

## **Book Review: Global Construction Success – Charles O’Neil**

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This is a unique book that addresses a challenge that is important worldwide: what are the ingredients for a successful construction project. Notwithstanding the importance of construction projects being delivered on time, within the budget and to the appropriate quality, many projects around the world fail to achieve one or more of these goals, resulting in wasted resources and disputes.

This book, written by Charles O’Neil with the assistance of 17 other experienced construction professionals, comprehensively addresses the many factors that influence the success or failure of a construction project. It is a very practical book – the authors all have many years of experience on major projects in the construction industry working for government, employer organisations, contractors, engineers, consultants, universities, financiers and lawyers. They not only collectively cover the wide range of disciplines essential to the delivery of construction projects, they have experience of project delivery in many countries around the world, both successful and unsuccessful. These experiences are articulated in the book in highlighting behaviour that contributes to unsuccessful projects, but perhaps more importantly, in identifying the behaviours and processes that result in successful projects. This is one of the book’s great strengths – considered views from a variety of construction practitioners with different perspectives.

The aims of the book can best be summed up by the following quote from the Introduction: “This book seeks to identify and understand the key structural ‘why’ questions related to the construction industry at this time, and then to make constructive arguments as to ‘how’ we can improve in the future, with emphasis on ‘what’ specific actions and focus could produce a long-term improvement in the industry’s general health.” In this reviewer’s opinion, the book not only ticks all these boxes, but does so with a clear understanding of the many real-world challenges that often inhibit project success and offers practical suggestions to overcome them.

Following an introduction, the book looks at the state of the industry in Chapters 2 to 6. The book then contains a number of chapters under each of the following headings:

- People and teamwork (Chapters 7 - 11)
- The right framework – forms of contract, business models and Public Private Partnerships (Chapters 12 - 15)
- Management of risk (Chapters 16 - 23)
- Robust processes – corporate and project management (Chapters 24 - 27)

The authors consider the above are the four overarching themes that are the universal drivers of project success. The book ends with conclusions on where the industry is headed and recommendations on actions, legislative change and client-contractor relationships.

Every reader of this book will have their own views of the most important and significant insights. For this reviewer, the following are some of the gems:

- The primary focus of the book is on the qualifications, performance and accountability of CEOs, directors and senior managers in both the public and private sectors, both client and contractor organisations.
- “The safest way in a new region, as with any contract is to spend the necessary extra time on detailed planning, precise specifications and on ensuring that the terms of the contract and the payment procedures in particular are clear and unambiguous, fair and reasonable, and clearly understood by both parties when the contract is signed.”

- “If foreign clients will not agree to fair and reasonable contract terms and payment conditions, then you are better off without the business.”
- “Contractors are not banks and they should be entitled to negotiate payment terms and guarantees that protect their financial position provided they perform the contract efficiently.”
- “Clients, including government authorities have an equal responsibility to be competent and professional ...”
- “Risk management in the construction industry is the difference between success and failure; between profit and loss; between life and death.”

Chapter 3 on construction consultants in the global market place highlights important risks that need to be managed. These include the increasing trends of more onerous contractual conditions, including unlimited liability, the number of indemnities and liabilities which have longer term liabilities attached, the application of liquidated and ascertained damages and litigation from third parties relying on the consultant’s information.

Chapter 4 addresses the common causes of project failure, defined as one of the objectives of any party involved in a project not being met. Case studies for a number of recent high-profile project failures are given – in Germany, USA, Australia, Scotland and England, and from 1973 to 2017, emphasising that the issues are international and not new. Thirty-five common causes of project failure are identified in which invariably the fault lies with senior management. Significantly, twenty of these causes arise during the structuring, bidding and pre-contractual phase – only fifteen arise during design, construction, commissioning and transition to operations. This reinforces other writings that emphasise that the most important phase of a project is before construction begins, and the value of “front end loading” of a project – spending the time and money to properly plan a project before major contracts are let. The chapter concludes with lessons to be learned from grossly incompetent site management, illustrated by a salutary case study.

The use and abuse of construction supply chains in the UK are discussed in Chapter 5. The problems are highlighted by two recent events – the closure of 17 Edinburgh schools due to poor quality masonry construction, and the tragedy of the Grenfell fire, both of which the author states were examples of dysfunctionality of the supply chain. The chapter identifies that the problems in the UK supply chain arise from its fragmented nature, inefficiencies in risk management and insurance, a high level of disputes and inequitable payment provisions in which subcontractors effectively fund the cash flow of tier one contractors. Several reports that have addressed supply chain problems are discussed, as well as recent initiatives such as statutory interventions, adjudication and project bank accounts which the author considers provide an effective solution to the persistent and endemic problem of late and non-payment. The author makes a strong argument that retention monies should be held in trust as recommended in the 1994 Latham Report.

The authors of Chapter 6 discuss the UK construction crisis in the expectation that there are lessons for the global construction industry. The roles of corporate risk manager and investment banker are highlighted in lifting the general level of corporate management and improvement of risk management. Some suggestions are made of appropriate tools to use: programme and project risk registers, gateway reviews and early warning systems.

