

Praise for Succeeding with Agile

- "Understanding the mechanics of an agile process is just not enough. Mike Cohn has compiled a superb and comprehensive collection of advice that will help individuals and teams with the intricate task of adopting and adapting agile processes to fit their specific challenges. This book will become the definitive handbook for agile teams."
- -Colin Bird, Global Head of Agile, EMC Consulting
- "Mike Cohn's experience working with so many different organizations in the adoption of agile methods shines through with practical approaches and valuable insights. If you really want agile methods to stick, this is the book to read."
- —Jeff Honious, Vice President, Innovation, Reed Elsevier
- "Mike Cohn has done it again. Succeeding with Agile is based on his experience, and all of our experience, with agile to date. He covers from the earliest days of the project up to maturity and offers advice for the individual, the team, and the enterprise. No matter where you are in the agile cycle, this book has something for you!"
- —Ron Jeffries, www.XProgramming.com
- "If you want to start or take the next step in agile software development, this book is for you. It discusses issues, great solutions, and helpful guidelines when scaling up in agile projects. We used the guidelines from this book extensively when we introduced agile in a large, FDA-regulated department."
- —Christ Vriens, Department Head of MiPlaza, part of Philips Research
- "If making the move to agile has always baffled you, then this book will unlock its mysteries. Mike Cohn gives us all the definitive, no-nonsense guide to transforming your organization into a high-powered, innovative, and competitive success."
- —Steve Greene, Senior Director, Program Management and Agile Development, www.salesforce.com
- "Mike Cohn is a great advisor for transforming your software organization. This book is a distillation of everything Mike has learned over the years working with companies that are trying to become more agile. If you are thinking of going agile, pick up this book."
- —**Christopher Fry**, Ph.D., Vice President Development, Platform, www.salesforce.com
- "Whether you're just starting out or have some Scrum experience under your belt, in *Succeeding with Agile*, Mike Cohn provides a wealth of information to guide you in your quest toward continuous improvement. Throughout the book, concepts are reinforced with practical everyday advice, including how to handle objections and thought-provoking 'things to try now.' An extensive list of recommended readings round this out to be a must have book."
- —Nikki Rohm, Studio Director Project and Resource Management, Electronic Arts







- "The first steps along the path of improving your software process with Scrum are hard, and every step reveals new challenges. In *Succeeding with Agile*, Mike Cohn shows how other organizations have followed this path, how you can learn from them to have a successful implementation of Scrum, and put your organization on the path of constant improvement and delivery of value."
- —Johanes Brodwall, Chief Scientist, Steria Norway
- "I began to recommend Mike Cohn's new book as soon as I began to review it. It seems that as soon as someone asked me a question about some corner of agile development, I would realize that I had just read something excellent in one of Mike's chapters. I am so glad the book is finally out so I can stop saying, 'Mike Cohn has a great new book coming out soon that will talk about this problem.' Now I can say, 'Mike's book is out! Get it!'"
- —Linda Rising, Coauthor with Mary Lynn Manns of Fearless Change: Patterns for Introducing New Ideas
- "The title says it all; this is an astonishingly insightful and pragmatic guide to succeeding with agile software development. If you only read one agile book, this is the one. I want to give it to all my clients now!"
- —**Henrik Kniberg**, Agile Coach, Agile Alliance Board Member, Author of *Scrum and XP from the Trenches*
- "Mike Cohn blends thorough theoretical knowledge with practical hands-on techniques. This is another great agile book from Mike. It will help your team, your department, or your whole organization Succeed with Agile."
- —Matt Truxaw, Application Delivery Manager, Kaiser Permanente IT, Certified Scrum Master
- "Mike Cohn's new book is the definitive guide for companies transitioning to Scrum. Its contents are practical and easily accessible. Get it, read it, and apply it!"
- -Roman Pichler, Author of Agile Product Management with Scrum
- "Succeeding with Agile is at once enormously practical, deeply insightful, and a pleasure to read. It combines great ideas with stories and examples from around the software industry and will appeal to a wide range of readers, from those looking to adopt a new company-wide agile process to developers who just need to improve the way a team is running a single project."
- —**Andrew Stellman**, Developer, Project Manager, and Author of *Head First PMP*, Beautiful Teams, Applied Software Project Management
- "Adopting agile methods is hard enough on a greenfield web app in a small company. Transforming an enterprise is another matter. This book captures challenges like the ones we faced and offers insight and, more importantly, practical approaches."
- —Michael Wollin, Senior Development Manager, Broadcast Production Systems, CNN







