HAROLD KERZNER, Ph.D.

PROJECT MANAGEMENT

BEST PRACTICES

ACHIEVING GLOBAL EXCELLENCE

5TH EDITION

INTERNATIONAL Institute for Learning, Inc.

WILEY

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To
my wife, Jo Ellyn
who showed me that excellence
can be achieved in
marriage, family, and life
as well as at work

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Preface

For almost 50 years, project management was viewed as a process that might be nice to have but not one that was necessary for the survival of the firm. Project management practices were restricted in many companies to traditional or operational projects with well-defined scopes rather than strategic or innovation activities that may be based upon just an idea or strategic business objective. Companies reluctantly invested in some training courses simply to provide their personnel with basic knowledge of planning and scheduling. Project management was viewed as a threat to established lines of authority, and in many companies, only partial project management was used. This halfhearted implementation occurred simply to placate lower- and middle-level personnel as well as select customers.

During this 50-year period, many companies did everything possible to prevent excellence in project management from occurring. Companies provided only lip service to empowerment, teamwork, and trust. They hoarded information because the control of information was viewed as power. They placed personal and functional interests ahead of the best interest of the company in the hierarchy of priorities, including innovation and other strategic necessities, and maintained the faulty belief that time was a luxury rather than a constraint.

By the mid-1990s, this mentality began to subside, largely due to two recessions. Companies were under severe competitive pressure to create new high-quality products in a shorter period of time. Innovation was now considered a necessity for growth and survival. The importance of developing a long-term trusting relationship with the customers had come to the forefront as customers wanted more innovations. Businesses were being forced by the stakeholders to change for the better and become innovative. The survival of the firm was now at stake.

Today, businesses have changed for the better, and innovative project management was a large part of the change. Trust between the customer and contractor is at an all-time high as well as trust between management and the project teams. New products resulting from better project management practices are being developed at a faster rate

than ever before. Innovation project management practices have become a competitive weapon during competitive bidding. Some companies are receiving sole-source contracts for innovative products and services because of the faith that the customer has in the contractor's ability to deliver a continuous stream of successful projects using a project management methodology that today appears more like a framework or flexible methodology than a rigid approach. All of these factors have allowed a multitude of companies to achieve some degree of excellence in project management. Business decisions are now being emphasized ahead of personal decisions.

Words that were commonplace 20 years ago have taken on new meanings today. Change resulting from better project execution is no longer being viewed as being entirely bad. Today, change implies continuous improvement. Conflicts are no longer seen as detrimental. Conflicts managed well can be beneficial. Project management is no longer viewed as a system entirely internal to the organization. Strategic partnerships may be required. Project management is now a competitive weapon that brings higher levels of quality and increased value-added opportunities for the customer. In many companies, project management is treated as a strategic competency that is one of the four or five career paths in the company that are critical for the company's future.

Companies that were considered excellent in management in the past may no longer be regarded as excellent today, especially with regard to project management. Consider the book entitled *In Search of Excellence*, written by Tom Peters and Robert Waterman in 1982 (published in New York by Harper & Row). How many of the companies identified in their book are still considered excellent today? How many of those companies have won the prestigious Malcolm Baldrige Award? How many of those companies that have won the award are excellent in project management today? Excellence in project management is a never-ending journey. Companies that are reluctant to invest in continuous improvements in project management soon find themselves with low customer satisfaction ratings.

This book covers the advanced project management topics necessary for implementation of and excellence in project management. The book contains numerous quotes from people in the field who have benchmarked best practices in project management and are currently implementing these processes within their own firms. Quotes in this book were provided by several senior corporate officers as well as others. The quotes are invaluable because they show the thought process of these leaders and the direction in which their firms are heading. These companies have obtained some degree of excellence in project management, and what is truly remarkable is the fact that this happened in less than five or six years. Best practices in implementation will be the future of project management well into the twenty-first century. Companies have created best practices libraries for project management. Many of the libraries are used during competitive bidding for differentiation from other competitors. Best practices in project management are now viewed as intellectual property.

Excellence in project management is not achieved simply by developing a project management methodology. Instead, it is how the methodology is used again and again that creates excellence and a stream of successfully managed projects. We are now trusting project managers with flexible methodologies where they can use just those components of the standard methodology that are needed for a particular project.

Project management practices and methodologies are built around the culture of companies and by determining what it takes to get people to work together, solve problems, and make decisions. Because each company most likely has its own unique culture, it is understandable that each company can have a different number of life-cycle phases, different decision points, and different success criteria. No single approach fits all companies, which is why this book discusses a variety of companies, in different industries, of different sizes, and on different continents. Hopefully, after reading this book, you will come up with ideas as to how your project management activities can improve.

