

A Trilogy of Books on Project Management
Book 4 – Managing Complex Projects
By Harold Kerzner, Ph.D, & Carl Belack, PMP
(Book reviews)
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Introduction to Book 4

After completing the review of the first three books in this trilogy, the publishers¹ pointed out that a very similarly structured book had since been published as a part of their series. They suggested that it be added to our set of book reviews. That explains why there are four books in this trilogy!

If you have arrived here directly, you may wish to go back and read the [Introduction](#) to our series, especially [About the Authors and their Books](#). The only difference is that the second author this time is Carl Belack. Carl is a Senior Consultant and Trainer for International Learning, Inc.

In this book, Harold Kerzner and Carl Belack set about the difficult task of distinguishing between "complex" projects and "simple" projects. Based on their findings, the authors examine the ramifications of this difference in what the project manager of a complex project should expect and how it should be managed. At 394 pages, this book is by far the largest in the series. It represents a serious attempt to depart from the description of the application of project management techniques that are now generally considered to be standard practice in today's business environment. Therefore, the authors go to some length to explain what they mean by "Complex".

To facilitate the discussion, the authors prefer to identify the two types of project as "traditional" and "non-traditional". For example:²

| Traditional Projects | Non-Traditional Projects |
|---|--|
| Time duration of 6–18 months | Time duration over several years |
| The assumptions are not expected to change over the duration of the project | The assumptions can and will change over the project's duration |
| Technology is known and will not change over the project's duration | Technology will certainly change |
| People that started on the project will remain through to completion (the team and the project sponsor) | People that approved the project and are part of the governance may not be there at the project's conclusion |
| The statement of work is reasonably well-defined | The statement of work is ill-defined and subject to numerous scope changes |
| The target is stationary | The target may be moving |
| There are few stakeholders | There are multiple stakeholders |

Figure 1: Table of significant differences in logistics

However, while this table describes some of the attributes of a complex project, it does not provide the definition of "complex project" itself. To this end the authors point to the "complexity of defining **complexity**" and to resolve this conundrum they first choose to redefine "projects" with traditional characteristics as follows.

Those that:³

- Have a specific objective (which may be unique or one-of-a-kind) to be completed within certain specifications
- Have defined start and end dates
- Have funding limits (if applicable)
- Have quality limits (if applicable)
- Consume human and non-human resources (i.e., money, people, equipment)
- Are multifunctional (i.e., cut across several functional lines)

So, for purposes of the book, the authors define "complex projects" as those involving one or more of the following five elements:⁴

- **Size and cost.** The budget could be in hundreds of millions or, if your company works on projects up to \$5 million, then this project might be \$20 million. Further more, the project is being accomplished for a client external to your company.
- **Interactions.** You must interface with several subcontractors or suppliers, and many of them may be in different time zones.
- **Cultural implications.** Because some or all of your team members may come from various locations around the globe, the cultural differences can have a severe effect on the management of the project.
- **Uncertainty.** This project is unlike any other project you have managed, and there is a great deal of uncertainty.
- **Stakeholders.** There are several stakeholders that you must interface with, and getting them all to agree on the scope, the deliverables, and the approval of change requests will be difficult.

However, within this scenario, certain other typical conditions should be included. For example:⁵

- The project manager may possess sufficient knowledge for some technology decision-making, but not have sufficient business knowledge to select the best course of action that is in the best interests of the company as well as the project.
- Management of the project may be one role, but management of the technology may be a separate role, or indeed, several functional manager roles. In other words, decision-making has to be shared.
- Finally, while control over the project may be ideal, the reality often is that the project manager simply has authority only to open and close charge numbers or cost accounts for the project. Once a charge number is opened, the team members performing the work and their respective functional managers are actually in control of how the money is being spent – so long as the charge number limits are not exceeded. That in itself is a difficult challenge.

The author's go on to describe a variety of other factors that may bear on complex projects.

Book Structure

Each chapter is divided into sub-topics consisting of one or more pairs of pages. As in the previous books, the first in the pair is like a presentation slide, while the second is its more detailed explanation.

The chapter headings are as follows:

1. Project Management Framework
2. Integration Management
3. Scope Management
4. Time Management
5. Cost Management
6. Human Resources Management

7. Procurement Management
8. Quality Management
9. Risk Management
10. Communications Management

The perceptive will note from this list that the book's chapters cover the nine knowledge areas of the Project Management Institute's *A Guide to the Project Management Body of Knowledge* ("PMBok") with *Project Management Framework* added at the front end. However, the chapters are not in exactly the same order as the PMBoK. For example, Quality, an input variable along side scope and an essential feature in the attainment of success in most projects, is relegated to a place even lower in the list than in the PMBoK.⁶

By far the largest chapters are *Project Management Framework*; *Integration Management*; and *Communications Management* (between 62 and 93 pages) while the remaining chapters are relatively short (between 16 and 28 pages). The general intent of the shorter chapters is to demonstrate how the content in each knowledge area differs from the PMBoK's descriptions when it comes to examining a complex project. Essentially, in the view of the authors, these differences arise as a result of the project expectations of multiple stakeholders.

