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Introducing agile projects

This chapter provides the background to the need for an agile approach to projects.

It covers the benefits of using an agile approach and an overview of four frameworks for leading agile projects.

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For a basic introduction to project management, refer to our book **Effective Project Management in easy steps**.



Templates are available on our website for many common project documents. Please visit <https://ineasysteps.com/downloads/>



All pages that include an example from **Vanguard Power** – the energy company used for illustration – are highlighted with this transmission tower/pylon in the margin.

Introduction

This book was written for everyone curious about how project management is affected by agile principles and practices. The primary audience is likely to be experienced project managers looking to broaden their knowledge and skills to lead agile projects. It will also be of interest to developers and others already working on agile projects who wish to understand the role of project management.

Learning agile project management in stages

As with any capability, your ability to lead agile projects will develop over time as you gain more experience and knowledge.

- **Novice:** On your first agile projects, it will feel safer to find and follow a set path of best-practice guidelines – this book can be an essential companion for you on that journey.
- **Proficient:** As your knowledge and experience grows, you will start to recognize patterns and understand how to mix and combine techniques – this book compares four project management frameworks, with guidance on when to use each.
- **Expert:** Once you have experienced leading agile projects in a wide range of conditions, you will start to contribute to practice improvement – Chapter 14 focuses on the evolution of project management.

Learning agile project management in easy steps

The **In Easy Steps** series of books is designed to take readers step-by-step through a new topic – learning through the experience of doing, rather than forcing you to work your way through pages of theory and being left to find your own way.

The best way to experience agile project management is to work on an agile project and learn first-hand by doing it. For those who want to find out about agile project management beforehand, the next best way is to see it play out step-by-step. This book guides you through a whole project life-cycle, from initiation through discovery, delivery, and learning, to closure.

To illustrate this, as you work your way through the book you will also be following the experience of a fictitious energy business – called **Vanguard Power** – that have realized they need to develop more consumer-facing services alongside maintaining and growing their infrastructure.

About agile project management

This first chapter provides an introduction to agile projects, beginning with some of the challenges we face in today's business environment, and how an agile approach helps cope with them.

Leading agile projects

Preparing to lead agile projects asks more of us than just learning some new practices; it **fundamentally changes our role**. Chapter 2 explores the impact on project management responsibilities.

The life-cycle of an agile project

These changes are brought to life stepping through a full project.

Chapter 3 describes how to **set good foundations**, forming a team, agreeing outcomes, gaining funds, and getting started.

Chapters 4 to 6 follow the repeating cycles of **discovery**, **delivery**, and **learning** that characterize an agile project.

Finally, Chapter 7 covers how we **close out** an agile project.

Frameworks for agile project management

The next five chapters present a range of agile project frameworks.

Chapter 8 defines the **Agile Project Framework** – a standard based on the Dynamic Systems Development Method.

Chapter 9 describes how to apply **lean principles and practices** to leading agile projects.

Chapter 10 explores how to overcome the challenges of leading agile projects in more **controlled environments**.

Chapter 11 considers the differences in organizations that have moved **from projects to continual flow** of delivery.

Chapter 12 describes approaches for **leading agile projects at scale**.

Frameworks for agile delivery

Agile project frameworks should also be capable of working with complementary delivery approaches. Chapter 13 covers five **agile delivery approaches**, with guidance on how they might be implemented or even combined.

Trends in agile project management

As the project management profession continues to evolve, Chapter 14 explores the impact of **current and future trends**.

The need for a shift in mindset

The profession of project management evolved from traditional construction and manufacturing industries, where requirements were commonly locked down early, solutions were well defined, and customers were accustomed to seeing nothing until the end.

While this was accepted practice for many years, such a predictive approach does not suit the challenges our organizations face today. We need a more adaptive approach to help cope with the disruption caused by the pace of change in technology, consumer expectations, population growth, and climate change.

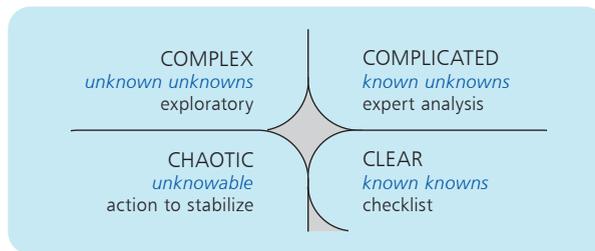
To determine when we need a more adaptive approach, we need a way to make sense of our organizational context and our project deliverables. The following two models have been proven to reliably help assess and guide our choice of approach.

