MANAGING CONSTRUCTION PROJECTS

Graham M. Winch

SECOND EDITION

WILEY-BLACKWELL

Managing Construction Projects

An Information Processing Approach

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An Information Processing Approach

Second Edition

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WILEY-BLACKWELL

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DEDICATION

This book is dedicated to the memory of Geoffrey Roy Winch,
engineer extraordinary, 1922–1999,
and to the love of Sandra Schmidt

It is a massive review of the art and science of the management of projects, which has the great virtue of being a good read wherever it is touched. It spills the dirt on things that went wrong, elucidates the history so that you can understand the industry's current stance, draws on other countries' experience and explains the latest management processes. Throughout it is liberally sprinkled with anecdotes and case histories which amply illustrate the do's and don'ts for practitioners wishing to deliver projects on time with expected quality and price. It is a valuable book for students and practitioners alike.

John D. Findlay
Director
Stent

This is a valuable source for practitioners and students. It covers the A–Z of project management in a confident contemporary manner and provides a powerful and much needed conceptual perspective in place of a purely prescriptive approach. The engaging presentation introduces a range of challenges to establishing thinking about project management, often by making comparisons between practices in the UK and those of other countries.

Peter Lansley
Professor of Construction Management
University of Reading

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Preface to 1st Edition

The management of construction projects is a problem in information, or rather, a problem in the lack of information required for decision-making. In order to keep the project rolling, decisions have to be made before all the information required for the decision is available. Decision-making in construction is, therefore, about robust decisions, rather than optimal decisions. This paradox is at the heart of the book, which explores the high-grade project management skills required to manage under uncertainty. The book does not provide easy answers, but ways of thinking about challenging problems. Construction project management is not easy otherwise we would have solved the problems by now, but it can be done better. This book draws extensively from practice in other industries to show how it can be done better.

The book is intended for those practitioners – let us call them reflective practitioners – who wish to develop their capabilities to manage the whole rather than the parts, and for those students on masters' courses who are being trained in those capabilities. Drawing on a wide range of research, it does not summarise received wisdom, but proposes new ways of thinking about managing construction projects better. Its basic assertion is that we have to treat the management of construction projects as a holistic discipline, managing from inception to completion, rather than a set of fragmented professional domains. It is this vision of an integrated construction project management that the book attempts to define.

If construction project management is a problem in information, what is the role of information and communication technology (ICT)? The answer is simple – it is central. ICT pervades this book. Although only one chapter is explicitly devoted to the topic, there are continual references to the role of the new, distributed, generation of ICT in the management of construction projects.

The argument is supported throughout by vignettes, and case studies complement each chapter. These are not intended to show only good or bad practice, but to illustrate the argument and stimulate reflection. Those using the book for teaching will be able to use them as teaching cases. A full version

of the Channel Fixed Link case study is available from the Blackwell website http://www.blackwellpublishing.com/winch, together with a complete set of lectures and associated graphics.

The book has been long in the making, and draws on a wide range of intellectual sources read over some 30 years. It might be helpful for the reader to identify some of the key influences here, for they are very much embedded in the text but without them this book could not have been written. The main ones are, in order of reading, are as follows:

- Peter Berger and Thomas Luckmann, *The Social Construction of Reality*. The first text – before the rise of Anthony Giddens – to articulate the dynamic dialectic between structure and process.
- Jay Galbraith, *Organization Design*. The source of the idea of organisations as information processing systems.
- Oliver Williamson, *Markets and Hierarchies*. The founding work of transaction cost economics, and hence the leading theory of inter-firm relations.
- Marian Bowley, *The British Building Industry*. Written about 40 years ago, much of the analysis of the construction industry as system is as relevant today as it ever was.
- Peter Morris, *The Management of Projects*. The first project management text to raise the discipline out of the tool box and into the boardroom as a strategic discipline.

In preparation for the writing of this text, a review of the project management literature (Winch, 2000a) identified five generic project management processes:

- Defining the project mission
- Mobilising the resource base
- Riding the project life cycle
- Leading the project coalition
- Maintaining the resource base.

