

Starting Out in Project Management

Starting Out in Project Management

Third edition

Association for Project Management

Association for Project Management
Ibis House, Regent Park
Summerleys Road, Princes Risborough
Buckinghamshire
HP27 9LE

© Association for Project Management 2018

First published 2004
Second edition 2007
Third edition 2018

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the express permission in writing of the Association for Project Management. Within the UK exceptions are allowed in respect of any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act, 1988, or in the case of reprographic reproduction in accordance with the terms of the licenses issued by the Copyright Licensing Agency. Enquiries concerning reproduction outside these terms and in other countries should be sent to the Rights Department, Association for Project Management at the address above.

The authors, Peter Simon and Ruth Murray-Webster, have asserted their moral right under the Copyright, Designs and Patents Act, 1988 and subsequent amendments to be identified as the authors of this work.

British Library Cataloguing in Publication Data is available.
Paperback ISBN: 978-1-903494-72-1
eISBN: 978-1-903494-73-8

Cover design by Fountainhead Creative Consultants
Typeset by RefineCatch Limited, Bungay, Suffolk
in 11/14pt Foundry Sans

Contents

List of figures	x
Foreword	xii
Preface	xiii
Fundamental features of project management	
Introduction	3
1 Project management	5
Projects and project management	5
What is a project?	5
Projects and business-as-usual	6
Project management	7
Project management processes	9
The relationship between time, cost and quality	11
2 Programme management and portfolio management	15
Programmes and portfolios	15
What is a programme and what is programme management?	15
What is a portfolio and what is portfolio management?	17
3 Organising for projects	19
The different roles and responsibilities required in the management of projects	19
Governance and sponsorship of projects	21
The project management office	21
Methods, processes and procedures	22
Organisation structures	22
4 Project life cycles	27
The project life cycle and project life cycle phases	27
The reasons for splitting projects into phases	28
Formal gate reviews	30
Other types of life cycle	32
Waterfall versus agile	33

Contents

5 Teamwork and leadership	35
Project team, teamwork, team building and team development	35
Leadership and the role of the leader	37
6 Conflict management and negotiation	41
What is conflict management?	41
How can the project manager manage conflict?	42
Negotiation in project management	43
The concept (idea) phase	
Introduction	49
7 Project context	51
PESTLE analysis	52
Legal requirements	53
Sustainability	54
8 Stakeholder engagement	55
Stakeholders	55
Stakeholder engagement	55
Stakeholder analysis	57
9 Requirements management	59
Requirements	59
Requirements management	59
Requirements management through the project life cycle	62
10 Communication	65
Communication and the contents of a communication plan	65
Barriers to communication	67
11 Project success	71
Outputs, outcomes and benefits	71
Project success criteria and key performance indicators (KPIs)	72
Benefits	74
Success factors	76
Organisational change management	78
12 Business case	79
Ownership of a business case	79
The purpose and content of the business case	80
Investment appraisal	81
Funding	82

The definition (planning) phase	
Introduction	87
13 Scope management	89
Decomposing scope into manageable chunks	91
Using a Responsibility Assignment Matrix (RAM)	92
Managing scope throughout the project	95
14 Quality management	97
What is quality and what is quality management?	97
The four elements of quality management	99
15 Health, safety, security and environmental (HSSE) management	103
Health and safety	104
Security	104
Environment	104
16 Risk management	107
Risks to project objectives	107
A typical project risk management process	110
The use of a risk log	112
Analysis of overall project risk	113
17 Estimating	115
The estimating funnel	115
Estimating methods	117
18 Scheduling	121
Key concepts in scheduling	121
Milestones	125
19 Resource management	129
Resource management/optimisation, resource smoothing and resource levelling	129
Resource critical path/critical chain	131
20 Procurement	135
Procurement	135
The purpose of a procurement strategy/plan	135
Supplier remuneration (paying suppliers)	138
21 Budgeting	141
Creating a budget	141
Cost contingency	142

Contents

22 The project management plan	145
What is the PMP?	145
Why have a PMP?	146
The development (execution) phase	
Introduction	151
23 Issue management	153
Issues and issue management	153
Issues and risks	153
24 Change control	157
Project change and the use of a change request	157
Change freeze	158
Project change control	159
The steps involved in a change control process and the use of the change log (register)	160
25 Configuration management	165
Configuration identification and configuration control	165
Why use configuration management?	167
26 Monitoring and control	169
Monitoring	169
Earned value management	171
Control	174
Cost control and cost management	174
27 Information management and reporting	177
Information management	177
Project reporting	178
The handover and closure (completion) phase	
Introduction	183
28 Handover and Closure	185
Handover	185
Closure	186
29 Post-project reviews and knowledge management	189
Conducting a post-project review	189
The importance of a post-project review	190
Knowledge management	192