Seminars and webinar courses on project management principles and best practices in project management are available using this text and my text *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, 13th edition (Hoboken, NJ: Wiley, 2022). Accompanying this text is a companion website, www.wiley.com/go/pmbestpractices4, where Instructors can access PowerPoint lecture slides, and an instructor's manual. Seminars on advanced project management are also available using this text. Information on these courses, e-learning courses, and in-house and public seminars can be obtained by contacting:

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About the Companion Website

This book is accompanied by a companion website:

www.wiley.com/go/kerzner/project_management5e

The website includes the instructor's manual which contains 291 multiple choice questions, 131 true/false questions, and 170 essay/discussion questions. Answers are provided to the multiple choice and true/false questions.

1 Understanding Best Practices

1.0 INTRODUCTION

Project management has evolved from a set of processes that were once considered "nice to have" to a structured methodology that is considered mandatory for the survival of the firm. Companies are now realizing that their entire business, including most of the routine activities, can be regarded as a series of projects. Simply stated, we are managing our business through projects.

Project management is now regarded as both a project management process and a business process. Therefore, project managers are expected to make business decisions as well as project decisions. The necessity of achieving project management excellence is now readily apparent to almost all businesses.

As the relative importance of project management permeates each facet of the business, knowledge of best practices in project management is captured. Some companies view this knowledge as intellectual property to be closely guarded in the vaults of the company. Others share this knowledge in hope of discovering other best practices. Companies are now performing strategic planning for project management because of the benefits and its contribution to sustainable business value.

One of the benefits of performing strategic planning for project management is that it usually identifies the need for capturing and retaining best practices. Unfortunately, this is easier said than done. One of the reasons for this difficulty, as is seen later in the chapter, is that companies today are not in agreement on the definition of a best practice, nor do they understand that best practices lead to continuous improvement, which in turn leads to the capturing of more best practices. Many companies also do not recognize the value and benefits that can come from best practices.

Today, project managers are capturing best practices in both project management activities and business activities. The reason is simple: The best practices are intellectual property that encourages companies to perform at higher levels. Best practices lead to added business value, greater benefits realization, and better benefits management activities. Project management and business thinking are no longer separate activities.

Project management is now regarded as the vehicle that provides the deliverables that create business benefits and business values. In the last few years, there has been a tremendous growth in the need for capturing best practices related to benefits realization management and value creation.

1.1 WÄRTSILÄ[1]

Benefits Management in Operational Development Projects in Wärtsilä

Wärtsilä has a strong tradition of project-based businesses and project management practices. Because of this, a corporate-wide project management office (PMO) was established in 2007 to further strengthen the focus on project management competence within the group and to develop a project management culture, processes, competencies, and tools.

Today, project management structures and ways of working have become a fundamental part of Wärtsilä's business thinking. The business process model has gradually shifted from being a somewhat disordered process to a harmonized model, enabling the implementation of unified guidelines, targets, and terminology. The company has approached this implementation of project management practices from two different but equally important aspects. First, a project management tool providing, inter alia, more effective resource and schedule planning has been introduced and implemented. Second, the organization has been encouraged to actively participate in professional project management training and certification paths.

As the project management processes have become well-defined and have gained maturity, the emphasis has gradually shifted toward benefits management in operational development projects. The initiative to improve benefits management processes stems from the mission of the Wärtsilä PMO for Operational Development, which is to ensure synergies between Wärtsilä's business units that would help enable businesses to transform their strategic ambitions into daily operations. This would be achieved by providing management and expertise in terms of change management, business processes, and application development.

In traditional project management, projects are often measured in terms of budget, schedule, scope, or quality. Benefits management as a concept, however, focuses more on the actual value that the projects are able to deliver to the end customer. In other words, project success is not measured solely in terms of time or money. Quite the opposite, measuring the success of a project comes from the end user: Did this solution fulfill the user's needs? As the concept of value is rather vague, it is of the utmost importance that the benefits have concrete metrics and measurements. This concerns also so-called soft, intangible benefits. Although they cannot be quantified financially, they must be measured. Another important aspect of benefits planning is creating a valid

1. Material has been provided by the Wärtsilä Project Management Office. (WPMO).

baseline to compare the results with. Instead of comparing only to a business-as-usual situation, the results gained from the benefit realization measurements should be compared to other alternative scenarios ("Could this have been achieved some other way?").