- "Mike Cohn has put together a fantastic book of guidelines to not only start the Scrum implementation, but to turn your entire corporation into an agile community. I have already implemented many of the recommendations included in this text and have seen a positive influence on the support for Scrum within our organization."
- —James Tischart, CSM, CSP, CTFL, Vice President, Product Delivery, Mx Logic, Inc
- "In Succeeding with Agile, Mike Cohn has scoured and sifted through the collective experience and lessons of not only scores of different projects, teams, and organizations from his own agile experience, but also from the experience of countless others. He provides real-world stories from the trenches, useful data and studies, and invaluable insights into what has and hasn't worked well when adopting, adapting, and scaling Scrum. What I like best about the book is where Mike provides wisdom on several different alternatives and approaches and the circumstances in which each is most suitable."
- —Brad Appleton, Internal Agile Consultant at a Fortune 100 telecommunications company
- "I believe Mike Cohn's book will answer many questions and issues that people and teams struggle with in terms of how to improve collaboration, communication, quality, and team productivity. I especially appreciate and agree with Mike's statement that 'there can be no end state in a process that calls for continuous improvement.' This is hard work and it requires persistence, teamwork, and good people. I plan to make *Succeeding with Agile* mandatory reading within my organization, just like we did with his book on *Agile Estimating and Planning*."
- —Scott Spencer, Vice President Engineering, First American CoreLogic, Inc.
- "Mike Cohn has done it again. This comprehensive study of agile software development provides numerous techniques and methodologies to achieve success. I enthusiastically recommend this book to anyone who wants to start using agile or wants to improve their software development process."
- —Benoit Houle, Senior Development Manager, BioWare (a Division of Electronic Arts)
- "There's no doubt that Mike Cohn's new book will become the reference on how to run software projects with Scrum. The book is very carefully crafted and avoids the trap of giving you the one, simple recipe to all your problems. Though mainly centered on Scrum, Mike draws on various other techniques to produce a handbook that is thorough and complete. This is not a hasty mash-up supported by just an act of faith or a single experience. The examples are credible and are a testimony of Mike's vast personal experience of the topic."
- —Philippe Kruchten, Professor of Software Engineering at University of British Columbia
- "This book is packed with useful advice on how your organization can become agile. It's a practical handbook for coaches and change agents who face real-world challenges, such as scaling agile for distributed teams, and who seek to engage with the wider organization. I love the way that Mike Cohn brings the book to life with stories from situations he's faced in the industry and follows up with data and insights from research. I learned something new from every chapter, and I bet you will too."
- -Rachel Davies, Coauthor of Agile Coaching







From "Succeeding with Agile: Software Development Using Scrum" by Mike Cohn







SUCCEEDING WITH AGILE







The Addison-Wesley Signature Series

Kent Beck, Mike Cohn, and Martin Fowler, Consulting Editors



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SUCCEEDING WITH AGILE

Software Development Using Scrum

MIKE COHN

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The Library of Congress Cataloging-in-Publication data is on file.

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Pearson Education, Inc.
Rights and Contracts Department
501 Boylston Street, Suite 900
Boston, MA 02116
Fax (617) 671-3447

ISBN-13: 978-0-321-57936-2 ISBN-10: 0-321-57936-4

Text printed in the United States on recycled paper at Edwards Brothers in Ann Arbor, Michigan. First printing October 2009

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To Laura, Savannah, and Delaney for making me the one who knows.







From "Succeeding with Agile: Software Development Using Scrum" by Mike Cohn







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From "Succeeding with Agile: Software Development Using Scrum" by Mike Cohn







Foreword

All the time I hear people talking about software projects as journeys, and I think they are implying that software projects are not just journeys, but they are journeys into the unknown. We start with funding from a sponsor, muster together a stout-hearted crew, head out in what we guess might be a useful direction, and the rest is The Odyssey. We live the tales of the brave Odysseus: tales of Lotus Eaters, the Cyclops, Circe, the Sirens, Scylla, and Calypso. We succeed or fail only with the help or rage of the gods. How wonderfully romantic, and how perfectly silly.

I think that the more appropriate analogy along this line is the project as an expedition. We have a goal or a short list of goals. We have some well-proven maps; we have some vaguer ones, too. We have the advice and journals from those who have been out there and made it back to tell their stories.

We don't walk out the door and face the unknown; but on the other hand, there are some big question marks, and these bring us into a high-risk position. We accept these risks, because if the expedition can succeed there are surely significant rewards. We have skills, but there are uncertainties.

