Complete Guide to Digital Project Management

From Pre-Sales to Post-Production

Shailesh Kumar Shivakumar

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I would like to dedicate this book to:

My parents, Shivakumara Setty V and Anasuya T M,
from whom I loaned love and strength,

My wife Chaitra Prabhudeva and my son Shishir from
whom I loaned time and support,

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from whom I loaned help and courage.

And

To all my schoolteachers who bestowed lots of love and
knowledge upon me.

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About the Author

Shailesh Kumar Shivakumar is a Practice Lead and Senior Technology Architect at Infosys Technologies. He is an award-winning digital technology practitioner with skills in technology and practice management. Shailesh is an experienced enterprise architect skilled in the wide spectrum of digital technologies, including enterprise portals, content systems, enterprise search, web analytics, cloud technologies, and other digital technologies. He has over 16 years of industry experience and was the chief architect in building a digital platform that won the "Best Web Support Site 2013" global award. His areas of expertise include digital technologies, software engineering, performance engineering, and digital program management. He is a Guinness world record holder of participation for successfully developing a mobile application during a coding marathon.

Shailesh is deeply focused on enterprise architecture, building alliance partnerships with product vendors, and has a proven track record of executing complex, large-scale programs. He successfully architected and led many engagements for Fortune 500 clients of Infosys and built globally deployed enterprise applications. He also headed a center-of-excellence for digital practice. He has created multiple IPs related to digital technologies at Infosys that can be used as solution accelerators. He led multiple thought-leadership and productivity improvement initiatives and was part of special interest groups (SIG) related to emerging web technologies at his organization.

Shailesh is listed in the "Marquis Who's Who in the World 2018" and is a 2018 Albert Nelson Marquis Lifetime Achievement Award Winner. He won prestigious awards such as Infosys Awards for Excellence 2013-14: "Multi-Talented Thought Leader" under the "Innovation – Thought leadership" category, the "Brand Ambassador Award 2013", the "Best Employee Award 2015," the delivery excellency award 2012, Unit champion award, Pinnacle award and multiple spot awards. He also received an honor from the executive vice chairman of his organization. He is featured as an "Infy star" in the Infosys

Hall of Fame and recently led a delivery team that won the “Best Project Team” award at his organization.

Shailesh holds numerous professional certifications, such as the TOGAF 9 certification, Oracle Certified Master (OCM) in Java EE5 Enterprise Architect certification, IBM Certified SOA Solution Designer, and IBM Certified Solution Architect Cloud Computing Infrastructure. He has authored three technical books on digital technologies and has published twelve technical whitepapers related to digital technologies. Shailesh has one granted US patent and three patent applications and is a frequent speaker at events such as IEEE conferences and Oracle JavaOne conference.

About the Technical Reviewer

George Koelsch is a system engineer who resides in Northern Virginia, within the DC metro area. He started system engineering 41 years ago while in the US Army and has continued that work for the last 31 years as a contractor for the Federal Government. With a five-year stint as an Industrial Engineer at Michelin Tire Corporation, he learned to become an efficiency expert, which he then applied to system engineering and project management to tailor the lifecycle development process before his contemporaries in the DC area were doing so. In his spare time, he has authored ten non-fiction articles on computers, coin collecting, stamp collecting, and high-energy physics.

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Introduction

Digital technologies are disrupting the way business is done and redefining the end user experience. As digital technologies are constantly evolving, a digital project manager should continuously seek to learn and understand the impact of digital technologies and thrive to constantly improve upon the project management practices. Continuous improvement is a never-ending endeavor for the project managers in digital project engagements. Digital project managers need to achieve a fine balance between high expectations from end users and business stakeholders and project constraints such as cost, quality, and schedule.

In this book, we explore the digital project management from a holistic perspective: from consulting until post-production maintenance. Having this 360-degree view can immensely benefit the digital project manager to proactively plan and successfully execute the program while minimizing the known risks.

Digital projects have their own set of unique challenges due to the niche technological skills, faster release plans, and continuous changes. We have tried to address these digital project-specific challenges.

Key Highlights of the Book

Here are some of the key value differentiators of this book:

- A focus on digital consulting and pre-sales (proof-of-concept, articulation of win themes) with detailed consulting case studies.
- Wide coverage of estimation models and pricing models, including modern estimation models such as user story based estimation used in modern digital projects.
- A focus on practical, proven, and usable project management artefacts/tools/frameworks such as:
    - Models such as the digital maturity model, the continuous execution model, and the quantitative risk management model
    - Templates such as the RACI template, the resource induction template, and the requirement elaboration template

    - Frameworks such as the migration framework, digital product evaluation, and knowledge transition
    - Tools related to DevOps, project planning, collaboration, Agile project management, test management, and project planning
- In-depth coverage of the Agile execution model along with its metrics, best practices, and applicability scenarios.
- Dedicated and in-depth coverage for achieving high quality in digital projects through a quality framework with a detailed case study.
- In-depth coverage of known anti-patterns and failure factors in digital projects along with lead indicators and mitigation strategies.
- Chapter dedicated to cover the proven best practices related to digital project management from various dimensions.
- In-depth focus on real-world project management scenarios and case studies, with three book chapters covering these topics.
- Exclusive chapter covering recent trends and innovations in digital space and its impact on digital project management.

