

# Introduction

---

Project management has evolved over many centuries as a means for organizations to deal with change. It was not until the 1950s that the literature began to reflect the evolving theory and practice of this discipline. The proposed book draws from the collective experience of project management leaders from around the world to develop a project management based scenario for the year 2025.

The project management practitioners authoring chapters are knowledgeable experts in the theory and practice of project management. These contributors, drawn from different industries and countries around the world, have written their chapters from a perspective of the likely forces and factors that will influence the probable state-of-the-art in project management for the period circa 2025.

The principal guiding criteria for the chapter authors were: (1) A very brief introduction of the current state-of-the-art of project management in their industry or environment; (2) A general overview of the expected and future technological, economic, social, political, and competitive characteristics of their industry or environment; (3) Identification of current trends in their industry or environment that will likely affect the manner in which project management is used in the future in their environment; and (4) Identification of the major characteristics of project management likely to be found in their industry or environment for the period circa 2025. The authors were given wide latitude in preparing their material and describing their knowledge and the experiences that influenced their foretelling of what the likely appearance of state of both theory and practice of project management in 2025.

The book is organized into five parts as follows:

Part 1 Examples of Projects from Geographic and Industry Applications

Part 2 Project Management Systems Applications

Part 3 Project Management Organizational Applications

Part 4 Project Management in Government

Part 5 Likely Growth of Project Management

Each part brings together for the reader the probable state-of-the-art in diverse environments for the year 2025. It provides the basis for the reader to learn of the varied uses of project management in the present, and how the cultural ambience of the organizations of the future will impact the probable state-of-the-art of project management circa 2025. As readers see what the future of project management may be, they might see how their organizations could be impacted. A brief outline of the parts and chapters follows.

## **Part 1: Examples of Projects from Geographic and Industry Applications**

Several projects are described in this part from different geographic areas. These projects describe how the strategic change management in their particular areas have been initiated and executed to deal with the alteration of the employment of organizational resources to accomplish desired objectives and goals. While there is a central theme of generic project management in these projects, there are provincial characteristics to be found as well.

In chapter 1, Christophe N. Bredillet presents a chapter on the deployment of project management in the Europe of 2025. He makes the key point that the project management discipline will likely continue to grow and is expected to be adopted more and more by companies and organizations, including governments, non-government, business and non-profit organizations and associations. The overall purpose of this chapter is to analyze the contribution of two organizations in the deployment of project management and compare their deployment within the European countries by 2025.

In chapter 2, Alfonso Bucero, PMP, explains that project management is becoming more and more popular in Spain, but is still understood as a tactical set of methods and tools focused principally on the project manager. Very few Spanish organizations spend time and money training their executives in the strategic part of project management and in their critical role as project sponsors. The author points out that the board of directors of many Spanish companies do not see the need of being trained as sponsors. There is a need to develop and train skilled project managers in both the hard and soft skills used in the management of projects.

Raju Rao, in chapter 3, has a vision of India where the role of the project manager is critical in transforming a nation from developing to developed. India has consistently maintained an economic growth of over 9% over the last several years. World Bank reports state that India will be the third-largest economy by the year 2025, although the rapid growth is threatened in terms of environmental issues, sustainability, degradation, infrastructure resource inadequacy, social imbalance, cultural differences and the lack of appropriate managerial skills. The chapter closes with the provocative question: Can project management as a discipline be used to handle these opportunities and threats?

In chapter 4, Brian Kooyman describes how project management will likely change in the Australasian and Pacific Region. The first part of the chapter addresses the geography of the region followed by a review of the current levels of project management and application in the region. Then a summary of the likely developments and changing environments in the region is presented. This is followed with hypotheses on how the region will cope with these changes. The last part of the chapter considers how these hypothetical changes may be managed.

Chapter 5 by Charles R. Franklin, PMP, Naceur Jabnoun, Ph.D., and Shriram R. Dharwadkar, Ph.D, states that project management in the Arabian Gulf region will be impacted by factors which include emerging and rapidly changing technologies, economics as the region's economies make a shift away from their dependency on oil and gas, critical issues in human resources development, and the increasing size and complexity of projects. These will result in new challenges to business in general and projects specifically. Some of the major challenges may be categorized as knowledge management, innovation, business, ethics, and safety. Project professionals of 2025 will

have developed new competencies both to meet these challenges and to leverage the opportunities they present.

