

the little book of  
**Project  
Methodologies**

**NineFeetTall**  
delivering positive change





Welcome  
to our little book on the  
big subject of  
**Project  
Methodologies**

## Why read this book?

You know there are a lot of different ways to do projects and you want to know more about them

---

You've always done projects one way but now everyone seems to be changing things around


---

You're a master of waterfall, agile and lean and looking for a simple tool to explain them to your team



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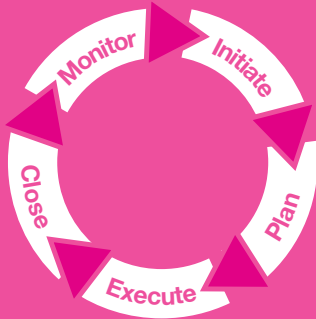


“ Be stubborn  
about your  
goals...

...and flexible  
about your  
methods. ”

Anon

1



**What is  
a project  
methodology?**

# What is a methodology?

“ A system of broad principles or rules...

...from which specific methods or procedures may be derived to interpret or solve different problems within the scope of a particular discipline.

It is not a formula but a set of practices. ”

# What is project management?

Project management is the application of processes, methods, knowledge, skills and experience to achieve project objectives.

A project is a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes, or benefits.


Association for Project Management

# Why use a project management methodology?

## A good methodology...

1. Provides direction
2. Saves time
3. Increases productivity
4. Improves quality
5. Generates efficiencies
6. Delivers consistent results
7. Clarifies expectations
8. Encourages continuous improvement
9. Increases chances of success

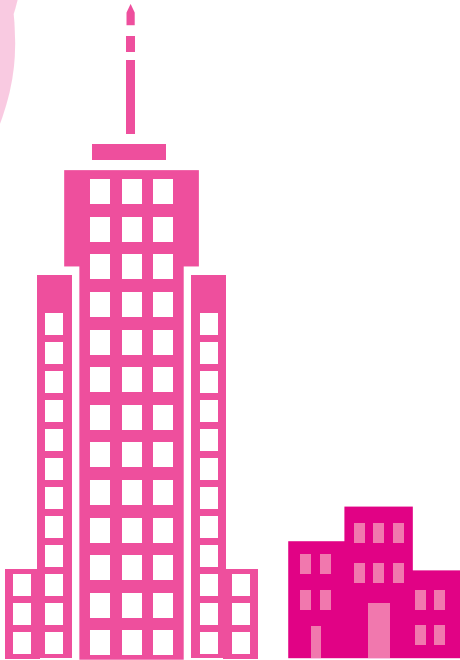




“ If you can't describe  
what you are doing  
as a process,

you don't know  
what you're doing. ”

W. Edwards Deming



The project management methodology used by a large organisation is typically defined by the business's project management office or PMO.

In smaller organisations, individual project managers may work to their own preferred methodology or select the most appropriate approach to every new project.

Where possible, applying a consistent methodology to all projects usually delivers most benefits.

# What does a methodology include?

- » Project lifecycle
- » Team structure
- » Samples
- » Templates
- » Instructions
- » Process workflows
- » Aids

These tools provide the know-how to manage the project:

- » Documentation
- » Business involvement
- » Communication
- » Risk and issue management
- » Change control
- » Reporting
- » Team management



# Remember...

**A methodology alone will  
not deliver projects or  
guarantee success.**

A project team also needs to be equipped with knowledge, skills, resources, experience, leadership, and a healthy dose of common sense.

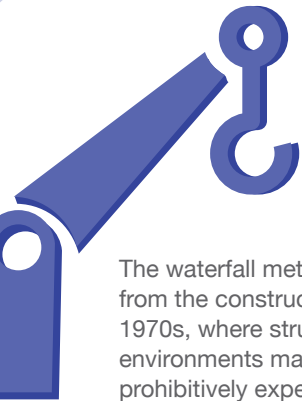


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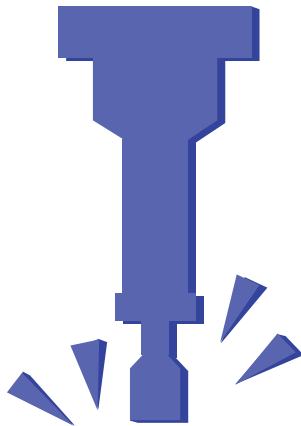


An  
introduction  
to waterfall

# Waterfall methodology



The waterfall methodology originates from the construction industry in the 1970s, where structured, physical environments made late changes prohibitively expensive.