The first four of these provide the overall structure of the book. Constraints of space and time mean that the fifth could not be addressed here. Readers seeking insights into this last process should refer to David Gann (2000) on construction innovation, and Jan Druker and Geoff White (1996) on human resource management in construction.

The range of acknowledgement that this book requires is vast, and I can only be selective here. First and foremost, thanks must go to Graham Ive who first encapsulated the approach taken here that project management is a problem in information, and who inspired the writing of the book in the first

place. Second, thanks go to the students on the MSc Construction Economics and Management at The Bartlett, University College London, who have had these ideas tried out on them over the past 10 years, and have contributed some of the case material. In particular, the contribution of the 2000/1 cohort who participated in a feedback seminar on version 1 of the book is warmly thanked. The 2001/2 cohorts on the MSc Engineering Project Management and fourth year MEng Civil Engineering at the Manchester Centre for Civil and Construction Engineering at UMIST worked with version 3 and allowed the argument and graphics to be fine-tuned. The approach of this book is different from the UMIST tradition in project management – represented by Roy Pilcher, Nigel Smith, Peter Thompson, Stephen Wearne and others – but it is, I hope, complementary.

Third, thanks go to the bodies which have funded the research over the past 10 years, which has allowed particular aspects of the argument to be explored. These include the Economic and Social Research Council, The Leverhulme Trust, Plan Construction et Architecture and, most notably, the Engineering and Physical Sciences Research Council (EPSRC). As researchers, Aalia Usmani, Naomi Clifton, Andrew Edkins, Bríd Carr, Steve North and John Kelsey have contributed to this book more than they probably appreciate. In particular, the book draws in a variety of ways on material developed by the EPSRC funded VIRCON project, a four-university collaboration of Teesside (Nash Dawood), University College London (Alan Penn), UMIST and Wolverhampton (Lamine Mahdjoubi). I am especially grateful to Nash Dawood and the team from Teesside for the data on, and images of, the Centuria Building.

The first draft of Chapter 14 was prepared while the author was Velux Visiting Professor at the Department of Civil Engineering, The Technical University of Denmark. Thanks go to Sten Bonke and Axel Gaarslov for their hospitality, and to Rob Howard and Christian Koch for their help in the development of the chapter. Steve North read version 3 of the chapter in detail and mitigated some of my misunderstandings of the issues. He, together with John Kelsey, was also enormously helpful in the development of Cases 10 and 11. In particular, John Kelsey grappled with the details of the critical chain methodology, giving the argument a robustness that would otherwise be missing. He also read and commented on version 2 of Chapters 10 and 11 in their entirety. Ghassan Aouad and Ming Sun of Salford University willingly provided materials for figures in Chapter 14. I am especially grateful to Peter Morris, who read and commented on the whole of version 2. Pam Hyde, administrator of the Project Management Division of the Manchester Centre, helped with the final production of version 4. None of these, of course, bears any responsibility for the argument in the text of the book.

Finally, warmest thanks go to Shilpi Kawar who acted as editorial assistant on the book, handling permissions and processing the text for printing, as well as drawing all the diagrams and researching some of the vignettes, mainly for Chapter 4.

The images that illustrate this book are of the various stages in the project life cycle of one of the more remarkable millennium projects in the UK – the Millennium Bridge, which links St Paul's Cathedral in the City of London to the Tate Modern Museum in Southwark. The vision of a *Financial Times* journalist, the bridge opened to the public in 2002, after a false start during 2000 when it had to be closed on its day of opening due to excessive lateral movement. It provides a wonderful example of the excitement and challenges of managing construction projects where the project mission is both to push the technological envelope and to make a major contribution to urban culture. Despite these problems, the bridge has already won a place in the affections of Londoners, and will doubtless go on to become a major landmark for London and its people. Further information is available in Deyan Sudjic's book, *Blade of Light: the Story of the Millennium Bridge.*

Graham M. Winch
Manchester

Preface to 2nd Edition

> In the wide ocean upon which we venture, the possible ways and directions are many; and the same studies which have served for this work might easily, in other hands, not only receive a wholly different treatment and application, but also lead to essentially different conclusions. Such indeed is the importance of the subject that it still calls for fresh investigation, and may be studied with advantage from the most varied points of view. Meanwhile we are content if a patient hearing is granted us, and if this book be taken and judged as a whole.