Assessing our organization's context

The **Cynefin Framework** was developed to help make sense of our situation and guide which approach might suit making changes.



The *Cynefin Framework* was developed by Dave Snowden. *Cynefin* is a Welsh word meaning habitat or domain.

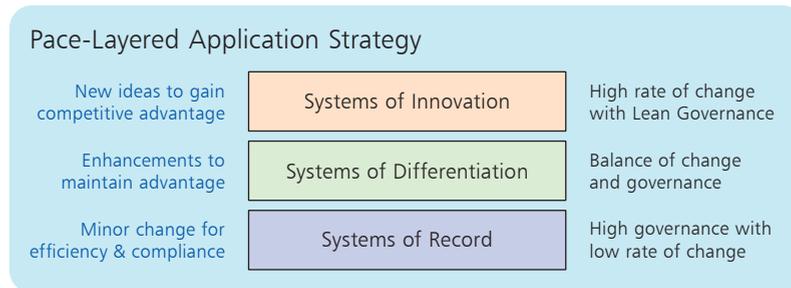


- In **clear** situations, once we can see the problem, the solution is simple and obvious – suiting a *checklist* approach.
- In **complicated** situations, there may be more than one solution; we typically have to uncover the way forward through detailed analysis or consulting an expert – suiting a more *predictive plan-driven* approach.
- In more **complex** situations, we cannot observe or analyze a way forward; instead, we need to feel our way a step at a time – suiting a more *adaptive exploratory feedback-driven* approach.
- Finally, in **chaotic** situations, such as a pandemic or global financial crises, we first need to stabilize our organization before we can make any changes – suiting a *rapid response* or *immediate action*.

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Assessing our project's deliverables

The **Pace-Layered Application Strategy** was developed to help inform an approach to managing projects, by categorizing the deliverables of a project.



- Systems of **Innovation** involve responses to new markets or opportunities, which would suit an exploratory approach that generates feedback and results quickly.
- Systems of **Differentiation** involve unique selling points for existing markets or products, which would suit careful analysis and design combined with fast implementation.
- Systems of **Record** involve mission-critical administration and important transactions, which would suit more standardized processes and compliance with governance.

Choosing the right approach

Assessing our deliverables and context will guide us toward an appropriate approach. When our answer involves innovation and complexity, the *exploratory* and *feedback-driven* requirements mean we need to adopt an agile project management approach.

However, even when the deliverables and context might suit a more *plan-driven* approach, we still benefit from adopting many of the practices outlined in this book, especially in organizations with a portfolio project management approach (see page 174 for portfolios at scale and page 206 for multi-speed delivery).

While the energy sector is mature, **Vanguard Power** do not currently have any consumer-facing services. As developing this would involve some risk, they chose to adopt agile project management so that they could deliver some services earlier and get feedback that would help them improve.



The *Pace-Layered Application Strategy* helps select an appropriate development approach, based on the type of application.





The name of the *Scrum* framework can be traced back to Takeuchi and Nonaka coining the term *rugby approach*.

A more adaptive approach

The shift from plan-driven to adaptive feedback-driven approaches to project management also involves a mindset shift.

“The traditional sequential *relay race* approach to product development – exemplified by phased program planning – may conflict with the goals of maximum speed and flexibility. Instead, a holistic or rugby approach – where a team tries to go the distance as a unit, passing the ball back and forth – may better serve today’s competitive requirements.”

Takeuchi and Nonaka, Harvard Business Review, 1986

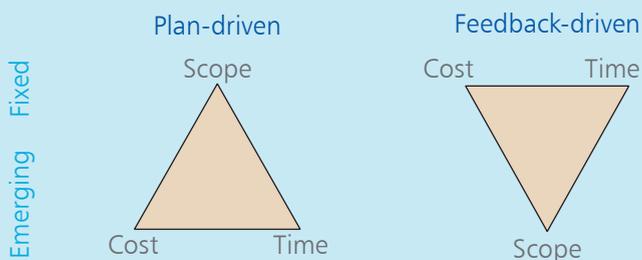
Plan-driven project management

A plan-driven approach to project management typically starts with a detailed specification of scope and deliverables, after which, time and cost can be estimated. Once formed, the team will analyze, design, and build the deliverables, which they test to confirm as meeting the requirements. Finally, they present all finished deliverables, which may or may not be accepted as matching the specification. Such a predictive approach suits less novel systems in more stable situations where the requirements are unlikely to change and the technical solution is well known.

