



# Beyond Requirements

Analysis with an Agile Mindset

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**Kent J. McDonald**

Agile Software Development Series

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Alistair Cockburn and Jim Highsmith,  
Series Editors



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# Beyond Requirements

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Alistair Cockburn and Jim Highsmith, Series Editors



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# Beyond Requirements

## *Analysis with an Agile Mindset*

Kent J. McDonald

Illustrations by Jeff Rains

◆ Addison-Wesley

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*To all of those who asked, “Is the book done yet?”  
Yes, yes it is.*

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# Contents

Preface . . . . . xv  
Acknowledgments . . . . . xxv  
About the Author . . . . . xxvii

**Part I: Ideas . . . . . 1**

**Chapter 1: Guiding Principles . . . . . 3**  
Introduction . . . . . 3  
Deliver Value . . . . . 4  
Collaborate . . . . . 5  
Iterate . . . . . 7  
Simplify . . . . . 8  
Consider Context . . . . . 9  
Decide Wisely . . . . . 10  
Reflect and Adapt . . . . . 11  
Conclusion . . . . . 12  
If You Remember Nothing Else . . . . . 12

**Chapter 2: Helpful Concepts . . . . . 15**  
Introduction . . . . . 15  
Needs and Solutions . . . . . 15  
Outcome and Output . . . . . 19  
Discovery and Delivery . . . . . 20  
If You Remember Nothing Else . . . . . 23

**Chapter 3: Influence of Lean Startup . . . . . 25**  
Introduction . . . . . 25  
Customer Development . . . . . 25  
Build-Measure-Learn . . . . . 29  
Metrics . . . . . 31  
    Good Metrics . . . . . 32

Things to Consider with Metrics . . . . .	34
Creating Your Metrics . . . . .	36
If You Remember Nothing Else . . . . .	38
<b>Chapter 4: Decision Making . . . . .</b>	<b>39</b>
Introduction . . . . .	39
A Structure for Decision Making . . . . .	39
Determine the Decision Maker . . . . .	39
Select a Decision Mechanism . . . . .	41
Determine What Information Is Needed . . . . .	42
Make a Timely Decision . . . . .	43
Build Support with Peers/Stakeholders . . . . .	45
Communicate the Decision . . . . .	45
Enact the Decision . . . . .	46
Real Options . . . . .	46
Cognitive Biases . . . . .	48
Elicitation . . . . .	49
Analysis . . . . .	51
Decision Making . . . . .	52
If You Remember Nothing Else . . . . .	53
<b>Chapter 5: Deliver Value . . . . .</b>	<b>55</b>
Introduction . . . . .	55
Feature Injection . . . . .	55
Identify the Value . . . . .	56
Inject the Features . . . . .	59
Spot the Examples . . . . .	61
Minimum Viable Product . . . . .	63
Minimum Marketable Features . . . . .	65
If You Remember Nothing Else . . . . .	67
<b>Chapter 6: Analysis with an Agile Mindset . . . . .</b>	<b>69</b>
Introduction . . . . .	69
What Is the Need? . . . . .	71
What Are Some Possible Solutions? . . . . .	71
What Should We Do Next? . . . . .	72
What Are the Details of This Part (i.e., Telling the Story)? . . . . .	73
If You Remember Nothing Else . . . . .	73

<b>Part II: Case Studies</b> .....	<b>75</b>
<b>Chapter 7: Case Study: Conference Submission System</b> .....	<b>77</b>
Introduction .....	77
The Need .....	77
The Possible Solution(s) .....	78
The Deliveries of Value .....	79
Define-Build-Test .....	81
The Incident of the Themes .....	84
Agile2014 .....	90
Lessons Learned .....	92
<b>Chapter 8: Case Study: Commission System</b> .....	<b>95</b>
Introduction .....	95
The Need .....	96
The Possible Solution(s) .....	96
The Deliveries of Value .....	97
Lessons Learned .....	98
<b>Chapter 9: Case Study: Data Warehouse</b> .....	<b>101</b>
Introduction .....	101
The Need .....	101
The Possible Solution(s) .....	102
The Deliveries of Value .....	103
Lessons Learned .....	110
<b>Chapter 10: Case Study: Student Information System</b> .....	<b>111</b>
Introduction .....	111
The Need .....	111
The Possible Solution(s) .....	114
Lessons Learned .....	118
<b>Part III: Techniques</b> .....	<b>121</b>
<b>Chapter 11: Understanding Stakeholders</b> .....	<b>123</b>
Introduction .....	123
Stakeholder Analysis .....	123
User Analysis .....	124
Stakeholder Map .....	124
What It Is .....	124

- An Example . . . . . 125
- When to Use It . . . . . 126
- Why Use It . . . . . 126
- How to Use It . . . . . 126
- Caveats and Considerations . . . . . 129
- Additional Resources . . . . . 129
- Commitment Scale . . . . . 129
  - What It Is . . . . . 129
  - An Example . . . . . 129
  - When to Use It . . . . . 130
  - Why Use It . . . . . 130
  - How to Use It . . . . . 131
  - Caveats and Considerations . . . . . 132
  - Additional Resource . . . . . 132
- User Modeling . . . . . 133
  - What It Is . . . . . 133
  - An Example . . . . . 133
  - When to Use It . . . . . 135
  - Why Use It . . . . . 135
  - How to Use It . . . . . 136
  - Caveats and Considerations . . . . . 137
  - Additional Resources . . . . . 137
- Persona . . . . . 138
  - What It Is . . . . . 138
  - An Example . . . . . 138
  - When to Use It . . . . . 139
  - Why Use It . . . . . 139
  - How to Use It . . . . . 139
  - Caveats and Considerations . . . . . 140
  - Additional Resources . . . . . 140
- Chapter 12: Understanding Context . . . . . 141**
  - Introduction . . . . . 141
  - Purpose-Based Alignment Model . . . . . 142
    - What It Is . . . . . 142
    - The Quadrants Explained . . . . . 143
    - An Example . . . . . 144
    - When to Use It . . . . . 145
    - Why Use It . . . . . 145

How to Use It . . . . .	145
Caveats and Considerations . . . . .	146
Additional Resource . . . . .	147
Six Questions . . . . .	147
What It Is . . . . .	147
An Example . . . . .	148
When to Use It . . . . .	148
Why Use It . . . . .	148
How to Use It . . . . .	149
Caveats and Considerations . . . . .	149
Additional Resource . . . . .	150
Context Leadership Model . . . . .	150
What It Is . . . . .	150
An Example . . . . .	154
When to Use It . . . . .	154
Why Use It . . . . .	155
How to Use It . . . . .	155
Caveats and Considerations . . . . .	156
Additional Resource . . . . .	157
<b>Chapter 13: Understanding the Need . . . . .</b>	<b>159</b>
Introduction . . . . .	159
Decision Filters . . . . .	160
What It Is . . . . .	160
An Example . . . . .	160
When to Use It . . . . .	161
Why Use It . . . . .	161
How to Use It . . . . .	161
Caveats and Considerations . . . . .	163
Additional Resources . . . . .	163
Project Opportunity Assessment . . . . .	163
What It Is . . . . .	163
An Example . . . . .	164
When to Use It . . . . .	165
Why Use It . . . . .	166
How to Use It . . . . .	166
Caveats and Considerations . . . . .	166
Additional Resource . . . . .	167

- Problem Statement . . . . . 167
  - What It Is . . . . . 167
  - An Example . . . . . 167
  - When to Use It . . . . . 168
  - Why Use It . . . . . 168
  - How to Use It . . . . . 168
  - Caveats and Considerations . . . . . 169
  - Additional Resource . . . . . 169
- Chapter 14: Understanding the Solution(s) . . . . . 171**
  - Introduction . . . . . 171
  - Impact Mapping . . . . . 173
    - What It Is . . . . . 173
    - An Example . . . . . 173
    - When to Use It . . . . . 174
    - Why Use It . . . . . 176
    - How to Use It . . . . . 176
    - Caveats and Considerations . . . . . 177
    - Additional Resources . . . . . 177
  - Story Mapping . . . . . 177
    - What It Is . . . . . 177
    - An Example . . . . . 178
    - When to Use It . . . . . 178
    - Why Use It . . . . . 178
    - How to Use It . . . . . 180
    - Caveats and Considerations . . . . . 182
    - Additional Resources . . . . . 182
  - Collaborative Modeling . . . . . 182
    - What It Is . . . . . 182
    - An Example . . . . . 183
    - When to Use It . . . . . 184
    - Why Use It . . . . . 186
    - How to Use It . . . . . 186
    - Caveats and Considerations . . . . . 188
    - Additional Resources . . . . . 188
  - Acceptance Criteria . . . . . 188
    - What It Is . . . . . 188
    - An Example . . . . . 189
    - When to Use It . . . . . 190

Why Use It . . . . .	190
How to Use It . . . . .	190
Caveats and Considerations . . . . .	191
Additional Resources . . . . .	192
Examples . . . . .	192
What It Is . . . . .	192
An Example . . . . .	193
When to Use It . . . . .	194
Why Use It . . . . .	195
How to Use It . . . . .	195
Caveats and Considerations . . . . .	196
Additional Resources . . . . .	196
<b>Chapter 15: Organizing and Persisting Solution Information . . . . .</b>	<b>199</b>
Introduction . . . . .	199
Discovery Board . . . . .	200
What It Is . . . . .	200
An Example . . . . .	200
When to Use It . . . . .	201
Why Use It . . . . .	201
How to Use It . . . . .	202
Caveats and Considerations . . . . .	203
Additional Resources . . . . .	204
Definition of Ready . . . . .	204
What It Is . . . . .	204
An Example . . . . .	204
When to Use It . . . . .	205
Why Use It . . . . .	205
How to Use It . . . . .	205
Caveats and Considerations . . . . .	206
Additional Resources . . . . .	206
Delivery Board . . . . .	206
What It Is . . . . .	206
An Example . . . . .	207
When to Use It . . . . .	208
Why Use It . . . . .	208
How to Use It . . . . .	209
Caveats and Considerations . . . . .	210
Additional Resources . . . . .	210

