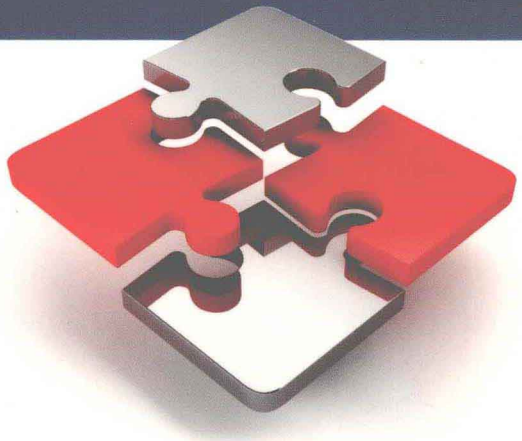
CREATIVE PROJECT MANAGEMENT



Innovative Project Options to Solve Problems On Time and Under Budget

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New York Chicago San Francisco Lisbon London
Madrid Mexico City Milan New Delhi San Juan
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1 2 3 4 5 6 7 8 9 0 DOC/DOC 1 5 4 3 2 1 0

ISBN 978-0-07-173933-7
MHID 0-07-173933-5

Illustrations by Baker & Hill Graphic Design.
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This book is printed on acid-free paper.

This book is dedicated to my dear friend
Humayun Mirza.

Michael Dobson

To my wife, Sandy, and family, and to my parents,
Doris and Edwin.

Ted Leemann

Acknowledgments

IT TAKES A village to produce a book. Thanks (and a tip o' the hat) to the many people who contributed ideas, tools, insights, and operational help, including Mark Hill of Baker and Hill Graphic Design, who turned our rough concepts into works of art; Maryann Karinch, who came to the rescue of Chapter 7 with management insights about the business of intelligence from her new book with Peter Earnest, executive director of the International Spy Museum and former senior CIA national clandestine service officer; Misha Burnett, the Eric Hoffer of locksmithing, who invented the model showing consequences of mismatching authority and responsibility in Chapter 8; and Robert Coulter for offering perspective and insight from a different generation.

The team at McGraw-Hill has been a professional delight to work with. John Aherne, our acquisitions editor, and Joe Berkowitz, our project editor, provided sure guidance and insightful questions. Janice Race's ace copyediting team caught just about everything else. Our literary agent Maryann Karinch of The Rudy Agency (an author in her own right, as noted above), coordinated all the myriad details of the project admirably.

And, of course, we'd like to thank the Academy. "King of the world, Ma!"

There are many others we need to thank, but they're playing the exit music, so it's time to go.

All mistakes and misjudgments that may have survived the eagle eye of our editors are, of course, our responsibility.

Except typos. Those pesky things breed on printing presses.

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Why Do 70 Percent of Projects Fail?

We should be careful to get out of an experience only the wisdom that is in it—and stop there; lest we be the cat that sits down on a hot stove-lid. She will never sit down on a hot stove-lid again—and that is well; but she will also never sit down on a cold one anymore.
—Mark Twain, *Following the Equator*, 1897

Why Projects Fail

If project management is such a good idea, why do 70 percent of all projects fail, including those led by experienced and capable project managers? Why does it seem to be so difficult to get projects done within the Triple Constraints of time, cost, and performance—or, in layperson's language, on time, on budget, and to spec?

Here are a few instructive examples of some of the more recent spectacular failures in project management:

- In 2006, a $400 million purchasing system for Ford Motor Company was simply abandoned.

- Software errors in a U.K. Inland Revenue system resulted in a $3.45 billion tax-credit overpayment.

- The infamous automated baggage system at Denver International

Airport burned through $250 million before being abandoned as unworkable.

- The U.S. Department of Defense's $6 billion Kinetic Energy Interceptor program was terminated in 2009 after it was determined that it would not achieve its goals.

That's not all. Let's look at some numbers on project performance, compiled by the Standish Group. This organization has tracked project performance since 1994. Every two years, the Standish Group issues the CHAOS Report, which analyzes projects primarily in the software area. In the 2009 CHAOS Report, they reported these abysmal numbers:

- 32 percent of projects were delivered on time, on budget, and with the required features and functions.

- 44 percent were finished either late, over budget, or only partially completed.