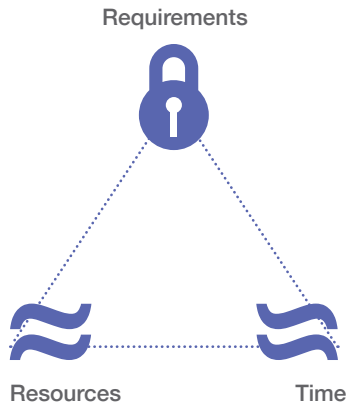


Because of this, it's a methodology geared toward minimising changes to requirements.

## Waterfall methodology is driven by the delivery of a plan.

It works on the basis that requirements defined by the business are fixed.

A project is able to flex resources and time available in order to deliver these requirements.



**FIRST**, have a definite, clear practical ideal; a goal, an objective.

**SECOND**, have the necessary means to achieve your ends; wisdom, money, materials, and methods.

**THIRD**, adjust all your means to that end.

Aristotle



# The fundamentals

A stylized illustration of a waterfall. The water is represented by a thick, dark blue stream with two white lines running down its center. It falls from the top left and creates several white water droplets as it descends. At the bottom, the water hits a surface, creating concentric white circles representing ripples. The background is white, and the overall style is clean and modern.

Solutions are developed in a sequential process: scope, plan, launch, monitor, close.

- » Formal review and approval is required to proceed from one stage to the next.
- » All requirements are determined upfront and remain unchanged.
- » Extensive documentation is created for each and every stage.
- » Business involvement is limited to requirements definition and testing.
- » Tasks are assigned to team members by the project manager.

# The waterfall lifecycle

## SCOPE

Evolve an idea into a vision, scope and benefits aligned with the business strategy.

## PLAN

Create plan and work packages, and secure budget and resources.

## LAUNCH

Define detailed requirements, design a solution, build, test, train the business and deploy.

## MONITOR


Monitor over time to measure benefits and embed change.

## CLOSE

Conduct lessons learnt and handover to BAU.

# Why do waterfall?

- » A clear and rigid lifecycle structure... ..is simple to understand and use
- » Stage-by-stage checkpoints... ..ensure regular quality and business case reviews
- » Specific deliverables and formal processes... ..focus the team on clear goals and ways of working
- » Requirements analysis and design of full solution upfront... ..optimises system architecture and business process
- » Accurate and thorough documentation... ..aids knowledge transfer for large or geographically dispersed teams



“ If it is not  
documented,  
it doesn't exist...

As long as information is  
retained in someone's head,  
it is vulnerable to loss. ”

Louis Fried



**3**



**An  
introduction  
to agile**

# Agile manifesto

The foundations of agile are based on a manifesto produced in 2001.

A group of bright minds got together and considered what they felt could make projects more successful.

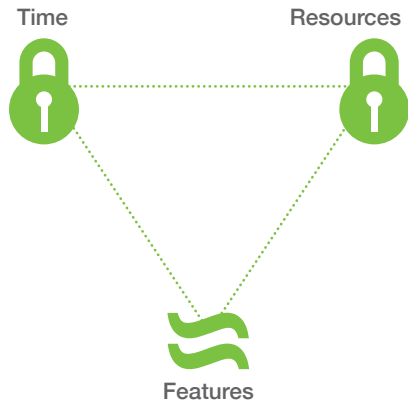
**They adopted a new set of values:**

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

**Agile is a methodology driven by delivering value to the customer.**

It works on the basis that the resources and time available to the business are fixed.

Within these limitations, a project aims to deliver as many of the prioritised features as possible.





# Think about it...

Would a business rather have...

**100% of features,  
80% complete?**

Or...

**80% of features,  
100% complete?**



# Agile is underpinned by 12 principles:

1. **Customer satisfaction** – by rapid delivery of useful software
2. **Changing requirements** – always welcomed, even late in development
3. **Frequent delivery** – of working software
4. **Daily cooperation** – between business people and developers
5. **Motivated individuals** – trusted to progress the project
6. **Face-to-face conversation** – is the best form of communication with co-located teams
7. **Clear progress measurement** – in terms of working software
8. **Sustainable development** – able to maintain a constant pace
9. **Technical excellence** – and good design continuously strived towards
10. **Simplicity** – to reduce waste and maximise the amount of work not done
11. **Self-organizing teams** – for generating the best quality outputs
12. **Regular reflection and adaptation** – to become more effective

# Pareto and the 80/20 rule

A man named Pareto first made this observation of uneven distribution, seen throughout the natural world.

