

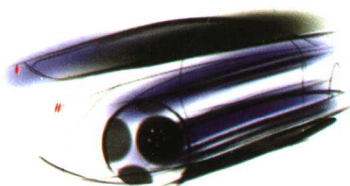
# 敏捷项目管理

(英文版)

## Agile Project Management

Jim Highsmith

The Agile Software Development Series  
Cockburn • Highsmith  
Series Editors



### Creating Innovative Products



(美) Jim Highsmith 著

# 敏捷项目管理

(英文版)

## Agile Project Management Creating Innovative Products

*"Jim Highsmith is one of a few modern writers who are helping us understand the new nature of work in the knowledge economy."*

—Rob Austin, Assistant Professor, Harvard Business School

*"This is the project management book we've all been waiting for—the book that effectively combines Agile methods and rigorous project management. Not only does this book help us make sense of project management in this current world of iterative, incremental Agile methods, but it's an all-around good read!"*

—Lynne Ellen, Senior VP & CIO, DTE Energy

*"Finally a book that reconciles the passion of the Agile software movement with the needed disciplines of project management. Jim's book has provided a service to all of us."*

—Neville R. Singham, CEO, ThoughtWorks, Inc.

*"The world of product development is becoming more dynamic and uncertain. Many managers cope by reinforcing processes, adding documentation, or further honing costs. This isn't working. Highsmith brilliantly guides us into an alternative that fits the times."*

—Preston G. Smith, Principal, New Product Dynamics/  
Coauthor, *Developing Products in Half the Time*

Now, one of the field's leading experts brings together all the knowledge and resources you need to use APM in your next project. Jim Highsmith shows why APM should be in every manager's toolkit, thoroughly addressing the questions project managers raise about Agile approaches. He systematically introduces the five-phase APM framework, then presents specific, proven practices for every project participant. Coverage includes:

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- How to capitalize on emerging new product development technologies
- Putting customers at the center of your project, where they belong
- Creating adaptive teams that respond quickly to changes in your project's "ecosystem"
- Which projects will benefit from APM—and which won't
- APM's five phases: *Envision, Speculate, Explore, Adapt, Close*
- APM practices, including the Product Vision Box and Project Data Sheet
- Leveraging your PMI skills in Agile environments
- Scaling APM to larger projects and teams
- *For every project manager, team leader, and team member*

### About the Author

JIM HIGHSMITH is Director, Agile Project Management Practice, and Fellow, Business Technology Council, at Cutter Consortium. Highsmith authored *Adaptive Software Development*, which won the prestigious Jolt award for excellence, and *Agile Software Development Ecosystems* (Addison-Wesley). A recognized leader in the Agile movement, he coauthored the *Agile Manifesto* and cofounded the Agile Alliance.



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Creating Innovative Products

(美) Jim Highsmith 著



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# 出版者的话

文艺复兴以降，源远流长的科学精神和逐步形成的学术规范，使西方国家在自然科学的各个领域取得了垄断性的优势；也正是这样的传统，使美国在信息技术发展的六十多年间名家辈出、独领风骚。在商业化的进程中，美国的产业界与教育界越来越紧密地结合，计算机学科中的许多泰山北斗同时身处科研和教学的最前线，由此而产生的经典科学著作，不仅擘划了研究的范畴，还揭橥了学术的源变，既遵循学术规范，又自有学者个性，其价值并不会因年月的流逝而减退。

近年，在全球信息化大潮的推动下，我国的计算机产业发展迅猛，对专业人才的需求日益迫切。这对计算机教育界和出版界都既是机遇，也是挑战；而专业教材的建设在教育战略上显得举足轻重。在我国信息技术发展时间较短、从业人员较少的现状下，美国等发达国家在其计算机科学发展的几十年间积淀的经典教材仍有许多值得借鉴之处。因此，引进一批国外优秀计算机教材将对我国计算机教育事业的发展起积极的推动作用，也是与世界接轨、建设真正的世界一流大学的必由之路。

