
Contents

Foreword xiii

Preface xvii

Acknowledgments xxv

PART ONE THE RISE OF BIG DATA 1

Chapter 1 What Is Big Data and Why Does It Matter? 3

What Is Big Data? 4

Is the “Big” Part or the “Data” Part More Important? 5

How Is Big Data Different? 7

How Is Big Data More of the Same? 9

Risks of Big Data 10

Why You Need to Tame Big Data 12

The Structure of Big Data 14

Exploring Big Data 16

Most Big Data Doesn’t Matter 17

Filtering Big Data Effectively 20

Mixing Big Data with Traditional Data 21

The Need for Standards 22

Today’s Big Data Is Not Tomorrow’s Big Data 24

Wrap-Up 26

Notes 27

Chapter 2 Web Data: The Original Big Data..... 29

- Web Data Overview 30
- What Web Data Reveals 36
- Web Data in Action 42
- Wrap-Up 50
- Note 51

Chapter 3 A Cross-Section of Big Data Sources and the Value They Hold 53

- Auto Insurance: The Value of Telematics Data 54
- Multiple Industries: The Value of Text Data 57
- Multiple Industries: The Value of Time and Location Data 60
- Retail and Manufacturing: The Value of Radio Frequency Identification Data 64
- Utilities: The Value of Smart-Grid Data 68
- Gaming: The Value of Casino Chip Tracking Data 71
- Industrial Engines and Equipment: The Value of Sensor Data 73
- Video Games: The Value of Telemetry Data 76
- Telecommunications and Other Industries: The Value of Social Network Data 78
- Wrap-Up 82

PART TWO TAMING BIG DATA: THE TECHNOLOGIES, PROCESSES, AND METHODS 85

Chapter 4 The Evolution of Analytic Scalability..... 87

- A History of Scalability 88
- The Convergence of the Analytic and Data Environments 90
- Massively Parallel Processing Systems 93
- Cloud Computing 102
- Grid Computing 109

MapReduce	110
It Isn't an Either/Or Choice!	117
Wrap-Up	118
Notes	119

Chapter 5 The Evolution of Analytic Processes..... 121

The Analytic Sandbox	122
What Is an Analytic Data Set?	133
Enterprise Analytic Data Sets	137
Embedded Scoring	145
Wrap-Up	151

Chapter 6 The Evolution of Analytic Tools and Methods 153

The Evolution of Analytic Methods	154
The Evolution of Analytic Tools	163
Wrap-Up	175
Notes	176

PART THREE TAMING BIG DATA: THE PEOPLE AND APPROACHES..... 177

Chapter 7 What Makes a Great Analysis?..... 179

Analysis versus Reporting	179
Analysis: Make It G.R.E.A.T.!	184
Core Analytics versus Advanced Analytics	186
Listen to Your Analysis	188
Framing the Problem Correctly	189
Statistical Significance versus Business Importance	191
Samples versus Populations	195
Making Inferences versus Computing Statistics	198
Wrap-Up	200

Chapter 8 What Makes a Great Analytic Professional? 201

- Who Is the Analytic Professional? 202
- The Common Misconceptions about Analytic Professionals 203
- Every Great Analytic Professional Is an Exception 204
- The Often Underrated Traits of a Great Analytic Professional 208
- Is Analytics Certification Needed, or Is It Noise? 222
- Wrap-Up 224

Chapter 9 What Makes a Great Analytics Team? 227

- All Industries Are Not Created Equal 228
- Just Get Started! 230
- There's a Talent Crunch out There 231
- Team Structures 232
- Keeping a Great Team's Skills Up 237
- Who Should Be Doing Advanced Analytics? 241
- Why Can't IT and Analytic Professionals Get Along? 245
- Wrap-Up 247
- Notes 248

PART FOUR BRINGING IT TOGETHER: THE ANALYTICS CULTURE 249

Chapter 10 Enabling Analytic Innovation 251

- Businesses Need More Innovation 252
- Traditional Approaches Hamper Innovation 253
- Defining Analytic Innovation 255
- Iterative Approaches to Analytic Innovation 256
- Consider a Change in Perspective 257
- Are You Ready for an Analytic Innovation Center? 259
- Wrap-Up 269
- Note 270

Chapter 11 Creating a Culture of Innovation and Discovery	271
Setting the Stage	272
Overview of the Key Principles	274
Wrap-Up	290
Notes	291
Conclusion: Think Bigger!	293
About the Author	295
Index	297

<http://www.pbookshop.com>

<http://www.pbookshop.com>