- 24 percent failed altogether, and they were canceled or abandoned.

There's good news and bad news here. The good news is that in 1994, when the Standish Group began tracking data, only 16 percent of projects succeeded in meeting the Triple Constraints (on time, on budget, to spec). On the other hand, the 2009 report shows that there's been a downtick in success (34 percent to 32 percent) and a significant uptick in failure (from a low of 15 percent to 24 percent).

For challenged projects, those that succeed in some elements and fail in others, the good news is that average budget overrun has dropped from 180 percent to only 43 percent. On the less positive side, time overruns have gone up 30 percent, and the percentage of features that have made it into the final product has dropped from 67 percent to 52 percent.

During this time, nearly 260,000 project managers earned the prestigious Project Management Professional (PMP) designation from the Project Management Institute (PMI). But the track record of improved project performance is lackluster at best.

What's going on?

A significant amount of study and reporting going back several decades has shed light on some of the reasons for these failures:

- The 1998 Bull survey, conducted by the French computer company Bull, identified the major causes of information technology (IT) project failure as a breakdown of communications, a lack of planning, and poor quality control.

- KPMG Canada, in 1997, identified the core project failure issues as poor planning, weak business case, and a lack of top management involvement and support.

- The Standish Group's 1995 CHAOS Report named incomplete requirements and lack of user involvement as reasons for project failure.

- The OASIG Study, published in 1995 by a U.K. group studying organizational aspects of information technology, cited lack of attention to the human and organizational aspects, poor project management, and poor articulation of user requirements as reasons why projects failed.

But poor planning, weak business case, and inattention to human and organizational aspects aren't *causes*; rather, they are *symptoms* of a much large systemic shortcoming. Treating the symptoms isn't the same as treating the underlying conditions. We know some of the root causes. People with poor interpersonal or team leadership skills create friction, as well as stakeholder conflict, in the project environment. Friction then increases inefficiency and waste. The size and complexity of an organization increases its moment of inertia, and getting anything to move takes enormous effort. People come and go, missions mutate, information goes missing, and ultimately entropy increases—we tend to move from order toward chaos.

Things fall apart. It's been said that there are only two reasons for project failure:

1. Things that nobody thought of or prepared for
2. Things that everybody thought of, but nobody did anything about

If you think about it, these reasons alone cover almost every potential incident. How often have you experienced project problems because a couple of the people working on your project were suddenly pulled off halfway through? How about a major change ordered in one or more of the Triple Constraints when the project is three-quarters completed? Perhaps there's some recurrent problem in the project environment that manages to happen every single time. Things take longer than you expected. Not everybody is really on board. There's always a layer of technical complexity no one expected. Stakeholders don't really know what they want, or they expect you to figure it out magically. All of these problems have the same result: a mess.

But do you account for these situations in your project planning? For a few outstanding project managers, the answer is at least a partial yes. For most of us, the answer rests somewhere between seldom and never.

Four Essential Project Questions

If you take the list of reasons from the studies mentioned previously, you can boil them down into the following four (often unasked) questions:

1. Why are we doing this? (Business case)
2. Who has an interest in what we're doing, and what do they each want and need? (Human and organizational aspects)
3. What do we have to do, and how are we going to do it? (Project management, including planning and quality control)
4. Who needs to be involved, and in what way? (Top management and user involvement and support)

The official standards of professional project management are designed to make sure these issues get appropriate consideration. But these considerations are quite obvious—it shouldn't take a PMP to grasp these concepts. Why, then, given the amount of effort, knowledge, and resources, is the situation in some ways getting *worse?*

The Operational Art of Project Management

The Project Management Institute (PMI) defines project management as "the application of knowledge, skills, tools, and techniques to project activities to meet project requirements." That's fine, but it's not nearly enough. Tools matter, of course, but a hammer and saw don't make someone a carpenter. Nor does mastery of technical skills alone ensure success.

To us, the key issue is *thinking well*—a focus on practical creativity that combines brainstorming, operational analysis, and planning to help you solve problems, find opportunities, and gain insights into any project.