机械工业出版社华章图文信息有限公司较早意识到“出版要为教育服务”。自1998年开始，华章公司就将工作重点放在了遴选、移译国外优秀教材上。经过几年的不懈努力，我们与Prentice Hall, Addison-Wesley, McGraw-Hill, Morgan Kaufmann等世界著名出版公司建立了良好的合作关系，从它们现有的数百种教材中甄选出Tanenbaum, Stroustrup, Kernighan, Jim Gray等大师名家的一批经典作品，以“计算机科学丛书”为总称出版，供读者学习、研究及度藏。大理石纹理的封面，也正体现了这套丛书的品位和格调。

“计算机科学丛书”的出版工作得到了国内外学者的鼎力襄助，国内的专家不仅提供了中肯的选题指导，还不辞劳苦地担任了翻译和审校的工作；而原书的作者也相当关注其作品在中国的传播，有的还专程为其书的中译本作序。迄今，“计算机科学丛书”已经出版了近百个品种，这些书籍在读者中树立了良好的口碑，并被许多高校采用为正式教材和参考书籍，为进一步推广与发展打下了坚实的基础。

随着学科建设的初步完善和教材改革的逐渐深化，教育界对国外计算机教材的需求和应用都步入一个新的阶段。为此，华章公司将加大引进教材的力度，在“华章教育”的总规划之下出版三个系列的计算机教材：除“计算机科学丛书”之外，对影印版的教材，则单独开辟出“经典原版书库”；同时，引进全美通行的教学辅导书“Schaum's Outlines”系列组成“全美经典学习指导系列”。为了保证这三套丛书的权威性，同时也为了更好地为学校和老师服务，华章公司聘请了中国科学院、北京大学、清华大学、国防科技大学、复旦大学、上海交通大学、南京大学、浙江大学、中国科技大学、哈尔

滨工业大学、西安交通大学、中国人民大学、北京航空航天大学、北京邮电大学、中山大学、解放军理工大学、郑州大学、湖北工学院、中国国家信息安全测评认证中心等国内重点大学和科研机构在计算机的各个领域的著名学者组成“专家指导委员会”，为我们提供选题意见和出版监督。

这三套丛书是响应教育部提出的使用外版教材的号召，为国内高校的计算机及相关专业的教学度身订造的。其中许多教材均已为M. I. T., Stanford, U.C. Berkeley, C. M. U. 等世界名牌大学所采用。不仅涵盖了程序设计、数据结构、操作系统、计算机体系结构、数据库、编译原理、软件工程、图形学、通信与网络、离散数学等国内大学计算机专业普遍开设的核心课程，而且各具特色——有的出自语言设计者之手、有的历经三十年而不衰、有的已被全世界的几百所高校采用。在这些圆熟通博的名师大作的指引之下，读者必将在计算机科学的宫殿中由登堂而入室。

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# Praise for Jim Highsmith's *Agile Project Management*

"Jim Highsmith is one of a few modern writers who are helping us understand the new nature of work in the knowledge economy. A transition—from industrial-age thinking to management more suited to reliable innovation—is well underway. But few people yet understand the implications of this shift. *Agile Project Management* explains what's going on with startling clarity. Perhaps more importantly, it provides the vital management structure and practical advice that will support ongoing innovation in your company."

—Rob Austin, Assistant Professor, Harvard Business School

"There is a lot of attention these days being given to whether organizations are harvesting the maximum benefits from their IT investments. This book is totally in alignment with that theme and should be a must-read for all project participants who are passionate about their projects delivering 'value for money.'

"The one constant in the vast majority of large projects I see in my role as Project Management Practice Manager for Fujitsu Consulting is change. Yet, true to the observations that Jim has made in this book, the majority of these projects have been executed as if change is not the norm and as if the project initiators were 'seers' who could foretell the future with a high degree of certainty. These projects were run on the basis of traditional project management practices, where, simplistically speaking, the project plan was 'king,' and performance was measured and couched in terms of 'delivery to plan.'

"In the past 12–18 months, Fujitsu Consulting has seen the potential benefits of adopting more 'Agile' approaches in the way we deliver and manage some of our projects and have encouraged our clients to embrace an 'adaptive' project culture."