Jacob Burckhardt (1990, p. 19) thus introduced his distinctive perspective on the Italian Renaissance in 1860, suggesting that complex phenomena are best investigated using multiple perspectives. This second edition develops the information processing perspective introduced in the first as a distinctive contribution to the available perspectives on managing construction projects. The information processing perspective cannot claim to be comprehensive, but we do suggest that it is a worthy way of venturing on that wide ocean. In particular, the information processing perspective deepens understanding of the dynamics of the construction project process through life from the value proposition inherent in the project mission to the functioning asset generating that value for its owners and users.

The information processing perspective has been developed through three main influences since 2002.

- A move to Manchester Business School (MBS) within the new University of Manchester formed in 2004 from UMIST and the old Victoria University of Manchester. This created opportunities and incentives to read different literatures, attend different conferences and teach students with a broader perspective on managing projects than would be found within an engineering or built environment school. This edition is more clearly about the business of managing construction projects than the first, reflecting the needs of students on MBS' MBA for Construction Executives.
- The criticisms made by a number of researchers of the first edition. These are identified explicitly in Chapter 1, and addressed – hopefully adequately –

throughout the text. Here we reiterate Burckhardt's plea that the book be read as a whole, rather than criticised piecemeal.

- Research developing a more cognitive understanding of managerial information processing drawing on the work of Karl Weick (1995) and Alfred Schutz (1967) in collaboration with Eunice Maytorena on managing risk and uncertainty, and Kristian Kreiner on future perfect organizing respectively.

The text has been updated throughout to refer to current standards and practice in the industry, as well as the latest research findings. I am particularly grateful to Ghassan Aouad of Salford University and Martin Riese of Ghery Technologies for their help with the revisions to Chapter 14. One important systematic change throughout is to refer to 'schedule' rather than 'programme' in construction project planning. The two reasons are that, first, 'programme' in some countries (e.g. USA and France) refers to the brief and not the project plan and, second, it avoids confusion in relation to the concept of 'programme management' introduced in Chapter 15.

Interactions are always very important in the development of ideas, and I would particularly like to thank the members of the Managing Projects group of the Business Systems Division of MBS (Nuno Gil, David Lowe, Eunice Maytorena, Cliff Mitchell, Mike Pryce and Mark Winter) as well as the broader membership of the Centre for Research in the Management of Projects at MBS. Three years as a Visiting Professor (2006–2008) at the *Center for Ledelse i Byggeriet* (Centre for Management Studies of the Building Process) at Copenhagen Business School working with Professor Kristian Kreiner and his team have broadened my theoretical perspectives as well as helped me to appreciate the contribution of high-quality ethnographic research to understanding the construction project process. Of course, none of the above bears responsibility for the content of this edition.

As Burckhardt would have wished, the first edition has already provoked debate; I very much hope that the second edition will continue that debate as well as meet the needs of future cohorts of students of *Managing Construction Projects*. The images on the cover of this edition are of remarkable value generation – the Eden Project in Cornwall, UK. They show the architects' section of the geodesic roof structure (courtesy Grimshaw Architects) and a view of the completed biome (photo Ben Foster: courtesy of Eden Project), capturing the creation of these remarkable buildings through the life cycle from conception to completion. Further information on the project is given in Case 17 and a visit (http://www.edenproject.com) is heartily recommended for a sense of how the built environment can and should be created. Finally, I would like to add my enormous gratitude to Sandra for her diligence in preparing the final version of this text.

Graham M. Winch
Manchester

Part I

Introduction

Chapter 1

The Management of Construction Projects

1.1 Introduction

'Between the idea
And the reality. . . .
Between the conception
And the creation. . . .
Falls the Shadow'

One of the principal ways in which modern societies generate new value is through projects which create physical assets that can then be exploited to achieve social and economic ends – factories for manufacturing goods, offices and shops for delivering services, hospitals for health care and tunnels for transport. Societies even create assets that are exploited for largely symbolic purposes, such as opera houses and cathedrals. In a typical modern society, around half of all physical asset creation (fixed capital formation) is the responsibility of the construction industry, thereby generating around 10% of national wealth (gross domestic product). These figures are much higher for rapidly developing countries. The creation of these assets is the principal force in the dynamics of cities and change in the built environment and, therefore, one of the major sources of social and economic change. This book is about how such assets are created effectively and efficiently so that they meet the needs of the clients which make the investments, thereby providing a net gain to the economy and society for which they are created.

