**What Is a Project Management Methodology?**

A project management methodology is a set of principles that project managers and team leaders use to plan, execute, and manage a successful project. One of the most common is the Agile project management methodology, which focuses on flexibility and speed as its guiding principles. Others, such as the lean methodology preaches waste elimination as the primary principle.

Project management methodologies like these will often have an associated framework that gives project managers processes, procedures, and tools based on the principle. For example, the Scrum project management framework is based on the Agile methodology. The Kanban framework is based on the lean project management methodology.

However, other project management methodologies, such as the waterfall method include all the principles, processes, and tools without a separate framework. For this reason, when discussing the common methodologies and determining which is best for you, we’ll also discuss the relevant frameworks that help you best implement your chosen principles of management.

The best project management methodologies help you complete a project on time and under budget while exceeding quality standards. With that in mind, let’s look at the most common methodologies and their frameworks so you can choose the best one for you.

**Common Project Management Methodologies**

Arguably the most common project management methodologies are the waterfall, Agile and lean methods. However, there are many other helpful methodologies available, including the PRINCE2, critical path and Six Sigma methods. Let’s look at each of these methodologies and their related frameworks.

**Waterfall**

The waterfall model is a traditional, linear project management methodology developed in the 1950s. The model typically includes five or six dependent phases, with each phase relying on the deliverables of the previous one. For this reason, you need to complete each phase before moving onto the next. The six phases of the waterfall methodology include:

* **Requirements:**Gather information and create a detailed project plan that outlines each stage of the process, key dependencies, timelines and more.
* **Design:**Common in software development, this phase specifies things, including hardware, coding languages and user interface design.
* **Implementation:** Next it’s time to develop the product. Using the software example, this is where software development would take place.
* **Verification:**Test the software with a quality assurance (QA) team to discover and fix bugs and defects as well as identify additional risks.
* **Deployment:**At this stage, the software is deployed to the end-user or the final deliverable is given to the end customer.
* **Maintenance:**Maintain the software and make occasional modifications to fix defects, improve performance and add features.

The waterfall model offers a clear plan from start to finish and identifies requirements early in the process. An emphasis on documentation at every stage supports continuity no matter who works on the project.

However, this methodology is rigid and doesn’t account for factors that are unknown early but become relevant later. The linear process doesn’t leave room to iterate when new requirements or constraints become known. This could lead to an inefficient process with an ineffective outcome. For this reason, the waterfall methodology is only good if you’re managing a project with few unknowns.

**Lean**

Originally developed by Toyota for auto manufacturing, lean project management is focused on delivering value and eliminating waste, which it identifies in three categories by their Japanese names:

* **Muda:**wasted time, resources or effort that don’t add value for the end user.
* **Mura:**overproduction and excess inventory accumulated through an irregular workflow.
* **Muri:**overburdening of employees at any stage of a workflow.

The lean project management methodology specializes in creating a culture of continuous improvement by eliminating waste and empowering employees. It helps reduce costs, increase efficiencies and improve quality and employee morale. One of the primary frameworks for implementing its principles is the Kanban framework, which we discuss below

**Kanban**

Kanban is a method of lean project management that gives a visual overview of the project process from start to finish. This helps you manage workflow by showing exactly who is working on what and the status of each project component.

People using the Kanban method rely on a Kanban board, which is a digital project management tool that offers columns for various steps in a project workflow and “cards” for each project component moving through that workflow. Cards are moved from one step to the next as they progress through the process.

**Agile**

Agile project management methodologies developed as a response to the rigidity of the waterfall model and were inspired by the speed and flexibility of lean methods. They’re intentionally iterative and collaborative, and they put emphasis on creating good products for customers.

Agile isn’t just a methodology but a set of principles that underlie several methodologies, which sprung from the need for adaptive project management. Core Agile principles, as laid out in the Agile Manifesto penned in 2001 by a group of renegade software developers, include:

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

These principles allow for quick iterations that increase productivity and efficiency and can address changing requirements throughout the project lifecycle. However, eliminating documentation and relying on individual interaction can impede scalability and continuity across teams, especially within larger organizations. Therefore, Agile is best for small teams where developers and stakeholders are on the same page about business needs and constraints.

There are several Agile frameworks people use to implement this set of principles. The most common is the Scrum framework. Let’s look at the most popular Agile frameworks.

**Scrum**

Designed for small teams, a Scrum framework guides a simple process of communication, planning, execution and feedback.

Scrum teams work in “sprints” of two to four weeks. The team first plans the goals of the sprint and agrees on deliverables to complete in that period. The team then meets daily for a 15-minute “scrum” or “stand up,” where each team member shares progress and impediments toward the goal.

At the end of each sprint, the team holds a longer meeting for sprint review to present completed work and get feedback and suggestions for future work.

**Scrumban**

Scrumban is a hybrid of Scrum and Kanban methods. It follows a scrum workflow and visualizes work on a Kanban board with three columns: To Do, Doing and Done. To avoid being overwhelmed, team members pull tasks from To Do as they have bandwidth, rather than committing to timeboxed sprints.

Practitioners of Scrumban keep a daily standup but don’t hold an end-of-sprint review. Instead, they conduct planning and review on an as-needed basis as tasks are completed.

**Extreme Programming (XP)**

Focused squarely on software development, XP project management emphasizes communication, simplicity, feedback and testing. It relies on “feedback loops,” where coding is happening continuously—without waiting for comprehensive design or planning upfront—and iterations follow feedback from testing.