Thinking well is a broad topic that includes many issues of interest to project managers, for example:

- Thinking outside the box (or for Triple Constraints–oriented project managers, thinking outside the triangle)

- Thinking clearly about the circumstances and environment in which our project takes place

- Thinking honestly about risks and opportunities

- Thinking about our own biases and blind spots so we can minimize their harmful effects

What project managers learn (some of us do so the hard way) is that the self-imposed constraints, assumptions, and opinions we and other stakeholders bring to the project manifest themselves subliminally in a variety of ways that too often hinder project performance.

Fundamentally, project management is an *operational art*; it's the link between strategy and tactics. Project management is the operational art that applies the goals of the project to the tasks we perform. Just as there's an operational art to getting an army (equivalent to a small city) to move, there's an operational art to building a skyscraper or leading a large IT project.

The Seven Dimensions of Project Management

Projects differ from operational work because projects *end*. By definition, they are "temporary and unique." Projects take place under constraints. Projects have different levels of complexity and different levels of uncertainty. Project managers live in a bounded, finite universe ruled by scarcity and governed by the Triple Constraints of time, cost, and performance, as shown in Figure 1-1.

The Triple Constraints themselves array in a hierarchy of driver, middle, and weak constraints. The driver is the leg of the Triple Constraints that drives the project. If you're rushing to beat the clock, time is the driver. If there's only so much money and not a penny more, cost is the driver. If getting it exactly right is essential, performance is the driver. The weak constraint, on the other hand, is not necessarily the least important constraint, but it is always the most flexible. That flexibility is where many creative solutions tend to live, so knowing not only which constraint is weak but where it is weak is a huge opportunity for any project manager. The middle is, well, in the middle. There may be exploitable flexibility, but not as much.

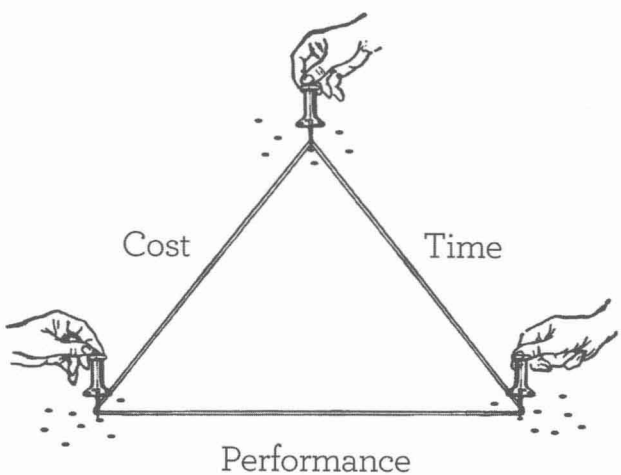

Figure 1-1. The Triple Constraints are the outer borders of any project: "How long do I have?" "How much can I spend?" and "What exactly does this puppy have to do, anyway?"

Each of the six possible combinations of time, cost, and performance forms a separate dimension of project management (Dobson/Feickert, 2007) and provides its own set of challenges and opportunities.

A Man, A Plan, A Gantt—Project Management

When the only tool you have is a hammer, all problems start to look like nails. The tendency to overuse the familiar tool (as opposed to the correct one) is part of our general proneness to prefer the familiar to the strange, the known to the unknown.

That line of thinking is a mistake. A creative project manager must accept that not everything is, can be, or should be familiar, known, or controllable. To understand how formal project management can mislead its modern practitioners, a brief history of its origins is necessary. Project management grew out of a production and engineering environment. In the process, rules, more rules, and even more rules were created. Project management is not production, however; it is the application of a standard production process to a unique and creative event. We tend to manage the creativity out of projects that are by definition unique and creative. That is the root cause of many project problems.

The project management profession has focused, reasonably enough, on performance improvement. To that end, the act of project management has been deconstructed, sliced and diced, and studied from a multitude of vantage points and technical specialties. The result has been a consistent effort to demystify project management by documenting centralized processes, to apply the rubric of "scientific management" so that projects become repeatable and controllable. It's a worthy goal. We question whether it is a realistic one.

Today, the center of gravity of the project management world is the Project Management Institute. In 2008, it reported a membership of 260,000 practitioners operating in 171 countries. PMI's standard reference, *A Guide to the Project Management Body of Knowledge* (popularly known as the *PMBOK Guide)* is the bible for people hoping to earn the designation of Project Management Professional by passing a challenging

examination. This guide is an intellectual heir to the theory of scientific management.