—Karen Chivers, Senior Consulting Director and Project Management  
Practice Manager, Fujitsu Consulting (Asia Pacific)



"There is a common set of values that all the Agile methods share, and, in this book, Jim Highsmith uses those values plus his knowledge of the Agile methods to present a common framework for Agile project management. Jim shows us what an Agile approach to project management is about—the essential insights and experiences—plus he expertly combines tools and techniques with proven project management value, those of his own and those from other methods, into this framework."

—Jeff De Luca, *Project Director, Nebulon Pty. Ltd. (Australia)*

"Jim's book, *Agile Project Management*, addresses one of the key questions asked when adopting an Agile software development methodology, 'How do you manage the project?' He spends a lot of time on the values and principles needed to be successful in a less bureaucratic development environment. It requires individual discipline and a substantial mindset shift by all parties. He has done an excellent job of documenting the behaviors that will create a winning team, no matter what process is being used. I applaud Jim for creating a book that will help take the Agile movement to a new level."

—Christine Davis, *Visiting Scientist, Carnegie Mellon University/  
former Executive Vice President and General Manager, Raytheon*

"Welcome to the second generation of Agile methodologies! *Agile Project Management* is an Agile methodology thoughtfully built on the key ideas and experiences of other AMs. The result is a coherent whole, from principles to practices. If your job is to deliver serious software, keep this book at hand on your library, since in the next ten years you will use it too many times!"

—Michele Marchesi, *Professor of Software Engineering,  
University of Cagliari, Italy*

"The world of product development is becoming more dynamic and uncertain. Many managers cope by reinforcing processes, adding documentation, or further honing costs. This isn't working. Highsmith brilliantly guides us into an alternative that fits the times."

—Preston G. Smith, *Founder and Principal of New Product Dynamics/  
Coauthor, Developing Products in Half the Time*

“Finally a book that reconciles the passion of the Agile software movement with the needed disciplines of project management. Jim’s book has provided a service to all of us.

“Agile software development is largely a grass-roots movement that focuses on reliably delivering software products in a dynamic world. To date, much of the Agile literature has focused on the engineering practices that support an Agile philosophy, and thus the coverage of project management has been limited. In this book, Jim Highsmith addresses project management in the Agile environment. He doesn’t limit this coverage to simply making a case for a new style of project management. Rather, Jim also offers a practical framework and supporting practices that project managers can use to help software development teams be more productive and reliably deliver products that add business value.”

—Neville R(oy) Singham, CEO, ThoughtWorks, Inc.

“Software development is a human activity, although we sometimes try to deny that fact by wrapping high ceremony processes and tools around our teams which, if unleashed, can produce some truly amazing things. Jim knows this all too well from his broad experience in working with a variety of projects, and that experience shines through in this very pragmatic and much needed take on Agile project management.”

—Grady Booch, IBM Fellow

“Agile methods, whether for software development, project management, or general product development, are the ideal approach for building things where change is a risk factor. Everywhere? Highsmith clearly shows how iterative development methods can be successfully applied to project management generally. It is truly groundbreaking when methods refined in the software space can actually inform other disciplines.”

—Charles Stack, Founder and CEO, Flashline, Inc.

“This is the project management book we’ve all been waiting for—the book that effectively combines Agile methods and rigorous project management. Not only does this book help us make sense of project management in this current world of iterative, incremental Agile methods, but it’s an all-around good read!

“Many IT organizations have made a mess of Agile methods and component development. Organizations that abandoned waterfall methods for undisciplined software hacking have given Agile methods a bad reputation in some businesses. A cure for these woes can be found in Jim Highsmith’s new book. You really can combine the benefits of Agile methods with project management disciplines. Jim shows us the way.”

—Lynne Ellen, Senior VP & CIO, DTE Energy

“Jim Highsmith’s *Agile Project Management* is a refreshing change in the flow of project management books being published today. The book combines project management theory and practice cast in common-sense terms in a manner valuable to both the student and user. The author’s recasting and renaming of the phases of a project life cycle adds an approach likely to be emulated in the future literature in this discipline.