The method is best suited for teams where programmers are in sync with stakeholders because the lack of formal management and documentation raises the risk for miscommunication and never-ending changes. However, this framework can create scope creep and it can become costly over time.

**PRINCE2**

PRINCE2 stands for “projects in controlled environments” and was created by the United Kingdom government in 1996 as a version of the waterfall project management methodology. PRINCE2 is based on seven principles that start with a clear business case and include stakeholder management, initiation, planning, control, progress monitoring and acceptance criteria.

There are also seven process steps of PRINCE2, which include:

* **Starting a project:**Start the project by submitting a project plan that defines the business case.
* **Directing a project:** The project board reviews the plan and decides to move forward.
* **Initiating a project:**The board chooses a project manager who creates a more detailed project plan.
* **Controlling a project:**The project manager breaks down the project into more manageable stages.
* **Managing product delivery:**The project manager oversees the project’s progress and assesses quality standards.
* **Managing stage boundaries:**Project board holds a review at the end of each stage before moving forward.
* **Closing a project: T**he project manager completes the project and creates the final report.

PRINCE2 is a well-structured and proven methodology that’s widely used. It’s also considered more flexible than the traditional waterfall method. However, PRINCE2 can be time-consuming with a lot of processes that can slow down a small project. Therefore, it’s best for more complex projects where quality standards are high.

**Six Sigma**

Six Sigma was developed by Motorola to improve business processes by eliminating any defects or errors in the process. It uses statistical models to continuously improve quality management so the project’s outcome is successful. Six Sigma uses the following process to eliminate defects and errors:

* **Define:**Outline the project goals with a project scope or business case.
* **Measure:**Collect data on the current state of the project.
* **Analyze:**Review the data to identify root causes of problems.
* **Improve:**Fix or improve the root cause in the process.
* **Control:**Create safeguards to ensure the issue doesn’t persist.

The Six Sigma framework helps improve quality, eliminate waste, increase efficiency and reduce costs. However, Six Sigma is complex and requires a knowledgeable manager to implement it. For this reason, it’s only right for larger organizations who are looking for efficiency gains in existing processes.

**Critical Path Method (CPM)**

The critical path method (CPM) is a methodology that identifies the critical tasks within a project, including the dependencies and timelines to completion. It then outlines the longest sequence of critical activities that must be completed to deliver the project on time.

Here’s how to find the critical path with the CPM:

* **List activities:**Break down your project into a series of activities or tasks.
* **Identify dependencies:**Identify the activities that are dependent on each other.
* **Build a network diagram:**Create a flow chart displaying all the activities.
* **Estimate the duration:**Estimate the duration of each activity.
* **Determine the critical path:**Calculate the critical path by determining the sequence of activities with the longest duration.
* **Determine your slack:** Calculate how much a task can be delayed without impacting the project.

The critical path method is great because it identifies a specific duration of time for each task. It even tells you how much allotted time you can go over for each task. This helps you manage project timelines and spot dependencies as you complete tasks. However, the methodology can be tough to manage and is therefore best for complex tasks with a lot of dependencies.

**Critical Chain Project Management (CCPM)**

Critical chain project management (CCPM) methodology is similar to the critical path method. However, CCPM focuses on the resources required to complete a project rather than time. It assumes that resources are the project’s limiting factor and therefore stresses efficient resource utilization.

CCPM typically follows this process:

* **Identify the critical path:** Identify the critical activities required to complete a project using the critical path method.
* **Determine required resources:**Estimate the resources you’ll need to complete the project by assigning resources to each task on the chain.
* **Include buffers:**Build time and resource buffers into your estimates to help avoid any bottlenecks.

CCPM bases its measure of success on how seldom you’re using your buffers. If you aren’t tapping into your buffer of resources, it’s a sign your process is running efficiently. CCPM can help you save time and money on a project by efficiently allocating resources. However, it can be complex to manage and should be used when resources are the limiting factor of a project.

**How To Choose the Right Project Management Methodology**

With so many project management methodologies available, which one do you choose? The best way to decide is to assess factors, such as your budget, team, project complexity, required flexibility, timeline, risk and stakeholder collaboration.

Let’s take a brief look at each to help you make the best decision possible:

* **Budget:** The size of your budget will dictate how closely you have to manage it as well as how much you can afford to implement and manage a complex methodology.
* **Team:**Assess the size and skill set of your team. Do you have anyone schooled in Scrum? Leveraging the skill set of your team will increase your chances of success.
* **Complexity:**Some methodologies are good for simple projects while others are better for complex ones. Choose the methodology that best fits the complexity of your project.
* **Flexibility:**How flexible or rigid does your process have to be? More rigid processes, such as the waterfall method, are good when there are few unknowns, but flexible processes, such as Agile, are better when you have to make changes quickly.
* **Timeline:**Your project timeline will help determine which methodology to use. Is it more important to finish quickly or spend time on a high-quality result?
* **Risk:**Projects with higher risk often use a more rigid methodology, such as the waterfall method, while projects with less risk use a more flexible approach.
* **Collaboration:**How much feedback and communication do you need from stakeholders? If you want consistent collaboration, an Agile methodology is best for you.

As you can see, there are many factors to consider when choosing a project management methodology. It may be a good idea to test a few out or even blend a few together to find an approach that best suits your needs. Ultimately, use the one that best helps you manage projects successfully.