Feedback-driven project management

A feedback-driven approach, on the other hand, accepts that requirements may not be known in advance and will continue to emerge. Instead of fixing the scope, we fix the size of the team and the amount of time (and thus cost) we are willing to invest, and then reprioritize requirements as we discover them. Such an adaptive approach suits the higher levels of risk when requirements and technology are likely to change, and especially when we need to deliver some part of the scope early. The difference between the two approaches is illustrated below:

The mindset shift (triple project constraints)



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To be effective, this shift also requires some new practices that enable teams to develop with speed, flexibility, and feedback.

The self-organizing autonomous team

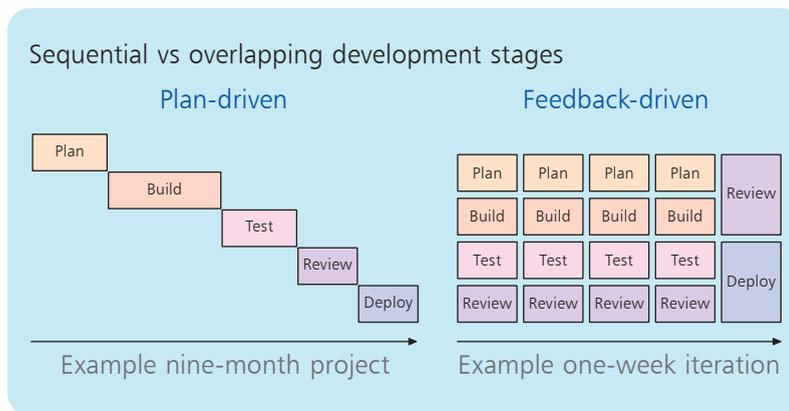
Teams should be free to determine the best technology, architecture, and approach to development. Ideally, they should think of themselves like a start-up, taking initiative and defining their own identity. To facilitate this level of autonomy, there should also be clear guidelines, expectations, and checkpoints to provide confidence while avoiding instability, tension, and chaos.

The learning team

As teams grow and discover how to solve their problems, they will experience a range of learning across levels (e.g. individuals, the team, and the wider organization) and across functions (e.g. analysis, programming, and quality assurance). It is vital that this learning is encouraged and that opportunities are also found to transfer this to people outside the team.

Overlapping development stages

The team should work together across all activities, testing one deliverable while building a second deliverable at the same time as planning a third. This is in contrast to the more sequential plan-driven approaches that make a team wait for all requirements to be specified before starting to build anything, for all build work to be completed before starting to test, and for all testing to be completed before anything can be reviewed, as illustrated below:



The overlapping stages enable a team to replan or do further build work immediately, when required, rather than waiting.

Agile values and principles

As more adaptive feedback-driven approaches emerged, a group of 14 project management and software development professionals recognized the need for a clear statement that described these alternatives to more predictive plan-driven approaches.

In early 2001, they published this as a manifesto for what they described as **agile software development**.



The *Manifesto for Agile Software Development* was developed in February 2001 at the Snowbird ski resort in Utah, USA.

The Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it; through this work we have come to value:

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

That is, while there is value in the items on the right, we value the items on the left more.

The agile values

These four value pairs have come to be known as the **agile values**. The meaning of these is described below:

- **Individuals and interactions:** Treating each other well and facilitating good interactions is more important than following strict protocols or arguing over which tools to use.
- **Working solutions:** Delivering a part of the solution that works is much more useful than investing in requirements documents that will be thrown away – however, documents required for operation and support are still valued.
- **Customer collaboration:** Requirements cannot be fully defined at the beginning of the project, therefore continuous customer involvement is very important.
- **Responding to change:** Agile project management enables a quicker response to new information – like feedback or scope changes – that can create competitive advantage.

...cont'd

12 principles

These values are in turn supported by the following 12 principles:

- 1 Customer satisfaction:** by the early and the continuing delivery of useful solutions.
- 2 Changing requirements:** welcome changing requirements, even late in the development process.
- 3 Frequent delivery:** of working solutions, from every couple of weeks to every couple of months.
- 4 Measure of progress:** delivery of working solutions is the principle measurement of progress.
- 5 Sustainable development:** so that the sponsors, developers, and users can maintain a steady pace indefinitely.
- 6 Close cooperation:** business people and developers must work together daily throughout the project.
- 7 Motivated team:** by giving them the support they need and trusting them to get the job done.
- 8 Face-to-face conversation:** whether in-person or digital, the most efficient and effective method of conveying information.
- 9 Technical excellence:** through continuous attention to quality working and good design.
- 10 Simplicity:** by keeping things simple, the amount of work that has to be done is minimized.
- 11 Self-organizing teams:** the best architectures, requirements and designs emerge from self-organizing teams.
- 12 Regular adaptation:** the team regularly reflect on how to become more effective and adjust their behavior accordingly.



