

JEREMIE AVEROUS

**Practical
Cost Control Handbook
for Project Managers**

Second Edition

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Cost Control
Handbook for
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A Practical Guide to Enable Consistent
and Predictable Forecasting
for Large, Complex Projects

Second Edition



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This Handbook is dedicated to all Project Control professionals who stand up to their duties by courageously reporting the reality of the forecast project outcome, even when Management does not want to acknowledge it.

Preface to the Second Edition

After six years and more than 2,000 handbooks sold globally to project control professionals in various formats (public and customised), it was time to refresh this reference book.

The main concepts developed in the handbook have proven to be remarkably robust and well adapted to many situations and industries during trainings, reviews and process improvement work. However, the initial handbook had been written more from the perspective of the contractor than from the perspective of the owner. This second edition expands with complements for the owner and clarifies which concepts are specifically applicable for contractors only. Most of the book remains applicable for owners who always have to control their own reserved scope in addition to managing contractors.

More details have also been included in a number of areas, notably estimating and cost control infrastructure setup.

We hope that this refreshed handbook will continue to be a worthwhile reference to Cost Controller practitioners globally.

Jeremie Averous
Founder, Project Value Delivery
Paris, June 2020

Foreword to the Second Edition by Pierre Pénicaut, Head of Project Control, Total

Oil & Gas Energy majors achieve their growth through the development of projects that require agreements to be signed with the countries where the resources are found. These complex and expensive projects are often developed in collaboration with several partners. In some cases, one partner will act as the operator and in other cases an operating company will be formed by all partners. The Oil & Gas majors therefore do not have one single project in progress but a portfolio of projects at different stages of development and with different characteristics. The CAPEX of a project weighs heavily on the calculation of internal rate of return (IRR), which is one of the main criteria when the final investment decision is considered.

In the cyclical, currently volatile, economic environment of the industry, control of project cost is crucial. Uncontrolled growth of project cost can bankrupt a contractor. It can also be really harmful for the project owner. It destroys the value of the project and damages his reputation as an operator. Additional costs must be shared by all partners and, in certain cases, must be approved by the host state. Cost overruns also mean less cash for other projects in the portfolio, and potentially less cash for shareholders and an increase in the company's debt.

The latest release of this well-structured manual, for the use of project managers on either the contractor or the owner side, appears at an opportune moment. This manual reminds project managers of the commitment to remain within the budgets which have been delegated to them, the need for anticipation, transparency, reliability of the

information they report and the check points to implement in the course of the project. They will also be able to understand the function of cost control and the role of project cost controllers on both contractor and owner side. Finally, it places project control at the heart of the project and at all decision levels in order that the estimated final cost of the project can be justified at any time from project start until completion. It goes without saying that all the recommendations in this book are applicable to any industrial project

Pierre Pénicaut

Paris, May 2020

Foreword to the First Edition by Bruno Chabas, CEO, SBM Offshore

“Prediction is very difficult, especially if it's about the future”
– Niels Bohr

This truism is particularly relevant for project-based organisations where success can only be achieved by anticipating the potential outcomes at completion of a project and taking the right stewardship decision when one can still influence the outcome. As such, having a sound process for controlling and forecasting project costs is a fundamental component of project-driven organisations and a necessary complement to competent personnel and relevant systems. Still, the importance and specifics of this discipline are too often misunderstood and underestimated, with the risk to create difficult situations where organisations must publicly admit that their projects have not been properly controlled and forecast in a context of unexpected financial results.

Project Managers and their management must be in a position to take the right decisions. Projects are specific, non-repeatable, risky ventures that require special approaches in terms of forecast and financial reporting. The Cost Control function is there to establish the best possible project forecast based both on a good understanding of the business and a sound application of fundamental financial principles.

Senior Management of project-based organisations and their Project Managers must hence understand what it takes to implement proper Cost Control. They need to be able to challenge their teams and understand whether they are producing the right data. This Practical Cost Control

Handbook is, to my knowledge, the first book that puts together, in an easily readable format, the fundamental best practices in the field of Cost Control, forecasting and financial reporting for large and complex projects. It should be a must-read for all project management professionals involved in large, international, multi-year projects.