How do we deal with this? I recommend that we look back, oh, about 300 years, to the York Factory on Hudson Bay in Canada. At that time this was the headquarters of the Hudson Bay Company. The Hudson Bay Company's main line of business was to be the supplier of all necessary provisions for fur traders going out on, you guessed it, expeditions, from Hudson Bay. The fur traders developed a great way to start an expedition, and it was called "The Hudson Bay Start." Having done their one-stop shopping at The Company, the fur traders would go out of Hudson Bay only a mile or two and set up camp. Why? Certainly not to set up traps; they wanted to discover what they forgot to bring while they were less than an hour's hike back into town! Being the excellent project person that you are, you know that for the vast majority of time the leather-faced expert fur trader would reappear for another shopping trip.

What the heck does all this have to do with the book in your hands right now? With Succeeding with Agile, Mike Cohn has delivered The Hudson Bay Start for agile development. This is it. This is a weather-beaten experienced fur trapper giving you the checklist to work through before you begin your expedition. By reading this book, you will find that Mike brings up issues that you never thought of, offers advice on how you might handle situations, and helps you define new roles on your team.

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Don't be the only person on your team to read this book; with self-organizing teams anyone can be expedition leader at any given time. This book is going to lead to many very interesting discussions; I guarantee it.

I worry a bit that I am saying that Mike has handed you a book without choices for you. He points out early and often that you must make your choices on individual, team, and organizational issues.

Succeeding with Agile is not about having a single successful project; it is about how agility can transform an organization. I guess in Hudson Bay terms, it's about how to have a great career as Voyageurs.

If you have any lingering doubts about Mike as an experienced expedition leader, notice that his company is Mountain Goat Software.

Tim Lister Principal, The Atlantic Systems Guild, Inc. New York City







Acknowledgments

owe a tremendous debt to my official reviewers: Brad Appleton, Johannes Brodwall, Rachel Davies, Ron Jeffries, Brian Marick, and Linda Rising. They read and commented on the entire manuscript, sometimes multiple times. Each offered tremendously valuable insights that have immeasurably improved the book.

Special thanks also to Tod Golding, Kenny Rubin, Rebecca Traeger, and my wife, Laura, who spent hours discussing the table of contents with me. There were times we thought those conversations would never end.

There's no way to thank Rebecca Traeger enough. She is a miracle worker as an editor, adviser, and sounding board. As the former editor for the Agile Alliance and the Scrum Alliance, I contend that she is the best-read person in the agile world. She's also the world's greatest editor. She worked wonders with this book, doing more slicing and dicing than a Veg-O-Matic on a late-night infomercial. This book is significantly better for her involvement in it.

Wow. A foreword by Tim Lister. I'm incredibly honored. I've known Tim for a handful of years, and so I e-mailed him to ask if he'd write the Foreword. I didn't know it, but he was vacationing at the time I e-mailed him and so he replied a week later. I saw the e-mail reply first on my phone, which only displayed the first two lines. Before I tapped the message to see the full e-mail, I had flashbacks of getting college admission letters—would it be good news or bad news? I was ecstatic when he said yes. I was then doubly thrilled when he had such nice things to say in his Foreword. Thank you, Tim.

My assistant, Jennifer Rai, provided invaluable help throughout this project. From tracking down references, to getting permissions, to keeping my research organized, she did it all. I appreciate her dedication, professionalism, and the consistent thoroughness of her work. I couldn't ask for more in an assistant.

For the past two years I have been posting chapters to this book's website at www.SucceedingWithAgile.com. I have been fortunate to have had a wonderful group of people download, review chapters, and provide comments to me. I would like to thank the following individuals for reading draft chapters posted on that site or for providing anecdotes that made their way into the book: Fridtjof Ahlswede, Peter Alfvin, Ole Andersen, Joshua Boelter, Mikael Boman, Rowan Bunning, Butterscotch, Bill Campbell, Mun-Wai Chung, Scott Collins, Jay Conne, John Cornell, Lisa Crispin, Alan Dayley, Ken DeLong, Scott Duncan, Sigfrid Dusci, Mike Dwyer, Pablo Rodriguez Facal, Abby Fichtner, Hillel Glazer, Karen Greaves, Janet Gregory, Ratha Grimes, Geir Hedemark, Fredrik Hedman, Ben Hogan, Matt Holmes, Sue Holstad, Benoit Houle, Eric Jimmink, Quinn Jones,