The term “software” from the original manifesto is now commonly replaced by “solution” to signify these values and principles apply to projects and other work with non-software deliverables.



With the growing popularity (and need) for remote and hybrid teams, digital tools can support communication and collaboration (see pages 198-199).



These benefits are modeled on the Project Management Institute's *project performance domains*.

Benefits for project outcomes

Applying these principles to how we plan and lead projects will improve the outcomes of our projects across a number of areas.

Adapting to changing requirements and uncertainty

All projects experience some degree of uncertainty, and any uncertainty presents a risk to project outcomes. Projects dealing with innovation and complexity will face higher levels of risk due to the number of unknowns and likely degree of change.

Agile approaches involve shorter delivery timescales and more frequent planning, so teams are better able to handle unknowns and changes. This is especially useful when customers cannot define their requirements before they have seen a prototype.

Delivering value and results early

Following agile practices will ensure that the project delivers a quality product sooner than on traditional projects. While an early release of a product will not have all required features, teams work to deliver a minimum viable product (MVP) each time, following the Pareto principle of prioritizing the most important features first.

Delivering significant benefits early will contribute to improved outcomes overall. Should the customer decide they have received sufficient functionality and benefit, this also provides them with the option to end the project earlier than planned and free the team up for other high-priority change and improvement work.

Stakeholder and customer involvement

Effective engagement for stakeholders and external customers will improve project outcomes, enabling them to share in making decisions, setting priorities, and resolving problems. Their ongoing involvement will increase their confidence that the final product will meet their requirements, whereas failing to involve them will increase the likelihood of dissatisfaction with the final product.

Transparency and monitoring progress

Using the delivery of working solutions as the principal measure of progress is a principle that anyone involved in a project is likely to appreciate. This makes it easier for the project manager to ensure that deliverables are monitored and reported transparently. The team will continually break their work down into small increments and deliver these frequently. Stakeholders and customers will also be able to see the impact of each release.

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Team motivation and wellbeing

By empowering the team to self-organize, they will be motivated to focus more on quality and improved outcomes.

The principles of frequent delivery and time to reflect ensure not only that the pace of work is sustainable but also that the team can learn and improve. While working outside normal business hours still remains a possibility, it should cease to be the default.

Planning to keep options open

Although it may appear that far less effort is invested in planning, it shifts instead from being detailed at initiation to being more continual. Delaying detailed commitments increases flexibility.

Rather than a detailed plan of weekly deliverables, outcomes are typically depicted on a roadmap by quarter, which is reviewed and adapted frequently. A distinct sub-set of deliverables is typically planned once per fortnight, followed by a daily review as progress reveals hidden complexity, new risk, and unexpected blockers.

Adaptive life-cycle

Applying these agile principles to project management requires us to pause frequently, reflect on performance, and consider whether there are any challenges or opportunities to improve our ways of working. This helps foster a learning environment.

Combined with enabling teams to self-organize, this leads to continual improvement in how we deliver working solutions, as well as our communication, engagement, management of physical resources, procurement, and everything else required to keep the project operating smoothly and achieving its outcomes.

Audit and compliance

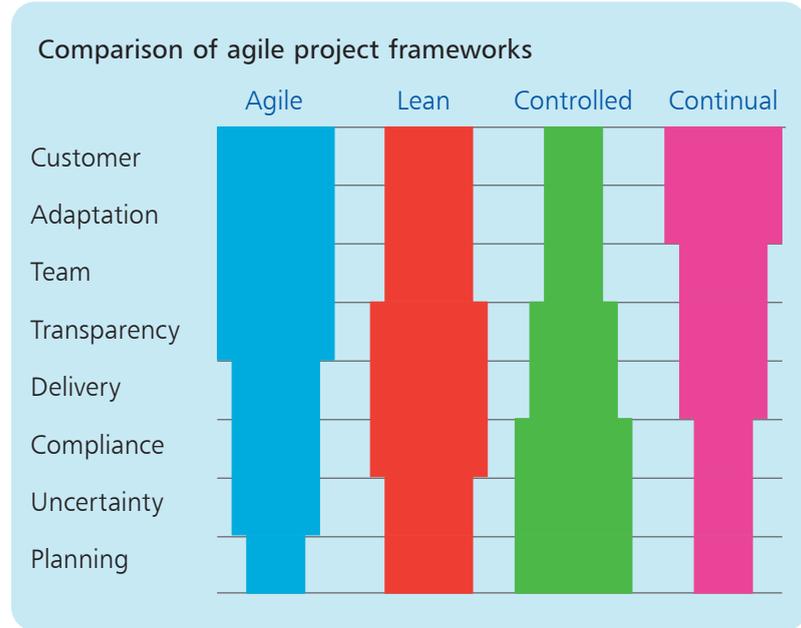
There is a myth that agile teams do whatever they like, with no documentation or process. If true, this would be a major concern for audit and compliance. However, while the attitude to process and documentation might be lighter, there is still plenty of rigor.