In fact, the book is really all about stakeholders and their influence in a "complex project". The issue of "stakeholder" surfaces in all of the chapters, while the concluding chapter on Communications Management is almost entirely dedicated to the subject of stakeholders and the potential problems they present.

Indeed, the authors conclude the book with these Final Thoughts:⁷

"In fact, the changing roles of the stakeholders and their varying degrees of involvement in the project add to the project's complexity. We have also seen how the management of project risk takes on added importance. Many of our observations about specific knowledge areas of the *PMBOK® Guide* deal with the permutations of increased risk attached to those areas. Finally, we've noted the need for new tools, lifecycles, and techniques demanded by increased project complexity."

What we liked – in "Framework"

As can be seen from the Table of Chapters described earlier, the majority of chapters deal with the details of the impact of stakeholders on the respective knowledge areas. However, we found the three largest chapters to be of most interest because of their broader coverage. We therefore concentrated on these chapters that, as we mentioned previously, are *Project Management Framework*; *Integration Management*; and *Communications Management*.

We were particularly gratified to see the first chapter labeled *Project Management Framework* because this enables a broader discussion of the environment in which a project takes place. Regrettably, the authors feel obliged to bring up the obsolete construct of Triple Constraint but at least in this book it is remodeled to encompass several triangles with a much broader range of potential constraints.

Here is what they had to say on this subject:⁸

"The traditional triple constraint that has been used for decades includes time, cost, and scope. Some practitioners prefer to use performance instead of scope, where performance

can be scope, quality, or technology. However, for complex projects involving multiple stakeholders, . . . there can be more than three constraints that are considered to be important,

For complex projects, quality, risk, image/reputation, and value can carry a great deal of importance. But the exact degree of importance can vary from stakeholder to stakeholder and from country to country."

Also:⁹

"In some host countries, the project's risk is extremely important, especially if the failure of the project can damage the host country's image or reputation. Risks and politics may go hand in hand in some host countries to the point where the early cancellation of a project may be necessary rather than incurring added risks that could damage one's reputation . . . [Further] the relative importance of each constraint can change from phase to phase . . . For non-traditional or highly complex project, cost is an issue until we approach the end of the project. At this point, risk and final value become important."¹⁰

These are all excellent points that are also illustrate in the book by a number of actual examples. While these observations are targeted at "complex projects", we suspect that many of them are also an issue in much smaller projects.

This chapter goes on to discuss critical requirements for successful execution. Here they suggest:¹¹

"Although there are several factors that can have a major influence on the project environment, three of these are identified as [follows]:

- With multiple stakeholders and possible cultural barriers, it is important that the project manager and all stakeholders have a unified agreement and understanding of the project's goals and objectives.
- Cradle-to-grave user involvement in complex projects is essential. What is unfortunate is that user involvement can change based on politics and the length of the project. ***It is not always possible to have the same user community attached to the project from the beginning to end*** [emphasis added]
- Governance is the process of decision-making. On large complex projects, governance will appear in the hands of the many rather than in the hands of the few. Each stakeholder will either expect or demand to be part of all critical decisions on the project. The channels for governance must be clearly defined at the beginning of the project, possibly before the project manager is assigned. Changes in governance, which is expected the longer the project takes, can have a serious impact on the way the project is managed.

The authors conclude this part of the discussion with the following table describing the difference between ***managing*** traditional projects and ***managing*** non-traditional projects.¹²

| Managing Traditional Projects | Managing Non-Traditional Projects |
|---|---|
| Single-person sponsorship | Governance by committee |
| Possibly a single stakeholder | Multiple stakeholders |
| Project decision making | Both project and business decision making |
| Inflexible project management methodology | Flexible or "fluid" project management methodology |
| Periodic reporting | Real-time reporting |
| Success is defined by [performance, schedule and cost] | Success is defined by [performance, schedule and cost] and business value |
| Key Performance Indicators (KPIs) are derived from earned value measurement (EVM) | Unique value-driven KPIs can exist on every project. |

Figure 2: Differences in management approach

The final pages of this chapter discuss such issues as "value" as a key decision driver, the impact of virtual teams, partnering and "engagement" expectations, and long-term globalization as a management strategy.

What we liked – in "Integration"

The contents of this chapter are very different from the contents of *Chapter 4 – Project management Integration* in the PMBoK Guide. Whereas, the Guide describes the inputs and outputs of six processes, the authors describe thirty-one differences in approach to the management of "complex" projects to which project managers may have to adapt. In the comparison that follows, we have arbitrarily chosen to paraphrase as examples those observations that we think are the most pervasive.