## **Part 2: Project Management Systems Applications**

In chapter 6, Elaine Bannon and David Pericak say that although external factors change over time, the key personal values and deliverables of project management that deliver excellent results do not. This chapter describes those key elements, how to measure them, and discusses the health of your project management organization and how a high performing team can thrive in time of significant change. It is critical for organization to recognize and deliberately foster these key personal values and core deliverables in order to strengthen their companies in any set of external factors, whether they are deemed challenging or enabling.

Chapter 7 by Janice Lynn Thomas, Jenny Krahn, and Stella George provides insight into the shape of project management research to come. They believe that those most successful in predicting the future are not so much predictors as shapers. What great shapers do is recognize the trends and needs that are about to become important to the world. Shapers support change through innovation. Considering the direction of changes in the world of work, project management is well-placed to shape itself to meet coming needs. The future of project management needs to be innovatively responsive to the leading edge of work.

Chapter 8 by Randall L. Speck focuses on the legal framework for projects circa 2025. The author notes that legal systems inherently resist change and rely on precedents. Statutes, he says, do not change easily or quickly and usually lag behind changes in economic relationships. Legal systems protect parochial, entrenched interests based on territorial jurisdiction. There is the need to develop legal constructs that will promote projects in a global, instantaneous, and transparent environment. Different legal traditions clash as globalization requires cross-border relationships, which also leads to the difficulty of assigning jurisdiction in one locale. The role of government regulations complicates the legal issues.

Stacy Goff admits at the beginning of chapter 9 that prediction is difficult. His chapter hedges that difficulty by applying several scenarios to establish alternative futures for the portfolio, program, and project management software industry. The chapter applies experience of industry veterans, interview results with several product managers of current market leaders, and insights from several more who are involved with changes in the industry's direction. A trajectory scenario traces key project management software achievements of the past

Chapter 10 discusses the likely growth of quality management in projects circa 2025. Sandra K. Ireland explores the history of quality management from original meaning of words through the turbulent "quality revolution" of the 1970s, where a sharp focus changed the thrust of quality from defect correction to defect prevention. This prevention focus is carried forward into the future with suggestions on what will cause changes and where some changes will occur by 2025. All of this is described within the context of projects, the environments that influence project work and organizational changes that meet the quality challenges of 2025.

In chapter 11, Edmund M. Ricci and Beth A. D. Nolan describes scientific program evaluation in a comprehensive framework of concepts and methods. This is used to assess the resources, activities, outputs, and outcomes used in the design and implemen-

tation of a time-limited project. Initially the chapter describes current concepts and methods used in scientific program evaluation. While certain aspects of scientific program evolution share similarities with project management, in reality their scope and methods are significantly different. The chapter concludes with suggestions describing how these two intellectual systems should be merged in the future to create a robust framework for monitoring an assessment of all aspects of time-limited projects.

James S. Pennypacker, in chapter 12, presents three vivid scenarios, each an equally plausible, yet very different story, about what might happen to project portfolio management (PPM) in the future. Facts about the future demographics, geographic, and industrial information, along with plausible social, technical, economic, environmental, educational, and political trends are key driving forces in creating these three possible futures. The result will be a surprising look into the future, offering insight into what the general shape of the future of PPM might be, and a framework for dealing with it.

### **Part 3: Project Management Organizational Applications**

In chapter 13, Kam Jugdev, Ralf Müller, and Maureen Hutchinson examine the likely interdependence of strategic and project management circa 2025. The chapter authors view strategy as matching an organization's capabilities to changing market environments to achieve better competitive positions. They note that increasingly, companies are turning to project management to help them be more effective and efficient. The question is posed for the year 2025: What are the likely interdependences between strategic management and project management? To help answer this question, the authors refer to some key concepts in strategy followed by a discussion of trends today as they relate to strategy. The chapter reviews macro environmental factors, and then discusses these factors for the year 2025 to develop perspectives on the links between strategy and project management.