The section on people and teamwork commences with Chapter 7 on obstacles to senior management and board success, the outcome of the author’s discussions with personnel within the industry and psychologists specialising in “team dynamics” and behavioural observation. The topics include thoughtful discussion on groupthink and team selection, training, choosing the wrong strategy or project, the need for “macro-level” focus, with effective corporate oversight to obtain the wider picture and effective communication and delegation. The summary contains a useful checklist of the core key attributes required for the effective control and management of an organisation at senior level.

Chapter 8 reviews the requirements for structuring successful projects. Success is defined by the achievement of a number of listed attributes. The key factors that create success are identified –

all of which have a strong human element. The different activities and responsibilities from concept to completion of construction are discussed under the following headings: building effective teams; understanding the bigger picture; know and manage the contract diligently; performance bonds, payment terms, retentions and pricing of variations and back charges. Contractors will take particular note of the author's eleven suggestions on contract terms appropriate in a situation where the employer's ability or willingness to pay may be in doubt. The chapter concludes with a detailed checklist for structuring successful projects.

Understanding and managing difficult client/contractor relationships are discussed in Chapter 9, in the context of wealthy residential clients. This chapter contains a number of practical suggestions on how to manage difficult clients, covering the client brief, the programme, the cost of the works, relationships with consultants, claims and payment. The problems posed by difficult contractors are also addressed, and suggestions made to manage them: developing a procurement strategy, tender reconciliation, acceptance of the tender, contract and other documents and performance on site. This chapter makes important points that both employer/client and contractor should heed.

Social intelligence as the critical ingredient to project success is considered in Chapter 10. This is defined as the knowledge and awareness of how humans behave in groups and teams. The other types of people intelligence required by a project team are technical intelligence and commercial intelligence – these are usually well represented, in contrast to social intelligence which the author considers is also essential to project success. The chapter discusses what is involved in social intelligence, and the practical aspects of applying it in a project – learning and development, building cohesive teams, introducing a specialist in social intelligence into the team, coaching the team and managing behavioural risk.

The section on people and teamwork concludes with Chapter 11 on practical human resources considerations. This chapter, like many others in the book, is squarely aimed at senior management, and includes many pertinent observations on structuring a team with appropriate personnel. It presents the argument for broader based training of tomorrow's industry leaders and identifies what makes a good leader in the construction industry. The author presents his perceptive checklist of the personal traits he looked for in interviewing job candidates. The section on leadership considerations looks at: real team leaders versus egos, arrogance and poor basic management skills; cronyism; bosses with poor people skills who avoid staff management problems, illustrated with a salutary case study. The author recognises the inherent risks of decision making for survival and the human fallout from a failed project.

The section on the right contractual framework commences with Chapter 12 on the contract as the primary risk management tool. This chapter, written by a construction lawyer, contains a number of examples that illustrate the importance of clear and unambiguous drafting in defining the parties' rights and obligations so that each party understands which risks it is responsible for. As noted elsewhere, the importance of devoting enough time to the initial activities of project inception, procurement and tender and contract negotiations is stressed. The five steps or opportunities in which to create a risk management tool in the form of contract are described in non-legal terms, emphasising the underlying principles and their application, rather than the specific words used.

Chapter 13 it is a short chapter that discusses the two themes that are inextricably linked to the New Engineering Contract – early warning systems and collaboration. The importance of these requirements are illustrated by reference to a successful UK project for construction of a manufacturing facility for a Japanese car manufacturer, contrasted with the substantial time and cost overruns on the Scottish Parliament House, which illustrated what can happen where there is a lack of early warning, lack of collaboration and lack of leadership.

Development contracting is discussed as an efficient way to implement major projects in Chapter 14. The author's experience of major projects within property development inform his insights into the requirements for successful delivery of projects, and the tools necessary to deliver them. These include identifying all the stakeholders that may play a role in the development cycle, and the planning and process requirements to deliver on time and on budget. The chapter contains a useful

matrix of stakeholder strategy, responsibility and deliverables, and a schedule of typical standard reports.

Chapter 15 contains an insightful critical review of Public Private Partnerships (PPPs). Based on the author's extensive experience in this field, as well as his informal survey of experienced PPP practitioners in a number of countries, the chapter reviews the pros and cons of PPPs. These are considered from the perspective of Governments and Authorities, providers such as equity investors, contractors, facility management service companies, and end users. Importantly, these pros and cons are addressed with practical suggestions that provide guidance on how this method of procurement can be made more cost-effective. The input from PPP practitioners in North America, United Kingdom, Europe and Australia highlight where past projects have not succeeded. Clear proposals are made for efficient structuring and managing of PPPs, managing claims and disputes and a summary of the key factors for success and minimising risk.

The section on risk management commences with a discussion of the human factors in Chapter 16. These are contextualised in a discussion of the Challenger space shuttle disaster in which the critical technical decision on the inadvisability of launch in low ambient temperature was overridden by management and clients. Dispute Boards are described and discussed as an appropriate human factor to minimise disputes on site. This chapter will appeal to engineers for its technical discussion of the Challenger disaster, and the current construction of the ITER project in France to demonstrate the feasibility of nuclear fusion to generate power – a project with a Dispute Board which the author believes will contribute to the completion of one of the world's most exciting energy projects.

