THIRD EDITION

PROJECT MANAGEMENT
BEST PRACTICES

ACHIEVING GLOBAL EXCELLENCE

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HAROLD KERZNER, PH.D.

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PROJECT MANAGEMENT BEST PRACTICES

Achieving Global Excellence

THIRD EDITION

HAROLD KERZNER, PH.D.

WILEY

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Institute for Learning, Inc.

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Published by John Wiley & Sons, Inc., Hoboken, New Jersey
Published simultaneously in Canada

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Library of Congress Cataloging-in-Publication Data:

Kerzner, Harold.
Project management best practices : achieving global excellence / Harold Kerzner. - Third edition
pages cm
Includes bibliographical references and index.
ISBN 978-1-118-65701-0 (cloth); ISBN 978-1-118-83553-1 (ebk); ISBN 978-1-118-83560-9 (ebk); ISBN 978-1-118-83567-8 (ebk)
1. Project management–Methodology. 2. Project management–Case studies. I. Title.
HD69.P75K4715 2013
658.4'04—dc23
2013034142

Printed in the United States of America
10 9 8 7 6 5 4 3 2 1

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

Contents

Preface *xiii*

1 UNDERSTANDING BEST PRACTICES 1

1.0 Introduction 1
1.1 Wärtsilä 2
1.2 Project Management Best Practices: 1945–1960 3
1.3 Project Management Best Practices: 1960–1985 5
1.4 Project Management Best Practices: 1985–2014 8
1.5 An Executive's View of Project Management 13
1.6 Best Practices Process 17
1.7 Step 1: Definition of a Best Practice 18
1.8 Step 2: Seeking Out Best Practices 22
1.9 Dashboards and Scorecards 33
1.10 Key Performance Indicators 36
1.11 Step 3: Validating the Best Practice 41
1.12 Step 4: Levels of Best Practices 44
1.13 Step 5: Management of Best Practices 46
1.14 Step 6: Revalidating Best Practices 46
1.15 Step 7: What to Do with a Best Practice 47
1.16 Step 8: Communicating Best Practices across the Company 48
1.17 Step 9: Ensuring Usage of the Best Practices 51
1.18 Common Beliefs 51
1.19 Best Practices Library 52
1.20 Hewlett-Packard: Best Practices in Action 54
1.21 DTE Energy 57
1.22 A Consultant's View of Project Management and Best Practices 61

2 FROM BEST PRACTICE TO MIGRAINE HEADACHE 67

2.0 Introduction 67
2.1 Good Intentions Becoming Migraines 67
2.2 Enterprise Project Management Methodology Migraine 69
2.3 Customer Satisfaction Migraine 69
2.4 Migraine Resulting from Responding to Changing Customer Requirements 70
2.5 Reporting Level of the PMO Migraine 71
2.6 Cash Flow Dilemma Migraine 71
2.7 Scope Change Dilemma Migraine 72
2.8 Outsource or Not Migraine 73
2.9 Determining When to Cancel a Project Migraine 73
2.10 Providing Project Awards Migraine 74
2.11 Migraine from Having the Wrong Culture in Place 75
2.12 Migraines due to Politics 76
2.13 Migraines Caused by the Seven Deadly Sins 83
2.14 Sources of Smaller Migraines 94
2.15 Ten Uglies of Projects 97
References 105

3 JOURNEY TO EXCELLENCE 107

3.0 Introduction 107
3.1 Strategic Planning for Project Management 109
3.2 Hitachi Ltd. 118
3.3 KONE: The Project Management Challenge 130
3.4 The Light at the End of the Tunnel 133
3.5 Goodyear 136
3.6 Managing Assumptions 140
3.7 Managing Assumptions in Conservation Projects—WWF International 140
3.8 Project Governance 142
3.9 Seven Fallacies That Delay Project Management Maturity 146
3.10 Motorola 148
3.11 Texas Instruments 149
3.12 Hewlett-Packard: Recognizing the Need 152
3.13 Hewlett-Packard: The Journey and the Obstacles 153
3.14 CooperStandard 160
3.15 Naviair: On Time—on Budget 166
3.16 DTE Energy 175
3.17 Key Plastics 176
3.18 ILLUMINAT and the Strategic Business of Project Management 179
3.19 Avalon Power and Light 183
3.20 Roadway Express 184