- Definition of Done . . . . . 211
  - What It Is . . . . . 211
  - An Example . . . . . 211
  - When to Use It . . . . . 211
  - Why Use It . . . . . 211
  - How to Use It . . . . . 212
  - Caveats and Considerations . . . . . 212
  - Additional Resources . . . . . 213
- System Documentation . . . . . 213
  - What It Is . . . . . 213
  - An Example . . . . . 214
  - When to Use It . . . . . 214
  - Why Use It . . . . . 214
  - How to Use It . . . . . 215
  - Caveats and Considerations . . . . . 215
  - Additional Resources . . . . . 217

- Part IV: Resources . . . . . 219**
  - Glossary . . . . . 221
  - References . . . . . 245
  - Index . . . . . 249

# Preface

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## What This Book Is About

I wrote *Beyond Requirements* to paint a picture of analysis in IT projects and how it can be applied with an agile mindset to make those projects more effective. For the purposes of this book I think of analysis as the activities involved with

- Understanding **stakeholders**
- Understanding **context**
- Understanding the **need**
- Understanding the **solution(s)**
- Organizing and persisting solution information

Performing these activities with an agile mindset, which I explain in Chapter 1, best positions teams to satisfy stakeholder needs. As a result, I assume that people are approaching work with an agile mindset (which is up to each individual to adopt) and that they are using agile techniques. Most of the techniques I describe can also be used in other environments, of course, but they're most effective when combined with agile approaches.

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## Who Is This Book For?

If you find yourself performing analysis on a project in order to make sure the project is delivering the right thing, this book is for you. You may identify yourself as a **business analyst** (or derivation of that title), product owner, product manager, project manager, tester, or developer.

I chose to target those performing analysis activities or possessing analysis skills rather than analysts as a role, or even analysts as a profession. While it is true that the people who are most endowed with the analysis skill set are those who generally fill an analyst role, I didn't want the advice in this book to get hung up on discussions such as, "The analyst does this, the developer does that, the tester does this other thing." I'd much rather focus on describing why and when techniques are most appropriate and leave it up to you and your team to

determine who is the best person to do various activities. In many cases, multiple people on your team will end up doing analysis in order to take advantage of strong technical and business knowledge.

The business analyst role exists primarily because in the past several organizations used a prescriptive, phase-based approach to software development. In this approach, there was a time period in the project when the main work was eliciting and documenting **requirements**. Since it made sense to structure the software development organization according to how project work was done, all the people doing work in the analysis phase were lumped together and called business analysts. But gathering and documenting requirements didn't generate much respect for the people doing it. Members of the analysis community longingly eyed the success project managers had enjoyed by proclaiming project management a profession, and they chose to do the same.

A lot of good things have come from the “professionalization” of **business analysis**, including more consideration of, training on, and attention to analysis skills. However, the benefits are somewhat diluted by the effort required to justify a separate profession for people who elicit, document, and manage requirements, and the overspecialization that may result. That effort would be better spent figuring out how analysis can be used to make projects more successful.

That doesn't change the fact that you have a business analyst title and you have spent a considerable amount of your career honing your business analysis skills. Where does that leave you? Looking at analysis as an activity more than a role, title, or profession means that you can use your in-depth knowledge of analysis techniques to help your teams solve the right problems in the right way and help out with other activities on the project whenever possible.

---

## To What Context Does This Book Apply?

This book focuses on the analysis that occurs on **IT projects**. An IT project is any project that results in solutions, often involving software, that support internal business processes, automate manual processes, or streamline current processes. Examples include building a system to support the session submission process for a conference, implementing a system to calculate and deliver commissions, reporting and data warehousing solutions, or implementing a solution to track student information at a nonprofit school.

I chose this focus for a few reasons. First, activities labeled as business analysis and the role of business analyst seem to be more prevalent in IT projects than in activities focused on **product** development. Second, most of the existing literature in the analysis space seems to assume a product development context,

and the context of the IT departments of an organization strikes me as underserved. Third, and probably most important, it's where most of my experience lies, so focusing on that topic gives me the opportunity to write from actual experience.

As I describe how analysis with an agile mindset works on IT projects, I won't delve too much into how to do tried-and-true analysis techniques. There are already enough resources that do a fantastic job of explaining those techniques, and it dilutes the focus of this book. Instead, I'll focus on why those techniques are helpful and when they are best used. I do introduce a few techniques from other skill sets not commonly known in analysis circles, and in those cases I provide a more detailed description of how to perform that technique. In all cases, I provide my favorite references for more information about those techniques.

The word project has acquired a certain stigma in the agile community. Those who apply that stigma feel as though the use of the word project implies some of the downsides of the way that projects are managed in a waterfall setting.

The term project often suggests the following:

- The temporary nature of projects is applied to the teams that work on them. People are brought to the work instead of the work being brought to the team.
- It takes a while to get an effort going due to the extensive chartering and planning that come with trying to predict the future 6 to 12 months out.
- Even though projects are intended to be temporary (or maybe because of that), they are rarely stopped once they get started. Sponsors and teams get enamored with projects and become more reluctant to end a project the longer it goes on.
- The project funding approach may encourage grouping multiple small **changes** together in order to justify expenditure, increasing the time before the changes are delivered to waiting stakeholders.

While these problems certainly exist, merely using the word project does not ensure that they will happen. I reasoned that most people are familiar with the idea of the project, and it would be more useful to explain that these patterns are antipatterns and it's possible for projects to work differently than to use a new term for an existing concept and deal with all of the confusion that could cause. As Deanna, one of my editors, suggested, I should just "own it" when it comes to using the word project.

## What Problem Is This Book Trying to Solve?

Analysis is often portrayed as eliciting and documenting requirements, frequently in terms that sound a lot like asking people what they want and writing it down. Deep philosophical discussions about analysis often center on the best way to capture requirements: “Should I use a use case, or should I use a **user story**?” Requirements are important, but they are a means to an end, not the end in and of themselves. As I described previously, analysis is about understanding your stakeholders and their needs, identifying the best solution for satisfying those needs in your particular context, and then building a shared understanding of that solution. Requirements play a part in that work, especially around describing the need, but they are certainly not the end product.

One fundamental problem this book is trying to solve is how to determine whether your IT project is doing the right thing and how analysis can help you do that. It’s about changing the purpose of analysis from requirements gathering and capture to problem solving and building shared understanding. Along with that comes a substantial change in how your team views requirements and **designs**. They are no longer deliverables that get tossed over the wall to the people performing the next step in the process. Now both requirements and designs are tools that teams can use to build a shared understanding of the solution they seek to deliver in order to reach a desired **outcome**.

A second fundamental problem this book attempts to solve is to demonstrate how to do analysis in an agile setting. As many teams first adopt agile approaches, they struggle with finding the right balance between identifying a viable solution and describing that solution in too much detail too early. This book aims to show you how to perform analysis in an iterative fashion so that you can take advantage of the learning that occurs during development, testing, and deployment. While doing so, it also demonstrates that many analysis techniques are applicable in an agile setting with changes to when and to what extent you perform those techniques. I sought to solve this problem because many teams that adopt agile think analysis is no longer necessary, and as a result they end up creating solutions that don’t solve the identified problem, or don’t solve any problem at all.

---

## How the Book Is Organized

This book is organized into three main parts to make it a bit easier to consume. The first part, “Ideas,” covers the agile mindset and some key principles that underlie the agile mindset and effective analysis. The second part, “Case Studies,” features four case studies that show how to practically apply the ideas in a variety of situations. The third part, “Techniques,” takes a deeper view of some techniques that are very helpful for using analysis in an agile setting.

## Part I: Ideas

The first section takes a look at some key ideas that I consider essential for effectively performing analysis in an agile setting. These include the concepts that describe an agile mindset, and some helpful concepts from outside traditional analysis thinking that supplement typical analysis techniques. Finally, I build on those ideas to place analysis techniques in context.

### *Chapter 1: Guiding Principles*

As I help teams adopt agile and tighten up their analysis approach, I find that adopting the appropriate mindset is more important than mastering a specific set of techniques. With the proper mindset and a great deal of self-discipline a team can be successful with minimal process. Without the proper mindset, teams find that they must continuously add process to aid the **collaboration** that comes naturally to those who have the right mindset.

What is the proper mindset? There are a variety of perspectives on that. The original definition of the agile mindset is encapsulated by the “Manifesto for Agile Software Development” and the corresponding principles. Others have expanded on those original ideas to describe the agile mindset, and I have done the same, placing emphasis on aspects that encourage building the right thing. I describe my perspective on the agile mindset through seven guiding principles:

- Deliver **value**
- Collaborate
- Iterate
- Simplify
- Consider context
- Decide wisely
- Reflect and adapt

### *Chapter 2: Helpful Concepts*

I use this chapter to introduce some ideas that form the conceptual basis for the following chapters. The ideas discussed include

- Needs and solutions
- Outcome and **output**
- Discovery and delivery

### *Chapter 3: Influence of Lean Startup*

This chapter explores some concepts of Lean Startup and describes how these concepts can be applied effectively to the context of IT projects. Those concepts include

- Customer development
- Build-Measure-Learn
- Metrics

### *Chapter 4: Decision Making*

This chapter discusses decision making in more detail, specifically a structure for decision making, the idea of **Real Options**, and the cognitive biases I find can get in the way of effective decision making.

### *Chapter 5: Deliver Value*

In this chapter I discuss some key concepts surrounding value delivery, including **Feature Injection**, **minimum viable product**, and **minimum marketable feature**.