Notwithstanding process issues, both a culture of openness and the principle of candidness, as well as the willingness to deal with reality rather than hope, are essential. Cost Control will often be amongst the first project contributors in the difficult situation of challenging management to accept a different view of the project outcome. At the end of the day, the ability of the organisation to take onboard and examine this challenge without 'shooting the messenger' is essential to sustainable success.

Cost Control is a very serious matter. Sufficient focus needs to be provided from senior management, and it needs to be manned with high quality resources. From my experience, the investment in a very strong Cost Control function is always worthwhile for the sustainable development of project-driven organisations. I certainly hope that with this book, this need will be recognised and understood more widely.

Bruno Chabas

Monaco, June 2014

Introduction to Project Cost Control

What is the Issue?



A project is similar to an intercontinental sailing expedition. When executing a project, one needs to define the goal and a plan to reach it; then, fit out a vessel with the appropriate quantities of fuel and supplies to last for the long voyage, and finally, recruit the right crew.

The days are long gone of the adventurers that cast off without any idea of goal or direction; but it still happens too often that they do not load the right amount of fuel, money or provisions before casting off.

Historically, purveying ships and then managing supplies and money was so important on seagoing vessels that a specific licensed position was created as early as the 14th century in the Royal Navy: the 'purser'. This position continues to exist nowadays. The 'purser' is an officer in charge of the accounts and documents of the ship and he also kept money and valuables for crew and passengers.

When the vessel has finally left the shore to begin the uncertain voyage towards a new continent, left to the forces of the sea, the currents and the winds, three fundamental purveying questions need to be responded accurately on a regular basis:

- What did we spend and how does it compare to the budget/forecast?

- What is our analysis of the causes of variance? How much more will be spent if we continue the current trends? Will we then be able to finish the voyage before we exhaust our supplies?
- What needs to be done to finish the voyage in good conditions and according to our original objective?

Keeping the eye on the Cost Control basics

Even in leading and mature project-driven organisations, we still observe remarkable project reporting failures that occur due to the lack of understanding and application of basic principles of project Cost Control.

These failures or inadequacies lead to difficult situations for management and for the organisation as a whole. At company level, the revelation of unanticipated degradation of large individual projects' results can have very significant consequences on the company's reputation. The trust of the investors on the ability of company management to maintain control of their business can be deeply eroded, often propelling the share price into a long and painful downward slippage.

Project Value Delivery has decided to produce this handbook as a way to disseminate basic project Cost Control principles in a very practical and applied way.

This handbook thus aims to reinforce and spread to all relevant project management personnel the knowledge and understanding of practical Cost Control for projects.

It does not intend to be a 'starters' guide to Cost Control. Nevertheless, because it is often worth revisiting basic principles, it does so in the context of large, complex projects.

A practical handbook

This handbook has been specifically written in the particular context of large, complex construction projects, both from the Contractor and Owner perspectives. In the handbook, "Client" will be used to designate the contractor's client or, in the case of Owners, the facility budget holder.

The “project” in itself can be the main project implementation, or a specific phase of project definition

The handbook is designed to outline educational and practical step-by-step explanation of the most important Cost Control principles.



We will use the historical ship drawing on the left to highlight those sections that refer to the principles of navigation.

Those sections will form a thread running throughout our Project Control books (*Cost Control*, *Schedule*, *Risk and Project Control handbooks*), where traditional navigation tools and processes are quoted as an image that put the

concepts in perspective.

Our intent is that well worn-out copies of this handbook will be found on every Cost Controller’s, Project Control Manager’s and Project Manager’s desk.

The Handbook’s Structure

Chapter 1 describes in detail what Cost Control is in projects, how it is different and how it should interface with Finance/ Accounting.

Chapter 2 covers a number of Cost Control Golden Rules that summarise key principles that are essential to follow.

