

Evaluating Agile Benefits

• Increased productivity
• Improved quality
• Better communication
• Shorter development cycles
• Higher customer satisfaction



REMEMBER

don't fit when attempting mobile applications or web-centric, object-oriented applications, which require constant innovation to stay competitive. Even with older technologies, the track record of traditional methodologies is abysmal, especially when applied to software projects. For more details on the high failure rates of projects that are traditionally, check out the studies from the Standish Group shown in Chapter

You can use agile project management techniques in many industries besides software development. If you're creating a product and want early feedback throughout the process, you can benefit from agile processes.

When you have a critical looming deadline, your instinct is to go *agile*. Formality goes out of the window as you roll up your sleeves and focus on what has been done. You solve problems quickly, practically, and in descending order of necessity, making sure you complete the most critical tasks.

More than going agile — it's about *being agile*. When you become agile, you institute unreasonable deadlines to force greater focus. Instead, you realize that people function well as practical problem solvers, even under stress. For example, a popular team-building exercise titled the *marshmallow challenge* involves four people building the tallest free-standing structure possible out of 20 sticks, one yard of tape, and a yard of string, and then placing a marshmallow on top.

We pretend that we live in the world on the left, but we actually live in the world on the right.

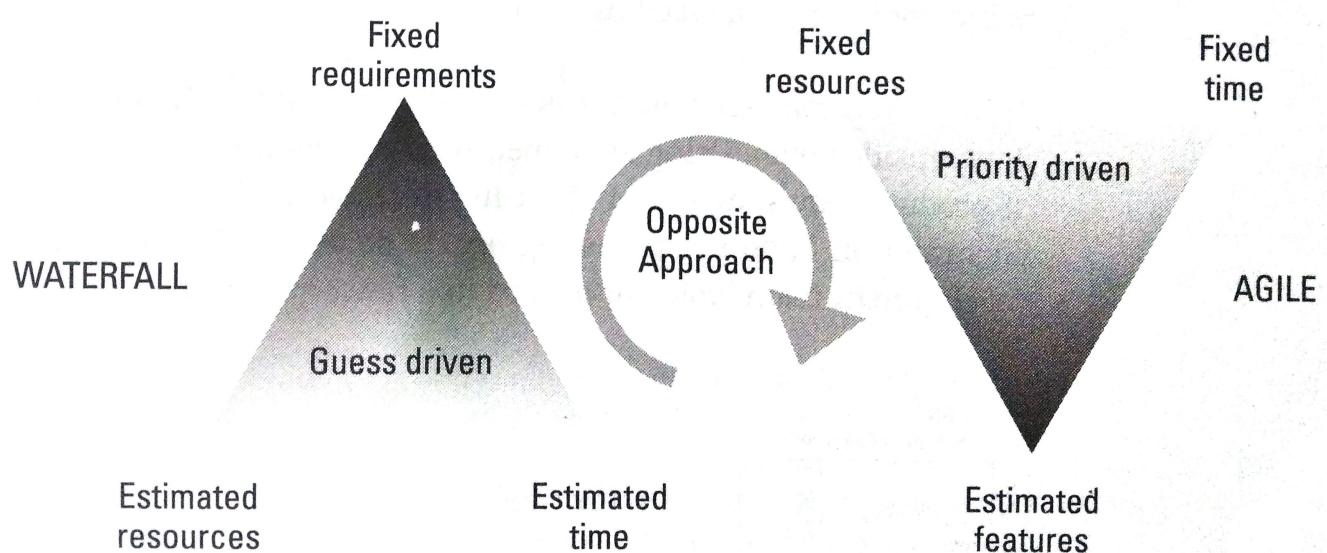
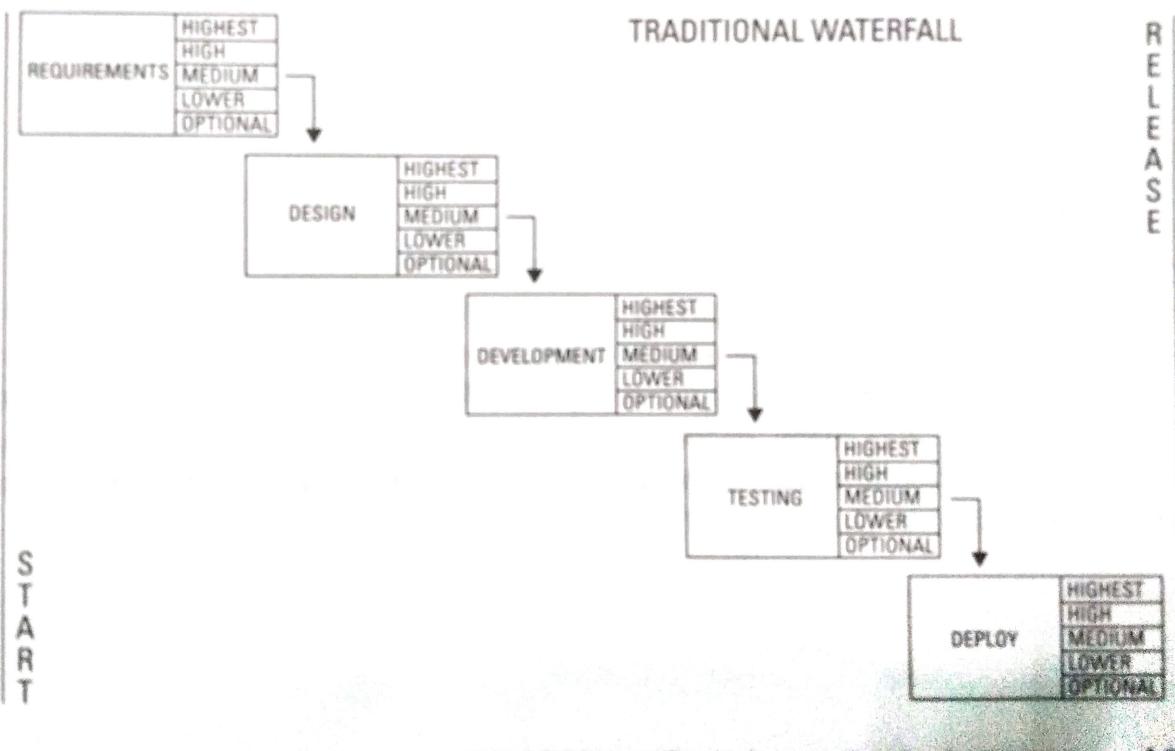