In operational development projects, the output of the project can be, for example, an information technology (IT) tool made to improve resource planning. The most crucial part of the project, however, is making the *output* into a project *outcome*. This means that the project output (in this case, an IT tool) should become a part of the end user's way of working. In order to make this happen, the benefits planning must consider two important aspects:

1. What does the end user want and need?
2. What has to change in order to make this happen?

With proper end-user expectation management and change management, the risk of the project output becoming just another tool in the toolbox can be avoided.

In a nutshell, the benefits management system should consist of the following elements:

- *Identifying the driver for the project*. Do we really need this investment? Who else is going to benefit from it?
- *Identifying the key benefits*. What are the benefits and when will they occur? What is their proximity (how likely are they to happen)?
- *Estimating the benefits*. Defining a clear baseline for the measurements allows us to define clear metrics (which apply to the entire portfolio of projects) and provides us with consistency throughout all life-cycle phases, from project initiation to benefit realization. The critical question we must ask is: Do these metrics tolerate changes in the business environment?
- *Linking the benefits with change*. How does the organization have to change in order to enable the benefits realization? How can we enable this change? Plan the deployment and adjust it to (business) environmental changes (organizational changes, market situation changes, etc.).
- *Who is accountable for the benefit?* Define a person/organization responsible for the benefits realization.
- *Monitoring benefits*. Monitor your performance with the established metrics, improve it if needed toward the defined goal, and acknowledge risks in a proactive way.
- *Doing a postproject evaluation*. Ensure a successful deployment by communicating about the project output and honestly promoting it. Imagine yourself in the end user's position: Would you like to use this tool?
- *Learning from your mistakes*. Ensure that project success points and failures are equally handled. Focus on honest communication and learning, not blaming. Examples should come all the way from the executive level.

1.2 PROJECT MANAGEMENT BEST PRACTICES: 1945–1960

During the 1940s, line managers functioned as project managers and used the concept of over-the-fence management to manage projects. Each line manager, temporarily wearing the hat of a project manager, would perform the work necessitated by his or her line organization and, when that was completed, would throw the "ball" over the fence in the hope that someone would catch it. Once the ball was thrown over the fence, the line managers would wash their hands of any responsibility for the project because the ball was no longer in their yard. If a project failed, blame was placed on whichever line manager had the ball at that time.

The problem with over-the-fence management was that the customer had no single contact point for questions. The filtering of information wasted precious time for both the customer and the contractor. Customers who wanted firsthand information had to seek out the manager in possession of the ball. For small projects, this was easy. However, as projects grew in size and complexity, this became more difficult.

During this time, very few best practices were identified. If there were best practices, then they would stay within a given functional area, never to be shared with the remainder of the company. Suboptimal project management decision-making was the norm.

Following World War II, the United States entered into the Cold War with the Soviet Union. To win the Cold War, the United States had to compete in an arms race and rapidly build weapons of mass destruction. The victor in a cold war is the side that can retaliate with such force as to obliterate the enemy. Development of weapons of mass destruction involved very large projects involving potentially thousands of contractors.

The arms race made it clear that the traditional use of over-the-fence management would not be acceptable to the Department of Defense (DoD) for projects such as the B52 bomber, the Minuteman intercontinental ballistic missile, and the Polaris submarine. The government wanted a single point of contact, namely, a project manager who had total accountability through all project phases. In addition, the government wanted the project manager to possess a command of technology rather than just an understanding of technology, which mandated that the project manager be an engineer, preferably with an advanced degree in some branch of technology. The use of project management was then mandated for some smaller weapon systems, such as jet fighters and tanks. The National Aeronautics and Space Administration (NASA) mandated the use of project management for all activities related to the space program.

Many projects in the aerospace and defense industries were having cost overruns in excess of 200–300 percent. Blame was erroneously placed on improper implementation of project management when, in fact, the real problem was the inability to forecast technology, resulting in numerous scope changes occurring. Forecasting technology is extremely difficult for projects that could last 10–20 years.

By the late 1950s and early 1960s, the aerospace and defense industries were using project management on virtually all projects, and they were pressuring their suppliers to use it as well. Project management was growing, but at a relatively slow rate, except for aerospace and defense.

Because of the vast number of contractors and subcontractors, the government needed standardization, especially in the planning process and the reporting of information. The government established a life-cycle planning and control model and a cost-monitoring system and created a group of project management auditors to make sure that the government's money was being spent as planned. These practices were to be used on all government programs above a certain dollar value. Private industry viewed these practices as an overmanagement cost and saw no practical value in project management. If any best practices were captured at that time, they were heavily focused on improvements to the standardized forms the DoD used.