In the 1880s and 1890s, Frederick W. Taylor pioneered the systematic analysis of workflows, hypothesizing that traditions and rules of thumb were insufficient to manage the radical new technologies brought on by the industrial age. That examination was scientific in that its conclusions were developed through careful study and analysis, not based on the whim or preference of any specific worker. This process of scientific management, Taylor believed, would naturally result in increased efficiency and productivity, combined with lower waste.

Taylorism and modern project management were joined at birth. Projects, of course, are as old as human civilization, but the story of project management as a formal discipline begins with Henry Lawrence Gantt (1861–1919), an American mechanical engineer and management consultant. Gantt, famous for the eponymous Gantt chart, was Frederick W. Taylor's college roommate and later worked with Taylor to apply scientific management to the steel industry.

Besides his chart, Henry Gantt is famous for two other accomplishments. He is credited as the originator of the idea of linking management bonuses to how well the managers have taught their employees to improve performance, and he established a formal model for industrial efficiency.

You Say You Want an Industrial Revolution . . .

Both Taylor and Gantt were children of the Industrial Revolution, a transformational moment in human history. Old ideas about work crumbled under the impact of new technology, and processes had to change. Unlike agriculture, in which a farmer can do everything right and still have a crop fall victim to a natural disaster like an early winter or a prolonged drought, the Industrial Revolution held out the hope of certainty. Machines, at least in theory, are predictable, repeatable, and efficient. If only workers could learn to be more like machines, we would shortly all live in a brave new world of controlled and managed happiness.

It's absolutely true that scientific management tamed the new technology of the Industrial Revolution, created new and valuable ideas about productivity and efficiency, and made the world a better place. It's equally

true that there are downsides and costs associated with the new goals of the modern age. From Aldous Huxley's *Brave New World* to George Orwell's *1984*, from Fritz Lang's *Metropolis* to Charlie Chaplin's *Modern Times*, scientific management and the Industrial Revolution have been portrayed as dehumanizing workers and imposing tyrannical control over the smallest details of human behavior.

There's plenty of truth to go around.

In the field of risk management, we talk about "secondary risk," the new risk inadvertently created by your attempt to mitigate the original risk. It's well known that solutions often create new problems.

Mechanical metaphors can only take us so far. Even an infinite set of checklists, databases, and Intranet sites filled with updated Microsoft Project or Primavera files and a fully staffed Project Management Office (PMO) filled with certified PMPs have clearly not solved the problem of failed projects and in some ways make it worse.

At one time it was possible for an educated person to learn almost everything there was to learn. That hasn't been the case since the late Renaissance period, and as a result people have specialized. Specialization allows people to develop great expertise, but it complicates creative cross-border thinking and creates its own special cognitive bias, known as *déformation professionnelle*. That's when people look at every problem through their own narrow lens, forgetting that any other points of view exist.

Adaptability

The conflict between Theory X and Theory Y, between chains of command and the matrix organization, and between efficiency and teams has kept the authors and publishers of management books in business for generations, for which everyone associated with *Creative Project Management* is deeply grateful. Like all attempts to perform balancing acts on slippery slopes, we must make continual adjustments. Sometimes these adjustments are a function of attitude and temperament; sometimes they are a function of a shifting environment or the characteristics and constraints of the project.

It is well known that project management must be scaled, but it must also be stretched.

The systems and processes needed to manage the construction of a new aircraft carrier would be gross overkill if they were used to build a patio in one's backyard. Both projects are temporary and unique. Both can be broken down into packages of work. Both have measurable end states. But that's about all they have in common. Scale affects costs, and it limits your choices.

Projects in creative or design fields often require agile approaches. When the border between tasks blurs into a transition, when the work iterates instead of progresses, and when collaboration crosses boundaries at will, project management must also be stretched. The systems management virtues of formal methodology weaken, and uncertainty replaces it.

This outcome makes many traditional project managers extremely uncomfortable.