The creation of new values is not an easy mission – as the liberties taken with T.S. Eliot's *The Hollow Men* in the epigraph above are intended to capture. Many problems have to be solved between the initial idea for a new asset, through its realisation on site, to the client starting to exploit it. This book covers the whole of this process conceived as a progressive reduction of uncertainty through time. In other words, it argues that the problem of managing construction projects is principally a problem in the management of information and its progressive embodiment in a physical asset. As a director of a leading European construction

corporation puts it, 'HBG's core competence is the generation and management of information'[1]. The book will, thereby, shine a penetrating light into the shadow between the conception of a constructed asset and its physical creation.

The book is not aimed at any particular professional group within the construction industry; rather it is aimed at all those whose working lives are committed to the creation of constructed assets – at all professional groups. These include the representatives of the clients who provide the capital; the designers who turn ideas into specifications; the constructors who turn specifications into reality on site; as well as those who manage and regulate the overall process on behalf of the client and society. Creating new value through construction projects is an inherently collaborative process, and all have their specialist skills to deploy. The central premise of this book is that these specialisms can be deployed more effectively in the context of an understanding of the process as a whole. Thus, one of the most important measures of the success of this book will be the extent to which it helps in the creation of a common language for discussing the management of construction projects between different professional groups. The perspectives and terminology used in this book may be a little unfamiliar at times; this is because the book is deliberately written from a perspective of managing the entire project process, rather than the contribution of any one professional group to it.

More specifically, the objectives of this book remain unchanged for this edition:

- to provide a total project perspective on the management of construction projects from inception to completion;
- to apply business process analysis (BPA) to the management of projects;
- to define basic principles of construction project management which will allow readers to apply these principles to their particular management problems;
- to review and synthesise the large number of different tools and techniques proposed for improving construction performance, from risk management and value management, through to supply chain management and quality assurance;
- to place the use of information and communication technologies (ICTs) at the heart of the construction project management process.

In achieving these objectives, the book will provide a holistic perspective that will allow practitioners and more advanced students to place their particular specialisms – be it risk management, design management or site management – in the broader context of the project process as a whole. The sheer variety of proposed ways of improving the performance of the construction process can be daunting, even for the most enthusiastic practitioner. By placing all these different initiatives in the context of the entire project process, and by articulating basic principles of good management rather than the latest fads, this book will provide help in sorting good practice from fashionable practice. As such, it aims to facilitate the development of the evidence-based management of construction projects which 'first and foremost, is a way of seeing the world and thinking about the craft of management; it proceeds from the premise that using better, deeper logic and employing facts, to the extent possible, permits leaders to do their jobs more effectively'[2].

1.2 Projects as the creation of new value

All modern societies and economies are dynamic – the only certainty is change. Many of these changes are the result of unforeseen interactions of complex forces, but societies also change through deliberate action, and one of the most important forms of deliberate action is to invest in physical assets which can then be exploited to provide the goods, services and symbols that society needs. Governments invest in schools to provide education services and in bridges to provide transport services; firms invest in shops to provide retail services and in houses to provide homes. Investments are also made in redundant quarries to create an inspirational ecological experience as at the Eden Project in Cornwall (which we shall revisit in Case 17) or a five-star hotel as at 松江區 (Songjiang) near Shanghai or on a smaller scale as a theatre at Dalhalla, Rättvik, Sweden. Investments are made to transform coastlines such as the Delta and Zuidersee projects in The Netherlands which created millions of hectares of farmland and the extensive marine works to 'help solve Dubai's beach shortage' in Nakheel's three Palm and The World developments – The World alone adds 232 km to Dubai's coastline[3]. Cities change as shops are refurbished and new metros are built. Increasingly, these investments are made by partnerships of the public and private sectors. What all these investments have in common – whether directly for profit or not – is that they create something where there was nothing, create new assets to be exploited for private benefit and public good. It is in this sense that construction projects are about the creation of new value in society.