“His treatment of the general principles to be followed in the Agile Revolution for new product development provides a model of behavior valuable to the enlightened scholar and practitioner of the project management process.”

—Dr. David I. Cleland, Professor Emeritus, Industrial Engineering  
Department, School of Engineering, University of Pittsburgh

“Product development in the 21st century must move from the world of structure and compliance to one of agility and rapid learning. As a result, project management must change from the administration of tasks to the flexible balancing of possibilities against constraints—‘managing on the edge of chaos,’ as the author puts it. This book explains the process of doing just that and should be the foundation for change—readable, full of logic, and a sound process.”

—Michael Kennedy, President, Product Development Solutions/  
Author, Product Development for the Lean Enterprise

"This is a wonderful and highly practical book. Within hours of putting it down I was putting some of its advice into practice. It's a highly thought-provoking book that argues, for instance, that agility is more attitude than process and more environment than methodology. Because of the complexity of today's software projects, one new product development project can rarely be viewed as a repeat of a prior project. This makes Highsmith's advice to favor a reliable process over a repeatable one particularly timely and important."

—Mike Cohn, *President, Mountain Goat Software/  
Author, User Stories Applied: For Agile Software Development*

"Jim's book removes the mystery around Agile project management and its associated techniques while providing a framework of discipline that can be easily applied to any high-tech development and is not limited to software development."

—Ken Delcol, *Director, Product Development, MDS SCIEX*

"Iterations are clearly the best way to create the innovative products that customers want to buy. *Agile Project Management* contains a wealth of ideas and insights about how to make a flexible product development process work."

—Michael A. Cusumano, *Professor, MIT Sloan School of  
Management/Author, The Business of Software*

"Practical and provocative advice allows the reader to examine Agile project management in unusual depth, which is what sets this book apart. Jim opens the gateway to the clockworks of Agile project management and does it using a great storyline that takes you all the way through the journey. A must-have for any leadership collection."

—Wes Balakian, *PMP, Chairman and Executive Advisor,  
PMI eBusiness SIG/President TSI*

*“Agile Project Management* is the first book to successfully bring together the theory of complex adaptive systems and the practice of project management in a usable, ‘how-to’ format. The book offers a range of concrete suggestions including, my favorite, how to develop a product vision statement by creating a prototype of the final package. Agile project management also helps the project manager with issues of scalability through offering specific suggestions on tailoring the APM approach and by devoting an entire chapter to managing the large team. If you’re looking for practical suggestions on how to deliver the best product you can given the normal constraints of time and budget, then APM is one book you absolutely want to have on your book shelf.”

—Donna Fitzgerald, Partner, Knowth Consulting/former Project Director for Project Management Software, Oracle

“In this landmark book, Jim Highsmith catapults project management into the 21st century. The book’s a goldmine of the essential principles and practices you need to succeed in delivering innovation and business value on any new product venture.”

—Doug DeCarlo, Principal, The Doug DeCarlo Group

“Jim Highsmith has done a great service in this book by providing an easy-to-read and valuable reference for project managers who want to foster greater agility through a common-sense set of practices.”

—Kevin Tate, Chief Product Architect, Alias

# Preface

When the *Manifesto for Agile Software Development* ([www.agilealliance.org](http://www.agilealliance.org)) was written in spring 2001, it launched a movement—a movement that has raced through the software development community; generated controversy and debate; connected with related movements in manufacturing, construction, and aerospace; and been extended into project management.

The essence of this movement, whether in new product development, new service offerings, software applications, or project management, rests on two foundational goals: delivering innovative products to customers (particularly in highly uncertain situations) and creating working environments in which people look forward to coming to work each day.

Innovation continues to drive economic success for countries, industries, and individual companies. While the rates of innovation in information technology in the last decade may have declined from prodigious to merely lofty, innovation in areas such as biotechnology and nanotechnology is picking up any slack.

