparison and why it is important in understanding the value of user stories.*

As you share the photo, you recall and talk about many aspects of the day that photo was taken: the train you took to arrive in Paris, the beautiful spring weather, interesting people you saw, foods you ate, how one of your friends became lost temporarily, and so on. That one photo triggers a lengthy conversation covering a wealth of details about your trip.

1. *What is the hierarchy of user stories typically found in the product backlog?*

A large story, termed an epic, is one that may take many weeks or more to implement. On the other hand, an implementation size story will take days or less to implement. Most user stories begin as an epic and are then broken down into implementation size stories as they move through the product backlog.

1. *What is the purpose of acceptance criteria? How do they contribute to a successful Scrum project?*

Acceptance criteria, or “conditions of satisfaction” help the team understand the story and set expectations as to when the team can consider something “done.” Acceptance criteria also help the team develop acceptance tests and provide documentation about the requirement.

1. *What is the purpose of a story point? How is the assignment of story points to a user story determined?*

A feature of Scrum is the story point, which is used to measure the size of a story. A story point does not have a precise meaning. In practice, each team defines what a story point means to them.

1. *What is the meaning of the term “team velocity”? How does this measure contribute to the Scrum process?*

The number of story points that a team can successfully complete during a sprint is termed the team velocity. Over time, teams develop their velocity history by monitoring the number of story points they committed to complete during a sprint and the actual number of story points completed in that sprint.

1. *In what way does a Scrum team determine whether it is “done” with something? What are some typical components in the definition of “done”?*

Each team establishes for itself the agreed upon way it defines being “done” with development of the user story solution. Although there is no standard list of elements in the definition of “done,” it usually includes all these definitions:

• Feature is complete

• Code is complete

• Fully tested

• No known defects—fully documented

1. *What is the purpose of the sprint planning meeting? What are its key inputs, parts, and outputs?*

In the sprint planning process, the team reviews the product backlog and selects the features it commits to completing during the upcoming sprint.

1. *How does the Sprint Commitment differ from the Sprint Backlog in sprint planning?*

Based on the team velocity, the top four user stories (features) are selected for the Sprint Commitment.

1. *What is the purpose of product backlog grooming? Who is involved with this activity? What exactly does it entail?*

This is a collaborative process involving the product owner, ScrumMaster, and team. During this process, the participants review the product backlog with the intent to refine and improve it.

1. *What is the daily standup in Scrum? Why is this meeting held? Who is involved? What does it contribute to the team?*

The daily standup is not a status reporting or a problem-solving meeting. Its purpose is to allow each team member, in turn, to state what he or she completed yesterday, commit to today’s tasks, and identify any roadblocks.

1. What did I do yesterday?
2. What will I do today?
3. Is anything in my way?
4. *What is the Sprint Review in Scrum? Why is this meeting held? Who is involved? What does it contribute to the project?*

The Sprint Review (or Demo) meeting occurs at the end of the sprint. Since the goal of the sprint is to produce functional software, this meeting allows the team to present and demonstrate what it accomplished during the sprint. These are informal meetings involving demonstrations and walk-throughs of the completed software.

1. *What is the Sprint Retrospective in Scrum? Why is this meeting held? Who is involved? What does it contribute to the team?*

The Sprint Retrospective meeting occurs at the conclusion of a Sprint. This meeting’s purpose is for the team to celebrate its success and accomplishments in the previous sprint. The entire team participates. This meeting is not just a party, however, because it also embodies the spirit of continuous improvement. The team discusses the processes that it used in the sprint and identifies areas (if any) where the team’s work processes need to be revised or the process implementation needs improving.

1. *How do projects end in Scrum?*

If at any point the product owner determines that the remaining features in the product backlog have little value, then the project should be terminated. From a practical standpoint, the project sometimes must be terminated because the project budget is exhausted. In other cases, the organization determines that the team needs to be reassigned to a different, higher value project and the project is ended.

1. *What are the main characteristics of the Crystal Development Methodology?*

* Teamwork is essential to Crystal.
* Communication is considered the most critical aspect of the project.
* Simplicity is stressed.
* Reflection is incorporated.
* Frequent adjustments are expected.
* Process improvements are performed continuously.

1. *What are the main characteristics of the Dynamic Systems Development Methodology?*

* Feasibility and business study
* Functional model/prototype iteration
* Design and build iteration
* Implementation

1. *What are the main characteristics of Feature Driven Development?*

1. Develop an overall model

2. Build a features list

3. Plan by feature

4. Design by feature

5. Build by feature

1. *What are the main characteristics of Lean Software Development?*

1. Eliminate everything that is not necessary for completing the project.

2. Build quality into the product from the outset.

3. Improve team knowledge about the project.

4. Commit to rapid development.

5. Plan for fast product delivery.

6. Treat all team members and stakeholders with respect.

7. Optimize the value of the project as a whole.

1. *What are the main barriers to adoption of Agile methods reported by organizations? How do these barriers impede Agile adoption?*

• General organizational resistance to change.

• Not enough leadership participation.

• Inconsistent processes and practices across teams.

• Organizational culture at odds with Agile values.

• Inadequate management support and sponsorship.

• Lack of skills/experience with Agile methods.

# Solutions to End of Chapter Exercises

1. *Review Minicase 4 at the end of Chapter 4. Develop a complete set of epic user stories for the situation described in this minicase.*

The minicase is about Williams Specialty Company is a small printing and engraving organization. The epic user stories developed by the students will vary. The main issue of the case is the need for software to keep track of many of the company’s sophisticated deals and arrangements with its customers so expect some version related to this.

1. *Select one of the epic user stories you developed in Exercise A that you believe has high value to the organization. Break this user story into implementation size user stories.*

Student answers will vary. They might, for example, discuss how the firm is struggling to handle each of its customers appropriately given their unique situation. They might also discuss how the lack of sophistication in the existing software is making it difficult to attract new customers.

1. *Select two of the implementation size user stories you developed in Exercise B. Develop a set of acceptance criteria for each of these user stories.*

Student answers will vary. They might, for example, discuss how the firm lost a potential customer due to their inability to incorporate some feature into the relationship due to the software. They might also discuss how a competitor outbid them due to their antiquated software. For the first, possible acceptance criteria might include…

* Ability to include unique discount schedules for each customer.
* Ability to set up custom delivery schedules for each customers.
* Ability to set up custom payment schedules for each customer.