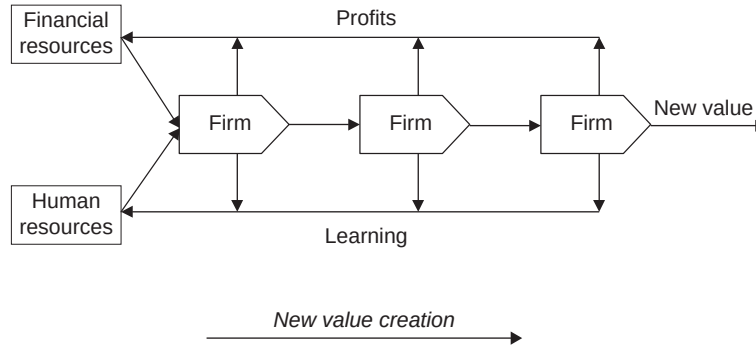

Fig. 1.1 Construction projects as the creation of new value.

This process forms a 'value system'[4] as illustrated in Fig. 1.1; how projects add value for clients through the value system will be explored in more detail in Chapter 3. The fundamental inputs to the process are capital and human resources – capital resources to cover the costs of investment; human resources to transform ideas into reality. The return on capital from the process is the profits taken out of the process by the participating firms. The return on human resources is the learning that takes place as problems are solved through the project life cycle. The effective achievement of both of these returns on the resources deployed in the creation of constructed assets is problematic – construction firms have low profitability compared to other

sectors, and learning often stays with the individual, rather than being captured by the firm. As will be explored in Part IV, these two problems are linked.

1.3 The project as an information processing system

All organisations are, in essence, information processing systems[5]. In order to function they must monitor their environment, take decisions, communicate their intentions and ensure that what they intended to happen does happen. In manufacturing organisations, these information flows generate and control flows of materials as well, but many service organisations are purely devoted to managing flows of information. Information flows are the heart of the business process in all organisations. These information flows are directed and enabled by the structure of the organisation, and the problem of management is the problem of continually shaping processes by manipulating the structure – what has been called the tectonic approach to organisation[6].

The analogy of a river is useful here. What is of interest in a river is the flow of water, which irrigates crops, provides a transport route, enables the generation of hydroelectric power and is a source of leisure and repose. Yet it is through altering the banks that we shape the flow – dams and weirs create lakes and power; dykes and canals control direction; docks and locks facilitate transport; bridges and tunnels mitigate the downside of the river as a barrier. At the same time, the action of the water erodes banks, weakens riverine structures and silts navigation channels. The process – the flow of water – cannot be directly managed; we have to manage the context in which it flows, but those flows also change the ways in which we manage. The same, I suggest, applies to organisations and their flows of information, and much of this book will be about how we manage the project process through managing the organisational structure of projects, and how the project process in turn shapes those organisational structures.

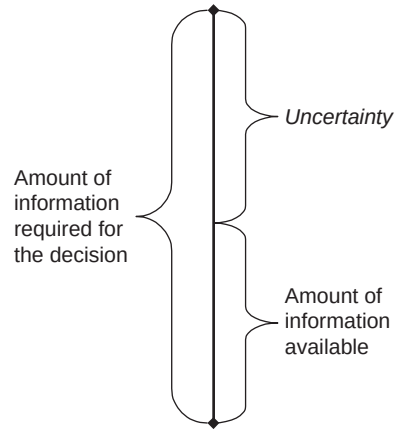

Fig. 1.2 The definition of uncertainty (source: developed from Galbraith, 1977, Fig. 3.1).

The fundamental problem in the management of information is uncertainty; in other words, the lack of all the information required to take a decision at a given time. Figure 1.2 illustrates Jay Galbraith's definition of uncertainty as the difference between the information required for a decision and the information available. This uncertainty has two sources:

- *Complexity*, or the condition where the information is, in principle, available, but it is too costly or time-consuming to collect and analyse;
- *Predictability*, or the condition where the past is not a reliable guide to the future – the future is, by definition, unknowable, but past experience is a valuable, if not infallible, guide to the future in many situations.