In chapter 14, Howard Bruck, PMP, examines the likely future of financial services circa 2025. He predicts that fierce competition exists on a global scale. The traditional barriers to entry and competition are no longer in play, so he posits that the project management practice for financial services in 2025 will be much more demanding and specialized. The success of projects will be judged for several years after initial completion as the results are not a static solution, but one which will evolve over time. The degree to which the project manager can advise the firm along the way will separate the profitable projects from those that quickly lose their value.

Writing in chapter 15, Belle Collins Brown believes the research and development (R&D) project manager will continue to evolve away from his or her process roots. Future R&D managers must be prepared to face the reality that most of today's work—planning, status tracking, reporting—will be automated into large development systems designed to provide portfolio-level views for an organization's R&D activities. Project managers of the future must develop leadership competencies rather than managerial capabilities alone. Such project managers will no longer be involved in discrete functional entities in "silos" crying out for coordination. Instead they will be part of project-based organizations that require real leadership.

In chapter 16, Hugh Woodward reviews the role of project management professional societies in connecting and networking, circa 2025. Project management professional associations, especially the Project Management Institute, have been growing exponentially since the early 1990s and one is tempted to predict that continued double-digit

growth will occur through 2025. He then asks the question of whether the professional association of 2025 will just be bigger versions of what we see today. Demographic trends and technological advancements will continue to affect the way we work, and even the nature of work itself. These trends are likely to impact the project manager's relationship to his or her professional associations. The professional associations will have to adapt, and the resulting organizations will look different than what we have today.

In chapter 17, Richard E. Boyatzis, Mary Fambrough, David Leonard, and Kenneth Rhee look at the emotional and social intelligence competencies of effective project managers. They note that emotional and social intelligence competencies have been shown to distinguish effective from ineffective managers and leaders at many levels in organizations around the world. Using original data from a study of effective versus less effective project managers at the R&D facility of a major government based research organization, they present a model of the competencies distinguishing outstanding project managers is presented. Implications will be discussed for the selection, retention, and development of effective project managers.

In chapter 18, Stephen R. Thomas, Ph.D., P.E., Edward J. Jaselskis, Ph.D., P.E., and Cory McDermott examine the trends likely to affect the future of construction project management. They note that the construction industry is fortunate to have an industry-driven process in place with the specific purpose of identifying trends likely to affect the construction industry. This process is a function of the Construction Industry Institute (CII) Strategic Planning Committee. CII is recognized as the principal construction industry forum for addressing current and future issues because CII members represent the leading owners, contractors, suppliers, and academics that are actively funding, directing, and performing research to improve competitiveness and prepare the engineering and construction industry for the future.

#### **Part 4: Project Management in Government**

In chapter 19 Michelle R. Brunswick describes how project management and defense acquisition in 2025 will likely look. The purpose of her chapter is to focus the reader on U.S. Department of Defense acquisition and how it will meet future threats. The chapter has three areas of assessment: Office of Secretary of Defense (OSD) including political atmosphere, the armed forces, and industry perspective. The first section of the chapter is a top-level vision and will address the OSD viewpoint of 2025 considering the political and economic global environment. The second section will narrow in on how the military services perceive the threat. The third section will cover how industry is prepared to meet the future vision of 2025.

In chapter 20, Dorothy J. Tiffany, CPA, PMP, will examine what new frontiers will exist in space exploration. The chapter author asks the obvious question: What does the future hold for space exploration? She believes that some of the most revolutionary changes in project management occurred during the years between 1983 and 2008, and equally important changes will take place over the next few decades. Just as the space hardware and software systems become more complicated, project management techniques matured and grew as well with the building of the International Space Station, Hubble Space Telescope, Phoenix Mars Lander and other trail-blazing missions. That maturation and growth will continue.

In chapter 21, Jonathan Weinstein, PMP, and Timothy Jaques, PMP describe how U.S. state governments are currently using project management. Such governments will

face tremendous upheaval in the next 18 years in the scale and scope of the services they deliver to their citizens and the methods by which those services are delivered. The chapter focuses on the key drivers of project management, specifically addressing the types of likely projects, the organizational design utilized, maturity levels, tools, processes, and skills and capabilities required of project teams. The chapter includes the results of interview and focus-groups session with state government project management personnel.