Extended and product life cycle phases	
Introduction	195
30 Extended and product life cycle phases	197
Benefit realisation and measurement	197
Organisational change management	197
Benefits tracking	199
Benefits realisation reviews	199
Operations	199
Termination	200
Total cost of ownership	200
Glossary	201
Index	217

List of figures

1.1	Fundamentals of project management – overview	3
1.2	Projects and business-as-usual	7
1.3	Balancing managing and doing	8
1.4	Project management processes	10
1.5	The project manager's 'trilemma'	13
2.1	Programme spiral life cycle	16
2.2	A portfolio	18
3.1	Project organisational roles	20
3.2	Organisation structures	23
4.1	Project Children's Hospice (PCH) life cycle	29
4.2	Gate reviews provide confidence	31
4.3	Extended and product life cycles	32
5.1	The project team	36
5.2	Good project managers lead groups into becoming a team	38
6.1	Ways of managing conflict	42
6.2	A five-stage negotiation process	43
7.1	Concept (idea) phase – overview	49
7.2	Understanding project context	51
8.1	All stakeholders must be engaged	56
8.2	A stakeholder analysis tool (stakeholder cube)	58
9.1	Requirements management	60
10.1	Methods of communication	66
10.2	Communication Plan for PCH	68
11.1	Success criteria	73
11.2	Success criteria and benefits	75
11.3	Critical success factors	77
12.1	Purpose of the business case	79
12.2	Contents of the business case	81
13.1	Definition (planning) phase – overview	87
13.2	Project scope and objectives	90
13.3	Product breakdown structure/work breakdown structure (PBS/WBS) for PCH	93

List of figures

13.4	Responsibility assignment matrix for PCH	94
14.1	Fit for purpose	98
14.2	Elements of quality management	101
15.1	Health, safety, security and environmental (HSSE) in practice	103
16.1	Risks can be opportunities or threats	108
16.2	A project risk management process	111
16.3	A simple risk log for PCH	113
17.1	The estimating funnel	116
17.2	Different methods of estimating	118
17.3	A journey to work using a three-point estimate and the PERT formula	119
18.1	Network diagram for PCH	122
18.2	Gantt chart for PCH	123
18.3	Gantt chart showing total and free float for PCH	126
18.4	Milestone plan for PCH	128
19.1	Resource smoothing and levelling	131
19.2	Resource critical path or critical chain	133
20.1	Project procurement process	136
20.2	Ways of paying suppliers	138
21.1	Base costs plus contingency	142
22.1	Purpose and content of the project management plan (PMP)	145
22.2	Agreeing the PMP	146
23.1	Development (execution) phase – overview	152
23.2	Escalate to resolve issues	154
24.1	Many things lead to a change	158
24.2	If only we had used formal change control	159
24.3	A change control process	161
25.1	Configuration items	166
25.2	Configuration item status	167
26.1	Gantt chart showing progress for PCH	170
26.2	Example of earned value management – planned cost curve	172
26.3	Example of earned value management – with actual costs	173
26.4	Example of earned value management – earned value	173
27.1	Reporting project status	179
28.1	Handover and closure (completion) phase – overview	183
28.2	Project handover and closure	186
29.1	Post-project review	190
30.1	Organisational change management	198

Foreword

As a modern, professional body, we recognise the need to develop talent for the future by ensuring that the next generation of project manager is equipped with the core skills required and given clear guidance and support throughout their career journey.

Since its release in 2004 *Starting Out in Project Management* has built a deserved reputation as the 'go-to guide' for those new to project management. The text is easy-to-follow and the diagrams are easy-to-understand. In fact, it's an easy read from start to finish.

The latest edition builds on that success and is sure to reward anybody who is curious to learn more, for example, not just about the time, cost, quality triangle, but the project manager's trilemma in trying to balance them.

Starting Out is written as an introductory text, as a good general read, as a reference book – and as an enduring source of inspiration for any aspiring project manager.