New technologies such as combinatorial chemistry and sophisticated computer simulation are fundamentally altering the innovation process itself. When these technologies are applied to the innovation process, the cost of iteration can be driven down dramatically, enabling exploratory and experimental processes to be both more effective and less costly than serial, specification-based processes. When it takes a pharmaceutical company months to develop a chemical compound and test it, errors are costly and careful laboratory design becomes the norm. When combinatorial chemistry can create hundreds, if not thousands, of compounds in a day and sophisticated instruments can test them in a few more days, careful specification and design can be less effective and more costly than careful experimentation. This same dynamic is at work in the automotive, integrated circuit, software, and pharmaceutical industries. It will soon be at work in your industry.

But taking advantage of these new innovation technologies has proved tricky. When exploration processes replace prescriptive processes, people have to change. For the chemist who now manages the experimental compounding process rather than designing compounds himself, and the manager



who has to deal with hundreds of experiments rather than a detailed, prescriptive plan, new project management and organizational processes are required. Even when these technologies and processes are lower cost and higher performance than their predecessors, the transformation often proves difficult.

Experimentation matters, as the title of Harvard Business School professor Stefan Thomke's recent book exclaims (Thomke 2003), but many project managers are still mired in a prescriptive, conformance-to-plan mentality that eschews that very experimentation.

Project management, at least that sector of project management dealing with new product development, needs to be transformed, but to what? It needs to be transformed to move faster, be more flexible, and be aggressively customer responsive. Agile Project Management (APM) and agile product development answer this transformational need. APM brings together a set of principles and practices that enables project managers to catch up with the realities of modern product development.

The target audience for this book is project managers, those hearty individuals who shepherd teams through the exciting but often messy process of turning visions into products—be they cell phones or medical electronic instruments. APM rejects the view of project managers as functionaries who merely comply with the bureaucratic demands of schedules and budgets and replaces it with one in which they are intimately involved in helping teams deliver products. Agile project managers focus on products and people, not paperwork.

There are four broad topics covered in *Agile Project Management*: opportunity, principles, framework, and practices. The opportunity lies in creating innovative products and services—things that are new, different, and creative. These are products that can't be defined completely in the beginning but evolve over time through experimentation, exploration, and adaptation.

The principles of APM revolve around creating both adaptive products that are easy and less expensive to change and adaptive project teams that can respond rapidly to changes in their project's ecosystem. The framework is a set of high-level processes, or phases—Envision, Speculate, Explore, Adapt, and Close—that support exploration and experimentation and deliver results reliably, even in the face of constant change, uncertainty, and ambiguity. Finally,

the practices—from developing a product vision box to getting the right people—provide actionable ways in which project teams can deliver results.

At its core, APM focuses on customers, products, and people—delivering value to customers, building adaptable products, and engaging talented people in collaborative work.

Jim Highsmith  
January 2004  
Flagstaff, Arizona

# Introduction

*Agile Project Management* contains four focal points: the agile revolution and its impact on new product development; the values and principles that drive agile project management; a process framework; and the specific practices that embody the principles and deliver results.

Chapter 1, *The Agile Revolution*, introduces changes that are occurring in product development—from cell phones to software—and how these changes are driving down the cost of experimentation and fundamentally altering how new product development should be managed. The chapter outlines the business objectives of APM and how organizations need to adapt to operating in a chaotic world.

Chapters 2 and 3 describe the values and principles that actuate APM. The values were first articulated in the *Manifesto for Agile Software Development*, and the principles are derived from the Manifesto, but they are adapted from a development to a project management perspective. Chapter 2 covers the principles related to customers and products, while Chapter 3 covers principles related to leadership and management. Chapter 2 will also introduce you to Herman and Maya, project managers from different companies and different cultures, who will explore through a series of chapter opening dialogues some of the principles and practices of APM.

Chapters 4–8 cover the APM process framework and individual practices. Chapter 4 describes the phases in the process framework—Envision, Speculate, Explore, Adapt, and Close—and Chapters 5–8 identify and describe practices in each of the phases.

Chapter 9, *Building Large Adaptive Teams*, examines how agile principles are used, together with additional practices, to scale APM to larger projects and larger teams.

Chapter 10, *Reliable Innovation*, underscores how APM helps address the changing nature of new product development, summarizes the role of