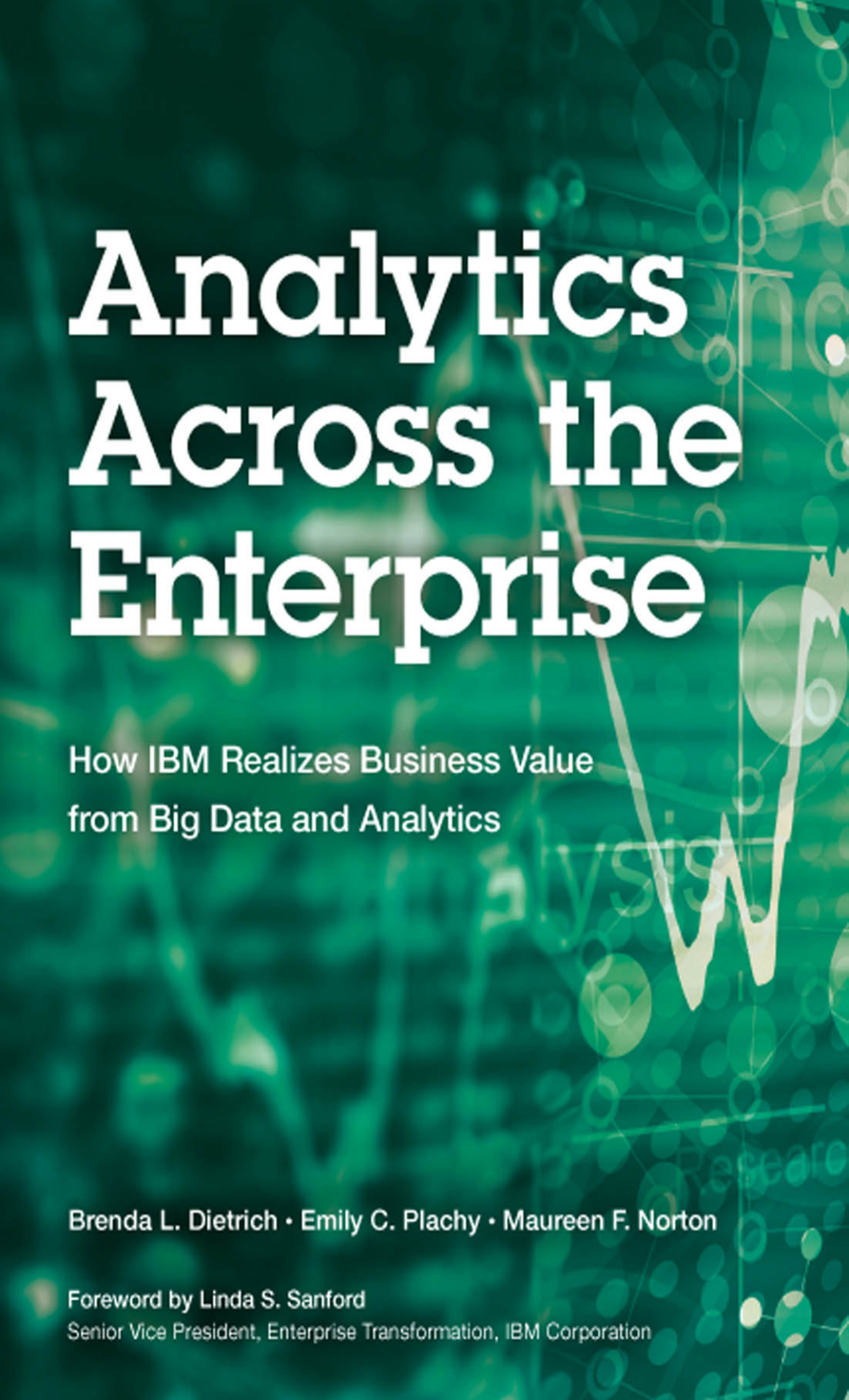
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How IBM Realizes Business Value from Big Data and Analytics
Brenda L. Dietrich • Emily C. Plachy • Maureen F. Norton
Foreword by Linda S. Sanford
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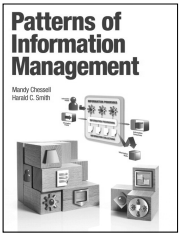

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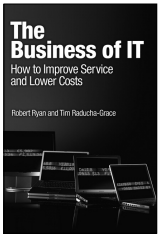

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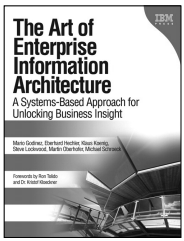

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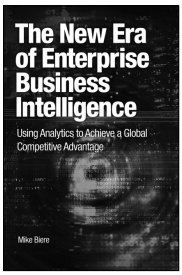

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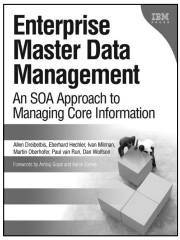

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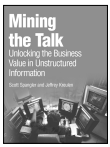

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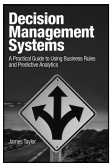

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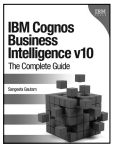

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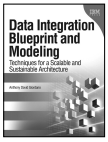

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Praise for *Analytics Across the Enterprise*

"Few major high-tech companies eat their own dog food. But give IBM credit: It practices what it preaches. This book provides an inside look at how IBM has applied analytics to nine business functions, the lessons it has learned, and the value it has derived. This book is valuable for anyone in a large company who wants to know how to apply analytics profitably."