## Did you know...

- » 20% of the global population **control 80% of its wealth**
- » 20% of a company's products **generate 80% of its income**
- » 20% of software bugs **generate 80% of software failures**

## Agile favours the idea that...

...delivery of the **most important 20%** of new product features usually **delivers around 80%** of the benefits.

# So what's new?

**Agile**      **Traditional**



## Management

Facilitates and ensures collaboration

Directs work and issues tasks

**Agile**      **Traditional**



## Features

Facilitates and ensures collaboration

Requirements fixed up front

**Agile**      **Traditional**



## Planning

Developers plan detail

Project manager plans detail

**Agile**      **Traditional**



## Changes

Add changes to features backlog

Pass requests through change control process

**Agile**      **Traditional**



## Lifecycle

Iterations, phases and releases

Sequential stages lead to go live

**Agile**      **Traditional**

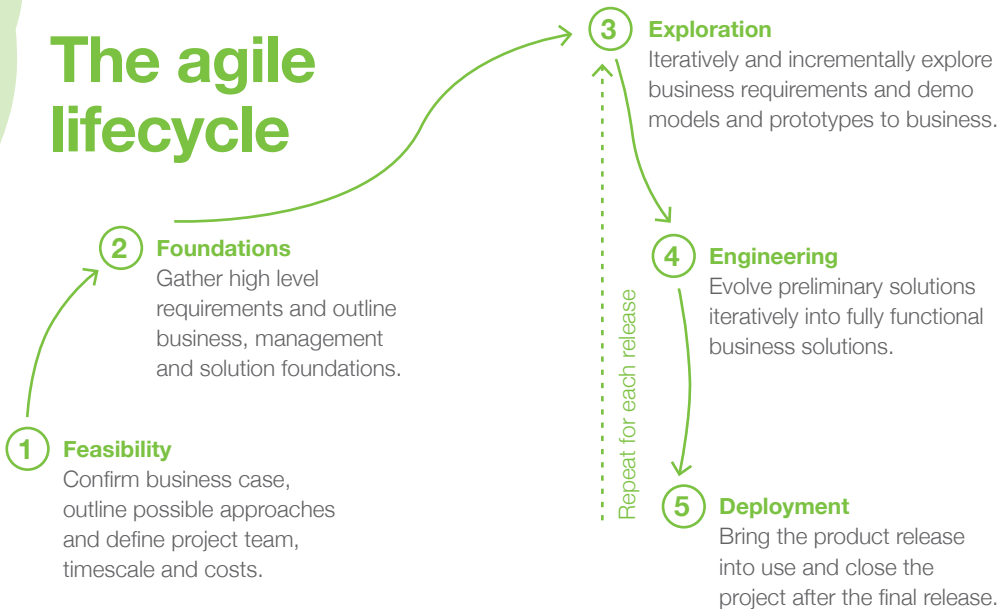


## Reporting

Iterations, phases and releases

Record activities completed against Gantt chart

# The agile lifecycle



↑ Pre-Project Phase

# Why do agile?

- » Prototypes, demos and flexible requirements...  
...combat the 'don't know what they want' problem
- » Continuous business collaboration...  
...builds acceptance of final products and ensures fit to business needs
- » The iterative approach...  
...delivers a simple, quality product more quickly and removes upfront overheads
- » Self-organisation and customer interaction...  
...empowers and motivates developers
- » Simple progress measures...  
...are easy for everyone to communicate and understand



We don't need  
an accurate  
document.

We need  
a shared  
understanding. ”

Jeff Patton

The image features a solid orange background. On the left side, there is a white circle containing the number '4'. To the right of the circle, two white arrows originate from a point, cross each other, and then point towards the right. The top arrow curves upwards and then right, while the bottom arrow curves downwards and then right. The text 'The best of the rest!' is positioned to the right of the arrows.

**4**

**The best of  
the rest!**

# The rest

**Waterfall and agile are the champions of methodology, but there are lots of other contenders and conspirators too.**

Some hone in on specific methodology components – lifecycle, team interactions or development – or represent a specific core value.

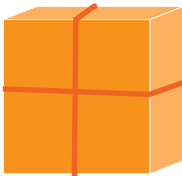
Lets take a whistle stop tour through...

