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by Don Jones, Series Editor

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Introduction to Realtime Publishers i

Myths About Agile Development and Project Management 1

Myth 1: Agile Is All or Nothing 2

Myth 2: Agile Projects Do Not Need Project Management 3

Myth 3: You Cannot Have Deadlines with Agile Methodologies 4

Summary 5

Copyright Statement

Myths About Agile Development and Project Management

Agile development has become widely adopted. With their focus on rapid development and delivery of software, agile methods offer a fundamentally different approach than do traditional waterfall methodologies. Waterfall methodologies are an obvious fit with project management practices—projects are divided into stages, such as requirements gathering, design, development, and testing. Once a stage is complete, you move onto the next stage and never return to prior stages. It's easy to see how this approach would map to a simple Gantt chart. Whatever the merits of waterfall methods, they did not work well for many IT projects, and agile methods emerged as an alternative approach.

Agile methods address some of the weaknesses of waterfall methods. For example, during the development phase, software engineers might realize an unanticipated requirement that necessitates a change to the design. In theory, this should not happen, but in practice, it does. Waterfall-oriented management practices might have change orders or other methods for notifying designers and requesting changes to the application design. This kind of formal procedure can slow development and increase costs, especially when changes are common.

Rather than treat this kind of an event as an exception, agile methods see it as the rule. You learn as you develop and you should be able to adapt your design as you develop too. The focus shifts from sticking to the plan and waterfall sequence of events to continually adding value. One of the driving principles of agile development, according to the Manifesto for Agile Software Development is

Responding to change over following a plan.

This sound principle has served agile developers well, but it might have been better expressed as

*Responding to change over following a **fixed** plan.*

The availability of agile methods is an advance for software development, but it unfortunately has been accompanied by myths about how these methods must be used and how they relate to project management. Dispelling these myths can help you realize the combined benefits of agile development and sound project management practices.

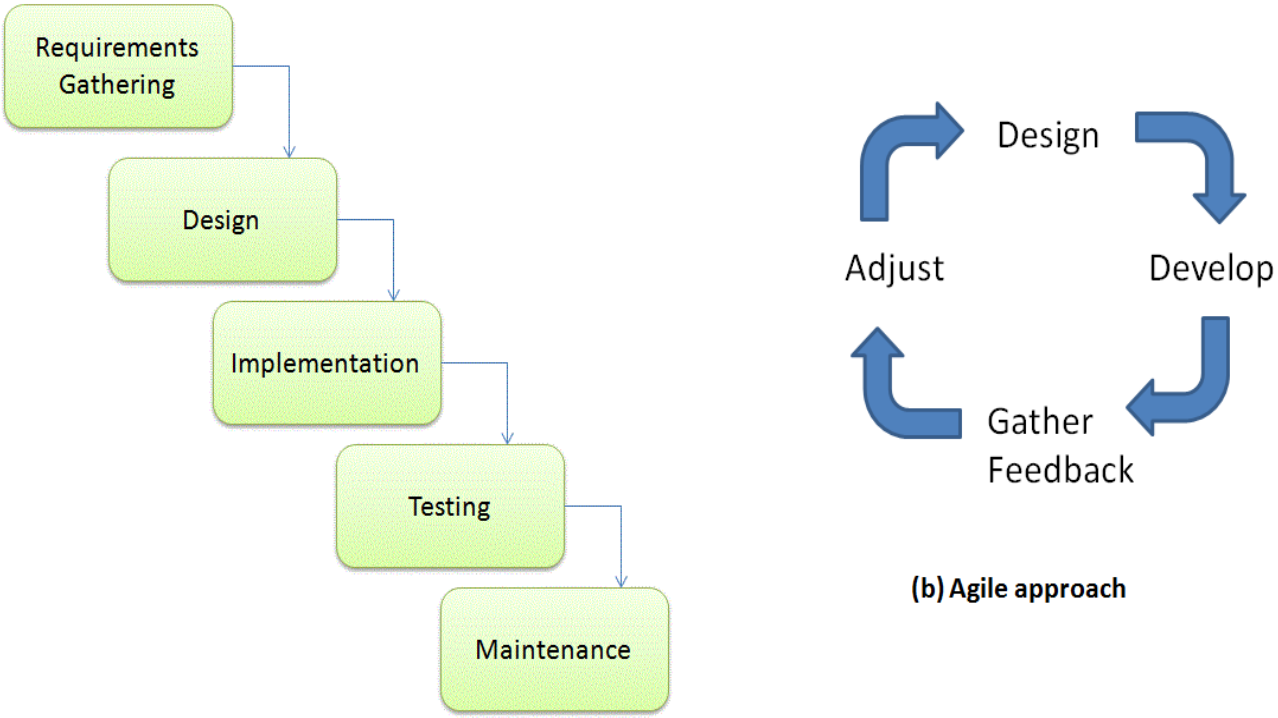

Figure 1: A typical waterfall methodology (a) moves from one development stage to the next without returning to previous stages; in contrast, agile methodologies (b) are iterative.