Chapter 3 to 5 explain where the emphasis needs to be placed to respond best to the project needs for each project stage. Chapter 3 starts by covering the expected quality of the project estimate and how to challenge it at the project onset. Chapter 4 covers the necessary setup activities at project start-up, and Chapter 5 covers the subsequent stages of project execution.

Chapter 6, 7 and 8 focus on forecasting and related reporting. Chapter 6 describes the fundamentals of cost forecasting and how to apply them in large projects. Chapter 7 exposes how to forecast each type of cost and revenue in the project. Then, Chapter 8 explains how to reflect those forecasts in the Monthly Project Reports - including reporting on sensitivities.

Chapter 9 to 11 cover the relationship between Cost Control and financial performance, Chapter 9 covers the advanced topic of time-phasing of cost estimates. Chapter 10 is Contractor-specific and focuses on Percentage of Completion (POC) accounting and financial performance, including in the case of multi-entity projects. Chapter 11 covers the case of multi-currency cost control, issues which is common in most large international projects. These Chapters have been included because Project Managers need to be aware of these subjects without being specialists.

Finally, Chapter 12 cover forensic analysis of Cost Control issues on projects and serves as a wrap-up chapter by covering most shortcomings and issues that can be observed in real-life project Cost Control.

Appendices cover various checklists for Cost Control (monthly and by project phase), and a short reminder on the principles of Earned Value Management, including some practical advanced concepts.

Topics not covered in this handbook

This handbook is aimed at the practice of project Cost Control. While it covers extensively the input from Cost Control to Finance, in particular regarding the establishment and maintenance of an exhaustive *project cost model* for the project (in source currency and time-phased), the following topics are not covered in this handbook:

- Details of accounting for variable exchange rates and currency hedging,
- Contractual and tax strategies that lead to split a Main Contract in several contracts involving several entities,

- Strategic management of project bottom line beyond the remit of the Project Manager, when applicable,
- Legal entity income tax and related optimisations.

Who is this handbook for?

This handbook is explicitly for Project Sponsors, Project Managers, Project Control personnel and all those who aspire to become Project Managers; budget owners within projects (package delivery managers, etc.) as well as functional managers that are involved in Cost Control.

Finance personnel involved in project-driven organisations will also find this book useful to understand some of the reasons driving financial results recognition in the context of projects' execution. Financial analysts involved in the valuation of project-driven companies will also find useful concepts to understand the reality of project performance reporting.

Chapter 2:

Cost Control Golden Rules

The main objective of Cost Control is to enable the Project Manager to take decisions based on an accurate description of the project's expected financial outcome, based on the organisation's current knowledge and understanding of reality.

From this broad objective, a number of Golden Rules describe the basic requirements of Cost Control.

In all instances, 14 Golden Rules / Principles need to be followed when it comes to Cost Control.

1. **Accountability:** Budget Owners are ultimately accountable for their budget (including forecast and time-phasing). Cost Control supports budget reviews by providing the supporting documents and actual analysis of any deviations, and by challenging Budget Owners.
2. **Forecasting focus:** The primary focus of Cost Control is Forecasting. An important part of Forecasting consists of understanding where you are (Actual Cost of Work Performed or AC compared to Budget). Equally important, and where Cost Control can really add value is on the Estimate at Completion (EAC) determined by adequate forecasting approaches (refer to Chapter 6).
3. **Maintenance of the reference *Project Cost Model*:** At all times, Cost Control maintains an updated overall *Project Cost Model* of the project (time-phased and in source currencies) that will be used as a basis for all financial modelling of the company's results. The *Project Cost Model* reflects at all times the latest knowledge, information and anticipation available.