Managing Traditional Projects

Project sponsorship is most likely a single individual from the funding organization and may or may not be at an executive level.

The project's business case is prepared by the user and project manager and reviewed by the project management office (PMO) for alignment with corporate objectives.

Once justified by valid objectives and approved, projects continue on unless serious issues emerge that mandates that the project be canceled.

Managing Non-Traditional Projects

Project sponsorship most likely replaced by complex governance and fragmented throughout the main stakeholders, including executive management and even senior government officials.¹³

Business case development may be far more complex due to the multitude of stakeholders and their diversity of interests. Neither the project manager nor even the PMO may be involved at this stage. As a result the quality of the business case may be poorer and subject to change as the project unfolds over a prolonged period. Hence the need for a regular review of the business case.¹⁴

Projects exist just for the duration of the funding cycle, typically yearly. It may then have to be re justified with new funding, especially if the stakeholders and their politics change, or market conditions change the expected benefits.¹⁵

The Project Charter represents the project manager's authority in decision-making as handed down by the project's sponsor. Hence, the project sponsor and the project manager control the decisions.

The company may have a template for the Project Charter. It is signed by the project's sponsor and there is agreement on its contents

Project governance is well understood and remains the same throughout the project.

Focus is on project controls and balancing the constraints of performance, schedule and cost.

The project manager and team leads prepare the project management plan covering all work packages, essentially for the entire project.

Project approvals are relatively fast and do not compromise the schedule

Decision-making techniques such as facilitated workshops, group creativity techniques, search for alternatives are all possible and can be conducted in a timely fashion.

Excessive optimism can exist but is quickly

The project manager may have limited authority in decision-making. The greater the number of stakeholders, the more likely that consensus decision-making will be necessary, and the more localized the project manager's authority.¹⁶

The authority needed for managing the project could be diluted over several project managers. The stakeholders of each may seek control over their group's project manager, and there may be separate project charters with no agreement amongst the respective charter contents. The result is that the distribution of project authority may be very unbalanced.¹⁷

The stakeholders will change. Politics and policies will change. Support will decline if the project runs into obstacles. An analysis of the stakeholders will not be stable. Hence, the project governance¹⁸ is likely to change, creating obstacles to decision-making and achieving objectives.¹⁹

Focus is on excellence in leadership, motivation, and communication with a large number of internal and external stakeholders.²⁰

Because of the complex agreements involved, development of a single project management plan, together with associated sub function plans, may be impossible. Therefore, global targets may be contemplated but detailed planning takes the form of progressive or "rolling wave"²¹ planning, work package by work package.²²

There may be little sense of urgency amongst the stakeholders, even a desire to delay. Since decision-making may also be dispersed through the range of stakeholders, approvals may take an extended length of time that compromises the schedule and gives rise to serious financial claims.²³

Making decisions promptly may not be possible because of the number of stakeholders that wish to be involved, their individual lack of relevant information, and their differing perspectives. Therefore it may be necessary to single out the key or most influential stakeholders, in limited number, and work with them.²⁴

Excessive optimism can lead to significant cost

corrected because the length of the project is relatively short

overruns because it engenders the withholding, even concealment of adverse information due to a desire to see the project continue and thus avoid criticism. On the other hand, this optimism is sometimes necessary to see the project through.²⁵

This chapter highlights the many challenges that face complex projects. While it may offer few obvious solutions, just to be aware of the problems makes a valuable contribution to the knowledge base where complex projects are concerned.

Downside – in "Communications"

At first we were overjoyed to see a large chapter dedicated to "Communications" management. That's because we think that Chapter 10 of the PMBoK guide sadly under-represents the subject. It is true that the entire Chapter 10 of the PMBoK guide is about "stakeholders", who they are, how they should be "managed" and the project reports that should be shared with them. However, in our view this subject should cover much more than that.

For example, on a large project it is necessary to understand the main contractual arrangements between the parties and the resulting organizational structure. For the project manager, that means dealing with the various levels in the organization. In addition to a variety of project sponsors, there will likely be one or more project directors, project management office directors and so on.

Bear in mind that the Project Management Institute's original documentation of *Communications Management* in their Project Management Body of Knowledge²⁶ also covered the management of information, as well as communications. In the original breakdown of the subject we see such topics as: "Project direction"; "Meetings" (management); "Project Management Information systems"; "Marketing and selling"; "Public relations"; and "Records management". It seems to us that not only are all of these essential tools of project communications, but they are also particularly important and difficult when it comes to large projects.