- » DSDM
- » Scrum
- » Extreme Programming
- » Lean Development
- » Spiral
- » Critical Chain



# Dynamic Systems Development Model

DSDM is the most fully defined agile framework – a project lifecycle, team management approach and development methodology neatly wrapped into one package.

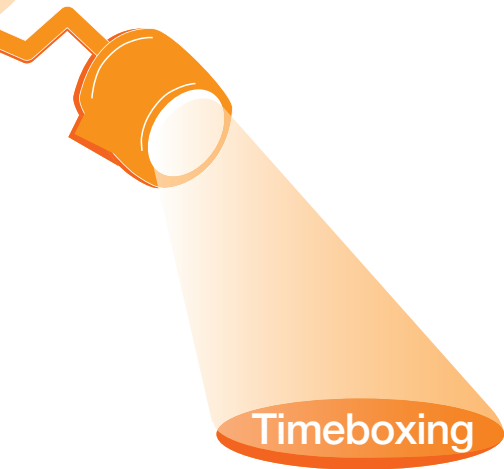


It is guided by similar principles to agile...

- » focus on business need
- » deliver on time
- » collaborate
- » never compromise on quality
- » build incrementally
- » develop iteratively
- » communicate continuously
- » demonstrate control

...and follows an iterative and incremental lifecycle, just like agile.

# Technique Spotlight:



## What?

Breaking up time into short periods during which a team works towards a goal.

## How?

Requirements of different priorities are assigned to a timebox for investigation and development. Low priority requirements act as contingency because they can be dropped if necessary to protect a deadline.

## Why?

Timeboxing focusses a team on specific short-term objectives and values delivery on time, every time.



Nothing is particularly hard if you divide it into small jobs. ”

Henry Ford

# Scrum

This is an iterative, incremental framework focused on cross-functional teams, a bit like rugby teams.

It embraces agile values and an experiential learning cycle:



## Rules of the game

- » A prioritised product backlog is the full list of requirements.
- » A sprint is an agreed amount of time to complete some work (e.g. two weeks).
- » A scrum team skims the top layer from the backlog to create a sprint backlog.
- » The team holds a daily scrum or meeting to assess progress.
- » The team delivers the features in the sprint backlog by the end of the sprint.
- » The team reviews the sprint and begins the next.

# Extreme Programming (XP)

A software development methodology that prizes customer satisfaction, aiming to deliver simple solutions as they are needed.

XP uses the timeboxing technique to break down work into small parts. A self-organising development team select tasks to each work on.

XP is all about continuously receiving feedback and responding to it quickly.



Pair programming, unit testing and daily stand up meetings act as particularly immediate feedback loops.



Measuring  
programming  
progress by  
lines of code...

...is like measuring  
aircraft building  
progress by weight.



Bill Gates

# Lean Software Development

Lean methodology was born out of Toyota manufacturing plants in Japan. It is all about eliminating waste.

The basics of lean philosophy are...

1. Eliminate waste
2. Amplify learning
3. Decide as late as possible
4. Deliver as fast as possible
5. Empower the team
6. Build integrity in
7. See the whole

What does project waste look like?

Waste is anything that does not create value for the customer.

- » Unnecessary code and functionality
- » Time delays
- » Unclear requirements
- » Insufficient testing
- » Bureaucracy
- » Slow communications



# Technique Spotlight:



Kanban is a technique for visualizing the software production line.

Use sticky notes to make a Kanban board that shows what different resources are working on.

Can you see the bottleneck in this Kanban board? If so, you can add resources to increase the flow of production.





# Spiral

The spiral methodology is a lifecycle framework for incremental software development.

It places emphasis on understanding and eliminating risks.

A project kicks off with the first spiral, and each spiral represents an iteration.



# Critical chain

This approach is about acknowledging and addressing the fact that project resources are only human.

It argues 30% of lost time on projects is typically due to wasteful behaviours:

- » poor multitasking
- » student syndrome (procrastinating)
- » lack of prioritisation

Critical chain plans tasks with ambitious time estimates, and with no contingency.

It collects the would-be contingency for each task into a buffer zone at the end of the project, or stages of the project.

Traditional project plan:



Critical chain project plan:



A lack of slack drives people to complete and hand off tasks as soon as possible, like a relay race... no multitasking, no procrastinating, no prioritising!