3.21 Defcon Corporation 185
3.22 Kombs Engineering 187
3.23 Williams Machine Tool Company 188

4 PROJECT MANAGEMENT METHODOLOGIES 191

4.0 Introduction 191
4.1 Excellence Defined 192
4.2 Recognizing the Need for Methodology Development 196
4.3 Enterprise Project Management Methodologies 199
4.4 Benefits of a Standard Methodology 204
4.5 Critical Components 205
4.6 SAP 207
4.7 Cassidian: Integrated Multilevel Schedules 211
4.8 Tecnicas Reunidas 213
4.9 Teradyne: From Myth to Reality 220
4.10 Slalom Consulting: Project Management Functions 224
4.11 Slalom Consulting: Replacing Methodologies with Frameworks 226
4.12 Life-Cycle Phases 228
4.13 Expanding Life-Cycle Phases 230
4.14 Churchill Downs, Incorporated 230
4.15 Indra: The Need for a Methodology 232
4.16 Implementing the Methodology 233
4.17 Implementation Blunders 235
4.18 Overcoming Development and Implementation Barriers 235
4.19 Project Management Tools 236
4.20 Wärtsilä: Recognizing the Need for Supporting Tools 242
4.21 Tech Mahindra Limited: Project Process Monitoring 244
4.22 Tech Mahindra Limited: Customer Delight Index for Projects 247
4.23 General Motors Powertrain Group 251
4.24 Ericsson Telecom AB 252
4.25 Indra: Closing the Project 255
4.26 Repsol: The Repsol E&P GIP© Methodology—The Project Quality Management Process Applied to Decision Making 258
4.27 Rockwell Automation: Quest for a Common Process 266
4.28 Sherwin-Williams 271
4.29 Medical Mutual 275
4.30 Holcim 278
4.31 Westfield Group 281
4.32 Hewlett-Packard 284
4.33 DTE Energy 286
4.34 ALSTOM 293
4.35 Cassidian: Golden Rules in Project Management 297
4.36 When Traditional Methodologies May Not Work 299

5 INTEGRATED PROCESSES 303

5.0 Introduction 303
5.1 Understanding Integrated Management Processes 304
5.2 Evolution of Complementary Project Management Processes 305
5.3 Zurich America Insurance Company 309
5.4 Total Quality Management 310
5.5 Concurrent Engineering 315
5.6 Risk Management 315
5.7 Wärtsilä: The Need for Proactive Risk Management 318
5.8 ILLUMINAT: Effective Risk Management 321
5.9 Indra: When a Risk Becomes Reality (Issue Management) 325
5.10 The Failure of Risk Management 327
5.11 Defining Maturity Using Risk Management 328
5.12 Boeing Aircraft Company 329
5.13 Change Management 330
5.14 Other Management Processes 331
5.15 Hewlett-Packard 331
5.16 Earned-Value Measurement 333
5.17 DTE Energy 333

6 CULTURE 335

6.0 Introduction 335
6.1 Creation of a Corporate Culture 336
6.2 Corporate Values 338
6.3 Types of Cultures 338
6.4 Corporate Cultures at Work 340
6.5 Indra: Building a Cohesive Culture 343
6.6 maxIT-VCS 346
6.7 DFCU Financial 348
6.8 ILLUMINAT (Trinidad & Tobago) Limited 363
6.9 DTE Energy 365
6.10 Hewlett-Packard 366
6.11 Barriers to Implementing Project Management in Emerging Markets 367

7 MANAGEMENT SUPPORT 375

7.0 Introduction 375
7.1 Visible Support from Senior Managers 375
7.2 Project Sponsorship 376
7.3 Excellence in Project Sponsorship 380
7.4 Hewlett-Packard Sponsorship in Action 381
7.5 Zurich America Insurance Company: Improving Stakeholder Engagement 382

7.6 Project Governance 383
7.7 Tokio Marine: Excellence in Project Governance 385
7.8 Empowerment of Project Managers 391
7.9 Management Support at Work 392
7.10 Getting Line Management Support 395
7.11 DTE Energy 396
7.12 Initiation Champions and Exit Champions 397