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Martin Kearns, Jeff Langr, Paul Lear, Lowell Lindstrom, Catherine Louis, Rune Mai, Artem Marchenko, Kent McDonald, Susan McIntosh, Alicia McLain, Ulla Merz, Ralph Miner, Brian Lewis Pate, Trond Pedersen, David Peterson, Roman Pichler, Walter Ries, Adam Rogers, René Rosendahl, Kenny Rubin, Mike Russell, Michael Sahota, George Schlitz, Lori Schubring, Raffi Simonian, Jamie Tischart, Ryan Toone, Matt Truxaw, J. F. Unson, Srinivas Vadhri, Stefan van den Oord, Bas Vodde, Bill Wake, Daniel Wildt, Trond Wingård, Rüdiger Wolf, Elizabeth Woodward, Nick Xidis, Alicia Yanik, and Mauricio Zamora.

Thank you to Jeff Schaich who did a wonderful job creating the illustrations for this book. When I was first introduced to Jeff, I was told he might be as much of a perfectionist as I am. He may be, and his drawings show it.

Stephen Wilbers, author of Keys to Great Writing, provided some much needed editing and advice early on. I am thankful for his suggestions and encouragement.

As always, the staff at Pearson was wonderful to work with. Chris Guzikowski showed tremendous patience with me, especially early on when I refused to commit to a deadline of any sort. Chris Zahn provided excellent guidance during those early days when I was working to organize what I wanted to say. Jake McFarland designed the interior of the book and did a wonderful job. Jake also showed tremendous patience with my endless barrage of InDesign questions, for which I am extremely thankful. Raina Chrobak was extremely helpful throughout the project, but especially down the home stretch, which is always a frantic period.

Jovana San-Nicolas Shirley was fantastic as this book's project editor. She kept everything moving smoothly, coordinating each of us involved in the final months of the project. I appreciate her willing replies to my e-mails at all hours of the day and night. San Dee Phillips did a top-notch (or is it top notch?) job for the final copy edit. I thank her for going over the manuscript at exactly the right level and for so carefully finding all the last little errors that really polished the text.

Thank you as well to cover designer Alan Clements. What a beautiful cover! Can you judge a book by its cover? I hope so based on the number of people who have already told me they love this one. Lisa Stumpf did a marvelous job with our indexing. She herself should be indexed under thorough and meticulous. Karen Gill did the final proofreading and was fantastic at finding all the little inconsistencies and problems. Kim Scott of Bumpy Design took care of the final page composition. I appreciate her joining at the end to help all of us make the deadline.

I would also like to thank Chris Guzikowski and Karen Gettman of Pearson for offering me the opportunity to edit a Signature Series of books for Addison-Wesley. I can still clearly remember sitting at Ken Kaplan's place in Ben Lomond in the woods of California in 1985 reading C Primer Plus. It was written by Stephen Prata but was part of a series by Mitchell Waite. I didn't know what a series editor did, but it sounded important and cool. Now I'm learning what a series editor does and am incredibly honored by their confidence in me.





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My thanks also go to Lyssa Adkins, Lisa Crispin, Janet Gregory, Clinton Keith, Roman Pichler, and Kenny Rubin. Each has written or is writing a book that will be part of this series. We have had many discussions about writing, agile, how to make certain points, and more. Through these discussions, each has improved this book.

A special thank you to all of my clients and to everyone who has ever attended one of my classes. I'm not smart enough to sit around, think big thoughts, and come up with great ideas on my own. Everything I know I've learned from working with teams and observing what worked or from talking with participants in classes. This book would be four pages long if not for you. Thank you.

Thank you to Ken Schwaber, Jeff Sutherland, Mike Beedle, Jeff McKenna, Martine Devos, and others who were there in the earliest days of Scrum. Without them writing about Scrum, presenting about it at early conferences, and talking about it, Scrum wouldn't be what it is today. Thank you as well to all of the trainers and coaches in the Scrum community who push so hard to improve how we do Scrum while pushing just as hard to keep Scrum from becoming more than the simple framework it is. My conversations with you so many of you have influenced me in more ways than you know.

There's no way to thank my family enough for all the sacrifices they made while allowing me the time to work on this book. I couldn't ask for a more wonderful and loving wife than I have in Laura. Our daughters, Savannah and Delaney, remain my practically perfect precious princesses. I cherish every moment with them. And with this book finally done, I promise them many more hours and days doing all the things we haven't done enough of lately—now it's my turn to make you the ones who know how far love goes.