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"*Analytics Across the Enterprise* is the only book on analytics written by three world-class experts 'standing on the shoulders of a giant' analytics powerhouse: an impressive first-hand account of nine breakthrough analytic journeys from 70 top executives and practitioners, the largest private math department in the world, and a leading consulting think tank. This is an unprecedented tour de force showing how a best-of-breed analytics company revolutionized its own business model."

—**Gonçalo Pacheco de Almeida**, Associate Professor of Strategy, Head of the Business Analytics Initiative, and Academic Director of the MBA Strategy Specialization, HEC Paris Business School and the French National Scientific Research Center–HEC Lab

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"Organizations are awash in data. Many have transformed this data into information, yet few have identified patterns of insight from this information. A rare number of organizations can take the insight to action, but even fewer can create a pathway from data to decisions. In *Analytics Across the Enterprise,* Dietrich, Plachy, and Norton definitively chronicle what it takes to apply big data and analytics in the transformation of enterprises. The results: Successful leaders create competitive advantage in smarter workforces, optimized supply chains, and predictable sales performance. Organizations will learn how to move not only from gut-feel intuition but also to powerful fact-based decision making."

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—**Mark Smith**, CEO and Chief Research Officer, Ventana Research

"Glimpses of the IBM vision of the future for analytics have regularly appeared in the literature, and now for the first time we have a comprehensive inside account of how IBM uses advanced analytics to compete globally. Using examples from many functions (HR, marketing, finance, supply chain), this book provides a fascinating view of IBM as an intensively data-driven corporation. Senior executives familiar with analytics and data applications will find many ideas in this book on how they can harness analytics to improve their corporation's performance. Executives less familiar with analytics may experience some 'shock and awe' in reading how far data- and analytics-driven corporations have progressed and what formidable competitors they have become."

—**Peter C. Bell**, Professor, Management Science, Ivey Business School at Western University

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—**Fred Balboni**, Global Managing Partner, Strategy and Analytics, Global Business Services, IBM Corporation

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Analytics Across the Enterprise

How IBM Realizes Business Value from Big Data and Analytics

Brenda L. Dietrich, Emily C. Plachy, and Maureen F. Norton

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For the many pioneers at IBM who are breaking new ground to realize business value from big data and analytics.

Contents

Foreword xix

Preface xxi

Chapter 1 ■ Why Big Data and Analytics? 1

Why IBM Started an Enterprise-Wide Journey to Use Analytics 3

Big Data and Analytics Demystified 4

Descriptive and Predictive Analytics 5

Prescriptive Analytics 6

Social Media Analytics 6

Entity Analytics 7

Cognitive Computing 7

Big Data 8

Why Analytics Matters 9

Governance 10

Proven Approaches 12

Gauging Progress 13

Overview of Nine Journeys 14

Emerging Themes 15

How to Use This Book 17

Endnotes 18

Chapter 2 ■ Creating a Smarter Workforce 21

Perspective: Applying Analytics to the Workforce 21

Challenge: Retaining High-Value Resources in Growth Markets 25

Outcome: Attrition Rate Declined; Net Benefits Exceeded Expectations 26

Challenge: Gaining an Accurate View of What Employees Are Thinking 26

Outcome: Ability to Act on Real Insights About Employees 27

Lessons Learned 29

Endnotes 31

Chapter 3 ■ Optimizing the Supply Chain 33

Perspective: Applying Analytics to the Supply Chain 33

Challenge: Detecting Quality Problems Early 36

Outcome: Significant Cost Savings, Improved Productivity, Improved Brand Value, and Two Awards 38

Challenge: Providing Supply/Demand Visibility and Improved Channel Inventory Management 39

Outcome: Reduced Price Protection Expense, Reduced Returns, and Two Industry Awards 41

Challenge: Improving the Accounts Receivable Business Process and Collector Productivity 41

Outcome: Better Visibility to Track the Total Receivables View Across the Entire Collection Process and Reduction in Labor Cost 43

Challenge: Predicting Disruptions in the Supply Chain 43

Outcome: Number of Listening Events Increased Tenfold and Local Language Listening Proved Valuable 44