Myth 1: Agile Is All or Nothing

When it comes to software development methodologies, there is no one-size-fits-all solution. Agile methodology works well in some cases, but in other situations, a different methodology may be called for. Consider two scenarios.

In the first scenario, a small team of developers is assigned the task of designing a new interface for a Web application. They work with designers and solicit feedback from users. They create wireframes and mockups. They also implement some of the functionality so that users can actually work with the new interface and provide feedback. This kind of development project is a good fit for agile methodologies. There is much to learn from user feedback even after some code has been developed. An agile approach in which developers work together to implement working code and to collaborate with users works well in this case.

Now consider a different set of requirements. Auditors have indicated that an organization's current method of storing payment card data is not in compliance with industry regulations. The regulations and best practices are understood but care must be taken in implementing them. There are many dependencies within this project because a decision about how to implement one feature, such as when to encrypt payment card data, can influence other decisions, such as which protocol to use to transfer that data between systems. In this situation, it can be more cost effective to fully analyze requirements and design decisions before implementing a solution. Waterfall or spiral development methodologies may be a better option in this case.

As these examples show, a single organization can have need for multiple methodologies. Fortunately, agile development practices in one project do not preclude the use of other methodologies in other projects. Even within a project, there may be subprojects that use different methodologies.

Hybrid models can work well for many organizations. It helps to have project management tools that support multiple types of methodologies. By decoupling your software development methodology from your project management tools, you can retain the flexibility to use different methodologies without sacrificing important project management functionality.

Myth 2: Agile Projects Do Not Need Project Management

It is a myth that projects utilizing agile methodologies do not need project management. The error in this reasoning occurs at two levels: within the project itself and from the perspective of the project as part of the larger IT portfolio.

Planning does occur within an agile-managed project. The Scrum methodology, one of several agile methodologies, uses the idea of a "sprint," a development period restricted to a set period of time such as a week or a month. During the course of a sprint, the team gathers requirements and then designs, builds, and tests a functional part of an application. Planning practices can be used to coordinate among developers during the sprint. Just as important, project planning information can be shared with other IT managers who need visibility into the workloads and schedules of team members.

IT managers and other business executives responsible for managing a portfolio of projects need to understand the state of all projects regardless of the methodology used. Such is especially the case when developers work on multiple projects or must attend to operational issues in addition to their development work.

As noted earlier, decoupling development methodologies from project management methods allows for more streamlined changes. It also allows for a single project management tool to be used in organizations that employ multiple development methodologies.

Myth 3: You Cannot Have Deadlines with Agile Methodologies

The idea that deadlines are not supported by agile methodologies is incorrect. Agile methods change the way organizations develop software and implement systems, but these methods do not try to avoid basic coordination practices.

Deadlines are needed in order to manage projects at an organizational level. If a developer is assigned to a project, then managers will want to know how long the assignment will last and what level of time commitment is required. Is it a 100% time commitment or a 50% commitment? If it is the latter, the developer can be assigned other development projects or take on additional troubleshooting and issue-tracking responsibilities.

Similarly, projects need deadlines. A business sponsor who funds the development of a reporting project will rightfully want a schedule of deliverables. Creating such a schedule does not mean the development team cannot use an agile methodology for its internal tasks. This example highlights the fact that project plans are used for multiple purposes:

- Documenting assignments
- Estimating time commitments
- Identifying dependencies between project deliverables
- Highlighting constraints on project activities
- Revealing potential conflicts in resource use
- Planning other operations that depend on deliverables from the project

Deadlines are not an artifact of waterfall methodologies that can be dispensed with in agile-managed projects. Deadlines are one element of coordinating activities and communicating the status and expectations for project tasks.

Summary

The flexibility and adaptability of agile development methodologies addresses significant shortcomings of waterfall methodologies. Unfortunately, this flexibility and adaptability also contributes to misunderstandings about agile development and project management. Agile methods are not suitable for all projects, and organizations do not need to use agile methods in all cases. The flexibility that is embraced by agile methods does not eliminate the need for project management, both within a project and across a portfolio of projects. Deadlines are a key feature of project planning—that does not change when the software development methodology changes. Fortunately, project planning practices and software development methodologies can integrate without compromising on the benefits of either.