### *Chapter 6: Analysis with an Agile Mindset*

While I'm not necessarily advocating a new "analysis process," I wanted to provide a general description of how analysis flows alongside the lifecycle of a project. This chapter positions the techniques from Chapters 11 through 15 in their usual location in the project lifecycle.

I don't spend a great deal of time talking about this flow specifically because it is not the same on every project, but going through the whole flow once helps put the techniques into the proper perspective and helps to explain why certain techniques make more sense in some contexts than in others.

## **Part II: Case Studies**

In this part of the book, I share four stories intended to describe analysis in a real-world setting. These stories illustrate the ways a variety of IT projects used the ideas described in Chapters 1 through 6 and the techniques described in later chapters. While I cannot cover every possible situation, I hope this mix of case studies provides fairly broad coverage of the various environments in which you may find yourself. In addition, they should furnish ideas for using the same techniques in different situations and adjusting your approach based on your current context.

### *Chapter 7: Case Study: Conference Submission System*

This is the story of developing and maintaining the submission system for the Agile2013 and Agile2014 conferences. This was a fairly straightforward project, but it provides the opportunity to position several analysis techniques in their proper context.

### *Chapter 8: Case Study: Commission System*

This case describes what happened when a health insurance company undertook a project to replace multiple commission systems. The case explores some good techniques for projects involving off-the-shelf software and the tendency to gold plate.

### *Chapter 9: Case Study: Data Warehouse*

This case tells the story of a project to incorporate a new source of data into an existing data warehouse. This story explores analysis in a business intelligence project, another environment that can benefit from an agile mindset.

### *Chapter 10: Case Study: Student Information System*

This case explores analysis in a nonprofit setting and focuses on the decisions that need to be made when a project is initially being considered.

## **Part III: Techniques**

In this section I describe a series of techniques that can be helpful in many different settings using my technique brief format. That format covers the following aspects of a technique:

- What it is
- An example
- When to use it
- Why use it
- How to use it
- Caveats and considerations
- Additional resources

### *Chapter 11: Understanding Stakeholders*

This chapter describes some techniques that are helpful for understanding the people you work with. The first two techniques are useful for understanding

the people whose needs you are trying to satisfy—better known as **stakeholder analysis**. The other two techniques in this chapter will help you better understand the people who are actually going to use the solution you deliver; let's call this **user analysis**. The techniques I cover include

- Stakeholder map
- Commitment scale
- User modeling
- Persona

### *Chapter 12: Understanding Context*

Understanding context means familiarizing yourself with the nature of the business and sharing that information with the rest of the team. You want to put the project in the perspective of the overall organization and determine what the project is intended to do. If the project does not support something explicitly related to the organization's **strategy** or ongoing operations, don't do it.

This chapter introduces several techniques for understanding the organization as a whole and using that information to guide decisions about your projects. The techniques described in this chapter are often called **strategy analysis** (formerly enterprise analysis) in the analyst community.

- The Purpose-Based Alignment Model
- Six questions
- The Context Leadership Model

### *Chapter 13: Understanding the Need*

A key and often overlooked aspect of IT projects is figuring out the real need that must be satisfied, determining if it is worth satisfying, and sharing that understanding with the entire team. If those activities were done more frequently, the story told about IT projects would undoubtedly be much brighter.

In this chapter, I introduce a set of techniques that I have found very helpful for performing those activities:

- Decision filters
- Project opportunity assessment
- Problem statement

### *Chapter 14: Understanding the Solution(s)*

Once we understand the need we're trying to satisfy and we've determined that it's worth satisfying, we should investigate possible solutions. The plural form is intentional. Project teams often limit themselves by focusing on one possible solution too soon instead of leaving their options open. In many cases there are multiple options.

In this chapter I identify a variety of techniques for exploring multiple solutions and describing the solutions that seem best, all in a way that is meaningful for everyone working on the project:

- **Impact mapping**
- **Story mapping**
- **Collaborative modeling**
- **Acceptance criteria**
- **Examples**

### *Chapter 15: Organizing and Persisting Solution Information*

This chapter describes techniques that help teams visualize progress and the aspect of the solution they are working on, as well as a way to persist key information about the solution for future reference. The techniques described in this chapter include

- **Discovery board**
- **Definition of ready**
- **Delivery board**
- **Definition of done**
- **System documentation**

## **Part IV: Resources**

In this final part of the book, I provide a couple of resource sections that summarize key definitions and reference sources collected from the rest of the book.

### *Glossary*

It's always a good practice to establish a common language for your projects. Since I am trying to be very specific about how I refer to certain concepts, and

in the interest of eating my own dog food, I decided to establish a glossary for *Beyond Requirements*. This should help me be consistent in my use of certain words, or at least give you a chance to catch me if I am inconsistent. Words in the glossary appear in bold the first time they are mentioned in the text.

### *References*

Throughout the book I reference several great sources of additional information about the topics I discuss. This section compiles all the references into a single list. Take some time to check out the references listed here; there's some great stuff.

In addition to the resources included in the book, [beyondrequirements.com](http://beyondrequirements.com) features additional thoughts on analysis with an agile mindset, new technique briefs, and updates to the material in the book.

# Acknowledgments

This is not the first book I have written, but it is the first I took on by myself, or at least that's what I thought the case was when I started. It turns out that while I'll be listed as the only author, this book would not have been possible without the help of several people.

There are two people who played the biggest part in how the book looks and reads. Jeff Rains created all the hand-drawn graphics in the book. It was important that the graphics reinforce the idea of having a conversation at a whiteboard. Jeff's great work allowed me to get that message across while allowing you to be able to read the graphics. Deanna Burghart provided the first line of defense that prevented me from doing horrendous things to the English language. I have worked with Deanna for several years as she edited my pieces for ProjectConnections.com. I knew when I started working on this book a . . . um . . . couple of years ago that I wanted her editorial help. She, as always, did a great job helping me sound like me.

I have been fortunate in my professional life to work and interact with brilliant people who look at things in a slightly different way and who do not hesitate to share their perspective with me. Several of those people played a part in this book, but it's important that I thank three especially. It is truly an honor and a privilege to be able to fall back on these three to discuss ideas and ways to describe them. Gojko Adzic's extensive review notes were an immense help during the editing stage and helped me see things from a different and better perspective. Todd Little reviewed most of the book during the final editing stages and, as always, provided practical and insightful advice to help me crystallize my revisions. Chris Matts, long a primary source of cutting-edge, yet eminently practical thought in the space of analysis, generously discussed several ideas for this book and was a key source of many of the more important ones. My understanding of the nuances of analysis and IT project work is due largely to being fortunate enough to know these three practitioners.

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# About the Author

**Kent J. McDonald** uncovers better ways of delivering value by doing it and helping others do it. His years of experience include work in business analysis, strategic planning, project management, and product development in a variety of industries, including financial services, health insurance, performance marketing, human services, nonprofit, and automotive. He is active in the business analysis and agile software development communities helping people share stories about what does and does not work.

Kent has a Bachelor of Science degree in industrial engineering from Iowa State University and an MBA from Kent State University.

Kent is also a coauthor of *Stand Back and Deliver: Accelerating Business Agility*.

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## Chapter 8

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# Case Study: Commission System

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### Introduction

McMillan Insurance is a midsize health insurance company located in a midsize city in the middle of the United States. McMillan has grown through acquisition, and until recently one of its practices was to let each company keep its own identity when dealing with anyone outside the walls of headquarters. This included the relationships with independent agents and the resulting commission structures. This meant that Arthur, the manager of the commissions area, had to deal with a slew of different very unique commission rules down to the individual agent level, and the resulting hodgepodge of commission “systems” required to administer those different commission plans. McMillan has finished its acquisition binge and now realizes that some commonality needs to be introduced in many areas, including commissions.

Arthur was charged with making the commissions area more efficient, so his first instinct was to find a new commission system that would allow him to administer all the various commission plans in one place, while still maintaining all the unique commission structures. He sat down with a couple of more experienced members of his staff, and they started scouring the Internet for possible products. A quick search revealed several options. (Of course, this should have been obvious just from the seven different software applications McMillan had inherited from the acquired companies, only one of which was built in-house.)

It was at this point that they reached out to IT for some help figuring out what to do. Arthur was a little hesitant to do that at first because he was concerned that IT would want to build something in-house. He was pleasantly surprised when Heather, a business analyst from IT on the team, suggested that instead of immediately going out and looking for specific products they should step back

and think about what need they were trying to satisfy. Heather and Arthur sat down to discuss the current situation and what Arthur hoped to accomplish.

---

## The Need

As a result of their conversation, Arthur and Heather identified the following objectives:

- Reduce the time it takes to produce commission payments from one week to two days.
- Reduce the time required to set up a new commission plan from six weeks to one week (needed every time a new product is created).
- Reduce the time required to set up a new agent from one day to one hour.

They then discussed the characteristics of a desirable solution. As they were talking, Heather used the Purpose-Based Alignment Model (Chapter 12) to identify commissions as a **parity activity**, and Arthur realized that trying to have unique commission rules for every agent was, in effect, overinvesting in commissions. Data from the existing commission payments indicated that the unique rules did not have a direct impact on what the agents sold, so they were probably not worth the effort that Arthur's area spent in creating and administering them. Arthur made a note to talk to the sales managers about reducing the complexity of the commission rules.

At this point a team was formed that included Arthur and some of the more experienced members of his staff as well as Heather and a few others from IT. Arthur and Heather described the objectives they had put together and then worked with the team to create decision filters for the project, to make sure everyone was on the same page.

Here are the decision filters they came up with:

- Will this reduce the cycle time for commission payments?
- Will this help us set up a commission plan faster?
- Will this help us set up a new agent faster?