Book's Organization

The book is organized into 17 chapters and 6 appendixes, wherein the 17 chapters are categorized into four parts. The first three parts covers three main phases of the project—project initiation, project execution, and project maintenance—and the last part is exclusively dedicated to project management scenarios and case studies. The next sections describe high-level summaries of each of the parts.

Part I: Initiation of Digital Projects

This part contains topics that are related to digital project initiation, consulting, and pre-sales. Chapter 1 introduces project management concepts such as project phases, governance, execution models, and more. Chapter 2 covers various topics related to digital project consulting, such as consulting frameworks, pre-sales activities along with a detailed digital consulting case study. Chapter 3 introduces various project management related plans such as project plan, collaboration plan, quality management

plan, staffing plan, training plan, and risk management plan that a project manager would define during the initiation phase. Chapter 4 discusses various estimation models, such as function point estimation, SMC estimation, use case based estimation, and various pricing models.

Part II: Execution of Digital Projects

This part covers various topics related to project execution. Chapter 5 provides detailed insights into various models (such as earned value management and the digital maturity models), templates (such as the RACI template and the requirements template), and tools that a digital project manager can use during project execution. Chapter 6 details various project execution models such as the waterfall model and the iterative model, with special focus on the Agile model and its variants. Chapter 7 covers various aspects of project quality across project phases, along with a case study. Chapter 8 elaborates on various project management functions such as requirements management, stakeholder management, knowledge transition planning, project governance, and auditing. Chapter 9 covers people management topics such as coaching, feedback management, competency development, and such.

Part III: Monitoring and Maintenance of Digital Projects

The chapters in this part cover maintenance, monitoring, and post-production related topics. The main topics in this part are focused on the "continuous improvement" principle, which we adopt during the maintenance phase. We will initially look at the common lessons, best practices, and failure scenarios based on our experience from various digital projects. These insights will help digital project managers take proactive measures to identify and address known problem patterns in the early stages. Chapter 10 covers common reasons for failure in digital projects, along with a best practices-based approach to avoid failures. Chapter 11 covers various best practices that can be adopted at different phases of digital project management. Chapter 12 covers product evaluation framework, migration framework, and digital product governance. Chapter 13 covers the emerging trends and innovations in the digital space. Chapter 14 covers various project management activities during maintenance phase, such as incident management, production maintenance, knowledge transition, and more.

Part IV: Digital Project Management Scenarios and Case Studies

The chapters in this part are dedicated to the real-world project management scenarios and case studies so that project managers can gain insights from these scenarios and case studies and apply the insights to their current engagements. Chapter 15 covers various digital project management scenarios, such as scope creep handling, change request handling, etc.; each scenario is explained with its challenges, root causes, and handling methods. Chapter 16 discuses four detailed case studies related to digital project management. Chapter 17 discusses an elaborate digital transformation case study related to a digital bank.

Appendixes

Six appendixes complement the topics discussed in the book. Appendix A briefly discusses the cloud adoption strategy; Appendix B compiles the domain-specific use cases and business drivers; Appendix C provides the acceptance criteria for various testing phases; Appendix D provides a project scope template document; Appendix E provides a template for a product evaluation score card; and Appendix F compiles best practices in digital project governance.

Target Audience

The primary target audience of this book is the digital project manager and program manager who can use the insights, tools, frameworks, and models described here. The book will also be useful to self-driven Agile team members who can use the lessons from this book to efficiently execute Agile projects. Account managers, business sponsors, technical managers, and digital practitioners will also find useful information in relevant book chapters.

PART I

Initiation of Digital Projects

CHAPTER 1

Introduction to Digital Project Management

Project management aims to utilize resources across all technology tracks to achieve the intended goals within a set schedule. Managing digital projects involves managing various digital technologies (e.g., content management systems, portals, search, analytics, etc.) to achieve high-quality deliverables.

The vast majority of project management failures we see can be traced back to requirements management, scope creep, change request handling, adoption failures, or sustained maintenance—all activities that are in the realm of project management. Therefore, it is very important to understand the critical aspects of project management and its related challenges and to be aware of the best project management techniques.

This chapter introduces the key concepts in digital project management. The first section discusses digital project phases and project governance activities. The next section looks at various execution models, such as the iterative and Agile models with case studies. Subsequent sections cover risk management, change management, and release management for digital projects.

Project managers, project managers, account managers, business executives, and enterprise architects will find the content in this chapter useful.

What Are Digital Projects?

Digital projects in the context of this book refer mainly to modern day software projects that predominantly use digital technologies such as experience platforms, enterprise portals, content systems, commerce platforms, user experience technologies, mobile technologies, search, and collaboration.

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The Key Tenets of Digital Projects

Here are the key tenets of a typical digital project are as follows:

- The project uses modern day technologies such as experience platforms, commerce products, API platforms, Big Data technologies, AI technologies, and so on.
- The project releases are mainly executed through an Agile methodology or in iterations to attain faster time to market.
- The primary success metrics are user engagement, performance, responsiveness, agility, and user conversion.
- The solutions mainly cater to Internet users and provide omni-channel capabilities.