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About the Author

Mike Cohn is the founder of Mountain Goat Software, through which he provides training and consulting on Scrum and agile software development. Mike specializes in helping companies adopt Scrum and become more agile as a way of building extremely high performance development organizations. In addition to this book, he is the author of *User Stories Applied for Agile Software Development, Agile Estimating and Planning*, and books on Java and C++ programming.

With more than 25 years of experience, Mike has previously been a technology executive in companies of various sizes, from start-up to Fortune 40. He has also written articles for *Better Software*, *IEEE Computer*, *Cutter IT Journal*, *Software Test and Quality Engineering*, *Agile Times*, and the *C/C++ Users Journal*. Mike is a frequent speaker at industry conferences and is a founding member of the Agile Alliance and Scrum Alliance. He is also a Certified Scrum Trainer, having cotaught the first Certified ScrumMaster class with Ken Schwaber in May 2003.

For more information, visit www.mountaingoatsoftware.com. Mike maintains a popular blog at blog.mountaingoatsoftware.com. He can also be found on Twitter as mikewcohn and by e-mail at mike@mountaingoatsoftware.com.





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From "Succeeding with Agile: Software Development Using Scrum" by Mike Cohn







Introduction

his is not a book for those who are completely new to Scrum or agile. There are other books, classes, and even websites for that. If you are completely new to Scrum, start with one of those. Nor is this a book for purists. They can find many blogs that will argue the one, true way of agile or Scrum. This is a book for pragmatists. It is for those who have started with Scrum and then encountered problems or for those who have not yet started with Scrum but who know they want to. They don't need to read again about how to draw a burndown chart or what three answers each person gives at the daily scrum. They need advice on the harder stuff—how to introduce and spread Scrum, how to get people to let go of doing a big design at the start of the project, how to deliver software that works by the end of each sprint, what managers do, and more. If these concerns sound familiar, this is a book for you.

To answer these questions, this book draws on my experience with Scrum over the past 15 years, but especially over the last 4. For the last 4 years, every evening after I spent the day with one of my clients, I would go back to my hotel room and make notes about the problems they were facing, the questions they asked, and the advice I gave. I then followed up, either with return visits or e-mails. I wanted to know for sure what advice was working to solve which problems.

As I collected the questions, problems, and advice, I was able to look for common themes. Some obstacles were completely unique to one client or one team. Others were more prevalent and repeated across many teams and organizations. It is these more universal problems—and my advice on overcoming them—that form the basis of this book. This advice is particularly evident in two ways: First, most chapters include boxes labeled *Things to Try Now.* These re-create the advice I found myself giving most often or that was most helpful in particular situations. Second, most chapters also include boxes labeled Objection. I have tried in these boxes to reproduce a typical conversation in which someone disagreed with the point I was making at the time. As you read these objections, try to hear the voice of some of your coworkers. I suspect you have heard many of the same objections. In these boxes, you will see how I've sought to overcome them.

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A good starting point is www.mountaingoatsoftware.com/scrum.



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Introduction

What Else I've Assumed About You

Beyond assuming that you understand the basics of Scrum and now want to either introduce it into your organization or get good at it, I assume that you have some influence within the organization. That doesn't mean I have aimed this book at directors, vice presidents, and the CEO. The type of influence I am assuming is just as likely to come from your personality and individual credibility with your coworkers as it is to come from whatever job title is on your business card. Sure, having a fancy title can help. But as we'll see, the type of influence needed to succeed with Scrum more often comes from opinion leaders.

How This Book Is Organized

When I began this book four years ago, my working subtitle was *Getting Started* and *Getting Good*, as those were the two things I really wanted to help with. In collecting anecdotes and giving advice, I realized that getting started and getting good at Scrum are the same thing. There are not separate techniques we apply to start and then different techniques we use to get good at it.

Part I is about getting started—it includes advice on whether to start small or convert everyone at once, how to help people move from being aware that a new process is needed to desiring change to having the ability to do it, and how to select initial projects and teams. You will use the basic mechanisms introduced in this section not only to get started but also to get good. Among these are the improvement communities and improvement backlogs of Chapter 4, "Iterating Toward Agility."

In Part II, I focus on individuals and the changes each needs to make as part of the process of adopting Scrum. Chapter 6, "Overcoming Resistance," describes the type of resistance some individuals may exhibit. In it, I offer advice for thinking about why someone is resistant and then provide guidance on how to help the person get past the resistance. Chapters 7 and 8 describe the new roles that exist on a Scrum project and the changes necessary in the traditional roles, such as programmer, tester, project manager, and so on. Chapter 9, "Technical Practices," describes some of the technical practices (continuous integration, pair programming, test-driven development, and so on) that should be used or at least experimented with and that can change much of how individuals approach their day-to-day work.