8 TRAINING AND EDUCATION 401

8.0 Introduction 401
8.1 Training for Modern Project Management 401
8.2 Need for Business Education 403
8.3 SAP: Importance of a Project Management Career Path 404
8.4 International Institute for Learning 406
8.5 Identifying the Need for Training 410
8.6 Selecting Students 411
8.7 Fundamentals of Project Management Education 411
8.8 Some Changes in Project Management Education 412
8.9 Designing Courses and Conducting Training 414
8.10 Measuring the Return on Investment on Education 416
8.11 Project Management Is Now a Profession 416
8.12 Competency Models 419
8.13 Harris Corporation 429
8.14 Alcatel-Lucent: Recognizing the Value of a PMP 434
8.15 Integrated Project Management at Tech Mahindra Limited 436
8.16 Hewlett-Packard 439

9 INFORMAL PROJECT MANAGEMENT 441

9.0 Introduction 441
9.1 Informal versus Formal Project Management 441
9.2 Trust 444
9.3 Communication 445
9.4 Cooperation 447
9.5 Teamwork 447
9.6 Color-Coded Status Reporting 448
9.7 Crisis Dashboards 449
9.8 Informal Project Management at Work 452

10 BEHAVIORAL EXCELLENCE 455

10.0 Introduction 455
10.1 Situational Leadership 455

10.2 Conflict Resolution 458
10.3 Staffing for Excellence 460
10.4 Virtual Project Teams 462
10.5 Rewarding Project Teams 464
10.6 Keys to Behavioral Excellence 467
10.7 Proactive versus Reactive Management 470

11 MEASURING RETURN ON INVESTMENT ON PROJECT MANAGEMENT TRAINING DOLLARS 475

11.0 Introduction 475
11.1 Project Management Benefits 476
11.2 Growth of ROI Modeling 477
11.3 The ROI Model 478
11.4 Planning Life-Cycle Phase 479
11.5 Data Collection Life-Cycle Phase 480
11.6 Data Analysis Life-Cycle Phase 483
11.7 Reporting Life-Cycle Phase 487
11.8 Conclusions 487

12 THE PROJECT OFFICE 489

12.0 Introduction 489
12.1 Boeing 492
12.2 Philips Healthcare Software Customer Services 493
12.3 maxIT-VCS 500
12.4 Aviva 502
12.5 Churchill Downs Incorporated (CDI): Establishing a PMO 517
12.6 Churchill Downs Incorporated (CDI): Managing Scope Changes 518
12.7 Types of Project Offices 522
12.8 Dell Inc. 523
12.9 Computer Sciences Corporation (CSC) 532
12.10 Slalom Consulting: Understanding the Nature of a PMO 538
12.11 DTE Energy 546
12.12 Chubb 547
12.13 Hewlett-Packard 548
12.14 Star Alliance 550
12.15 Project Audits and the PMO 552
12.16 Project Health Checks 555
12.17 PMO of the Year Award 557

13 SIX SIGMA AND THE PROJECT MANAGEMENT OFFICE 565

13.0 Introduction 565
13.1 Project Management—Six Sigma Relationship 565
13.2 Involving the PMO 568
13.3 Traditional versus Nontraditional Six Sigma 568
13.4 Understanding Six Sigma 571
13.5 Six Sigma Myths 573
13.6 Use of Assessments 575
13.7 Project Selection 577
13.8 Typical PMO Six Sigma Projects 579

14 PROJECT PORTFOLIO MANAGEMENT 581

14.0 Introduction 581
14.1 Why Use Portfolio Management? 582
14.2 Involvement of Senior Management, Stakeholders, and the PMO 583
14.3 Project Selection Obstacles 588
14.4 Identification of Projects 588
14.5 Preliminary Evaluation 592
14.6 Strategic Selection of Projects 593
14.7 Strategic Timing 596
14.8 Analyzing the Portfolio 596
14.9 Problems with Meeting Expectations 599
14.10 Portfolio Management at Rockwell Automation 601
14.11 World Wildlife Fund (WWF) 602

15 GLOBAL PROJECT MANAGEMENT EXCELLENCE 607

15.0 Introduction 607
15.1 IBM 608
15.2 Computer Associates Technologies (CA): Successful Project Delivery and Management 634
15.3 Microsoft Corporation 647
15.4 Deloitte: Enterprise Program Management 659
15.5 COMAU 680
15.6 Fluor Corporation: Knowledge Management for Project Execution 692
15.7 Siemens PLM Software: Developing a Global Project Management Methodology 705