The challenge of managing projects in the context of uncertainty is the central theme of this book, while we will focus explicitly on the cognitive issues this poses in Chapter 13.

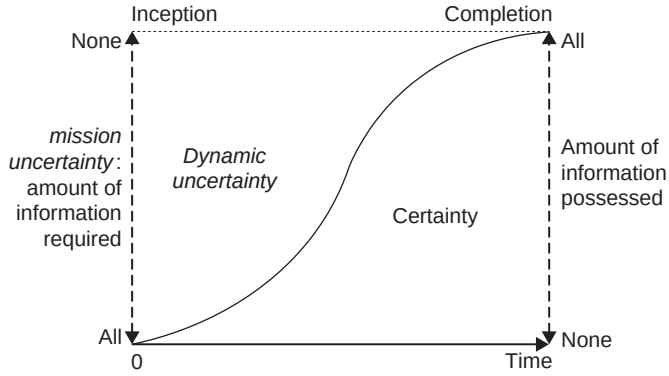

Fig. 1.3 The project process as the dynamic reduction of uncertainty through time (source: developed from Winch *et al.*, 1998).

At the inception stages of a construction project, uncertainty is very high – the asset of the future is little more than an idea and possibly a few sketches. How high depends upon a number of factors such as the extent to which the asset is a copy of the ones existing; the extent to which standardised components and solutions can be used; and the extent of the requirement for new technologies to solve the particular problems posed by the project. This may be thought of as the level of *mission uncertainty* inherent in the project. As the project moves through the life cycle, uncertainty is reduced as more information becomes available – ambiguities in design are resolved; geotechnic surveys are completed; regulatory approval is obtained; component suppliers provide their shop drawings; and contractors successfully complete their tasks. The level of uncertainty at a particular point in the project life cycle relative to earlier and later points in the project life cycle may be thought of as the level of *dynamic uncertainty* on the project. This framework

is illustrated in Fig. 1.3, which shows how uncertainty is progressively reduced through time, and how certainty increases until all the information required for the project is available at completion and embodied in the asset created. The area to the left of the S-curve represents information still to be acquired, that is uncertainty; that to the right represents what is known, that is certainty.

1.4 Project management and the management of projects

Construction projects have been 'managed' since time immemorial. Traditionally, this was the responsibility of the 'master of the works' – a concept retained in the modern French *maître d'œuvre* – but the emergence of a concept of 'project management' is a phenomenon of the nineteenth century[7]. Project management emerged as industrial societies started to build complex systems such as rail and power networks. This concept was adopted by the US aircraft industry in the 1920s, came to maturity in the US defence programme in the 1950s and gained international attention with the space programme in the 1960s. Project management is essentially an organisational innovation – the identification of a team responsible for ensuring the effective delivery of the project mission for the client. However, it has become associated with a particular set of tools and techniques – most notably critical path analysis – which has stunted its development. As the concepts of project management diffused to the construction industry from the 1960s onwards, it was this toolbox, rather than the broader management concept, which was adopted[8].

Peter Morris (1994) argues strongly that project management is about the total process, not just about realising a specification to time, cost and quality. For this reason, he distinguishes the 'management of projects' as a strategic approach from 'project management' as a toolbox approach to delivering the project mission. This book adopts Morris' perspective and argues for a holistic approach to managing the construction project. Effective management tools are vital – and will be discussed in detail in Part IV – but they are no substitute for a strategic overview of the process of realising a constructed asset, and skills in managing the disparate stakeholders in the project. However, this book is not just about the activities of the designated project management team, but about all those who are responsible for ensuring that the project mission is achieved – including project architects, site supervisors and contracts managers as well as client representatives. To be effective, the principles of the management of projects need to infuse the project process – construction project managers cannot operate effectively as an external add-on harrying those responsible for actually adding value.