Association for Project Management–
the chartered body for the project profession

January 2018

Preface

When we wrote the first edition of this book in 2003, our respective children Amy, Kirsty, Joel, Megan, Lois (Simon) and Josh and Helen (Murray-Webster) were all in either university or school (or pre-school) and project management was struggling to break out of its traditional roots and into the modern world of business and fast-moving organisational change. The second edition, published 10 years ago in 2007 was updated slightly, but progress in modernising project management was slow. We are delighted with the sales of that book and it is our privilege to be asked to write this third edition. What is really pleasing for us is to see project management coming of age as an essential, business-critical discipline, and a chartered profession. More amazing has been to watch our children and their partners move either directly or indirectly into the world of project management and put into practice the profession that has served us well and that we care so much about. It is with particular pride too that we can attribute the modernised figures for this edition to Josh Murray-Webster. Until the fourth edition . . .

Peter Simon
Ruth Murray-Webster

Fundamental features of project management

Introduction

In this section we discuss some of the main concepts that underpin **project management**. These include the recognition that **projects** are different from **business-as-usual**, and that alongside projects we have other mechanisms for delivering planned change called **programmes** and **portfolios**.

We will also discuss the key roles needed to ensure that projects are successfully delivered. These include the **sponsor** and **project manager** who work with the **project team** and with business users to deliver a project, **reporting** to a **steering group/committee**. We touch on the ways an organisation can set itself up to deliver projects, recognising that different arrangements suit different situations.

The idea of a **project life cycle** is the key differentiator between projects and business-as-usual. All projects follow a **life cycle** of some description, and we will outline the basic ideas of a project life cycle and of the **extended** and **product life cycles**.

Finally, projects are delivered by people and an ability to lead teams, negotiate and resolve conflicts is a vital skill, so we outline the basic elements of **teamwork**, leadership, conflict management and negotiation.

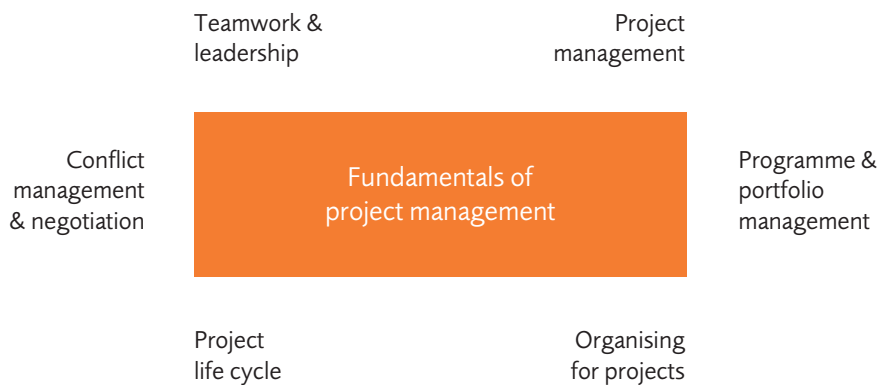


Figure 1.1 Fundamentals of project management – overview

1

Project management

Projects and project management

Projects and project management have been around for a very long time. Some of the iconic buildings and structures we all know were created over 5,000 years ago and it is clear that they could not have been constructed without a great deal of planning and organisation. However, the discipline of project management as we know it today has been around not nearly so long. Many argue that it is less than 50 years old (from the time of the North Sea oil boom and the first major nuclear power stations), while others suggest that it is more like 100 years. Henry Gantt of 'Gantt chart' fame published his book *Organizing for Work* in 1919. It doesn't really matter when it all started. What is important is that in today's fast-moving world the successful delivery of projects has never been more important.

What is a project?

At its simplest level the word project is used to describe activities that are done to meet specific **objectives** for change. Changes that are managed as projects can be amendments to things that already exist, or the introduction of new things. It can involve new products, new services, or improvement to existing products or services. Whatever the cause of the change and the nature of the project, the principles of project management always apply.

Even though project work involves doing new things, it still needs to be controlled, so that the specific objectives are met and the organisation actually gains the desired **benefits**. One way that this control is achieved is by setting targets or **constraints** for time, cost and **quality**. Some people and some organisations prefer to use the term performance rather than quality. For a 'starting out' book we can use the terms quality and performance interchangeably, both meaning that the project needs to meet defined stakeholder **requirements**. When we talk about **stakeholders** in project management, we mean the organisations or people who have an interest or role in the work, or are impacted by it.

Starting Out in Project Management

Project work is rarely ever done within a single part of an organisation, e.g. contained within one department or using a single specialist group. Project work cuts across traditional boundaries and requires people to come together temporarily to focus on achieving the specific project objectives. As a result, effective teamwork is central to projects.