FIGURE 3-1:
A comparison of
historical project
management and
agile concepts.

In Figure 3-2, you can see how each phase of a waterfall project is dependent on the previous one. Teams design and develop all features together, meaning you don't get the highest-priority feature until you've finished developing the lowest-priority feature. The customer has to wait until the end of the project to get final delivery of any element of the product.



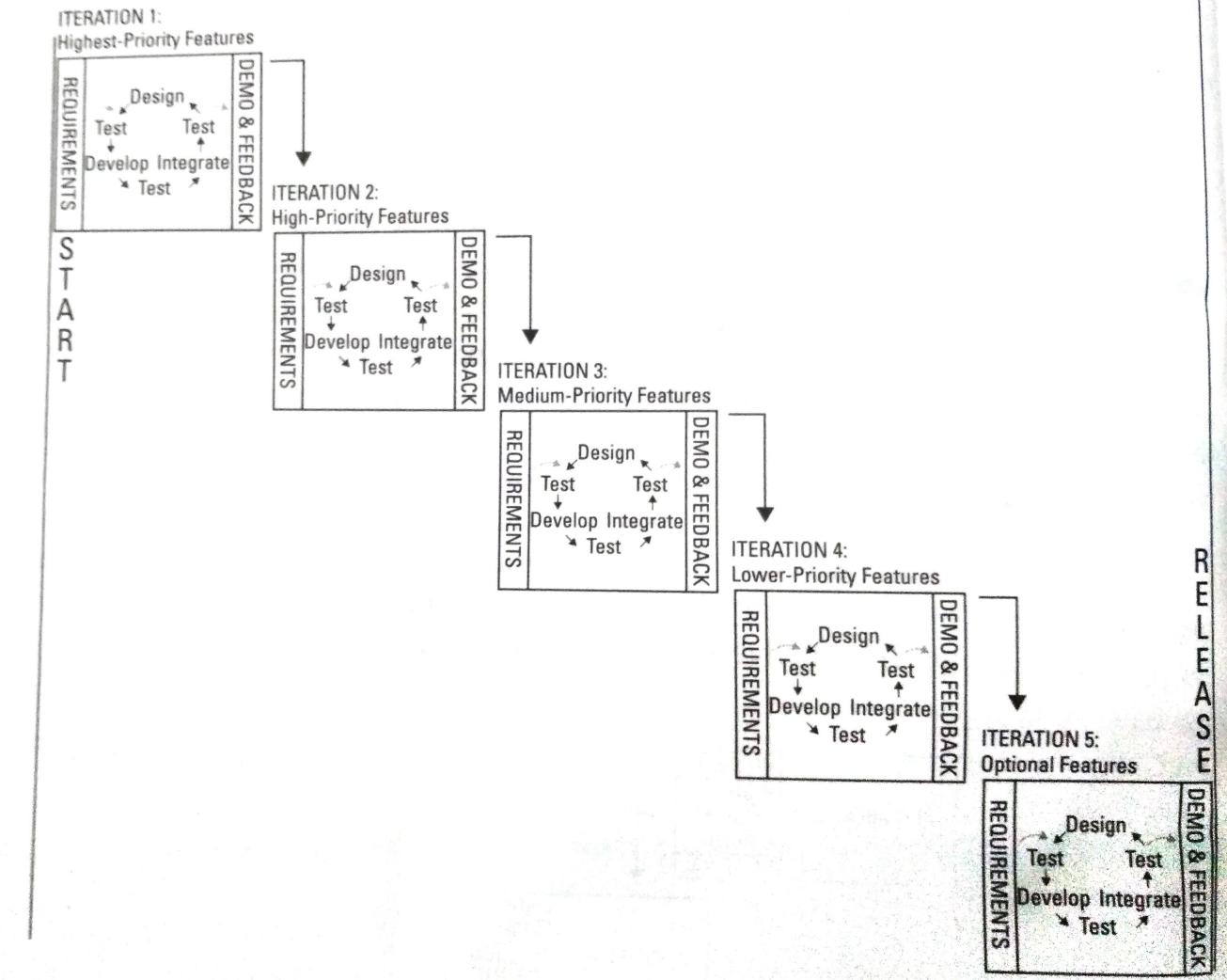


FIGURE 3-3:
Agile approaches
have an iterative
project cycle.