1.5 Projects and resource bases

Construction projects mobilise capital and human resources. The capital that finances the process comes from the client and its financiers. The human resources that enable the progressive reduction of uncertainty through time are supplied

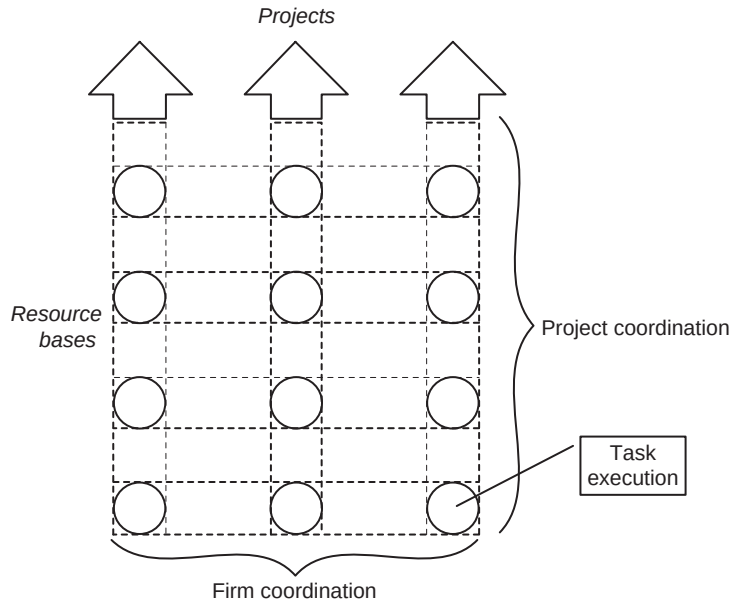

Fig. 1.4 Project organisation as a coalition of resource bases and a portfolio of projects (source: developed from Fellows *et al.*, 1983, Fig. 1.1).

by the firms on the supply side of the construction industry, which act as skill containers[9] for these resources. Resources of equipment are also typically supplied by firms in the construction industry. Components and materials are usually supplied by firms outside the construction industry, although some construction firms are vertically integrated backwards into frequently used sources of components such as prefabricated concrete elements and materials such as aggregates. Our focus here will be on the mobilisation of human resources and specialist equipment.

Firms are different from projects – projects are temporary organisations with no autonomous capability; they rely entirely on mobilising the resources supplied by clients and the firms in the construction industry for their existence. Each project requires a large number of different types of human and equipment resources which are held by the firms on the supply side; we can think of these as the *resource bases* of the construction industry. It is with these resource bases that the continuing capacity to create constructed assets lies. These groupings of resource bases are often called the project team. However, as will be explored in Part V, the number of people involved is, in practice, too large to be meaningfully called a team. Moreover, as will become clear – particularly in Parts II and III – all these different resource bases have different interests. We can more usefully think of these groupings of resource bases mobilised on the project as the *project coalition* which comes together around shared objectives so that each member can meet its individual objectives. One of the main reasons why interests differ is

that most resource bases will be supplying resources to more than one project at once, and can find themselves juggling resources between projects. We can, therefore, most usefully think of projects as coalitions of resource bases co-ordinated by the project management team, indicated by the vertical dimension in Fig. 1.4, and firms as participating in portfolios of projects co-ordinated by the resource-base firm, indicated by the horizontal dimension, with project and firm meeting through task execution.

1.6 The five generic project processes

Business process analysis has become increasingly influential in a number of industries – both in the re-engineering of business processes to maximise the benefits of ICT systems and in the diffusion of lean thinking. Conceptually, there are important links between the notion of the management of projects as the management of the entire project life cycle and the development of BPA. This is clear from Thomas Davenport's formulation of a business process as 'a specific ordering of work activities across time and place, with a beginning, and end, and clearly identified inputs and outputs: a structure for action'[10], and James Womack and Dan Jones' argument[11] that the emergence of project management foreshadowed their own concepts of lean thinking. The concepts behind BPA and lean thinking are central to the agenda for change set out in the UK Construction Task Force's report, on *Rethinking Construction* – colloquially known as the Egan Report. We will revisit these themes in the conclusions, showing how they have evolved into the *revaluing construction* agenda.