Doing new things means that the project's **outputs, outcomes** and/or benefits can never be predicted with certainty. Uncertain situations are all around us, but the nature of project work means that there tends to be lots of uncertainty that might affect the project. For example, it is not possible to know with any degree of certainty how long it will take to create a new design; or to build something that uses new technology. Likewise, it is not possible to know if a team who have not worked together before will be effective, or whether a new product, e.g. a Formula One racing car, will perform until it is actually tested, or whether a new smart phone will sell in the numbers expected. The fact that projects are uncertain means that project managers need to clearly understand the underpinning **assumptions** being made by stakeholders, and actively manage risk throughout the life of the project.

All of the points made so far help define project work as distinct from other sorts of work. Most organisations will be able to separate those tasks that are done to maintain the business-as-usual or operational activities from those things that are done to introduce change, i.e. projects (and programmes).

Projects and business-as-usual

The main way in which projects are different from the routine business of work is associated with the uniqueness of projects. While routine work involves the repetition of processes in a way that gives consistency and reliability, project work involves doing new things, or modifying existing methods and practices. This means that project work, unlike business-as-usual, will always have a defined start and an end point, and a particular and unique scope of work to do between those points.

Taking all these considerations together, projects can be said to have the following features:

- unique endeavour with defined start and finish points
- undertaken to achieve specific objectives for change
- carried out within defined time, cost and quality constraints

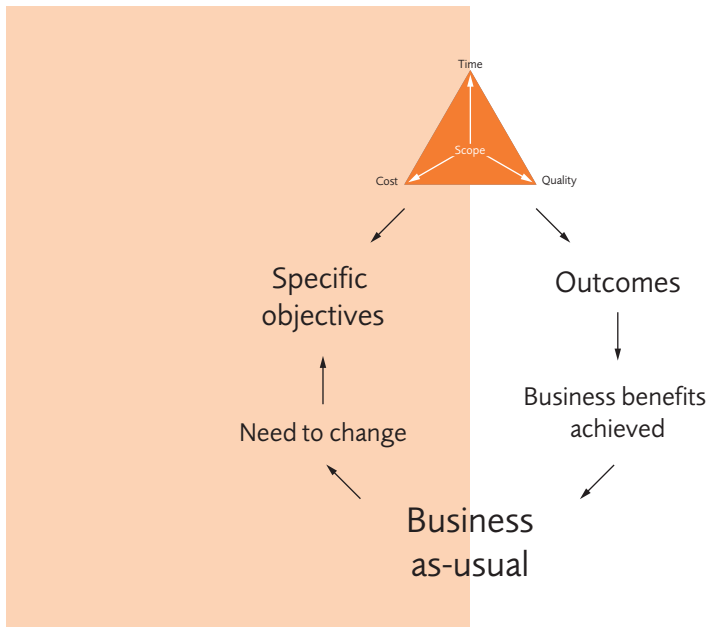


Figure 1.2 Projects and business-as-usual

- requires team-working across traditional departmental boundaries
- delivers outputs that enable outcomes to the business that are beneficial
- necessarily involves **risk** that needs to be managed.

Business-as-usual does not meet these criteria.

Project Children's Hospice (PCH)

You have been approached by a friend to be part of an initiative to raise funds for your local children's hospice. You work in the headquarters building of a company along with 500 other people. Your friend would like you to organise a fund-raising event to take place during normal working hours in exactly 10 weeks' time. This coincides with a number of other fundraising initiatives that will be happening for the same cause on the same day. Your initial objectives are to involve as many people as possible and to raise at least £10,000 for the charity.

Project management

If projects are used to introduce change, it follows that project management is primarily about organising and controlling the introduction of the desired change.

The words or phrases that tend to be used to describe project management include:

- understanding the needs and requirements of all the stakeholders
- planning what work needs to be done, when, by whom and to what standards
- building and motivating the team to achieve the planned work
- coordinating the work of a range of different people
- monitoring that the work is being done to plan (time, cost and quality/performance)
- taking action to keep the planned work on track, or to change the plan in a controlled way if that is the best way to achieve the change objectives
- delivering successful results (outputs, outcomes and/or benefits).

Project management should be a service to the organisation that is requesting the change, and is the process by which control is exerted over the project in order to achieve a desired end point.