Chapter 17 is a valuable discussion of effective risk management processes. It connects two of the most important themes of the book: the effects of human behaviour and risk management. Typical project risks are identified for client, contractor and other stakeholders, the project bidding phase and the subsequent award of the contract, design and construction. Unsurprisingly, this is a long list! The chapter has many practical suggestions, such as keeping risk management simple and procedures to eliminate, mitigate and control risks. These include useful proposals such as "by exception" reporting, regular auditing of processes and proposals for the vital function of communication at both company level and project level.

Risk management and its relation to success in the North American context are discussed in Chapter 18, based on the author's experience in senior positions in engineering firms and construction companies involved in PPPs. The author notes that success derives from well planned and executed risk management, and he articulates activities involved in identifying risks and subsequently managing them. The chapter contains practical suggestions for planning for success and managing risks, firstly at the go/no-go stage, and secondly during project execution; simplified examples of risk matrices are provided for these stages. Brief details are provided of recent projects: a success and a failure.

Chapter 19 provides an overview of early warning systems, which the authors consider important in achieving successful project outcomes. Their discussion covers a number of issues that are typically outside the realm of mainstream risk management: looking outside of the "technical bubble", cultural barriers, and learning to value "gut feel". The value of early warning systems is illustrated by the case study of a successful cutting-edge project which highlighted the added value provided by the non-traditional communications.

Technology to manage risk (ConTech) is discussed in Chapter 20. This provides an overview of what ConTech currently comprises, and the challenges inherent in its more widespread adoption in the construction industry. Potential commercial management applications are explained in the context of smart city principles. The section on dehumanising risk management considers commercial uses of ConTech through data generation and capture, data analysis and presentation, process automation and option generation and implementation. A futuristic scenario of comprehensive application of ConTech throughout a construction project illustrate the theoretical advantages possible. The use of blockchain technology is postulated to provide substantial improvements in payment, auditability of project decision-making and reduction of resources throughout the supply chain.

A specific application of ConTech is outlined in Chapter 21: intelligent document processes (IDP) to capture data and manage risk and compliance. IDP is a 21st-century computer application for textual documents such as complex contracts, which enables the ever increasingly complex suite of project documents to be readily understood and used by project participants. The author describes its benefits for any high Value documents, and specifically in the context of Collaborative Business Relationships to ISO 44001.

Chapter 22 discusses the importance of aligning an organisation's strategic business plan with its information requirements to achieve its business goals and objectives for successful BIM implementation. It provides a step-by-step guide on how to create formation criteria and sub criteria recommended to populate an organisational information requirements (OIR) chart. This can inform the creation of asset and employer information requirements documentation for individual projects, and influence design, construction and operations decisions.

Three case studies of successful projects are outlined in Chapter 23 – London 2012 Olympic and Paralympic Games, tunnels for Heathrow's Terminal 5 and the Alder Hey Institute in the Park, UK that involved cyber design development. These projects illustrate many of the book's themes including people, effective risk management, appropriate management of the supply chain and clients that understand ownership of risks and the importance of appropriate and timely payment.

The penultimate section of the book is on robust processes for corporate and project management. This commences with a chapter on planning and programming major projects that describes three commonly used planning and programming formats: bar charts, S-curves and time location diagrams. Useful guidance is given on monitoring "progress versus program" and "cost-to-complete versus budget". Guiding principles are given for delay, EOTs and cost reimbursement. The important topic of ownership of float is clearly explained with the aid of simple diagrams.

Chapter 25 is on managing and resolving conflict. It contains useful commentary on the drivers of behaviour in negotiation and conflict situations and suggestions on improving relationships and collaborative working. The section on mediation will be appreciated by those who have not had prior experience of it. This is followed by a chapter on dispute resolution – the benefits and risks of alternative methods from the perspective of an experienced negotiator. It contains valuable advice for commercial clients on how to deal with their lawyers, and techniques for negotiating settlements. This advice alone will save the cost of this book many times over!

Peer reviews and independent auditing of construction projects are discussed briefly in Chapter 27. The benefits for various stakeholders are outlined whilst recognising the "people" roadblocks to their use.

The final section and chapter summarises the conclusions arising from the book's contents. It contains an assessment of where the global construction industry is headed and provides a number of key observations and recommended actions for legislative change as well as for improving client contractor relationships. This chapter should be compulsory reading for senior executives responsible for procurement in government and client organisations as well as contractors.

In addition to the book's construction practitioner's readers, this book will also be valuable as a reference for the increasing number of construction law courses around the world. A minor criticism is that there is insufficient citation of references that would enable further research.

This book has something of importance for all the stakeholders involved in the delivery of a construction project. They must cooperate to achieve a successful outcome, and along the journey they must manage a variety of risks, which requires robust processes for corporate and project management. A successful project is not achieved in the absence of teamwork and communication – two of the fundamental 'people' themes in this excellent book. It will undoubtedly make a significant contribution to more successful construction projects in the future - an important achievement for a better world.