## **Part 5: Likely Growth of Project Management**

In chapter 22, Dr. Hans J. Thamhain looks at the future of team leadership in complex project environments. The author believes that team leadership has become critically important to project performance. The twenty-first century is bringing new technologies, social innovations, and a closely-linked world but also brings constant change, uncertainty, and disruption. This has provided great business opportunities, but also enormous managerial challenge. Team leaders of the future must understand the dynamics of people and organization at all levels, including the cognitive structures that create change and influence decision-making, in order to build and sustain high-performance project teams. This chapter provides an insight into the changing social processes and organizational environments that drive team performance.

Chapter 23 by Storm Cunningham provides insight into important global trends in project management. Four major trends are opening a vast gap between today's project management disciplines/tools and those that will be increasingly needed as this century progresses. These trends are restorative development, integration, engagement, and partnering. The strategic need to plug this gap is already urgent, and presents possibly the best career path for project managers just entering the field. The author argues that by 2025, these four trends will be well-established as the norm. Project managers who aren't intimately familiar with the technical, legal, and managerial challenges of all four will likely find they are obsolete. One of the many outcomes of this confluence of trends will be the ascendancy of program management over project management.

In chapters 24 and 25, David L. Pells provides an examination of new frontiers for project management. An examination is provided of seven new industries where projects and project management will play a significant role, with tremendous potential impact on economies and society. These new frontiers will be nanotechnology (applied across various industries and scientific fields); new energy supplies; humans in space (colonization of the moon, flights to Mars, space tourism, commercialization of space, etc.); climate change and sciences (near space research, development and technologies); economic development, especially in Africa, Asia and Latin America; health and medicines; and global security. Most of this area will require global cooperation, global programs and projects, and application of portfolio, program, and project management models.

The title of chapter 26 by Rebecca Ann Winston, "Why are We Still Conducting Risky Business?" prepares the reader for the challenges coming forth in the next two decades. The author explores the business drivers that will still be operable in the year 2025 that will drive risk management in projects. The exploration begins from the first strategic decisions to initiate the project to how risk will be disseminated in lessons learned. The focus will be on medium to large corporations and government corporations. The author believes that the connection between the business drivers and how

risk management should be conducted has been and will continue to be ignored in many areas of project management. The chapter will highlight those areas and the impact on the whole (the net bottom line) when one does not holistically view the impact of the connection between business drivers and risk management within project management.

In chapter 27, Guiping Hu, Lizhi Wang, and Bopaya Bidanda review the likely connection between sustainable manufacturing and project management, circa 2025. Sustainability/sustainable manufacturing has gained popularity in a broad spectrum of societal sectors. Sustainable manufacturing can be viewed as the implementation of a group of projects the product's life cycle evolution process. Therefore, it is important to incorporate the concept of sustainability into the project management process. In this chapter, the authors discuss how to implement and manage projects within the sustainability concept. A case study is utilized for demonstration purposes. In addition, quantitative models are also be discussed to assist decision making problems for stakeholders.

"Project management in a flat world" is the subject of chapter 28. Ozlem Arisoy, Murat Azim, David Cleland, and Bopaya Bidanda note the growing offshoring trend forces companies to transfer their high-cost activities to low-labor rate countries. A systematic project management approach during the process of global sourcing decisions is usually the key driver to success and will likely grow in importance over the next few decades. Offshoring decision-making processes can be considered as large-size projects that impact a company's strategies and future operations. Although these projects can be managed based on the classical project management principles, modifications and extensions are inevitable to support the wide scope of growing globalization.

In chapter 29, Jang Ra focuses on predicting the roles of project managers circa 2025 and using that knowledge to provide better education and training by reshaping the project management curriculum, teaching methods, delivery means, faculty and students. This approach is taken on the premise that future organizations will survive mainly through innovative and successful projects, within a globally competitive environment representing many different cultures and time-zones, and by completing transformation cycles faster than their competitors.