**12 Project Management Methodologies: Your Guide**

*Set your project up for success by choosing the right project management methodology.*

Your choice of project management methodology defines how you manage a project. Learn about some common options (and how to choose the right one for your project).

**What is a project management methodology?**

The Merriam-Webster Dictionary defines ‘methodology' as “a body of methods, rules, and postulates employed by a discipline” or “a particular procedure or set of procedures”. In the field of project management, this would be a set of rules and processes that define how you manage a project.

When discussing project management methodologies (PMMs), you’ll likely encounter a variety of terms—some of them are true methodologies and others would be more accurately described as principles or philosophies. For the purposes of this discussion, we’ll consider a variety of terms often referred to as PMMs, even if they don’t technically satisfy the definition.

**12 popular project management methodologies**

Often one of the first decisions you’ll make as a project manager involves which methodology to follow. As the industry has evolved over the years, so to have the PM methodology options. Keep in mind that there isn’t one best option—the best methodology is the one (or combination) that best fits your project, team, and company.

Before we discuss how to choose methodology, let’s take a look at some common options in project management.

**1. Waterfall**

The Waterfall method, first designed by Winston W. Royce in 1970 for software development, is considered a more traditional, linear approach to managing a project. With the Waterfall methodology, a project flows through a series of steps or phases. Generally, each must be completed before the next can begin.

**Stages of the waterfall model**

**1. Requirements:** In this first phase, you’ll work with stakeholders to clearly define the requirements of the project.

**2. Design:** The critical design phase is when you’ll plan what the final product will look like and what steps your team needs to take to get there.

**3. Implementation:** This is where all your planning gets put into action. For software projects, this is when programmers will write the actual code.

**4. Verification:** During verification, you team tests the product to ensure it meets the requirements laid out in the first phase.

**5. Maintenance:** After the project is complete, the development team responds to feedback and makes any necessary modifications.

***When to use waterfall?*** *The logical flow of waterfall makes it an excellent option for short, predictable projects where you have a clear vision of the finished product and fixed requirements that are not likely to change. It’s best suited for teams and PMs that excel at planning and documentation.*

**2. Agile**

Agile takes an iterative approach to project management. The Agile Manifesto was created by several software development industry leaders as a way to adapt to quickly changing technology at the time.

While not technically a full methodology — adopting Agile won’t give you a comprehensive plan for how to manage your projects — Agile does offer a series of values and principles to promote agility and efficiency in the development process.

**Four foundational values of Agile**

**1. Individuals and interactions over processes and tools:** Managing a project around your agile team rather than your tools can help make your team more responsive and adaptable.

**2. Working software over comprehensive documentation:** Robust documentation involved in older software development techniques often led to long delays. You’ll still produce documentation in Agile, but the focus shifts to functionality.

**3. Customer collaboration over contract negotiation:** Instead of working out every detail of a project at the beginning, this method keeps clients and customers engaged in every stage of the collaborative development process. This is particularly helpful when a customer has unclear or changing requirements.

**4. Responding to change over following a plan:** Instead of front loading all the planning of a project, Agile encourages short iterations that help make changes an improvement rather than an expense.

***When to use agile?*** *An**Agile approach works well on creative projects where requirements might change along the way and the final details of the product are not yet established. It’s also a good option for projects where clients or stakeholders prefer to offer feedback regularly, rather than only when the final product is delivered.*

*--------------------------------------------------------------------------------------------------------------*

**3. Scrum**

Scrum is a lightweight Agile framework designed to help self-organizing teams develop more complex projects. The framework includes a set of roles and meetings centered on the values of commitment, courage, focus, openness, and respect.

To better understand Scrum, let’s take a look at some of its roles and practices.

**Sprint:** Short (usually one month or less) development cycle where a team creates a useable and (hopefully) releasable product increment

**Scrum master:** Team leader responsible for coaching the team in the Scrum method, organizing Scrum meetings and events, and ensuring team members have the support they need to succeed

**Daily Scrum:** 15-minute stand-up meeting held each day of a sprint where the team plans work for the next 24 hours

**Product backlog:** Prioritized list of work still to be done on a product

**Product owner:** Person responsible for maximizing the value of the product by managing the product backlog

**Development team:** Roles responsible for the actual development work of a project

**Sprint review:** Informal session where the development team presents their finished iterations to stakeholders for feedback

***When to use Scrum?*** *The Scrum method, best for self-managing teams and a culture open to innovation, can help bring products to market more quickly. The short development cycles and frequent stakeholder involvement can often lead to a better-quality product.*

**4. Kanban**

Kanban is an Agile method of project management that helps visualize workflow to improve efficiency. The method got its start in the Japanese manufacturing industry before gaining popularity across many fields.