---

## The Possible Solution(s)

Once the team had a good understanding of what they were trying to accomplish, they decided they needed to identify options for realizing those objectives, starting with reducing the time required for commission payments. They used

**Table 8.1** *Desired Characteristics of New Commission Software*

Characteristic	Required/ Optional
Accept inputs from multiple policy systems to determine commissions.	Required
Create unique commission rules for each individual agent.	Required
Support multiple hierarchies: some sales channels are organized based on product, others are based on geography, some are based on both product and geography.	Required
Allow for adjustments to occur in the calculated commission rules.	Required
Allow for manual determination of commission payments.	Required
Create unique commission rules based on free-form attributes and specific values of those attributes.	Optional
Support multiple commission rules unique to the individual, unique to the policy.	Optional

impact mapping (Chapter 14) to help them identify options. Several options came up, including simplifying the commission rules and consolidating the multiple commission systems into one. The team also identified multiple options for dealing with the existing systems:

- Build something in-house.
- Revise the existing conglomerate.
- Purchase something.
- Outsource all commissions activity.
- Do nothing.

The team decided that the best route was to start with simplifying the rules for commissions in one of the acquired companies to see if there was any impact on sales. At the same time, they started the search for software to replace all of the existing commission systems. Table 8.1 lists the characteristics that served as criteria for the search.

The team included the optional characteristics as a way of seeing if any commonly used applications used complex rule logic, in case they found data to support the need for unique commission rules.

---

## The Deliveries of Value

The team split the work into a series of rounds. (They chose that term instead of *releases*, because not every round involved deploying software.) They weren't

**Table 8.2** *Rounds of Work*

Round	Contents
1	<ul style="list-style-type: none"> <li>• Simplify the commission rules for Southern Comfort Insurance (SCI).</li> <li>• Identify a commission system to purchase.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Implement a commission system in-house.</li> <li>• Use the commission system for McMillan agents (who already had straightforward commission rules).</li> <li>• Simplify the commission rules for Western Amalgamated Insurance (WAI).</li> </ul>
3	<ul style="list-style-type: none"> <li>• Use the new commission system for SCI.</li> <li>• Phase out the existing commission system for SCI.</li> <li>• Simplify the commission rules for Eastern Agrarian Insurance (EAI).</li> </ul>
4–N	<ul style="list-style-type: none"> <li>• Roll out the commission system to the remaining units.</li> <li>• Simplify the commission rules for the remaining units.</li> <li>• Phase out the existing commission systems.</li> </ul>

sure how many rounds they would have at the beginning, but they knew they would be organized along the lines shown in Table 8.2.

The team figured that after the first couple of rounds they would simplify rules and move the units to the new commission system at the same time. They staggered the first few so that they could isolate the changes and get a sense of what impact those changes had on sales.

---

## Lessons Learned

The effort is still going on at the time of this writing, but the team has already learned several lessons:

**Not all problems require a technical solution.** The team found that simplifying the commission rules helped reduce the amount of time required to process commissions a great deal and confirmed their suspicions that unique rules did not have a large impact on sales agent behavior. Even so, the team decided it would be good to consolidate all the processing on a single system.

**You may not realize how good you have it on your side of the fence.** As the team started their search for a new commission system, they decided to include the five purchased systems they were already using to administer parts of their commissions. They found that as a result of simplifying commission rules, one of the systems they already had fit the bill nicely for what they were trying to do. They had to upgrade that commission system several versions, but once they

did, they found that their work mainly consisted of creating new interfaces for any data they didn't have in that system already.

**Commercial off-the-shelf (COTS) systems often contain good industry practices.** When the team picked the commission system, they found they could use that unit's commission process for all the other units as well. That process was one suggested by the developers of the existing commission system. Switching to that process for all the units provided even more improvement in overall commissions processing and eased the transition effort since the team didn't have to come up with new processes for each unit.

**Don't forget change management.** Just because the team didn't have to come up with new processes didn't make the change completely turnkey. The commissions team did not have much trouble with the change, since over half of the team was involved on the project to switch commission systems, but they had a bit of change management to do with the agents. When they found out that commission structures were changing, most of the agents complained. Loudly. The team found that the best way to help the agents adapt to the change was to give them examples of their own commissions under both the old and the new structures. Most of the agents found that their commissions would stay consistent, or even increase. The only agents whose commissions decreased were those few who had studied the old plans enough to use loopholes to maximize their revenue. These agents were among the highest compensated but were only middle of the pack in terms of actual sales.

**Don't overlook interdependencies with other efforts.** The team originally thought they would have to do a lot of work to interface with a new set of systems for each unit they brought onto the new commission system. Shortly into the project, the team caught wind that the accounting and new business systems were also undergoing projects to make things more uniform. The commissions team got together with the other two teams and synced their rollout plans so they affected the same units in the same order, though not necessarily at the same time. That meant that the commissions team did not have to build new interfaces for every additional unit; they just had to revise the ones they had already built.

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# Index

## A

- Acceptance criteria
  - “On Acceptance Criteria for User Stories,” 192
  - “Acceptance Criteria *vs.* Scenarios,” 192
  - additional resources, 192
  - appropriate use of, 190
  - caveats and considerations, 191–192
  - definition, 188–189, 221
  - example, 189–190
  - Growing Agile: A Coach’s Guide to Agile Requirements*, 192
  - guidelines for expressing business rules. *See* RuleSpeak
  - mind map of, 189
  - potential criteria, 190
  - process description, 190–191
  - purpose of, 188, 190
  - RuleSpeak, 191, 192
  - in system documentation, 216
  - “On Acceptance Criteria for User Stories,” 192
  - “Acceptance Criteria *vs.* Scenarios,” 192
- Acceptance test driven development. *See* Examples (Agile technique)
- Actionable metrics
  - appropriate use of, 36
  - definition, 221
  - purpose of, 34
- Adaptation, characteristic of initiatives, 11–12
- “Adventures in Scaling Agile,” 177
- Adzic, Gojko
  - examples (Agile technique), 62–63, 196
  - focusing on the desired outcome, 4
  - impact mapping, 174, 175–176, 177
  - Specification by Example*, 62
- Agile Alliance, 213
- The Agile Culture: Leading through Trust and Ownership*, 150
- Agile mindset. *See* Analysis, with an Agile mindset
- “Agile Models Distilled: Potential Artifacts for Agile Modeling,” 188
- Agile Project Leadership Network (APLN), 12
- Agreed upon, characteristic of objectives, 18
- Ambler, Scott, 140, 217
- Analysis
  - cognitive bias. *See* Cognitive bias, analysis
  - of discovery and delivery, 20–23
  - of needs and solutions, 15–19
  - of outcomes and outputs, 19–20
  - scope of, xv
- Analysis, with an Agile mindset
  - decision filters, identifying needs, 71
  - delivery boards, 73
  - diagram of, 70
  - information radiators, 73
  - needs, identifying, 71
  - possible solutions, identifying, 71–72
  - release backlog, 72–73
  - release planning, 72–73
  - story mapping, 72
  - user stories, 72–73
  - visualization boards, 73
- Analyst. *See* Business analyst
- Anchoring effect
  - cognitive bias, 51
  - definition, 221
- APLN (Agile Project Leadership Network), 12
- Appropriate practices
  - vs.* best practices, 9–10
  - definition, 221

- Arbitrary decision mechanism
  - definition, 222
  - description, 41
- Ariely, Dan, 11, 48
- Automated testing, 93
- Availability heuristic
  - definition, 222
  - description, 51
- B**
- BABOK v3, definition, 222
- BACCM (Business Analysis Core Concept Model)
  - core concepts, 16–17
  - definition, 222
- Backbone, definition, 222
- Backlog items, in system documentation, 216
- Backlogs
  - failure to identify complete solutions, 186
  - as wish lists, 186
- Bandwagon effect. *See also* Groupthink
  - definition, 222
  - description, 49
- Barely sufficient approach
  - definition, 222
  - description, 8–9
- Baseline, attribute of objectives, 18
- BDD (behavior-driven development). *See* Examples (Agile technique)
- Behavior-Driven Development: Using Examples in Conversation to Illustrate Behavior—A Work in Progress*, 197
- Berndtsson, Johan, 174
- Best practices, definition, 9. *See also* Appropriate practices
  - “Best Practices for Agile/Lean Documentation,” 217
- Bezos, Jeff, 241
- Blank, Steve, 26, 230
- Books and publications
  - “On Acceptance Criteria for User Stories,” 192
  - “Acceptance Criteria *vs.* Scenarios,” 192
  - “Adventures in Scaling Agile,” 177
  - The Agile Culture: Leading through Trust and Ownership*, 150
  - “Agile Models Distilled: Potential Artifacts for Agile Modeling,” 188
  - Behavior-Driven Development: Using Examples in Conversation to Illustrate Behavior—A Work in Progress*, 197
  - “Best Practices for Agile/Lean Documentation,” 217
  - Bridging the Communication Gap: Specification by Example and Agile Acceptance Testing*, 196
  - Commitment*, 46
  - Commitment: Novel about Managing Project Risk*, 204
  - Competitive Engineering*, 18
  - “Comprehensive Documentation Has Its Place,” 217
  - “Customer Guide,” 197
  - “Decision Filters,” 163
  - “Definition of Done,” 213
  - “Definition of Ready,” 206
  - Discover to Deliver*, 21
  - The Entrepreneur’s Guide to Customer Development*, 26
  - The Four Steps to the Epiphany*, 26
  - “Getting the Most out of Impact Mapping,” 174
  - Growing Agile: A Coach’s Guide to Agile Requirements*, 192
  - How to Measure Anything*, 32
  - “How Visualization Boards Can Benefit Your Team,” 204, 210
  - “Impact Mapping,” 177
  - Impact Mapping: Making a Big Impact with Software Products*, 177
  - “Inclusive Modeling: User Centered Approaches for Agile Software Development,” 188
  - Inspired: How to Create Products Customers Love*, 163, 167
  - “An Interview with the Authors of ‘Stand Back and Deliver: Accelerating Business Agility,’” 163
  - Lean Analytics*, 32
  - Manage Your Project Portfolio*, 69