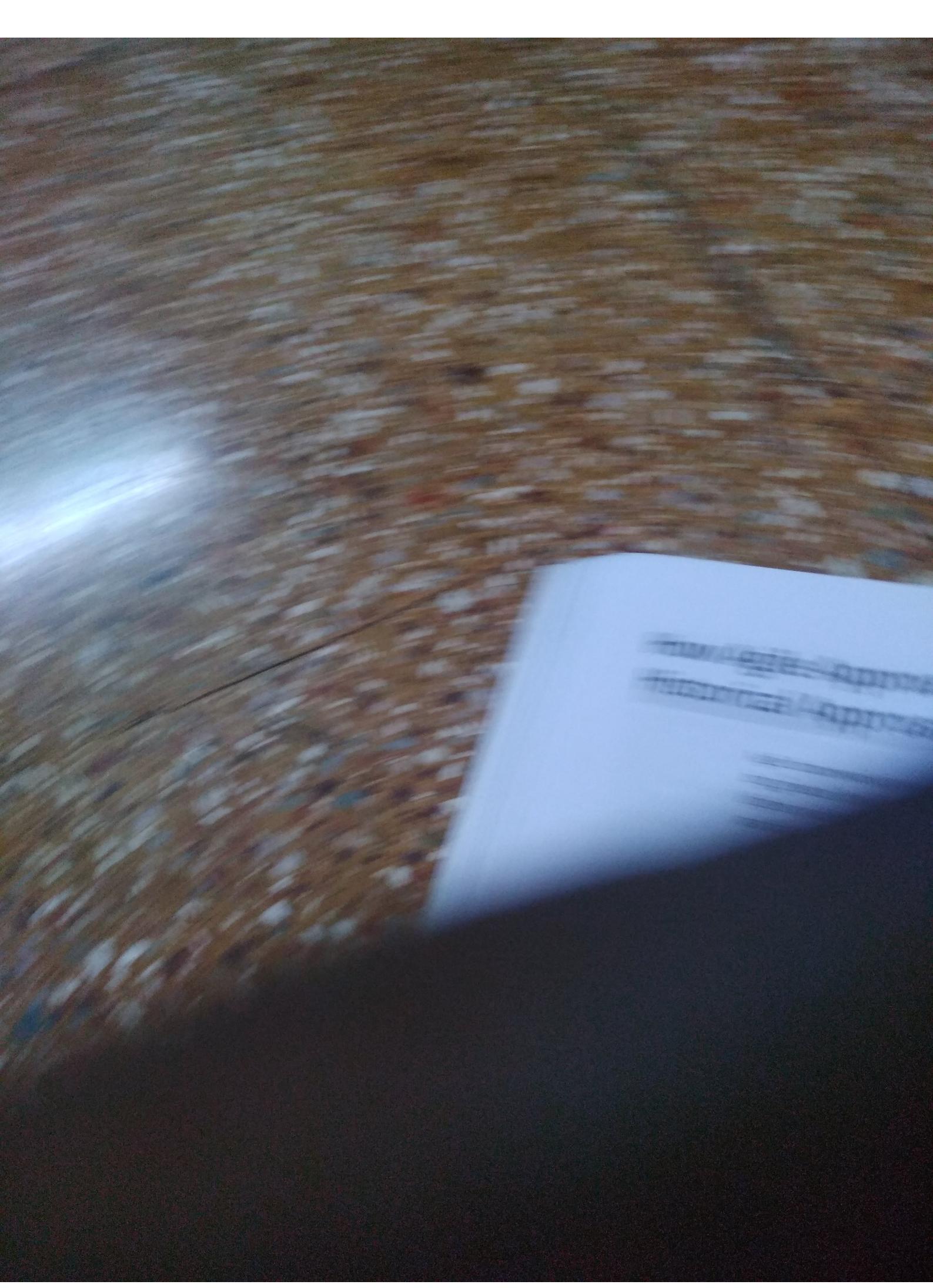
Product owner

WHERE THE WATERFALL FALLS SHORT

As we mention in Chapter 1, before 2008, waterfall was the most widely used traditional project management methodology. The following list summarizes the major aspects of the waterfall approach to project management:

- The team must know all requirements up front to estimate time, budgets, team members, and resources. Knowing all the requirements at the project start means you have a high investment in detailed requirements gathering before any development begins.
- Estimation is complex and requires a high degree of competence and experience and a lot of effort to complete.
- The customer and stakeholders may not be available to answer questions during the development period, because they may assume that they provided all the information needed during the requirements-gathering and design phases.
- The team needs to resist the addition of new requirements or document them as change orders, which adds more work to the project and extends the schedule and budget.
- The team must create and maintain volumes of process documentation to manage and control the project.
- Although some testing can be done as you go, final testing can't be completed until the end of the project, when all functionality has been developed and integrated.
- Full and complete customer feedback is not possible until the end of the project, when all functionality is complete.
- Funding is ongoing, but the value appears only at the end of the project, creating a high level of risk.
- The project has to be fully complete for value to be achieved. If funding runs out prior to the end of the project, the project delivers zero value.

How Agile Approaches Beat Historical Approaches



- » **Product owner:** The *product owner* is a project team member who is an expert on the product and the customer's business needs. The product owner works with the business community and prioritizes product requirements, and supports the development team by being available to provide daily clarifications and final acceptance to the development team. (Chapter 2 has more on the product owner.)
- » **Scrum master or agile coach:** The *scrum master or agile coach* acts as a buffer between the development team and distractions that might slow down the development effort. The scrum master also provides expertise on agile processes and helps remove obstacles that hinder the development team from making progress. The scrum master or agile coach facilitates consensus building and stakeholder communication.

Greater flexibility and stability

By way of comparison, agile projects offer both greater flexibility and greater stability than traditional projects. First, you find out how agile projects offer flexibility, and then we discuss stability.