Some projects have a dedicated project manager who takes responsibility for delivering the project objectives to time, cost and quality. Where this is the case

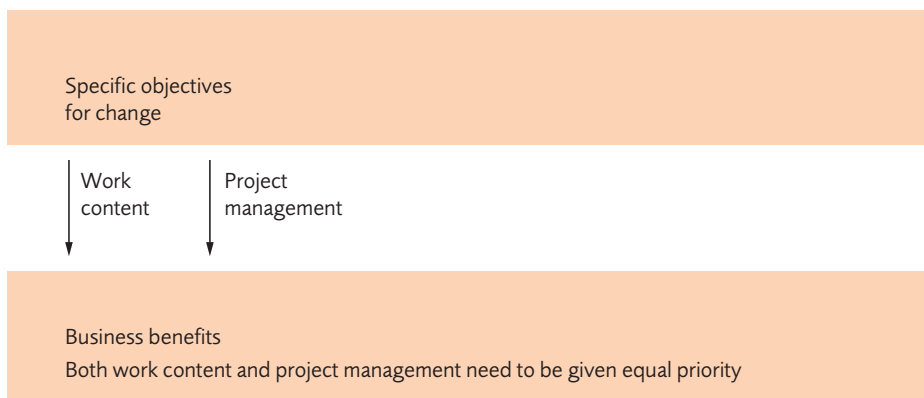


Figure 1.3 Balancing managing and doing

it will be easy to see that the work the project manager does is focused on the points in the bulleted list above.

Some projects have a project manager who additionally takes on the role of a technical specialist within the project team, e.g. a business analyst who is both managing the project to establish feasibility for a new computer system, and doing the business analysis themselves, or a manager of a hockey team who is both managing the organisation of a major tournament and playing in the tournament on the day.

When this happens – and it does all the time when projects are small or contained primarily within one part of the organisation – it is really important that the project manager focuses just as much on the *management* of the project as on *completing the work* that must be done for the project to be a success.

Project Children's Hospice (PCH)

You are the project manager for Project Children's Hospice (PCH). It is your responsibility to plan what needs to be done, making use of as many of the staff members as is practical. As you are an expert in communications management, you will probably design and carry out the communications element of the project yourself. It is clearly your responsibility to monitor the work as it progresses, as well as motivate and coordinate your project team.

Project management processes

Processes are things that turn inputs into outputs.

It follows, then, that **project management processes** turn inputs, including things such as user requirements or technical specifications, into those outputs that will achieve the specific change objectives, e.g. new products or services.

Project management processes include:

- a starting or initiating process that secures agreement to begin a portion of work
- a planning process that takes an input and turns it into a set of integrated plans against which to implement the project. As the project progresses there is

Starting Out in Project Management

invariably a need for a re-planning process to reflect project progress or changes in objectives

- a monitoring process that measures the progress of a project against its plan, whether it is ahead or behind **schedule**, over-spending or under-spending against **budget**, or delivering outputs that meet the desired performance or quality objectives
- a controlling process that reacts to the information gathered during monitoring, and enables decisions to be made to correct lateness, over-spending or poor quality
- a learning process that takes an input such as a finished project and turns it into a set of amended guidelines, processes and checklists for the next project
- a closing process that formally concludes a portion of work.

You will see a pattern among these processes. They are not specific to any particular project or any project **phase**; rather, they are the things that happen on all projects and in all phases of a project. They are the things concerned with project management in general, rather than any specific project.

The labels and terms used to describe a particular project process may vary. Sometimes it is easy to become confused between the labels given for project management processes and the labels given for the phases in a project life cycle. This will be explored further in Chapter 4, which deals specifically with the project life cycle.

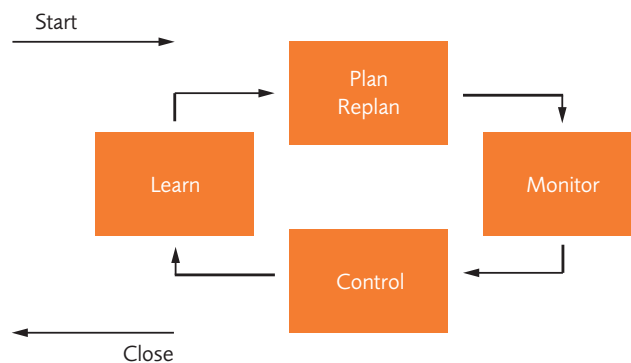


Figure 1.4 Project management processes

The fact is, theoretical terms rarely matter. What does matter in practice is that you not only understand the terms that are used in your organisation, but also that you can compare and contrast them with other terms used in published literature about project management as a means of understanding what your organisation does and why.