- “Personas, Profiles, Actors, & Roles: Modeling Users to Target Successful Product Design,” 137, 140
  - Predictably Irrational*, 48
  - Rath & Strong’s Six Sigma Pocket Guide*, 132
  - The Software Requirements Memory Jogger: A Pocket Guide to Help Software and Business Teams Develop and Manage Requirements*, 169
  - Specification by Example: How Successful Teams Deliver the Right Software*, 196
  - “Stakeholder Analysis,” 129
  - Stand Back and Deliver: Accelerating Business Agility*, 10, 147, 150, 157, 163
  - Thinking, Fast and Slow*, 48
  - User Stories Applied: For Agile Software Development*, 137
  - User Story Mapping: Discover the Whole Story, Build the Right Product*, 182
  - “Using a Definition of Ready,” 206
  - Box, George E. P., 61
  - Break the Model approach
    - definition, 222
    - Feature Injection, 62
  - Bridging the Communication Gap: Specification by Example and Agile Acceptance Testing*, 196
  - Budgeting
    - conference submission system case study, 90–91, 94
    - vs. estimating, 94
  - Build-Measure-Learn loop
    - definition, 223
    - description, 30–31
    - in the lean startup process, 29–31
    - leap-of-faith assumptions, 31
  - Business analysis, definition, 223
  - Business Analysis Core Concept Model (BACCM)
    - core concepts, 16–17
    - definition, 222
  - Business analysts
    - cognitive bias, 49–50
    - definition, 223
  - Business case
    - definition, 223
    - presenting required information, 43
  - Business domain model, definition, 223
  - Business goals. *See* Goals
  - Business objectives. *See* Objectives
  - Business rule catalog, in system
    - documentation, 213
  - Business rules, guidelines for expressing. *See* RuleSpeak
  - Business value
    - case studies, 57–58
    - definition, 56–57, 223
    - Feature Injection, 56–57
    - in Feature Injection, 56
  - Business value model
    - definition, 223
    - Feature Injection, 57–58
- ## C
- Cagan, Marty, 163, 167
  - Campbell-Pretty, Em, 177
  - Carlson, Brandon
    - adding themes, 84–86
    - budgeting Agile 2014, 90–92
    - define-build-test, 81–84
    - identifying solutions, 78–81
  - Case studies
    - financial services company, 57
    - Mercury space program, 47
    - minimum viable products, 64–65
    - new payroll system, 60
    - nurse line service, 44
    - organizing conferences, 58
  - Case studies, commission system
    - change management, 99
    - commercial off-the-shelf (COTS) systems, 99
    - deliveries of value, 97–98
    - identifying solutions, 96–97
    - interdependencies, 99
    - lessons learned, 98–99
    - needs assessment, 96
    - non-technical solutions, 98
    - rounds of work, 97–98
  - Case studies, conference submission system
    - acceptance criteria, 189–190
    - adding themes, 84–90

- Case studies, conference submission system (*continued*)
  - automated testing, 93
  - budgeting, 90–91
  - budgeting *vs.* estimating, 94
  - cards for, 169
  - conveying requirements, 82
  - define-build-test, 81–84
  - deliveries of value, 79–92
  - differentiating activities, 78
  - distributed teams, 93–94
  - documentation, 91–92
  - examples (Agile technique), 193–194
  - feature files (example), 83–84
  - identifying solutions, 78
  - key user roles and activities, 79
  - lessons learned, 92–94
  - letting approach dictate tools, 93
  - needs assessment, 77–78
  - project opportunity assessment, 165
  - public commenting, 87–88
  - reporting, 88
  - story map, 79, 88–89
  - story mapping, example, 179
  - stubbed identity service, 82
  - system documentation, example, 214
  - team trust and transparency, effect on
    - documentation, 92
    - when even Scrum is overkill, 92
- Case studies, data warehouse
  - decision filters, 104
  - deliveries of value, 103–109
  - identifying solutions, 102–103
  - lessons learned, 110
  - needs assessment, 101–102
  - performance metrics, 109
- Case studies, student information system
  - cost-benefit analysis, 119
  - examples, 142, 144
  - functional requirements, 117–118
  - identifying solutions, 114–118
  - lessons learned, 118–119
  - needs assessment, 111–114
  - Purpose-Based Alignment Model, 142, 144
  - RFPs, 114–118, 119
  - six questions, 147–148
  - solutions looking for problems, 119
- Causal metrics, 35–36, 36
- Cauwenberghe, Pascal Van, 58–59
- Change
  - in the BACCM, 16
  - definition, 224
- Change management, case study, 99
- Cleland-Huang, Jane, 66
- Clustering illusion
  - cognitive bias, 51
  - definition, 224
- Cockburn, Alistair, 12, 222
- Cognitive bias
  - affecting analysts, 49–50
  - affecting stakeholders, 49. *See also* Bandwagon effect; Curse of knowledge; Herd instinct; Response bias
  - definition, 224
  - overview, 48–50
  - Predictably Irrational*, 48
  - Thinking, Fast and Slow*, 48
- Cognitive bias, analysis
  - anchoring effect, 51
  - availability heuristic, 51
  - clustering illusion, 51
  - déformation professionnelle*, 51
  - focusing effect, 51
  - frequency illusion, 51
  - observation selection bias, 51
  - recency bias, 51
  - Semmelweis reflex, 51
  - sharpshooter fallacy, 51
  - survivorship bias, 51
- Cognitive bias, decision making
  - false consensus effect, 52
  - fist of five, 53
  - group attribution error, 52
  - irrational escalation, 52
  - loss aversion, 53
  - mitigating, 53
  - sunk cost bias, 52–53
  - throwing good money after bad, 52
- Cognitive bias, elicitation
  - affecting analysts, 49–50
  - bandwagon effect, 49
  - biases affecting stakeholders, 49
  - confirmation bias, 50
  - the curse of knowledge, 49
  - framing effect, 50
  - herd instinct, 49

- mirror imaging, 50
- mitigating, 49, 50
- observer-expectancy effect, 50
- response bias, 49
- Cohn, Mike, 137
- Collaboration
  - characteristic of initiatives, 5–7
  - vs.* consensus, 6
  - definition, 224
  - examples, 6
  - teams *vs.* workgroups, 6
- Collaborative modeling
  - additional resources, 188
  - “Agile Models Distilled: Potential Artifacts for Agile Modeling,” 188
  - appropriate use of, 184–186
  - caveats and considerations, 188
  - context diagrams, 183
  - data dictionaries, 183
  - definition, 182–183, 224
  - example, 183–184
  - functional decomposition, 183
  - glossaries, 183
  - “Inclusive Modeling: User Centered Approaches for Agile Software Development,” 188
  - logical data models, 183
  - organization charts, 183
  - process description, 186–187
  - process flow, 183
  - purpose of, 186
  - report mockups, 183
  - state transition diagrams, 183, 184
  - techniques, 183
  - value stream maps, 183
  - wireframes, 183
- Commercial off-the-shelf (COTS) systems, case study, 99
- Commission system. *See* Case studies, commission system
- Commit to, transform, or kill, definition, 224
- Commitment*, 46
- Commitment: Novel about Managing Project Risk*, 204
- Commitment scale. *See also* Stakeholder engagement
  - appropriate use of, 130
  - caveats and considerations, 132
  - definition, 129, 224
  - example, 129–130
  - process description, 131–132
  - purpose of, 124, 130
  - Rath & Strong's Six Sigma Pocket Guide*, 132
- Commitments *vs.* options, 46–47. *See also* Real Options
- Communicating a decision, 45–46
- Company building, definition, 26, 224
- Company creation, definition, 26, 225
- Competitive Engineering*, 18
- Complexity attributes, Context Leadership Model, 151
- Complexity risks, mitigating, 156
- “Comprehensive Documentation Has Its Place,” 217
- Conference organizing, case study, 58
- Conference submission system. *See* Case studies, conference submission system
- Confirmation bias. *See also* Observer-expectancy effect
  - definition, 225
  - description, 50
- Consensus, decision mechanism
  - vs.* collaboration, 6
  - definition, 225
  - description, 41
- Constraint, attribute of objectives, 18
- Context
  - in the BACCM, 16
  - characteristic of initiatives, 9–10
  - definition, 225
- Context diagrams
  - collaborative modeling, 183
  - definition, 225
- Context Leadership Model. *See also* Purpose-Based Alignment Model; Six questions
  - advantages of a two-by-two matrix, 9
  - appropriate use of, 154
  - caveats and considerations, 156–157
  - complexity attributes, 151
  - complexity risks, mitigating, 156
  - definition, 150, 225
  - example, 151–154
  - process description, 154–157
  - purpose of, 155