A project team, regardless of its project management approach, faces two significant challenges at the beginning of a project:

- » The project team has limited knowledge of the product end state.
- » The project team cannot predict the future.

This limited knowledge of the product and of future business needs almost guarantees project changes.

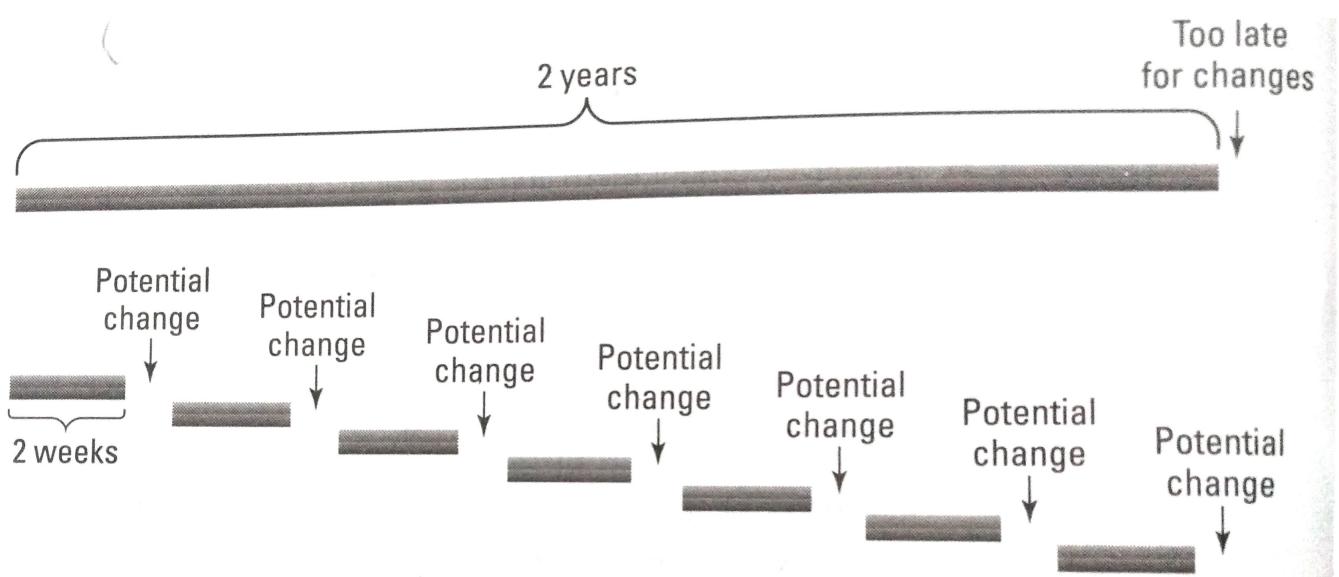


FIGURE 3-4:
Stability in
flexibility on
agile projects.

Reduced nonproductive tasks

types of tasks. The following causal chain is the result:

Long workday = tired developers = unnecessary defects = more defect fixing = delayed release = longer time to value

Meetings

- » Agile processes include only a few formal meetings. These meetings are focused, with specific topics and limited time. On agile projects, you generally don't need to attend non-agile meetings.
- » Part of the scrum master's job is to prevent disruptions to the development team's working time, including requests for non-agile meetings. When there's a demand to pull developers away from development work, the scrum master asks "why" to understand the true need. The scrum master then may figure out how to satisfy that need without disrupting the development team.
- » On agile projects, the current project status is often visually available to the entire organization, removing the need for status meetings. You can find ways to streamline status reporting in Chapter 14.

Email

Email is not an efficient mode of communication; agile project teams aim to use email only sparingly. The email process is asynchronous and slow: You send an email, you wait for an answer; you have another question, you send another email. This process eats up time that could be spent more productively.

Instead of sending emails, agile project teams use face-to-face discussions to resolve questions and issues on the spot.

Presentations

- » **Demonstrate, don't present.** In other words, show the customer what you've created, rather than describing what you've created.
- » **Show how the functionality delivers on the requirement and fulfills the acceptance criteria.** In other words, say, "This was the requirement. These are the criteria needed to indicate that the feature was complete. Here is the resulting functionality meeting those criteria."
- » **Avoid formal slide presentations and all the preparation they involve.** When you demonstrate the working functionality, it will speak for itself. Keep demonstrations raw and real.