The approach adopted here to identifying the principal project process is that of BT[12] which identified five first-order processes (Manage the Business; Manage People and Work; Serve the Customer; Run the Network; and Support the Business). Within these five, some 15 second-order business processes were identified. The structure of this book will draw upon a review of the body of empirical studies on the management of projects across the full range of project-orientated industries which identified five first-order project processes[13] – defining the project mission; mobilising the resource base; riding the project life cycle; leading the project coalition; and maintaining the resource base. Within these five, a larger number of more focused business processes such as risk management, supply chain management and quality management will then be explored.

1.7 Critiques of the first edition

The first edition of this text was generally well received – which is why you are reading the second one now – but it did attract a number of criticisms which we will try to address in this section.

Stuart Green has argued that the attempt to place the analysis of the process of managing projects in its institutional context is welcome, but also argue that the institutionalism deployed in the book is more 'old' than 'new' in that it is

structurally deterministic. Green then goes on to suggest that 'there is seemingly little recognition of the role of discourse in the shaping of self-identities that lead to action, and how such streams of action combine over time to reshape context'[14]. Green's principal influences in this argument are Giddens, and Powell and DiMaggio[15]. Green is correct to point out that the argument in the book does not explicitly rely upon Gidden's structuration theory; however, the discussion of the 'tectonic approach' on page 6 shows that it is rooted in Gidden's work and articulates the same[16] dialectic of structure and process that Green advocates. The metaphor of the river in section 1.3 has been developed to make this point clearer and the overall approach is captured in the *tectonic approach* presented in Fig. 1.5. Green's advocacy of a discourse approach, we would suggest, is compatible with a tectonic approach, save in one crucial respect. This is the tendency, well displayed in the empirical section of Green's chapter, to focus only on process while ignoring outcomes, a weakness shared by much constructivist analysis[17].

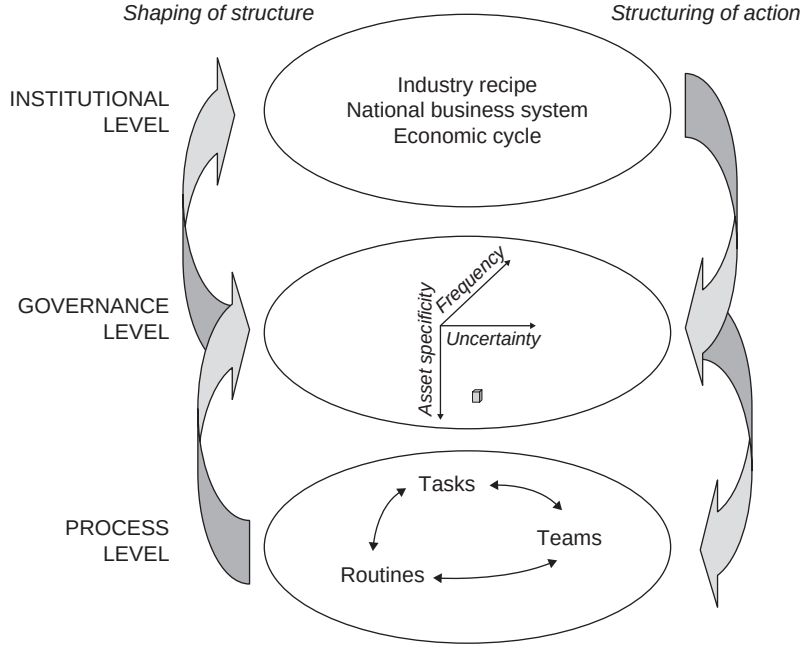

Fig. 1.5 The tectonic approach (source: developed from Winch, 2006a, Fig. 14.2).

Mark Winter and Tony Szczepanek[18] argued that the perspective on projects as the creation of new value is compromised by its reliance on Porter's concept of a value chain. Winter and Szczepanek prefer to draw on the work of Normann[19] who emphasises the co-creation of value between customer and supplier, and argue for a concept of a project as a 'value creation process'. This criticism would appear to be based on a misreading of Porter. The value chain concept does, indeed, focus on the single suppling firm, but as Porter emphasises, any