- Context Leadership Model (*continued*)  
*Stand Back and Deliver: Accelerating Business Agility*, 157  
 uncertainty attributes, 152  
 uncertainty risks, mitigating, 156
- Cooper, Alan, 138, 140
- Cooper, Brant, 26
- Core concept, definition, 225–226
- Correlated metrics, 35–36, 36
- COTS (commercial off-the-shelf) systems,  
 case study, 99
- Croll, Alistair, 32, 34, 37
- The curse of knowledge  
 cognitive bias, 49  
 definition, 226
- Customer, definition, 226
- Customer development  
 definition, 26, 226  
 in IT projects, 26  
 in the lean startup process, 25–29
- Customer discovery  
 definition, 26, 226  
 in IT projects, 28  
 process description, 27
- “Customer Guide,” 197
- Customer validation, definition, 26, 226
- Customer-problem-solution hypothesis,  
 definition, 226
- D**
- Dalton, Nigel, 43
- Data dictionaries  
 collaborative modeling, 183  
 definition, 227
- Data warehouse. *See* Case studies, data warehouse
- Deadlines, determining, 47
- Decider  
*vs.* decision leader, 40  
 definition, 227  
 determining, 39–41
- Decider decides with discussion  
 definition, 227  
 description, 41
- Decider decides without discussion  
 definition, 227  
 description, 42
- Deciding wisely, characteristic of  
 initiatives, 10–11
- Decision filters  
 additional resources, 163  
 appropriate use of, 161  
 case study, 104  
 caveats and considerations, 163  
 “Decision Filters,” 163  
 definition, 160, 227  
 example, 160  
 identifying needs, 71  
 “An Interview with the Authors  
 of ‘Stand Back and Deliver:  
 Accelerating Business Agility,’” 163  
 process description, 161–162  
 purpose of, 161  
 role in delivering value, 4  
*Stand Back and Deliver: Accelerating Business Agility*, 163  
 “Decision Filters,” 163
- Decision leader  
*vs.* decider, 40  
 definition, 227
- Decision maker, determining, 39–41
- Decision making. *See also* Cognitive bias  
 building support, 45  
 communicating the decision, 45–46  
 determining a deadline, 47  
 determining required information, 42  
 determining the decision maker, 39–41  
 enacting the decision, 46  
 options *vs.* commitments, 46–47  
 process structure, 39  
 Real Options, 46–48  
 timely decisions, 43–44
- Decision mechanisms  
 arbitrary, 41  
 consensus, 41  
 decider decides with discussion, 41  
 decider decides without discussion, 42  
 delegation, 41–42  
 majority vote, 42  
 negotiation, 42  
 spontaneous agreement, 42. *See also*  
 Groupthink
- Deep Thought Academy. *See* Case studies, student information system
- Define-build-test, case study, 81–84
- Definition of done  
 additional resources, 213  
 appropriate use of, 211

- definition, 211, 227
- “Definition of Done,” 213
- example, 211
- process description, 212
- purpose of, 211–212
- “Definition of Done,” 213
- Definition of ready
  - additional resources, 206
  - appropriate use of, 205
  - caveats and considerations, 206
  - definition, 204, 227
  - “Definition of Ready,” 206
  - example, 204
  - process description, 205
  - purpose of, 205
  - “Using a Definition of Ready,” 206
- “Definition of Ready,” 206
- Déformation professionnelle*
  - cognitive bias, 51
  - definition, 227
- Delegation decision mechanism, 41–42
- Delivering value
  - case studies, 79–92, 97–98, 103–109
  - characteristic of initiatives, 4–5
  - minimum viable product (MVP), 63–64
- Delivering value, Feature Injection. *See also* MMF (minimum marketable feature); MVP (minimum viable product)
  - Break the Model approach, 62
  - business value, 56–57
  - business value model, 57–58
  - examples, as specifications, 61–63
  - identifying value, 56–59
  - Increase Revenue, Avoid Costs, Improve Service (IRACIS), 56–57
  - injecting the features, 59–61
  - Key Example pattern, 62
  - overview, 55–56
  - role of value points, 59
  - stakeholder expectations, 60–61
  - story mapping, 60
- Delivery
  - analyzing, 20–23
  - definition, 21, 228
- Delivery boards. *See also* Discovery boards
  - additional resources, 210
  - analysis with an Agile mindset, 73
  - appropriate use of, 208
  - caveats and considerations, 210
  - Commitment: Novel about Managing Project Risk*, 204
  - creating, 209
  - definition, 206–207, 228
  - example, 207–208
  - process description, 209
  - purpose of, 208
  - using, 209
- Deming, W. Edwards, 30
- Deming Cycle. *See* PDSA (Plan-Do-Study-Act) cycle
- Deming Wheel. *See* PDSA (Plan-Do-Study-Act) cycle
- Denne, Mark, 65–67
- Denning, Steve, 57
- Design
  - definition, 228
  - vs.* requirements, 22–23
- Design thinking
  - definition, 228
  - in the development process, 22–23
- Differentiating activities
  - case study, 78
  - definition, 228
  - identifying, 147
  - in the Purpose-Based Alignment Model, 143, 146
- Discover to Deliver*, 21
- Discovery
  - analyzing, 20–23
  - definition, 21, 228
- Discovery boards. *See also* Delivery boards
  - additional resources, 204
  - appropriate use of, 201
  - caveats and considerations, 203–204
  - Commitment: Novel about Managing Project Risk*, 204
  - creating, 202
  - definition, 200, 228
  - example, 200–201
  - “How Visualization Boards Can Benefit Your Team,” 204, 210
  - process description, 202–203
  - purpose of, 201–202
  - using, 202–203
- Distributed teams, 93–94

- Documentation. *See* System documentation
- Domain, definition, 228
- Domingues, Ingrid, 174
- Done, definition of. *See* Definition of done
- E**
- Elicitation
  - cognitive bias. *See* Cognitive bias, elicitation
  - definition, 228
- Elssamadisy, Amr, 163
- Email, conveying requirements with, 82
- Enacting a decision, 46
- Enterprise, definition, 229
- The Entrepreneur's Guide to Customer Development*, 26
- Examples (Agile technique)
  - additional resources, 196–197
  - appropriate use of, 194–195
  - Behavior-Driven Development: Using Examples in Conversation to Illustrate Behavior—A Work in Progress*, 197
  - Bridging the Communication Gap: Specification by Example and Agile Acceptance Testing*, 196
  - caveats and considerations, 196
  - “Customer Guide,” 197
  - in a decision table, 193
  - definition, 192–193, 229
  - example, 193–194
  - formats, 192
  - Framework for Integrated Test (Fit)
    - format, 192, 194–195
  - Gherkin format, 192, 195, 197
  - Key Example pattern, 62
  - process description, 195–196
  - purpose of, 195
  - Specification by Example*, 62
  - Specification by Example: How Successful Teams Deliver the Right Software*, 196
  - as specifications, 61–63
  - system documentation, 216
  - in system documentation, 216
- Examples (used in this book)
  - acceptance criteria, 189–190
  - collaboration, 6
  - collaborative modeling, 183–184
  - commitment scale, 129–130
  - Context Leadership Model, 151–154
  - decision filters, 160
  - definition of done, 211
  - definition of ready, 204
  - delivery boards, 207–208
  - discovery boards, 200–201
  - of the example Agile technique, 193–194
  - feature files, conference submission
    - system case study, 83–84
  - impact mapping, 173–174
  - impact mapping, student information
    - system case study, 173–174
  - metrics, 33
  - modeling user roles and descriptions, 135
  - personas, 138
  - problem statement, 167–168
  - project opportunity assessment, 164–165
  - Purpose-Based Alignment Model
    - quadrants, 142, 144
  - six questions, 148
  - stakeholder maps, 125
  - story mapping, 178, 179
  - student information system case study, 142, 144
  - system documentation, 214
  - user modeling, 133–135
- Exploratory metrics, 34–35, 36
- F**
- Facilitate, definition, 229
- False consensus effect
  - in decision making, 52
  - definition, 229
- Feature, definition, 66, 229
- Feature files (example), 83–84
- Feature Injection
  - Break the Model approach, 62
  - business value, 56–57
  - business value model, 57–58
  - case study, 60
  - definition, 229
  - examples, as specifications, 61–63
  - identifying value, 56–59
  - Increase Revenue, Avoid Costs, Improve Service (IRACIS), 56–57

- injecting the features, 59–61
  - Key Example pattern, 62
  - overview, 55–56
  - role of value points, 59
  - stakeholder expectations, 60–61
  - story mapping, 60
  - Fichtner, Abby, 25–26
  - Financial services company, case study, 57
  - Fist of five
    - in decision making, 53
    - definition, 229–230
  - Fit. *See* Framework for Integrated Test
  - Fitzpatrick, Rob, 28
  - Focusing effect
    - definition, 230
    - description, 51
  - The Four Steps to the Epiphany*, 26
  - Framework for Integrated Test,
    - definition, 230
  - Framework for Integrated Test (Fit)
    - format
    - appropriate use of, 194–195
    - of examples (Agile technique), 192
  - Framing effect
    - cognitive bias, 50
    - definition, 230
  - Frequency illusion
    - cognitive bias, 51
    - definition, 230
  - Functional decomposition
    - collaborative modeling, 183
    - definition, 230
  - Functional requirements, case study,
    - 117–118, 119
  - Functionalist, definition, 230
- G**
- Gamestorming, 129
  - Geary, Chris, 46, 204, 210
  - “Get out of the building” technique
    - definition, 230
    - description, 28
  - “Getting the Most out of Impact Mapping,” 174
  - Gherkin format
    - definition, 231
    - examples (Agile technique), 192, 195
    - online description of, 197
  - Gilb, Tom, 18
  - Glenn, John, 47
  - Glossaries, in collaborative modeling, 183
  - Glossaries, in system documentation
    - definition, 213, 231
    - for intermediate communication, 9
  - Glossary, of terms in this book, 221–243
  - Goals
    - definition, 17, 231
    - role in delivering value, 4
  - Good practices. *See* Appropriate practices
  - Gorman, Mary, 21
  - Gottesdiener, Ellen, 21, 169
  - Group attribution error
    - in decision making, 52
    - definition, 231
  - Groupthink. *See also* Spontaneous agreement
    - bandwagon effect, 49
    - definition, 231
    - herd instinct, 49
  - Growing Agile: A Coach’s Guide to Agile Requirements*, 192
  - Guidelines for expressing business rules.
    - See* RuleSpeak
- H**
- Herd instinct. *See also* Groupthink
    - definition, 231
    - in elicitation, 49
  - High influence/high interest stakeholders,
    - 128
  - High influence/low interest stakeholders,
    - 128
  - Holst, Darrin
    - adding themes, 84–86
    - budgeting Agile 2014, 90–92
    - define-build-test, 81–84
    - identifying solutions, 78–81
  - How to Measure Anything*, 32
  - “How Visualization Boards Can Benefit Your Team,” 204, 210
  - Hubbard, Douglas, 32
- I**
- Impact mapping
    - additional resources, 177
    - “Adventures in Scaling Agile,” 177
    - align context, 175–176
    - appropriate use of, 173–176

