

---

# Contents

**Preface xvii***The Power of Dynamic Data***Figures and Tables xxvii****Introduction: It Didn't Used To Be This Way 1**

A Little History Lesson 2

Analytics and the Need for Speed 5

Book Scope, Approach, and Style 9

Intended Audience 12

Plan of Attack 13

Next 14

Notes 14

**Part I Background and Trends.....17****Chapter 1 Signs of the Times: Why Data and Analytics Are  
Dominating Our World 19**

The *Moneyball* Effect 20

Digitization and the Great Unbundling 22

Amazon Web Services and Cloud Computing 24

Not Your Father's Data Storage 26

Moore's Law 28

The Smartphone Revolution 28

The Democratization of Data 29

The Primacy of Privacy 29

The Internet of Things 31

The Rise of the Data-Savvy Employee 31

The Burgeoning Importance of Data Analytics 32

Data-Related Challenges 40

Companies Left Behind 41

The Growth of Analytics Programs 42

Next 43

Notes 43

**Chapter 2 The Fundamentals of Contemporary Data: A Primer on What It Is, Why It Matters, and How to Get It** 45

Types of Data 46  
Getting the Data 52  
Data in Motion 62  
Next 64  
Notes 64

**Chapter 3 The Fundamentals of Analytics: Peeling Back the Onion** 65

Defining Analytics 66  
Types of Analytics 69  
Streaming Data Revisited 72  
A Final Word on Analytics 74  
Next 75  
Notes 75

**Part II Agile Methods and Analytics.....77**

**Chapter 4 A Better Way to Work: The Benefits and Core Values of Agile Development** 79

The Case against Traditional Analytics Projects 80  
Proving the Superiority of Agile Methods 82  
The Case for Guidelines over Rules 84  
Next 88

**Chapter 5 Introducing Scrum: Looking at One of Today's Most Popular Agile Methods** 89

A Very Brief History 90  
Scrum Teams 91  
User Stories 94  
Backlogs 97  
Sprints and Meetings 98  
Releases 101  
Estimation Techniques 102  
Other Scrum Artifacts, Tools, and Concepts 108  
Next 112

**Chapter 6 A Framework for Agile Analytics: A Simple Model for Gathering Insights** 113

Perform Business Discovery 115  
Perform Data Discovery 117

Prepare the Data	118
Model the Data	120
Score and Deploy	127
Evaluate and Improve	128
Next	130
Note	130
<b>Part III Analytics in Action .....</b>	<b>131</b>
<b>Chapter 7 University Tutoring Center: An In-Depth Case Study on Agile Analytics</b>	<b>133</b>
The UTC and Project Background	135
Project Goals and Kickoff	136
Iteration One	139
Iteration Two	141
Iteration Three	145
Iteration Four	146
Results	147
Lessons	148
Next	148
Note	148
<b>Chapter 8 People Analytics at Google/Alphabet: Not Your Father's HR Department</b>	<b>149</b>
The Value of Business Experiments	150
PiLab's Adventures in Analytics	151
A Better Approach to Hiring	153
Staffing	156
The Value of Perks	158
Results and Lessons	162
Next	162
Notes	163
<b>Chapter 9 The Anti-Google: Beneke Pharmaceuticals</b>	<b>165</b>
Project Background	166
Business and Data Discovery	167
The Friction Begins	168
Astonishing Results	169
Developing Options	171
The Grand Finale	172
Results and Lessons	173
Next	174

**Chapter 10 Ice Station Zebra Medical: How Agile Methods  
Solved a Messy Health-Care Data Problem 175**

Paying Nurses 176  
Enter the Consultant 178  
User Stories 179  
Agile: The Better Way 182  
Results 183  
Lessons 184  
Next 184

**Chapter 11 Racial Profiling at Nextdoor: Using Data to Build a  
Better App and Combat a PR Disaster 185**

Unintended but Familiar Consequences 187  
Evaluating the Problem 189  
Results and Lessons 194  
Next 196  
Notes 196

**Part IV Making the Most Out of Agile Analytics ..... 197**

**Chapter 12 The Benefits of Agile Analytics: The Upsides of  
Small Batches 199**

Life at IAC 200  
Life at RDC 203  
Comparing the Two 206  
Next 207

**Chapter 13 No Free Lunch: The Impediments to—and  
Limitations of—Agile Analytics 209**

People Issues 210  
Data Issues 212  
The Limitations of Agile Analytics 216  
Next 219

**Chapter 14 The Importance of Designing for Data: Lessons from  
the Upstarts 221**

The Genes of Music 222  
The Tension between Data and Design 226  
Next 229  
Notes 229

**Part V Conclusions and Next Steps ..... 231**

Chapter 15 What Now?: A Look Forward 233

    A Tale of Two Retailers 234

    The Blurry Futures of Data, Analytics, and Related Issues 239

    Final Thoughts and Next Steps 243

    Notes 244

**Afterword 245**

**Selected Bibliography 247**

    Books 247

    Articles and Essays 249

**About the Author 251**

**Index 253**