The Mental Effects of Uncertainty

The American National Standards Institute (ANSI) accredits PMI's *PMBOK Guide* as a standard for project management practice. That means its mission, in some ways, is to finish what Henry Gantt started: to ensure that the characteristics and performance of processes are consistent and that people use the same definitions and terms. It is fully compatible with Gantt's concept that industrial efficiency can only be produced by the application of scientific analysis to *all* aspects of the work in progress.

Like Henry Gantt, PMI appears to believe that the essential goal and aim of project management is to *eliminate chance and accidents.*

We believe that not only is that goal impossible but it is also not necessarily even a good idea.

The Chaos Paradigm

The age of machines has pointed the way toward a utopia of predictability, but in the age of computers and biotechnology, chaos seems much more the norm. While it's a good idea to tame what can usefully and practically be tamed, most of the project world lives where the wild things are. Chance and accidents have given us penicillin, vulcanized rubber, and that most essential tool for modern project managers, the Post-it Note. (You can have our copies of Microsoft Project, but you'll have to pry the Post-it Notes out of our cold, dead fingers.)

On top of that, the world in which we live sometimes resembles *Matrix Revolution* more than Industrial Revolution. The *fin de siècle* inevitably turns, sooner or later, into the Y2K problem. Gantt gives way to PERT (Project Evaluation and Review Technique), and PERT gives way to the Monte Carlo simulation technique. Statistical process control begets TQM (Total Quality Management), which begets ISO-9000, which begets lean Six Sigma (or as we like call it, "TQM with karate belts").

The center cannot hold.

We are living through a transformation easily equal to the Industrial Revolution, and uncertainty is our daily companion. But fear is not the only legitimate response to uncertainty, and it's frequently not the best one, either. Uncertainty also allows for hope.

We believe that embracing the reality of uncertainty and fluidity in the projects we manage, rather than fighting a forlorn attempt to stamp it out altogether, provides greater benefits, on the whole. Pretending to have a false certainty is no virtue. You have to sail the turbulent seas toward a destination that often shifts.

The Cost of Information

Project management, like most formal systems, has a side no one likes to talk about: it's expensive. Gathering, organizing, formatting, displaying, discussing, and using information takes time and money—often quite a lot of both. Formal project management can be dizzying in its breadth, in that it's supposed to cover everything. But don't think you have to drive carpet tacks with a sledgehammer. You can balance and adjust the tools you use based on the difficulty of your project.

In order to do that, you must ask this next question.

What Makes This Project Hard?

As Figure 1-2 shows, project challenge can be grouped into three rough dimensions:

1. **Constraints**. How tight are the constraints of time, cost, and performance?

2. **Complexity.** How complex is the project (tasks, resources, technology)?
3. **Certainty.** How much do we know about the risks and issues we face (on a continuum from certain to uncertain)?

Constraints

"Give me a lever long enough and a fulcrum on which to place it, and I shall move the world," said Archimedes. Of course, he couldn't have either one, and that's the reality of project management.

When we say "nothing's impossible," we generally mean something like this: given unlimited time, unlimited resources, and really flexible standards, we can accomplish anything. Well, okay. But that's seldom the reality of the situation. A job can be relatively easy if the constraints are loose, but it can be completely impossible if they are too tight. We rarely get to decide how those constraints are drawn. So, then, the first necessary step is to define the constraints: what *can't* you do, and how can you do it anyway?

Constraints can be tight or loose, flexible or inflexible. Some constraints turn out to be based on mere assumptions, and they end up having flexibility. Others are solid and binding, making the projects literally impossible. If you have an ironclad deadline that's six months more than you need, or an approaching deadline for which no one will worry if you miss it by a few months, it's a loose constraint. When the constraint is close and it has to be done just so, it's inflexible . . . and it's a headache.

There are various strategies for managing tight constraints, depending on each individual project's circumstances. Some constraints are nondiscretionary: they're simply facts. Managing nondiscretionary constraints requires creativity if the constraints are too tight. Straight-line solutions are closed off, but there may be ways to get around brick walls.

Some constraints are actually just preferences, as when your customer would sooner not spend the extra money but still wants it early. Preferences can be negotiated; the customer will likely prefer some tradeoffs to others.

Other constraints are based on assumptions about what the customer wants and needs. Some assumptions are made by the customers, some by the project manager, some by other stakeholders. Assumptions first appear as nondiscretionary constraints or preferences, so probe every constraint to