Process documentation

- » **Use iterative development.** A lot of documentation is created to reference decisions made months or years ago. Iterative development shortens the time between decision and developed product from months or years to days. The product and associated automated tests, rather than extensive paperwork, documents the decisions made.
- » **Remember that one size doesn't fit all.** You don't have to create the same documents for every project. Choose what you need to fit the particular project.
- » **Use informal, flexible documentation tools.** Whiteboards, sticky notes, charts, and other visual representations of the work plan are great tools.
- » **Include simple tools that provide adequate information for management about project progress.** Don't create special project progress reports, such as extensive status reports, for the sake of reporting. Agile teams use visual charts, such as burndown charts, to readily convey project status.

Higher quality, delivered faster

Agile project management is designed to deliver high-quality, shippable functionality quickly. Agile projects achieve better quality and quick delivery with the following:

- » The client reviews working functionality at the end of each sprint, and gives immediate feedback to the team for inspection and adaptation as soon as the next sprint.
- » Short development iterations (sprints) limit the number and complexity of features in development at any given time, making the finished work easier to test in each sprint. Only so much can be created in each sprint. Development teams break down features too complex for one sprint.
- » The development team builds and tests daily and maintains a working product throughout the project.
- » The product owner is involved throughout the day to answer questions and clarify misunderstandings quickly.
- » The development team is empowered and motivated and has a reasonable workday. Because the development team is not worn out, fewer defects occur.
- » Errors are detected quickly because developers test their work as it's completed. Extensive automated testing happens frequently, at least every night.
- » Modern software development tools allow many requirements to be written as test scripts, without the need for programming, which makes automated testing quicker.

Improved team performance

- » A common agile practice is *collocation* — keeping the development team and, ideally, the product owner together in one place and physically close to the customer. Collocation encourages collaboration and makes communication faster, clearer, and easier. You can get out of your seat, have a direct conversation, and eliminate any vagueness or uncertainty immediately.
- » The product owner can respond to development team questions and requests for clarification without delay, eliminating confusion and allowing work to proceed smoothly.
- » The scrum master removes impediments and ensures that the development team has everything it needs to focus and achieve maximum productivity.

Focus

Using agile processes, the development team can focus as much of its work time as possible on the development of the product. The following approaches help agile development teams focus:

- » Development team members are allocated 100 percent to one project, eliminating the time and focus lost by switching context among different projects.
- » Development team members know that their teammates will be fully available.
- » Developers focus on small units of functionality that are as independent as possible from other functionality. Every morning, the development team knows what it means to be successful that day.
- » The scrum master has an explicit responsibility to help protect the development team from organizational distractions.
- » The time the development team spends on coding and related productive activities increases because nonproductive work decreases.

Continuous improvement

An agile process involves iterative cycles of planning, execution, and review.

Tighter project control

The work goes more quickly under agile projects than under waterfall conditions. Elevated productivity helps increase project control with the following:

- » Agile processes provide a constant flow of information. Development teams plan their work together every morning in daily scrum meetings, and they update task status throughout each day.
- » For every sprint, the customer has the opportunity to reprioritize product requirements based on business needs.
- » After you deliver working functionality at the end of each sprint, you finalize the workload for the next sprint according to current priorities. It makes no difference whether the priorities were set weeks or minutes before the next sprint.
- » When the product owner sets priorities for the next sprint, this action has no effect on the current sprint. On an agile project, a change in requirements adds no administrative costs or time and doesn't disrupt the current work.
- » Agile techniques make project termination easier. At the end of each iteration, you can determine whether the features of the product are now adequate. Low-priority items may never be developed.

Faster and less costly failure

In a waterfall project, opportunities for failure detection are theoretical until close to the end of the project schedule, when all the completed work comes together and when most of the investment is gone. Waiting until the final weeks or days of the project to find out that the product has serious issues is risky for all concerned. Figure 3-5 compares the risk and investment profile for waterfall with that for agile approaches.