Because many firms saw no practical value in project management in their early years, there were misconceptions about it. Some of the misconceptions included:

- Project management is a scheduling tool like PERT/CPM (program evaluation and review technique/critical path method) scheduling.
- Project management applies to large projects only.
- Project management is designed for government projects only.
- Project managers must be engineers, preferably with advanced degrees.
- Project managers need a command of technology to be successful.
- Project success is measured in technical terms only. (Did it work?)

1.3 PROJECT MANAGEMENT BEST PRACTICES: 1960–1985

Between 1960 and 1985, a better understanding of project management existed. Growth in the field had come about more through necessity than through desire, but at a very slow rate. Its slow growth can be attributed mainly to lack of acceptance of the new management techniques necessary for successful implementation of project management. An inherent fear of the unknown acted as a deterrent for both managers and executives.

Other than aerospace, defense, and construction, the majority of companies in the 1960s managed projects informally. In informal project management, just as the words imply, projects were handled on an informal basis, and the authority of the project manager was minimized. Most projects were handled by functional managers and stayed in one or two functional lines, and formal communications were either unnecessary or handled informally because of the good working relationships between line managers. Those individuals who were assigned as project managers soon found that they were functioning more as project leaders or project monitors than as real project managers. Many organizations today, such as low-technology manufacturing, have line managers who have been working side by side for 10 years or more. In such situations, informal project management may be effective on capital equipment or facility development projects, and project management is not regarded as a profession.

By 1970 and through the early 1980s, more companies departed from informal project management and restructured to formalize the project management process, mainly because the size and complexity of their activities had grown to a point where they were unmanageable within the current structure.

Not all industries need project management, and executives must determine whether there is an actual need before making a commitment. Several industries with simple tasks, whether in a static or a dynamic environment, do not need formalized project management. Manufacturing industries with slowly changing technology do not need project management, unless, of course, they have a requirement for several special projects, such as capital equipment activities, that could interrupt the normal flow of work in the routine manufacturing operations. The slow growth rate and acceptance of project management were related to the fact that the limitations of project management were readily apparent, yet the advantages were not completely recognizable. Project management requires organizational restructuring. The question, of course, is "How much restructuring?" Executives avoided the subject of project management for fear that "revolutionary" changes would have to be made in the organization.

Project management restructuring has permitted companies to:

- Accomplish tasks that could not be effectively handled by the traditional structure
- Accomplish one-time activities with minimum disruption of routine business

The second item implies that project management is a "temporary" management structure and, therefore, causes minimal organizational disruption. The major problems identified by those managers who endeavored to adapt to the new system all revolved around conflicts in authority and resources. Companies began to recognize the need for capturing best practices, especially those that could reduce some human behavior issues. Improvements in the methodologies were also taking place.

Another major concern was that project management required upper-level managers to relinquish some of their authority through delegation to middle managers. In several situations, middle managers soon occupied the power positions, even more so than upper-level managers.

Project management became a necessity for many companies as they expanded into multiple product lines, many of which were dissimilar, and organizational complexities grew. This growth can be attributed to four factors:

1. Technology increasing at an astounding rate
2. More money being invested in research and development (R&D)
3. More information being available
4. Shortening of project life cycles

To satisfy the requirements imposed by these four factors, management was "forced" into organizational restructuring; the traditional organizational form that had survived for decades was inadequate for integrating activities across functional "empires."

By 1970, the environment began to change rapidly. Companies in aerospace, defense, and construction pioneered the implementation of project management, and other industries soon followed, some with great reluctance. NASA and the DoD "forced" subcontractors to accept project management.

Because current organizational structures are unable to accommodate the wide variety of interrelated tasks necessary for successful project completion, the need for

project management has become apparent. It is usually first identified by those lower-level and middle managers who find it impossible to control their resources effectively for the diverse activities within their line organization. Quite often, middle managers feel the impact of changing environment more than upper-level executives.

Once the need for change is identified, middle management must convince upper-level management that such a change is actually warranted. If top-level executives cannot recognize the problems with resource control, then project management will not be adopted, at least formally. Informal acceptance, however, is another story.

As project management developed, some essential factors for its successful implementation were recognized. The major factor was the role of the project manager, which became the focal point for integrative responsibility. The need for integrative responsibility was first identified in complex R&D projects.

The R&D technology has broken down the boundaries that used to exist between industries. Once-stable markets and distribution channels are now in a state of flux. The industrial environment is turbulent and increasingly hard to predict. Many complex facts about markets, production methods, costs, and scientific potentials are related to investment decisions in R&D.