In Part III, we expand outward from individuals to teams. We look first at how to structure teams to best achieve the benefits of Scrum. Next, in Chapter 11, "Teamwork," I cover the nature of teamwork on a Scrum project. In Chapter 12, "Leading a Self-Organizing Team," we look at what it means to lead a self-organizing Scrum team. In that chapter, I provide specific advice for what ScrumMasters, functional







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managers, and other leaders can do to help a team self-organize for success. Chapters 13–15 round out Part Three with a discussion of sprints, planning, and quality.

Part IV expands our focus outward once more, this time to the organization. In Chapter 17, "Scaling Scrum," we take an extended look at what is necessary to scale Scrum up to work on large, multi-team projects. In Chapter 18, "Distributed Teams," we consider the additional complexities of distributed teams. Then, in Chapter 19, "Coexisting with Other Approaches," we add yet more complexity by discussing how to make Scrum work when part of the project uses a sequential process or when there are compliance or governance requirements. Part IV concludes with Chapter 20, "Human Resources, Facilities, and the PMO," focusing on special considerations of the impact of Scrum on an organization's human resources, facilities, and project management office groups.

Part V contains two chapters. Chapter 21, "Seeing How Far You've Come," summarizes various approaches to measuring how far an organization has progressed in becoming agile. Chapter 22, "You're Not Done Yet," concludes the book with the reminder that being agile requires continuous improvement. It doesn't matter how good you are today; to be agile you must be better next month.

A Note on Some Terms

As with most things, writing about Scrum is harder than talking about it. It is too easy to misinterpret a sentence or take one sentence out of context. To avoid these problems, I have tried to be careful and precise in my use of certain terms. I use the word *developer*, for example, to refer to anyone on the development side of the project. This includes programmers, testers, analysts, user experience designers, database administrators, and so on.

The word *team* poses its own challenges. It, of course, includes the developers, but does *team* include the ScrumMaster and product owner? Naturally, this depends on the context. When I have wanted to be especially clear, I use *whole team* to refer to everyone: developers, product owner, and ScrumMaster. However, slavish use of *whole team* would have reduced the readability of the book. So you will encounter *team* as well, but usually in places where the context makes it sufficiently clear which group I'm referring to.

In referring to Scrum and agile teams, I have also needed a term to refer to those teams that are neither. In various places, I have used *sequential*, *traditional*, and even *non-agile*. Each conveys a slightly different meaning and is used appropriately.







xxviii Introduction

How to Use This Book

Many books have a heading like the one above this sentence. But those headings usually say How to *Read* This Book. The best way to read this book is to use it. Don't just read it. When you encounter a *Things to Try Now* section, try some of them. Or note them and try them at your next retrospective or planning meeting, if that is what I recommended.

It is not necessary to read the book in order. In fact, there could well be entire chapters you do not need to read. If in your organization's quest to become good at Scrum, you have no significant problems with planning and no distributed teams, then skip or skim those chapters. I do, however, recommend that everyone read at least the first four chapters and read them in order. They lay the foundation for much of what follows.

In Chapter 4 you will be introduced to the idea of improvement communities and improvement backlogs. An improvement community is a group of likeminded individuals who are passionate about driving improvements in a particular area. One improvement community could form when three people passionate about the product backlog decide to collect best practices and advice to share across teams. Another improvement community could include hundreds of people interested in improving how your organization tests its applications. An improvement backlog is exactly what it sounds like—a prioritized list of things that an improvement community would like to help the organization get better at.

One of my hopes is that improvement communities—including the Enterprise Transition Community that guides and energizes the transition effort—will use this book to load their improvement backlogs. In fact, many of the top-level section headings have been deliberately worded so that those headings can go right onto an improvement backlog. As examples, consider "Shift from Documents to Discussions" in Chapter 13, "Prepare in This Sprint for the Next" in Chapter 14, and "Automate at Different Levels" in Chapter 16.

As a long-time Scrum trainer and consultant, I have worked with hundreds of teams and organizations, and I've come to believe that success with Scrum is possible for every organization. Some will have a harder time than others. Some will be challenged by a rigid corporate culture. Others will confront entrenched, difficult personalities facing personal loss. The lucky ones will have supportive leadership and passionately engaged employees. What each of these organizations will have in common, though, is the need for pragmatic and proven advice. I have written this book with the hope of providing it.