16 VALUE-DRIVEN PROJECT MANAGEMENT 713

16.0 Introduction 713
16.1 Value over the Years 714
16.2 Values and Leadership 717

17 EFFECT OF MERGERS AND ACQUISITIONS ON PROJECT MANAGEMENT 731

17.0 Introduction 731
17.1 Planning for Growth 731
17.2 Project Management Value-Added Chain 732
17.3 Preacquisition Decision Making 735
17.4 Landlords and Tenants 740
17.5 Best Practices: Case Study on Johnson Controls, Inc. 741
17.6 Integration Results 745
17.7 Value Chain Strategies 747
17.8 Failure and Restructuring 749

INDEX 751

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. 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 half-hearted implementation occurred simply to placate lower- and middle-level personnel as well as selected customers.

During this 50-year period, we did everything possible to prevent excellence in project management from occurring. We provided only lip service to empowerment, teamwork, and trust. We hoarded information because the control of information was viewed as power. We placed personal and functional interests ahead of the best interest of the company in the hierarchy of priorities, and we 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 high-quality products in a shorter period of time. The importance of developing a long-term trusting relationship with the customers had come to the forefront. Businesses were being forced by the stakeholders to change for the better. The survival of the firm was now at stake.

Today, businesses have changed for the better. Trust between the customer and contractor is at an all-time high. New products are being developed at a faster rate than ever before. Project management has become a competitive weapon during competitive bidding. Some companies are receiving sole-source contracts 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. 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 ten years ago have taken on new meanings today. Change 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. It is now a competitive weapon that brings higher levels of quality and increased value-added opportunities for the customer.

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 by Harper & Row, New York). How many of those 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.

The differentiation between the first fifty years of project management and the last ten years is in the implementation of project management on a company-wide basis. For more than three decades, we emphasized the quantitative and behavioral tools of project management. Basic knowledge and primary skills were emphasized, and education on project management was provided only to a relatively small group of people. However, within the past ten years, emphasis has been on implementation across the entire company. What was now strategically important was how to put thirty years of basic project management theory in the hands of a few into corporate-wide practice. Today it is the implementation of companywide project management applications that constitutes advanced project management. Subjects such as earned-value analysis, situational leadership, and cost and change control are part of basic project management courses today, whereas fifteen years ago they were considered advanced topics in project management. So, what constitutes applied project management today? Topics related to project management implementation, enterprise project management methodologies, project management offices, and working with stakeholders are advanced project management concepts.

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 CEOs, presidents, COOs, CIOs, CFOs, senior VPs, VPs, global VPs, general managers, PMO directors, and 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.

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 lifecycle 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.

Companies that are discussed in this book include:

3M
ABB
Alcatel-Lucent
ALSTOM
American Greetings
AT&T
Aviva
Babcock & Wilcox
Bendix
Boeing
Cassidian
Chrysler
Chubb
Churchill Downs
Comau
Computer Associates
Cooper Standard
CSC
Dell
Deloitte
Department of Defense
DFCU Financial
Dow Chemical
DTE Energy
EDS
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Harris
Hewlett-Packard
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Johnson Controls
Key Plastics
Kodak
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maxIT-VCS
MCI
Medical Mutual
Microsoft
Minnesota Power & Light
Motorola
NASA
Neal and Massy Holdings, Ltd.
Nortel
NXP
Ohio Bell
Orange Switzerland
Our Lady of Lourdes Regional Medical Ctr.
Philips
Repsol
Roadway Express
Rockwell Automation
SAP
Sherwin Williams
Siemens
SigmaPM
Slalom
Star Alliance
Tech Mahindra Limited
Tecnicas Reunidas
Teradyne
Thiokol
Tokio Marine
Visteon
Wärtsilä
Westfield Group
World Wildlife Fund
Zurich North America

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*, 11th edition (Wiley, Hoboken, New Jersey, 2013). 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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2014

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 by 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 for 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 is captured on best practices in project management. 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 will be 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 benefit realization, and better benefits management activities. Project management and business thinking are no longer separate activities.

1.1 WÄRTSILÄ[1]

Benefits Management in Operational Development Projects in Wärtsilä

Wärtsilä has a strong tradition in project-based businesses and project management practices. As such, a corporate-wide project management office was established in 2007 to further strengthen the focus on project management competence within the group and to develop a project management culture, processes, competences and tools.