At the center of the Kanban method is a Kanban board—a physical or digital tool that divides workflow into columns organized by development stage, such as to-do, in-progress, and completed tasks. This helps eliminate multitasking by encouraging teams to focus on only a few tasks at a time. It also makes it easy for both the team and stakeholders to quickly see where the team is in the development process.

***Did you know?****The word ‘kanban’ means ‘billboard’ in Japanese. The method was developed by Toyota in the 1940s.*

**Six kanban practices:**

**1. Visualize the workflow.** The Kanban board visualizes a team’s workload in a way that’s easy to understand and execute.

**2. Limit work in progress.** Restricting the number of tasks a team is working on at any given time helps maintain focus.

**3. Manage flow.** This method switches the focus from managing people to managing a smooth flow of work.

**4. Make policies explicit.** Keep them simple, visible, and easy to understand.

**5. Use feedback loops.** Revisiting project goals regularly helps the team respond to changes and take advantage of new opportunities.

**6. Improve collaboratively.** Teams with a shared vision can work together to achieve continuous improvement. These evolutions should be based on metrics and experimentation.

***When to use Kanban****? If you want to limit planning and meetings and focus on continuous improvement, kanban could be a good choice. It’s particularly effective in helping teams work through big backlogs or deal with frequent requests from stakeholders.*

*------------------------------------------------------------------------------------------------------------*

**5. Lean**

The Lean methodology focuses on maximizing value by reducing waste and improving efficiency. It’s another method that came from Toyota and has expanded in popularity well beyond manufacturing.

**Five core principles of lean:**

The Lean methodology centers on five principles, outlined in the book *The Machine that Changed the World and Lean Thinking*.

**1. Understand value.** Think about value from the customer’s perspective. What are they willing to pay?

**2. Identify the value stream.** Use visual techniques to map out the actions required to develop and launch a product. Use this map to identify areas of waste.

**3. Create value flow.** You can achieve this by eliminating waste due to things like excess inventory, time spent waiting, or performing more work than is necessary.

**4. Use a pull approach.** Deliver value as the customer requests it. This keeps the focus on delivering what the customer actually wants while eliminating time spent on features that might not be wanted or needed.

**5. Continuously improve.** Always be seeking perfection by assessing the project regularly for ways to reduce waste and enhance value.

***When to use Lean?*** *The focus on waste elimination makes Lean a natural fit for more traditional manufacturing projects. But it can also be effective in other industries, particularly when you want to keep the focus of development on the customer first.*

**6. Critical Path Method (CPM)**

The Critical Path Method defines the longest sequence of tasks that must be completed to successfully complete a project. These are the tasks that, if stalled, could cause delays in the entire project. The method also maps out the dependencies between tasks and an estimate of how long each task will take to complete.

Mapping out these elements can help establish important project deadlines and define a more accurate project schedule.

***When to use CPM?*** *CPM is best for projects with a well-defined series of tasks that need to be performed in a set order (construction projects, for example). It’s a good option to keep projects with a fixed deadline on schedule.*

**7. Critical Chain Management (CCM)**

Where CPM focuses on time, the Critical Chain Method (CCM) shifts the focus to the supply chain. This method is used to map out a critical path based on resource availability. These resources could include people, physical space, equipment, or other physical components. Unlike a CPM map, a CCM map includes scheduled “buffers” to remind a project team that a certain resource is necessary to finish a critical task.

***When to use CCM?*** *CCM is well-suited for projects that rely on limited or time-sensitive resources to complete. Overestimating task durations by building in buffers helps teams meet deadlines even in the face of unforeseen circumstances.*

**8. PRINCE2**

PRINCE2 stands for Projects in Controlled Environments. It’s a process-based project management methodology used to answer certain basic questions in product development:

* What are you trying to achieve?
* When will you start?
* What do you need to complete it?
* Do you need help?
* How long will it take?
* How much will it cost?

While used primarily by the British government, the PRINCE2 method has been applied to projects in a variety of industries around the world. The method is designed to be scalable to fit a variety of projects.

***When to use PRINCE2?*** *PRINCE2 is particularly popular outside the US — it’s used in more than 150 different countries. If your project involves multinational stakeholders, it might be worth considering this method. The focus on robust organization makes it more appropriate for complex yet predictable projects.*

**9. PMBOK**

The Project Management Body of Knowledge, or PMBOK for short, isn’t so much a methodology as a collection of best practices and guidelines outlined by the Project Management Institute (PMI).