Regular Software Projects vs. Digital Projects

While digital projects have the fundamentally same features of any regular software projects, they have their own set of unique features and challenges as well. Table 1-1 provides the key differences between a regular software project and a digital project.

Table 1-1. *Digital Projects vs. Regular Software Projects*

	Digital Projects	Regular Software Projects
Primary technology	Modern digital technologies such as portals, CMS, and search	Proven matured technologies such as legacy technologies and legacy web frameworks
Execution methodology	Mostly Agile or iterative	Mostly waterfall
Resource Needs	Needs niche skillset with limited availability	Rich availability of resources
Target audience	Mainly Internet (B2C) audience	Targeted to B2B and B2C audience

As the definition of "digital technologies" is continuously evolving, in the context of this book, we refer to any project using modern digital technology (such as digital commerce, experience platforms, responsive UI frameworks, mobile applications, analytics, cloud technologies etc.) as a digital project.

Project Management of Digital Projects

This section discusses the various phases and activities in each phase of typical digital projects.

Mapping Digital Capabilities Across a Solution Value Chain

A project manager plays an active role in identifying and mapping various digital capabilities needed during the entire journey of a digital user.

We can identify the user journey at the overall digital solution level and identify various customer touch points and map them to their corresponding digital capabilities. This exercise is normally done at the project level during requirements elaboration to determine various solution capabilities. Business analysts, solution architects, and project managers participate in this activity.

Digital project managers can use their project management experience and contribute to this exercise. They can bring in their experience of various digital products and capabilities that worked best in their earlier engagements and then refine the digital capability mapping. Figure 1-1 shows a sample digital capability mapping for a digital commerce user journey. The touch points referred to in Figure 1-1 are the user functionalities through which the user interacts with the system. Digital capabilities refer to various features and functionalities harnessed from digital technologies and products. For instance, during the marketing and sales phase of the e-commerce solution, the end user normally learns about the solution through a web search. To target the right customer in the right context, we could use digital capabilities such as Search Engine Optimization (SEO), Search Engine Marketing (SEM), promotions, and so on.

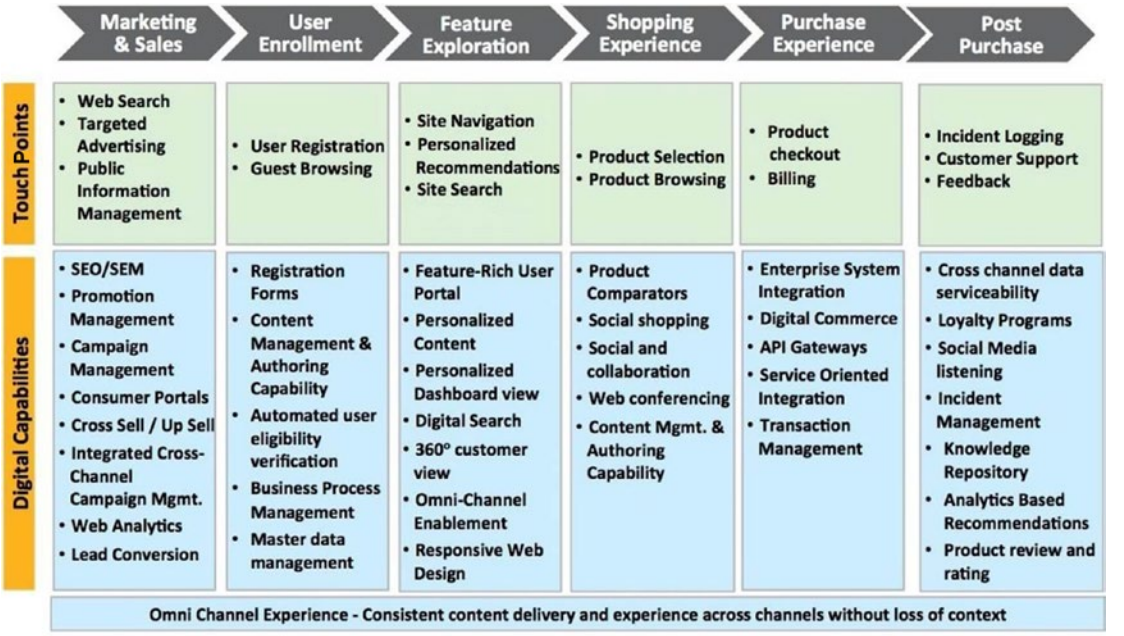

Figure 1-1. *Digital capability mapping for an e-commerce solution*

This mapping exercise can help project managers identify necessary digital technologies and products and then staff the appropriate resources.

Digital Project Phases

There are typically three phases in digital projects:

- *Planning phase*: During this phase, project initiation activities are performed. We define the scope and determine the functional/non-functional requirements. The project manager performs activities such as scope planning, schedule planning, cost and effort planning, resource planning, communication planning, and risk planning.