4. **Project Scope & Schedule consistency:** At all times, the *Project Cost Model* is consistent, comprehensive and intrinsically linked with the two other sides of the Project Triangle: the project Scope, and the project Schedule. The project Scope is developed during the project definition stage and explicitly described in contractors' contracts. It evolves through Management of Change and Variation Orders. The project schedule is continuously updated by the Project Control team.
5. **Immediacy principle:** It is essential to reflect significant new costs and costs variances as soon as their occurrence is known (e.g. contractors' claims, internal or Client's instruction to proceed), at least in terms of order of magnitude, even if their exact final value has not been fully assessed (the uncertainty can be shown in the sensitivity if there is a need for further investigation). Probable costs and revenues need also to be immediately reflected in the sensitivity analysis (refer to the Chapter 8).
6. **Candidness principle:** cost acknowledgment and reporting must be candid and reflect the actual understanding of reality. Cost forecasting must reflect the latest understanding of the possible unfolding of events, based on the information available. Variances should not be hidden by unwarranted usage of contingency.
7. **Timeliness of reporting:** periodic cost reports shall be produced regularly on the expected date without exception, based on the knowledge to date. Many processes depend on the *Project Cost Model* data and disregarding reporting deadlines is not acceptable.
8. **No surprises:** Quality of Cost Control is measured by a steady and converging EAC and Sensitivity analysis, and absence of sudden unexplained or unplanned variations. Variances should be exclusively caused by events that happen outside of the project and not by internal oversights.

9. **Commitment tracking focus:** commitment tracking is the key to Cost Control, payment control and to the avoidance of surprises. Cost Control is responsible to ensure that systems and processes are in place to identify and track commitments for all cost categories. This is valid for both internal and external commitments!
10. **Prudence principle for EAC:** Cost Control errs on the prudent side on the Estimate at Completion, recognising all costs to complete the project as soon as they are known. For Contractors, this applies irrespective of their indemnification by the client (client instruction to proceed, contractor claim, etc.) and revenues should not be recognised unless they are certain.
11. **Realism principle for 'Achievable' Forecast:** Cost Control updates a realistic achievable performance of the project in the sensitivity analysis. For contractors, it accounts in particular for 'achievable' revenues.
12. **Accuracy over precision:** cost updates should be accurate but not necessarily precise. This important distinction should focus the effort of the Cost Control team.
13. **Data integrity principle:** Cost Control ensures the integrity and consistency of the cost data in the *Project Cost Model*:
 - It defines and updates the project cost breakdown structure throughout all project systems,
 - It ensures that all cost variances since the beginning of the project are properly traced, auditable and explained,
 - It implements appropriate data consistency checks throughout the *Project Cost Model* to avoid pure data-driven errors.

14. **Cost reconciliation principle:** While Cost Control maintains a *Project Cost Model* independently from Accounting, costs ultimately will reconcile with Accounting at the end of the project, and proper reconciliation shall be done on a monthly basis at the relevant breakdown level, with differences explained, to ensure that the *Project Cost Model* remains related to reality. Reconciliation will result in the determination of the accruals, which should remain reasonable and explainable.



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Part of our mission is to identify and spread the world-class practices that define consistent success for project leadership. Ultimately, we want to be able to deliver a framework that makes Large, Complex Projects a reliable endeavor.

Our Book Series are a crucial part of this framework, spreading indispensable good practices and skillsets for leaders in projects.

Our approach to project success

At Project Value Delivery we believe that project success is based on three main pillars which require specific sets of skills and methodologies specific to Large, Complex projects. All three need to be strong to allow for ultimate success:

- Project Soft Power™ (the human side)
- Systems
- Processes

We focus on embedding these skills and methodologies in organisations through consulting, coaching and training appointments. We develop what organisations need and then help them implement it sustainably, transferring the knowledge and skills.

We recognise that to be effective, our interventions will involve access to confidential business information and make it a point to treat all information provided to us with the utmost confidentiality and integrity.

Our Products

Our products are directly related to our three pillars. We have developed proprietary methods and tools to deliver the results that are needed for Large, Complex projects. In a number of areas, they are significantly different from those conventional project management tools used for simpler projects.



We focus on consulting, coaching and training interventions where we come in for a short to medium duration, analyse the situation, develop customised tools if needed, and transfer skills and methods to our clients so that they can implement them in a sustainable manner.

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