Project Children's Hospice (PCH)

Your project to raise money for the children's hospice charity is made up of four distinct phases: concept, definition, development and handover and closure. These phases make up the life cycle for your project.

To apply project management processes, each phase needs to be started, planned, monitored, controlled and closed, having learned any lessons for future projects.

PCH day will take place in exactly 10 weeks. This date is not moveable. You have talked to your boss who is the HR director. She supports the project and has agreed to act as sponsor but has introduced the following new constraints, within which you must manage the project:

- Whatever you do must not offend anyone.
- The whole project must not eat up more than 1,000 hours of work time for staff, including you.
- There should be no more than £500 of external expenditure.
- The company should get good press through local newspaper, radio and TV coverage.

The relationship between time, cost and quality

Time, cost and quality are the three attributes that are typically described as either objectives or constraints for any project. For example:

- The project must be completed by 31 December 2020.
- The project must not spend more than £500,000.
- The products and services created must meet specification X456.

Starting Out in Project Management

Sometimes these attributes are alternatively stated as schedule, budget and performance, but here we will refer to time, cost and quality. The relationship between these three attributes is at the heart of project management.

It is unlikely that any project could ever achieve objectives that are considered to be the quickest, the cheapest and the best, even though that is what we would all like. In fact, if a project has to be delivered to meet a challenging finish date, it is likely that it will cost the organisation more overall than if it had a more relaxed schedule. Likewise, if a project has to achieve a tight specification for quality, it will probably cost more or take longer than it would have if the quality requirements had been reduced.

Projects are intended to be planned taking the relative priorities of time, cost and quality into account at the start, but given the challenges of estimating and the inherent uncertainties within projects, it is perhaps no surprise that projects need to adjust over time and that (for example) projects involving public safety end up taking longer and costing more than originally planned because, during delivery, quality is given greater priority than time and cost. Similarly, projects that need to be completed by a certain date, perhaps building a new stadium for a planned sporting event, almost invariably cost more than planned and/or have a finished product that is to a lower specification than was originally conceived.

Projects are unique, and initial plans that reflect time, cost and quality objectives are, in reality, 'educated guesses' that need to be implemented in an uncertain world. In such a scenario, it is rare for the project to proceed exactly to plan. The more usual situation is that something happens that requires the project manager to make a 'trade-off' – to take more time to achieve the specification, to spend more money to hold the deadline, or to agree reduced quality in order to hold the time and cost plans.

Because such dilemmas typify project management, the triangular relationship between time, cost and quality is often called the 'iron triangle of project management' or the 'project manager's trilemma'.

Often the area inside the triangle is said to represent the project **scope**, i.e. all the work that has to be done to achieve the time, cost and quality objectives. This is clearly another attribute of the project that can be varied as long as the project manager can be certain that an amended scope will still deliver the outcomes and benefits that the organisation requires from the change. A reduction in scope means that less work will be done, which then makes time and cost objectives more achievable. Sometimes there is a confusion between scope and quality. Scope defines the outputs of the project. Outputs are usually physical things, such as a document, a wall or a pump. Quality defines the grade or specification

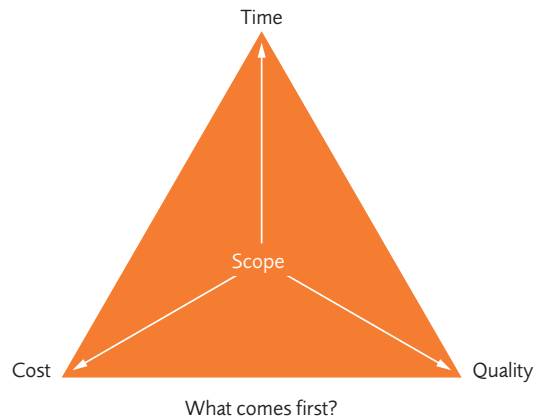


Figure 1.5 The project manager's trilemma

that the project outputs (the document, wall or pump in this example) need to be delivered to. Some parts of the scope (outputs) can be less tangible, such as changes in behaviour of staff. In this case defining quality can be more difficult but is still required.

It follows, then, that the most important thing for a project manager to understand when balancing the time, cost and quality objectives is the relative priority of objectives for the client organisation. Is it more important to finish on time, on budget or to the right quality?

Project Children's Hospice (PCH)

For Project Children's Hospice you understand the relative priorities to be: first, time, because the date is fixed; second, cost, because your boss has given you an effective maximum budget; and third, quality (in terms of positive awareness generated and funds raised), as no promises have been made to the national charity.