***Did you know?****The PMBOK Guide is currently in its seventh edition, published in 2021. This edition reflects the full range of development approaches and the evolving profession of project management.*

The book, regularly updated by PMI, breaks down projects into the following stages, often referred to as the lifecycle of a project:

1. Introduction
2. Growth
3. Maturity
4. Decline / Retirement

For large companies managing multiple projects, PMBOK can help standardize terminology and practices across different departments.

**When to use PMBOK?** Just about every company and project can benefit from the standardized practices outlined in PMBOK.

---------------------------------------------------------------------------------------------------------------

**10. PRiSM**

The Projects Integrating Sustainable Methods (PRiSM) model of project management places an emphasis on environmental sustainability. Specifically, the method focuses on minimizing the ecological risks and increasing benefits that may impact the five Ps: people, planet, prosperity, process, and products.

Unlike other methodologies, PRiSM looks at projects beyond the scope of development to consider their impact beyond delivery.

**Six principles of PRiSM:**

**1. Commitment and accountability:**Organizations should take responsibility for a clean environment, employee wellbeing, and equal opportunities.

**2. Ethics and decision making:** All decisions should take into account the short and long-term impacts on both society and the environment.

**3. Integrated and transparent:** Projects should promote financial, environmental, and social benefits at all policy levels.

**4. Principal and values based:** Projects should use technology to use resources more efficiently.

**5. Social and ecological equity:** Project managers should evaluate any impact a project many have on vulnerable populations or environmentally sensitive areas using demographic data.

**6. Economic prosperity:** Fiscal planning should balance the needs of company stakeholders and future generations.

***When to use PRiSM?*** *This approach is best for projects with an established environmental impact, such as real estate and industrial projects. It’s not as useful for things like software development, where environmental impact is less of a concern.*

**11. Six Sigma**

Six Sigma, a quality management process developed at Motorola in the 1980s, comprises a set of tools and techniques to eliminate errors in development. This can help reduce costs and customer complaints stemming from errors.

The method generally takes a five-phase approach to improving existing processes:

1. **Define:** Analyze a business problem from a customer perspective.
2. **Measure:** Measure the problem in terms of data and define a performance metric.
3. **Analyze:** Quantify your goals and determine if your process is efficient and effective.
4. **Improve:** Find ways to improve process implementation.
5. **Control:** Implement and maintain the solution.

***When to use Six Sigma?*** *Six Sigma tends to be most effective in large organizations with several hundred or more employees.*

**12. Extreme Project Management (XPM)**

Doug DeCarlo, the creator of Extreme Project Management (XPM) defines it as “the art and science of facilitating and managing the flow of thoughts, emotions, and interactions in a way that produces valued outcomes under turbulent and complex conditions.”

This flexible approach helps teams adapt to the unknowns that pop up during a project, including frequent changes to requirements and complex project needs. For software development projects, this is sometimes referred to as extreme programming.

***When to use XPM?*** *XPM works best for short development cycles with less-defined product specifications. Teams that like to experiment to see what works could thrive with this method.*

**Hybrid Methodologies**

Just as there’s no single “best” method for managing a project, you also don’t have to limit yourself to just one option. Project managers have mixed and matched to come up with new hybrid approaches, such as Lean Six Sigma or Scrumban (Scrum and Kanban).

**How to choose a project management methodology**

The best project management method for you will depend on your project, team, organization, and tools. Let’s take a quick look at some things to consider and questions you should ask yourself when choosing a PM methodology.

**1. Evaluate the project.** Does your project have fixed or flexible requirements? Is the finished product well-defined, or will the team take a creative approach to defining it? How complex is it, and how long will it take to complete? What physical resources are involved? Will the stakeholders or clients be readily available, and how involved would they like to be?

**2. Consider your team.** Some methods work well with small, self-managing teams. Others lend structure to larger cross-functional teams. Also take into account what method your team might already be used to. Would the benefits of implementing a new method outweigh the time cost of teaching it?

**3. Look at the organization.**What are your company’s goals and values? You’ll want to choose a methodology that aligns with these elements. Some companies may prefer and employ a particular approach that you’ll need to adapt to.

**4. Think about your tools.** Some project management tools are flexible enough to work with various different methodologies. Others might be more specific to a particular approach. Make sure the tools and software you’re proficient in are a good match for whatever methodology you select.