All of these factors have combined to produce a king-size managerial headache. There are just too many crucial decisions to have them all processed and resolved at the top of the organization through regular line hierarchy. They must be integrated in some other way.

Providing the project manager with integrative responsibility resulted in:

1. Total project accountability being assumed by a single person
2. Project rather than functional dedication
3. A requirement for coordination across functional interfaces
4. Proper utilization of integrated planning and control

Without project management, these four elements have to be accomplished by executives, and it is questionable whether these activities should be part of an executive's job description. An executive in a Fortune 500 corporation stated that he was spending 70 hours each week working as both an executive and a project manager, and he did not feel that he was performing either job to the best of his abilities. During a presentation to the staff, the executive stated what he expected of the organization after project management implementation:

- Push decision-making down in the organization.
- Eliminate the need for committee solutions.
- Trust the decisions of your peers.

Those executives who chose to accept project management soon found the advantages of the new technique:

- Easy adaptation to an ever-changing environment
- Ability to handle a multidisciplinary activity within a specified period of time

- Horizontal as well as vertical workflow
- Better orientation toward customer problems
- Easier identification of activity responsibilities
- A multidisciplinary decision-making process
- Innovation in organizational design

As project management evolved, best practices became important. Best practices were learned from both successes and failures. In the early years of project management, private industry focused on learning best practices from successes. The government, however, focused on learning about best practices from failures. When the government finally focused on learning from successes, the knowledge of best practices came from its relationships with both prime contractors and subcontractors. Some of these best practices that came out of the government included:

- Use of life-cycle phases
- Standardization and consistency
- Use of templates (e.g., for statement of work [SOW], work breakdown structure [WBS], and risk management)
- Providing military personnel in project management positions with extended tours of duty at the same location
- Use of integrated project teams
- Control of contractor-generated scope changes
- Use of earned value measurement

1.4 PROJECT MANAGEMENT BEST PRACTICES: 1985–2016[2]

By the 1990s, companies had begun to realize that implementing project management was a necessity, not a choice. By 2016, project management had spread to virtually every industry, and best practices were being captured. In the author's opinion, the appearance of best practices by industry can be summarized as follows:

- 1960–1985: Aerospace, defense, and construction
- 1986–1993: Automotive suppliers
- 1994–1999: Telecommunications
- 2000–2003: Information technology
- 2004–2006: Health care
- 2007–2008: Marketing and sales
- 2009–Present: Government agencies, small businesses, and global acceptance of project management

2. Many of the comments made by executives in the remainder of this chapter and throughout the book have been taken from earlier editions of this book. The dates of the comments are not critical. But it is important to recognize how executives are now and have been viewing the growth of project management practices and the accompanying benefits.

The question now is not how to implement project management, but how fast can it be done? How quickly can we become mature in project management? Can we use the best practices to accelerate the implementation of project management?

Table 1–1 shows the typical life-cycle phases that an organization goes through to implement project management. In the first phase—the embryonic phase—the organization recognizes the apparent need for project management. This recognition normally takes place at the lower and middle levels of management, where the project activities actually take place. The executives are then informed of the need and assess the situation.

Six driving forces lead executives to recognize the need for project management:

1. Capital projects
2. Customer expectations
3. Competitiveness
4. Executive understanding
5. New project development
6. Efficiency and effectiveness

Manufacturing companies are driven to project management because of large capital projects or a multitude of simultaneous projects. Executives soon realize the impact on cash flow and that slippages in the schedule could end up idling workers.

Companies that sell products or services, including installation, to their clients must have good project management practices. These companies are usually non-project-driven but function as though they were project-driven. These companies now sell solutions to their customers rather than products. It is almost impossible to sell complete solutions to customers without having superior project management practices, because what you are actually selling is your project management expertise (i.e., your project management processes).

TABLE 1–1. FIVE PHASES OF THE PROJECT MANAGEMENT LIFE CYCLE

Embryonic	Executive Management Acceptance	Line Management Acceptance	Growth	Maturity
Recognize need	Get visible executive support	Get line management support	Recognize use of life-cycle phases	Develop a management cost/schedule control system
Recognize benefits	Achieve executive understanding of project management	Achieve line management commitment	Develop a project management methodology	Integrate cost and schedule control
Recognize applications	Establish project sponsorship at executive levels	Provide line management education	Make the commitment to planning	Develop an educational program to enhance project management skills
Recognize what must be done	Become willing to change your way of doing business	Become willing to release employees for project management training	Minimize creeping scope Select a project tracking system	