- Impact mapping (*continued*)
  - caveats and considerations, 177
  - definition, 173, 231
  - discover context, 175
  - example, 173–174
  - experiment context, 175
  - “Getting the Most out of Impact Mapping,” 174
  - “Impact Mapping,” 177
  - Impact Mapping: Making a Big Impact with Software Products*, 177
  - iterate context, 175
  - key questions, 173
  - process description, 176–177
  - purpose of, 176
  - useful contexts, 174–175
  - “Impact Mapping,” 177
  - Impact Mapping: Making a Big Impact with Software Products*, 177
  - “Inclusive Modeling: User Centered Approaches for Agile Software Development,” 188
- Increase Revenue, Avoid Costs, Improve Service (IRACIS), 56–57
- Information radiators, definition, 232.
  - See also* Delivery boards; Discovery boards
- Initiatives
  - definition, 232
  - desirable characteristics of, 3
- Injecting features. *See* Feature Injection
- Inspired: How to Create Products Customers Love*, 163, 167
- Interdependencies, case study, 99
- “An Interview with the Authors of ‘Stand Back and Deliver: Accelerating Business Agility,’” 163
- Inventory turn, definition, 232
- INVEST (independent, negotiable, valuable, estimable, small, testable), 81
- IRACIS (Increase Revenue, Avoid Costs, Improve Service), 56–57
- Irrational escalation
  - in decision making, 52
  - definition, 232
- IT (Information Technology), definition, 232
- IT project, definition, 233
- Iteration
  - characteristic of initiatives, 7–8
  - definition, 232
- K**
- Kahneman, Daniel, 11, 48
- Keogh, Liz, 188, 192, 197
- Key Example pattern, 62
- Kraft, Chris, 47
- L**
- Lacey, Mitch, 213
- Lagging metrics, 35, 36
- Laing, Samantha, 192
- Leadership style, determining. *See* Context Leadership Model
- Leading indicator, definition, 233
- Leading metrics, 35, 36
- Lean Analytics*, 32
- Lean startup
  - Build-Measure-Learn loop, 29–31
  - customer development, 25–29
  - metrics, 31–38
- Lean TECHniques, 78
- Leap-of-faith assumptions, 31
- Lessons learned, case studies
  - commission system case study, 98–99
  - conference submission system case study, 92–94
  - data warehouse case study, 110
  - student information system case study, 118–119
- Linders, Ben, 206
- Little, Todd
  - Context Leadership Model, 157
  - decision filters, 163
  - Purpose-Based Alignment Model, 147
  - six questions, 150
  - software prioritization, 91
- Logical data models
  - collaborative modeling, 183
  - definition, 233
- Loss aversion
  - in decision making, 53
  - definition, 233
- Low influence/high interest stakeholders, 128
- Low influence/low interest stakeholders, 128

**M**

- Maassen, Olav, 46, 204, 210
- Majority vote decision mechanism
  - definition, 233
  - description, 42
- Mamoli, Sandy, 192
- Manage Your Project Portfolio*, 69
- Marketable, definition, 66
- Matts, Chris
  - Break the Model approach, 62
  - business value, 56
  - business value model, 58
  - Commitment*, 46
  - discovery boards, 204, 210
  - Feature Injection, 55–56
  - Real Options, 46, 237
  - visualization board, 242
- Maximizing work not done, 8–9
- McDonald, Kent
  - decision filters, 163
  - discovery boards, 204, 210
  - Purpose-Based Alignment Model, 147
  - system documentation, 217
- McMillan Insurance. *See* Case studies,
  - commission system; Case studies,
  - data warehouse
- Measurable, characteristic of objectives, 18
- Mercury space program, case study, 47
- Metadata, in system documentation, 214
- Method, attribute of objectives, 18
- Methodology, definition, 233
- Metrics
  - correlated *vs.* causal, 35–36, 36
  - creating, 36–37
  - desirable characteristics, 32–33
  - example, 33
  - exploratory *vs.* reporting, 34–35, 36
  - leading *vs.* lagging, 35, 36
  - in the lean startup process, 31–38
  - One Metric That Matters (OMTM), 37
  - qualitative *vs.* quantitative, 33, 36
  - for specific situations, 36–37
  - vanity *vs.* actionable, 33, 36
- MindTools, 129
- Minimum, definition, 66
- Mirror imaging
  - definition, 234
  - in elicitation, 50
- MMF (minimum marketable feature)
  - definition, 233
  - description, 65–67
  - feature, definition, 66
  - marketable, definition, 66
  - minimum, definition, 66
  - vs.* minimum viable product, 66–67
- Modeling
  - BACCM (Business Analysis Core Concept Model), 16–17, 222
- Models. *See also* Collaborative modeling;
  - Context Leadership Model;
  - Purpose-Based Alignment Model;
  - User modeling
- BACCM (Business Analysis Core Concept Model), 16–17
  - business domain model, 223
  - business value model, 57–58, 223
  - in system documentation, 216
  - wrong *vs.* useful, 61
- The Mom Test
  - definition, 234
  - description, 29
- MVP (minimum viable product)
  - case study, 64–65
  - definition, 234
  - description, 63
  - vs.* minimum marketable features, 66–67
  - purpose of, 64

**N**

- Name, attribute of objectives, 18
- Needs
  - in the BACCM, 16
  - definition, 234
  - origins of, 19
  - separating from solutions, 19
- Needs assessment
  - with an Agile mindset, 71
  - case studies, 77–78, 96, 101–102, 111–114
  - case study, 77–78
  - overview, 15–19
- Needs assessment techniques. *See also*
  - specific techniques*
  - decision filters, 160–163
  - problem statement, 167–169
  - project opportunity assessment, 163–167

- Negotiation decision mechanism  
 definition, 234  
 description, 42
- Nickolaisen, Niel  
 Context Leadership Model, 157  
 decision filters, 160, 163  
 Purpose-Based Alignment Model, 142, 147  
 six questions, 150, 239
- Non-technical solutions, case study, 98
- Nurse line service, case study, 44
- O**
- Objectives  
 attributes for, 18  
 characteristics of, 18  
 definition, 17, 234  
 role in delivering value, 4
- Observation selection bias  
 in analysis, 51  
 definition, 234
- Observer-expectancy effect. *See also*  
 Confirmation bias  
 definition, 234  
 in elicitation, 50
- OMTM (One Metric That Matters)  
 definition, 235  
 description, 37
- Options *vs.* commitments, 46–47. *See also* Real Options
- Organization (legal entity), definition, 235
- Organization charts  
 collaborative modeling, 183  
 definition, 235  
 determining a decision maker, 40–41
- Outcomes  
 analyzing, 19–20  
 definition, 235
- Outputs  
 analyzing, 19–20  
 definition, 235
- P**
- Parity activities  
 case study, 96  
 definition, 235  
*vs.* purpose, 146  
 Purpose-Based Alignment Model, 143, 146
- Partner activities, 143
- Patton, Jeff  
 personas, 139, 140  
 story mapping, 178, 180–181, 182  
 user modeling, 137
- Payroll system, case study, 60
- PDSA (Plan-Do-Study-Act) cycle  
 definition, 236  
 description, 30
- Performance metrics, case study, 109
- Permissions, in system documentation, 214
- Personas  
 additional resources, 140  
 appropriate use of, 139  
 caveats and considerations, 140  
 definition, 138, 235  
 example, 138  
*The Inmates Are Running the Asylum: Why High-Tech Products Drive Us Crazy and How to Restore the Sanity*, 140  
 “Personas: An Agile Introduction,” 140  
 process description, 139–140  
 purpose of, 124, 139  
 useful characteristics, 139
- “Personas, Profiles, Actors, & Roles: Modeling Users to Target Successful Product Design,” 137, 140
- Pivot, definition, 236
- Pixton, Pollyanna  
 Context Leadership Model, 157  
 decision filters, 163  
 Purpose-Based Alignment Model, 147  
 six questions, 150
- Plan-Do-Study-Act (PDSA) cycle  
 definition, 236  
 description, 30
- Pols, Andy, 58
- Post-mortems. *See* Lessons learned
- Predictably Irrational*, 48
- Problem statement  
 appropriate use of, 168  
 caveats and considerations, 169  
 components of, 167  
 definition, 167, 236  
 example, 167–168  
 process description, 168

- purpose of, 168
  - The Software Requirements Memory Jogger: A Pocket Guide to Help Software and Business Teams Develop and Manage Requirements*, 169
  - Problem-solution fit, definition, 236
  - Process flow
    - collaborative modeling, 183
    - definition, 236
    - in system documentation, 214
  - Product, definition, 236
  - Program, definition, 237
  - Project documentation
    - definition, 237
    - description, 216–217
  - Project opportunity assessment
    - appropriate use of, 165
    - caveats and considerations, 166–167
    - definition, 163, 237
    - example, 164–165
    - Inspired: How to Create Products Customers Love*, 163, 167
    - process description, 166
    - purpose of, 166
    - questions for, 164
  - Projects
    - definition, 237
    - stigma associated with, xvii
  - Public commenting, case study, 87–88
  - Pull systems, 56
  - Purpose vs. parity, 146
  - Purpose-Based Alignment Model. *See also* Context Leadership Model; Six questions
    - advantages of a two-by-two matrix, 9
    - appropriate use of, 145
    - case studies, 96, 113, 119–120
    - case study, 142, 144
    - caveats and considerations, 146–147
    - definition, 237
    - description, 142–144
    - process description, 145–146
    - purpose vs. parity, 146
    - Stand Back and Deliver: Accelerating Business Agility*, 147
  - Purpose-Based Alignment Model, quadrants
    - differentiating activities, 143, 146, 147
    - examples, 142, 144
  - parity activities, 143, 146
  - partner activities, 143
  - “Who cares” activities, 144
- ## Q
- Qualitative metrics, 33, 36
  - Quantitative metrics, 33, 36
- ## R
- Rath & Strong Management Consultants, 132
  - Rath & Strong’s Six Sigma Pocket Guide*, 132
  - Ready, definition of. *See* Definition of ready
  - Real Options
    - definition, 237
    - description, 46–48
  - Realistic, characteristic of objectives, 18
  - Recency bias
    - in analysis, 51
    - definition, 237
  - Reflection, characteristic of initiatives, 11–12
  - Rehearsal. *See* Iteration
  - Release, definition, 237
  - Release backlog
    - during analysis, 72–73
    - definition, 238
  - Release planning
    - during analysis, 72–73
    - definition, 238
  - Report mockups
    - collaborative modeling, 183
    - definition, 238
  - Reporting, case study, 88
  - Reporting metrics, 34–35, 36
  - Requirements
    - case study, 117–118, 119
    - conveying, 82
    - definition, 238
    - vs. design, 22–23
    - expressing, 89–90
    - Growing Agile: A Coach’s Guide to Agile Requirements*, 192
    - The Software Requirements Memory Jogger: A Pocket Guide to Help Software and Business Teams Develop and Manage Requirements*, 169