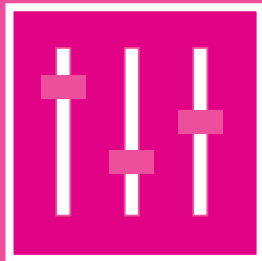


Don't let the want for perfection become procrastination. Every masterpiece that's ever been done, it could have been better.

Just launch and learn. ”

Danielle LaPorte

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**Mixing and  
matching**

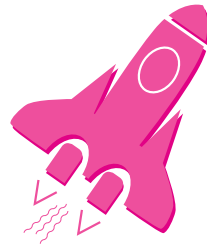
Many organisations choose to define their own methodology tailored to their business, rather than just take one off the shelf.

This way they can combine the best bits of different methodologies and reject the bits that don't work for them.

There are huge benefits to creating a methodology that is 'just right', so it's an activity worth investing in.

## Did you know...

NASA defines its own project management methodologies and continuously looks for new ideas in the field that could increase its success in space.



In 2003 it even set up the Center for Project Management Research to build learnings into its methodologies.

# Warning!



Mixing and matching is not without its dangers:

- » can strain interactions between teams using different methods
- » can create confusion over deadlines, deliverables and expectations
- » can exclude the use of project management software
- » can generate manual project information management work
- » can be difficult to report consistent or conventional metrics to senior stakeholders.



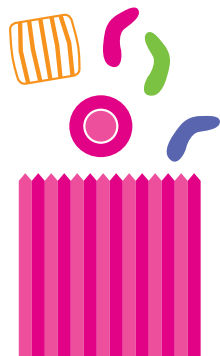
“

Create your own method. Don't depend slavishly on mine. Make up something that will work for you!

But keep breaking traditions, I beg you. ”

Constantin Stanislavski

# So what are the options? Where to begin!



The possibilities really are endless, and this is only a little book, so here's the low down on some popular pick-and-mixes.



# Agile + waterfall

Although agile and waterfall are always fundamentally different and sometimes actually polar opposites, mixing them isn't necessarily a definite no-go.

Taking the strongest components of both methodologies can resolve common problems experienced on projects, for example...



## Problem

Using agile for large solutions risks overlooking the design of system architecture, data and user experience at the outset and creates a messy landscape later on.

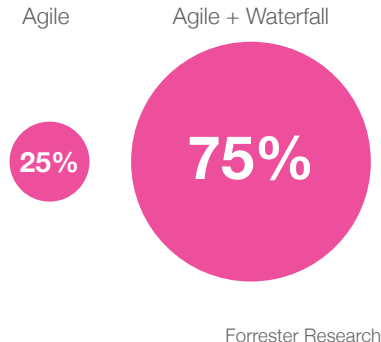


## Solution

Applying some of the structure of waterfall can clarify the architecture upfront, while the agile approach to development gives the benefit of rapid business feedback and early feature delivery.

In a recent survey of 150 agile adopters, 54% said they were using waterfall methods as well.

Applications developed with a combination of agile and waterfall methods scored higher on **robustness, security and changeability** than those developed using agile alone, 75% of the time.



# Waterfall + lean

The 'just-in-time' philosophy of lean and the 'plan and control' foundations of waterfall might not initially strike you as candidates for a long and happy marriage.

But what if one's strengths could cover the other's weakness spots?




## Problem

Different resource types feel the heat at different stages of the project – e.g. scope, design, build... which can create bottlenecks and delays.



## Solution

Use a Kanban to track workflows within each stage to understand how resource shifts could speed up that sign off. If business analyst resource is under pressure, ask what the development team could do to help.



“ Hell, there are  
no rules here

— we're trying  
to accomplish  
something. ”

Thomas A. Edison

# Agile + XP

XP and agile aren't so different, both believing in the value of iterative development and rapid feedback.



## Problem

XP methodology builds in multiple feedback loops to developers, to make sure the solution is of the highest quality for the customer. But why not try to get it right first time?



## Solution

Write requirements as user stories described from the customer's perspective, to empower developers with an understanding of why features are needed so they can build the best solution.

# Waterfall + scrum

Scrum focusses on people and interactions.

Waterfall focusses on process and documentation.

Combining elements of the two can be a great and easy-to-implement way to make your project an all-rounder.



## Problem

People are great communicators but unreliable. Documents are reliable but poor communicators.



## Solution

Maintain formal project documents to manage project and solution knowledge and hold a daily scrum (15 minute stand up meeting) among key stakeholders focussed on the here and now:


- » What did they do yesterday?
- » What will they do today?
- » What is impeding their progress?