Interestingly, we don't believe that the term "stakeholders" is even mentioned in the original 1987 PMBoK publication. It first appeared in *A Guide to the Project Management Body of Knowledge* published in 1996. And while stakeholders, their identification and analysis of influence are obviously the key to effective communications with them, it is evident that the original intent of this section has morphed into a different, and narrower, line of thinking.

Meanwhile, the authors own chapter²⁷ slavishly follows the current pattern, albeit in the larger context of "complex" projects. It contains over forty illustrations with associated texts ranging from Stakeholder Management — Macro Level²⁸ to Micro Level,²⁹ from Key Stakeholders³⁰ to Unimportant Stakeholders,³¹ from Making Bad Assumptions³² to, well, Another Bad Assumption.³³ Along the way, the chapter also touches on the issues of using Virtual Teams,³⁴ Measuring KPIs,³⁵ and the inappropriateness of Linear Thinking³⁶ in EPM³⁷ methodologies, instead favoring outside-the-box thinking.³⁸

Speaking of linear thinking, one thing we noticed in reading this chapter, the sequence of topics does not seem to follow any sort of logical or progressive pattern. It is as if the whole is composed of a large number of overhead transparencies, together with their explanatory notes. But, having been

inadvertently scattered on the floor, and being unnumbered, have been picked up at random and typed in accordingly. In our view, that makes the chapter less useful as a source of reference, than it could be.

Summary

This book presents its own Final Thoughts with these words, in part:

"In this book we have attempted to address the implications of project complexity on the good practices that are described in the *Guide to the Project Management Body of Knowledge — Fourth Edition*®. We have examined the increased importance of the role of stakeholders in projects of advanced complexity. In fact, the changing role of the stakeholders and their varying degrees of involvement in the project add to the project's complexity."³⁹

"Projects are essentially endeavors of people and organizations to meet specific needs through available technologies in given environments. And as those people, organizations, technologies, and environments change, so too will the processes, tools and techniques that are used to manage them."⁴⁰

In the book, we are treated to the many challenges in "complex" projects that the project manager may face as to "who" and "what", though only limited advice as to "how" and "when".

Undoubtedly, this book provides a valuable project management reference to the challenges facing the project management practitioner entering the world of "complex" projects, especially for the first time. It is to be hoped that, gradually, recommended "good practices" will be found to deal with the many intricacies described throughout this book. After all, as the authors rightly observe: "Effective stakeholder management can be the difference between an outstanding success and terrible failure."⁴¹

And, we think, that observation probably goes for any size of project.

R. Max Wideman
Fellow, PMI

¹ John Wiley & Sons, Inc., NJ

² Kerzner, Harold, and Carl Belack, *Managing Complex Projects*, John Wiley & Sons, Inc., NJ, 2010, p xvi

³ Ibid, p2

⁴ Ibid, extracted from descriptive summary on p7

⁵ Ibid, p9-10

⁶ From 5th place in PMBoK to 8th place in this list.

⁷ *Managing Complex Projects* p387

⁸ Ibid, p17

⁹ Ibid, p17-19

¹⁰ The authors might have explained here that there is good reason why other factors, especially completion and hand over, become more important near the end of the project. This is because the day-by-day carrying cost of the incurred project financing of a large project may well far exceed the added cost to accelerate for an earlier completion by one day.

¹¹ Ibid, p25

¹² Ibid, p38

¹³ Ibid, pp80-81

¹⁴ Ibid, pp94-95

¹⁵ Ibid, pp116-117

¹⁶ Ibid, pp106-107

¹⁷ Ibid, pp104-105

¹⁸ "Project governance" here implies how the project is controlled through its life span, e.g. the number and timing of "stage gates".

¹⁹ Ibid, pp96-97

²⁰ Ibid, pp78-79

²¹ Rolling Wave Planning: Cost and schedule planning where details are developed for the near term and general allocations are made for the out periods. [Comparative Glossary D04227] The "wave" of detail typically covers six weeks or three months.

²² *Managing Complex Projects* pp122-123

²³ Ibid, pp124-125

²⁴ Ibid, pp82-83

²⁵ Ibid, pp112-113

²⁶ *Project Management Body of Knowledge* published by the Project Management Institute, 1987

²⁷ *Managing Complex Projects*, Chapter 10

²⁸ Ibid, p318

²⁹ Ibid, 322

³⁰ Ibid, p342

³¹ Ibid, p344

³² Ibid, p304

³³ Ibid, p306

³⁴ Ibid, p356

³⁵ Key Performance Indicators, *ibid*, p358

³⁶ Ibid, p372

³⁷ Enterprise Project Management, the application of project management throughout an organization, Comparative Glossary, [D02705]

³⁸ *Managing Complex Projects*, p373

³⁹ Ibid, p387

⁴⁰ Ibid, p388

⁴¹ Ibid, p383