Today the 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. Firstly, a project management tool providing, inter alia, more effective resource and schedule planning has been introduced and implemented. Secondly, the organization has been encouraged to participate actively in professional project management training and certification paths.

As the project management processes have become well defined and gained maturity, the emphasis has gradually shifted towards 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 to enable businesses to transform their strategic ambition 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, the project success is not solely measured 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 could not be quantified financially, they have to be measured. Another important aspect in benefits planning is to create a valid baseline to compare the results with: instead of comparing only to a BAU (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?").

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In operational development projects the output of the project can be, for example, an IT tool made to improve resource planning. The most crucial part of the project, however, is to make the *output* become 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 benefit planning must take into consideration 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.

The benefits management system in a nutshell 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 benefit 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 benefit realization
- **Monitoring benefits:** monitor your performance with the established metrics, improve it if needed towards the defined goal and acknowledge risks in a proactive way
- **Doing a post-project evaluation:** ensure a successful deployment by communicating about the project output and honestly promoting it. Imagine yourself in the end user's position: Would I 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, 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 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 first-hand 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. To win a Cold War, one must compete in the arms race and rapidly build weapons of mass destruction. The victor in a Cold War is the one who can retaliate with such force as to obliterate the enemy. Development of weapons of mass destruction comprised 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 of the 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.

Projects in the aerospace and defense industries were having cost overruns in excess of 200–300 percent. Blame was erroneously placed upon 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.

In the early years of project management, because many firms saw no practical value in project management, there were misconceptions concerning project management. Some of the misconceptions included:

- Project management is a scheduling tool such as 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 and 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

During this time period, with a better understanding of project management, the growth of project management 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 its successful implementation. 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 maintained an informal method for managing projects. In informal project management, just as the words imply, the projects were handled on an informal basis whereby 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 that 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 ten or more years. 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 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 have avoided the subject of project management for fear that “revolutionary” changes must 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 minimum 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.

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:

- Technology increasing at an astounding rate
- More money being invested in research and development (R&D)
- More information being available
- 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 into accepting 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 in 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-sized 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:

- Total project accountability being assumed by a single person
- Project rather than functional dedication
- A requirement for coordination across functional interfaces
- 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 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 work flow
- 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 their relationships with both their prime contractors and the 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 (IPTs)
- Control of contractor-generated scope changes
- Use of earned value measurement

1.4 PROJECT MANAGEMENT BEST PRACTICES: 1985–2014

By the 1990s, companies had begun to realize that implementing project management was a necessity, not a choice. By 2014, project management had spread to virtually every industry and best practices were being captured. In the author's opinion, the appearance of best practices from an industry perspective might be:

- 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

The question now was not how to implement project management, but how fast could 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.

There are six driving forces that lead executives to recognize the need for project management:

- Capital projects
- Customer expectations
- Competitiveness
- Executive understanding
- New project development
- Efficiency and effectiveness

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 way of doing business	Become willing to release employees for project management training	Minimize creeping scope Select a project tracking system	

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.

There are two situations where competitiveness becomes the driving force: internal projects and external (outside customer) projects. Internally, companies get into trouble when they realize that much of the work can be outsourced for less than it would cost to perform the work themselves. Externally, companies get into trouble when they are no longer competitive on price or quality or simply cannot increase their market share.

Executive understanding is the driving force in those organizations that have a rigid traditional structure that performs routine, repetitive activities. These organizations are quite resistant to change unless driven by the executives. This driving force can exist in conjunction with any of the other driving forces.

New product development is the driving force for those organizations that are heavily invested in R&D activities. Given that only a small percentage of R&D projects ever make it into commercialization, where the R&D costs can be recovered, project management becomes a necessity. Project management can also be used as an early-warning system that a project should be canceled.

Efficiency and effectiveness, as driving forces, can exist in conjunction with any other driving forces. Efficiency and effectiveness take on paramount importance for small companies experiencing growing pains. Project management can be used to help such companies remain competitive during periods of growth and to assist in determining capacity constraints.

Because of the interrelatedness of these driving forces, some people contend that the only true driving force is survival. This is illustrated in Figure 1–1. When the company