6



**Choosing  
the right  
methodology**



So you're all  
clued up on  
methodologies now...

...but what's the  
right choice for  
your organisation?



# There are a variety of factors to consider...

Project type



Business sector



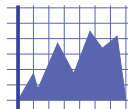
Organisational structure



Resource skills




Project management maturity



Culture





But even once  
you've accounted  
for the characteristics  
of your organisation...

...don't underestimate  
the benefits to  
be achieved by  
choosing the right  
approach for each  
individual project.






# When does agile suit my project?

In projects involving...

- ✓ Software development  
New product development
- ✓ Vague requirements at outset  
Frequent requirements changes
- ✓ A short timeline (< 1 year)
- ✓ Gradually enhanced features able to be used by the business
- ✓ A small team able to communicate face-to-face

# When should I avoid using agile?

Typically not best-suited in cases of...

-  Construction development  
Systems infrastructure change
-  Clear requirements at outset  
Requirements unlikely to change
-  A long timeline (> 1 year)
-  The business able to use only the final end product
-  A large or departmentalised team facing a communications burden.



Fit no stereotypes.  
Don't chase the latest  
management fads.


The situation dictates  
which approach best  
accomplishes the  
team's mission. ”

Colin Powell

# And, what about waterfall?

- ✓ An immature project management function can follow a simple plan
- ✓ Clear and fixed requirements with no ambiguity
- ✓ Resources likely to change and necessitate knowledge transfer
- ✓ A well-established core solution and implementation expertise
- ✓ Business resource only able to offer limited time

- ✗ A mature project management function can apply flexibility to deliver more efficiently
- ✗ Unclear requirements at the outset
- ✗ Consistent resources committed for the full lifecycle
- ✗ A creative, exploratory or industry-first solution
- ✗ Business resource available for active involvement and input



**So,** what's the most popular methodology in the business?

**A blended method**

(incorporating some waterfall and some agile) is the most frequently chosen across all types of businesses, with:

**43%**

saying it's the right choice for them.

Hammond J (2010)

7

# Glossary





# Glossary



## PRODUCT OWNER

A business representative responsible for communicating the business vision and for defining and prioritizing the project backlog

## SPRINT

A term used in scrum methodology to describe a time box of usually up to 30 days during which certain backlog items will be developed

## STAGE GATE

A review and decision point in a project lifecycle triggered by time or completion of a set of tasks, which marks the end of one stage and the beginning of another

## BURNDOWN CHART

A type of line graph that illustrates a project schedule by plotting work left to do on the vertical axis and time on the horizontal

## GANTT CHART

A type of bar chart that illustrates a project schedule by plotting start dates and finish dates of individual tasks

## SCRUM MASTER

A facilitator for a project team, responsible for guiding the team to agreements, removing obstacles, and protecting the team from distractions – but NOT responsible for outcomes achieved or decisions made

8



**Useful  
resources**

# Useful resources



## WEBSITES

- » [www.ninefeettall.com](http://www.ninefeettall.com)

## BOOKS

- » Carroll J (2012)  
Agile Project Management In Easy Steps,  
In Easy Steps Ltd
- » Davis B (2012)  
Agile Practices For Waterfall Projects,  
J Ross Publishing
- » Newton R (2007)  
Project Management Step By Step,  
Pearson Busine

## BLOGS

- » [www.ninefeettall.com/blog](http://www.ninefeettall.com/blog)
- » <https://www.apm.org.uk/blog>

## BEST PRACTICE

- » PRINCE2  
[www.apmg-international.com/en/qualifications/prince2/prince2.aspx](http://www.apmg-international.com/en/qualifications/prince2/prince2.aspx)
- » Agile PM  
[www.apmg-international.com/en/qualifications/agile-pm/agile-pm.aspx](http://www.apmg-international.com/en/qualifications/agile-pm/agile-pm.aspx)



**About  
NineFeetTall**



# About NineFeetTall

**NineFeetTall**  
are experts in  
business transformation

with proven experience of delivering  
complex change projects across  
multiple industries and sectors.

Each member of the team  
has a broad range of skills and  
knowledge brought together with  
a conviction and energy to deliver

measurable results  
for our clients.

# Contact us

We hope you have enjoyed our little book on this big subject.

If you would like to discuss your project management requirements, please get in touch:

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Don't forget we have other books in the series. Get in touch to receive your copy!



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