- Resources. *See* Books and publications
- Response bias  
 definition, 238  
 effects on stakeholders, 49
- Retrospectives  
 characteristic of initiatives, 11–12  
 definition, 238  
 description, 11–12  
 examples of. *See* Lessons learned, case studies
- RFP (requests for proposal), case study, 114–118, 119
- Ries, Eric  
*The Lean Startup*, 25, 29  
 leap-of-faith assumptions, 31  
 on metrics, 36  
 minimum viable product, 63–64
- Risk, definition, 238
- Risk management, 204
- Ross, Ron  
 acceptance criteria, 191, 192  
 RuleSpeak, 191, 192, 238
- Rothman, Johanna  
 commit to, transform, or kill, 224  
*Manage Your Project Portfolio*, 69  
 on portfolio projects, 69
- Royce, Winston, 20–21
- RuleSpeak  
 acceptance criteria, 191, 192  
 definition, 238
- S**
- Scope  
 definition, 238  
 role in delivering value, 4
- Scrum.org, 213
- Semmelweis, Ignaz, 239
- Semmelweis reflex  
 in analysis, 51  
 definition, 239
- Service, definition, 239
- Shared vision techniques. *See also specific techniques*  
 decision filters, 160–163  
 problem statement, 167–169  
 project opportunity assessment, 163–167
- Sharpshooter fallacy  
 definition, 241  
 description, 51
- Shewhart, Walter, 30, 236
- Simplification  
 barely sufficient approach, 8–9  
 characteristic of initiatives, 8–9  
 maximizing work not done, 8–9  
 perfect as the enemy of the good, 8–9
- Six questions. *See also* Context  
 Leadership Model; Purpose-Based Alignment Model  
*The Agile Culture: Leading through Trust and Ownership*, 150  
 appropriate use of, 148  
 case study, 148  
 caveats and considerations, 149–150  
 definition, 147–148, 239  
 desired answers, 149  
 example, 148  
 process description, 149  
 purpose of, 148–149
- SMART (specific, measurable, agreed upon, realistic, time framed), 17–18
- SME (subject matter expert)  
 definition, 241  
 in the development process, 12
- The Software Requirements Memory Jogger: A Pocket Guide to Help Software and Business Teams Develop and Manage Requirements*, 169
- Solution identification, case studies, 78–81, 96–97, 114–118
- Solution identification, refining. *See also specific techniques*  
 definition of done, 211–213  
 definition of ready, 204–206  
 delivery boards, 206–210  
 discovery boards, 200–204  
 system documentation, 213–217
- Solution identification techniques. *See also specific techniques*  
 acceptance criteria, 188–192  
 collaborative modeling, 182–188  
 examples (Agile technique), 192–197  
 impact mapping, 173–177  
 story mapping, 177–182
- Solutions  
 analyzing, 15–19  
 in the BACCM, 16

- definition, 239
- identifying (case study), 78
- identifying, with an Agile mindset, 71–72
- origins of, 19
- separating from need, 19
- Solutions looking for problems, 119
- Specific, characteristic of objectives, 18
- Specification by example. *See* Examples (Agile technique)
- Specification by Example: How Successful Teams Deliver the Right Software*, 196
- Sponsors
  - definition, 239
  - as source of needs, 19
- Spontaneous agreement decision
  - mechanism
  - definition, 239
  - selecting a decision mechanism, 42
- Stakeholder analysis
  - definition, 240
  - types of stakeholders, 123–124. *See also specific types*
- “Stakeholder Analysis,” 129
- Stakeholder engagement. *See also* Commitment scale
  - high influence/high interest, 128
  - high influence/low interest, 128
  - low influence/high interest, 128
  - low influence/low interest, 128
- Stakeholder expectations, Feature Injection, 60–61
- Stakeholder maps
  - with actions, 127–128
  - additional resources, 129
  - appropriate use of, 126
  - caveats and considerations, 129
  - definition, 240
  - description, 124–125
  - engagement levels, 127–128
  - example, 125
  - primary outcomes, 125
  - process description, 126–128
  - purpose of, 126
  - “Stakeholder Analysis,” 129
  - uses for, 124
- Stakeholders
  - in the BACCM, 16
  - building support for decision making, 45
  - definition, 239
  - “get out of the building,” 28
  - talking to, 28
  - types of, 123. *See also specific types*
- Stand Back and Deliver: Accelerating Business Agility*, 10, 147, 150, 157, 163
- Startup, 240. *See also* Lean startup
- State transition diagrams
  - collaborative modeling, 183, 184
  - definition, 240
- Story mapping
  - additional resources, 182
  - during analysis, 72
  - appropriate use of, 178
  - as a backlog visualization tool, 181
  - case study, 79, 88–89
  - caveats and considerations, 182
  - definition, 177, 240
  - as an elicitation tool, 180–181
  - example, 178, 179
  - Feature Injection, 60
  - process description, 180–181
  - purpose of, 178
  - User Story Mapping: Discover the Whole Story, Build the Right Product*, 182
- Storyboards, definition, 240
- Strategy, definition, 240
- Strategy analysis, definition, 240–241
- Stubbed identity service, 82
- Student information system. *See* Case studies, student information system
- Subject matter expert (SME)
  - definition, 241
  - in the development process, 12
- Sunk cost bias, 52–53
- Survivorship bias
  - in analysis, 51
  - definition, 241
- System documentation
  - acceptance criteria, 216
  - additional resources, 217
  - appropriate use of, 214
  - backlog items, 216
  - “Best Practices for Agile/Lean Documentation,” 217
  - business rule catalog, 213
  - caveats and considerations, 215–217

System documentation (*continued*)

- “Comprehensive Documentation Has Its Place,” 217
- contents of, 213–214
- contribution to the desired outcome, 5
- definition, 213–214, 241
- effects of teams, 91–92
- example, 214
- examples (Agile technique), 216
- glossary, 213
- metadata, 214
- models, 216
- permissions, 214
- process description, 215
- process flows, 214
- project documentation, 216–217
- purpose of, 214–215
- user interfaces, 214

## T

Target, attribute of objectives, 18

## Teams

- definition, 241
- distributed, 93–94
- organizational context. *See* Context Leadership Model; Purpose-Based Alignment Model; Six questions
- trust and transparency, effect on documentation, 92
- vs.* workgroups, 6

## Texas sharpshooter fallacy

- definition, 241
- description, 51

## Themes

- case study, 84–90
- definition, 241

*Thinking, Fast and Slow*, 48

Three amigos, definition, 241

Throwing good money after bad, 52

Time framed, characteristic of objectives, 18

Timely decisions, 43–44

Tools, dictated by your approach, 93

## Triple constraints

- definition, 241
- role in delivering value, 4

Tversky, Amos, 48

Two-pizza rule, 241

## U

Uncertainty attributes, 152

Uncertainty risks, mitigating, 156

Units, attribute of objectives, 18

## User analysis

- definition, 242
- description, 124

User interfaces, in system documentation, 214

## User modeling

- additional resources, 137
- appropriate use of, 135
- brainstorming users, 133–134
- caveats and considerations, 137
- definition, 133, 242
- example, 133–135
- organizing and consolidating users, 134

“Personas, Profiles, Actors, &

Roles: Modeling Users to Target Successful Product Design,” 137

process description, 135–137

purpose of, 124, 135–136

refining user roles, 135

user roles and descriptions, example, 135

*User Stories Applied: For Agile Software Development*, 137

## User roles

- case study, 79
- definition, 242
- user modeling, 133–135

## User stories

- during analysis, 72–73
- definition, 242

*User Stories Applied: For Agile Software Development*, 137

*User Story Mapping: Discover the Whole Story, Build the Right Product*,

182. *See also* Story mapping

“Using a Definition of Ready,” 206

## V

## Value

in the BACCM, 16

definition, 242

delivering. *See* Delivering value

identifying, case study, 57

Value points  
  definition, 242  
  in Feature Injection, 59  
  identifying features, 59

Value stream maps  
  collaborative modeling, 183  
  definition, 242

Van Cauwenberghe, Pascal, 58–59

Vanity metrics  
  appropriate use of, 36  
  definition, 242  
  description, 34–35

Vision, shared. *See* Shared vision techniques

Visualization boards  
  during analysis, 73  
  definition, 242

Vlaskovits, Patrick, 26

**W**

Waterfall planning technique,  
  20–21

“Who cares” activities  
  definition, 242  
  Purpose-Based Alignment Model,  
  144

Williams, Walter, 47–48

Wireframes  
  collaborative modeling, 183  
  definition, 243

Work groups  
  definition, 243  
  *vs.* teams, 6

**Y**

Yoskovitz, Benjamin, 32, 34, 37