This lighter approach enables a shift:

- From auditing teams against compliance with a rule-book.
- To facilitating and improving how they assess and mitigate risks and impediments.

Agile project frameworks

As there are many approaches, methodologies, and practices that adhere to agile values and principles, these have been simplified into **four frameworks** for this book, summarized below:



This table compares the four frameworks by depicting the emphasis each gives to the eight project performance domains. These domains were introduced in the previous section on benefits (see pages 16-17) and will be further explored in Chapter 2, while the frameworks are described below and detailed in Chapters 8 to 11.

Agile project management

When projects need an iterative and incremental approach to delivering outcomes, they need an approach with enough planning and oversight to enable delivery of quality products on time and within budget, and that works well with agile delivery frameworks.

The Agile Project Framework (see Chapter 8) is a feedback-driven approach to projects that succeeds by focusing more on customer value, adaptation, team wellbeing, and transparency. While this makes it suited to organizations operating in highly competitive markets or working with novel technologies, it would not be so well suited to developing systems of record or organizations operating in heavily regulated markets.

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Lean project management

The lean process approach originated in large-scale manufacturing, where the focus was on minimizing waste and improving flow. It can best be summarized as seven major principles, which are derived from lean manufacturing: eliminate waste (including unnecessary code and functionality); amplify learning; commit as late as possible; deliver as fast as possible; empower the team; build in integrity (so that components work well together); and see the whole (software systems are the product of their interactions).

Agile projects with lean principles (see Chapter 9) is a flow-based approach that succeeds by focusing on smooth flow, quality, and good controls. This makes it suited to projects focused on process improvement, or for organizations in manufacturing or who develop system components.

Agile projects in controlled environments

Large organizations, especially those in government, healthcare, and other regulated industries, are typically unable to remove or reduce much governance and compliance – especially when they are overseen by third parties, such as industry regulators.

Agile projects in controlled environments (see Chapter 10) is a stage-based approach that succeeds by focusing on planning, compliance, and process. This makes it suited to organizations where projects still need to be plan-driven; however, this would likely be too heavy-handed for those in more competitive markets.

Continual product delivery

Some organizations have chosen to prioritize their funding to create a continual flow of value. For them, the stages of project initiation and closure become an unnecessary overhead.

As an alternative to projects, as temporary organization structures to deliver value, they create aligned groups of development teams, approve streams of funding in advance, set clear objectives and goals, and create roles responsible for prioritizing the work that should generate customer value and meet those goals.

From projects to continual flow (see Chapter 11) discusses this product-based approach that succeeds by focusing on value streams, product fit, and continual improvement. This makes it suited to mature service organizations in competitive markets.



This shift toward continual flow over projects started as an online discussion, from which it is also known as *#NoProjects* (the hashtag label on posts and replies on Twitter).

Summary

- This book provides an introduction to leading agile projects, through several different project frameworks, and how to select which is right for your project.
- Traditional projects start by documenting all requirements. Agile projects start by choosing a team size and timeframe, then allow the requirements to emerge during the project.
- Traditional methodology was based on predictive plan-driven approaches, not well suited to complex innovation projects.
- In addition to fixing the requirements too early, traditional methodology also suffered from a lack of customer involvement and an authoritarian style of managing the team.
- As a result of these problems, software developers started to define more lightweight methods.
- These methods were codified in the **Agile Manifesto**, which called for a focus on individuals and interactions, working software, customer collaboration, and responding to change.
- Trying to lead an agile delivery using traditional project management approaches does not work – which is why agile project management frameworks were developed.
- A definition of agile project management was first published by the DSDM Consortium, and this focused on managing a project following the principles of the Agile Manifesto.
- The ideal agile project includes any area where the requirements or technology cannot be known fully in advance.
- Conversely, projects with fixed requirements and solutions may be better managed using traditional methodology.
- A number of frameworks have emerged that mean larger projects and programs can also follow more agile methods.
- There is a growing practice of shifting product development onto an operational footing, rather than within a project.
- Depending on context and deliverables, an agile project is likely to include a combination of practices that support agile projects, lean processes, and working in controlled environments.