Lessons Learned 45

Endnotes 48

Chapter 4 ■ Anticipating the Financial Future 51

Perspective: Big Data and Analytics Increase Value of Finance Team 51

Getting the Basics in Place 52

Creating an Analytics Culture 53

Challenge: Improving Efficiency and Effectiveness of Managing Worldwide Spending 55

Tracking Spending: The Worldwide Spend Project 55

Outcome: More Efficient and More Effective Spend Forecasting 57

Keeping Up with Reporting Requirements: The Accelerated External Reporting (AER) System 58

Outcome: Improved Statutory and Tax Reporting and Analytics 59

Challenge: Balancing Risk and Reward 59

Assessing Risk: Country Financial Risk Scorecard 59

Outcome: Country Financial Risk Scorecard Uses Big Data to Monitor Trends and Minimize Risk 61

Challenge: Validating Acquisition Strategy 62

Managing M & A: The Mergers and Acquisitions Analytics Project 62

Outcome: Mergers and Acquisitions Analytics Improves Success Rate 62

The Smarter Enterprise Enablement (SEE) Initiative 64

Outcome: SEE Project Transforms Strategic Planning and Its Novel Approach Leads to Patent Applications 64

What's Next for IBM Finance? 64

Lessons Learned 65

Endnotes 66

Chapter 5 n Enabling Analytics Through Information Technology 67

Perspective: Applying Analytics to IT and Enabling Big Data and Analytics Across an Enterprise 67

Challenge: Deciding When to Modernize Servers 69

Outcome: Increase in Application Availability 70

Challenge: Detecting Security Incidents 71

Outcome: Increased Detection of Security Incidents 71

Enabling the Transformation to a Smarter Enterprise 71

Developing Enterprise-Wide Big Data and Analytics Applications 71

Partnering with Business Areas to Develop Social Media Analytic Solutions for Customer-Centric Outcomes 73

Developing an Information Agenda and Processes for Governance and Security of Data 73

Providing a Big Data and Analytics Infrastructure 76

Lessons Learned 77

Endnotes 78

Chapter 6 ■ Reaching Your Market 81

Perspective: Using Analytics to Reach and Engage with Clients 81

A Signature Client Experience 83

Marketing-Related Analytics Hiring Soaring 84

Agility Is Key 84

Challenge: Developing the Data Foundation and Analytics Capability to Enable a Signature Client Experience 85

Outcome: Individual Data Master to Provide Client-Level Insights 87

Challenge: Providing a Real-Time View into Effectiveness of Marketing Actions: Performance Management 87

Outcome: Marketing Efficiencies Realized and Transformation of Marketing Enabled 88

Challenge: Going Beyond Correlation to Determine Causal Effects of Marketing Actions 90

Outcome: System Deals with Special Terms and Conditions Added Grew from 67% to 98% over Three Quarters 90

Challenge: Tapping into Analytics Passion to Provide New Insights to Inform IBM's Digital Strategy 92

Outcome: Insights from Diverse Teams Provided the Evidence Needed to Make Changes to the Digital Strategy 93

Lessons Learned 94

Endnotes 94

Chapter 7 ■ Measuring the Immeasurable 97

Perspective: Software Development Organization Optimizes the Highly Skilled Workforce 97

Challenge: Creating a Common View of Development Expense to Enable Decision Making 99

Development Expense Baseline Project 99

Outcome: Development Expense Baseline Project Proves That the Immeasurable Can Be Measured 105

Lessons Learned 105

Endnotes 106

Chapter 8 ■ Optimizing Manufacturing 107

Perspective: Applying Analytics to Manufacturing and Product Management 107

Challenge: Scheduling a Complex Manufacturing Process in a Semiconductor Fab 108

Outcome: Reduced Production Times 111

Challenge: Enhancing Yield in the Manufacturing of Semiconductors 111

Outcome: Cost Savings Due to Yield Improvement 112

Challenge: Reducing the Time to Detect Aberrant Events 113

Outcome: Engineers Take Action 114

Challenge: Simplifying the Hardware Product Portfolio 115

Outcome: Significant Reduction of Hardware Product Portfolio 116

Lessons Learned 117

Endnotes 117

Chapter 9 ■ Increasing Sales Performance 121

Perspective: Using Analytics to Optimize Sales Performance—Inside and Out 121

How IBM Approached Leveraging Analytics in Sales Organizations 122

Using Analytics to Build a Business Case for Inside Sales 123

Challenge: Deploying Sellers for Maximum Revenue Growth by Account 124

Outcome: Increased Sales Performance 126

Challenge: Deploying Sellers Within a Territory 126

Outcome: Increased Territory Performance 127

Challenge: Determining the Optimal Sales Coverage Investment by Account 128

Outcome: Increased Revenue and Increased Productivity 130

Online Commerce 130

Challenge: Creating a Smarter Commerce B2B Solution to Drive Cross-Company Efficiencies 132

Outcome: An Analytics-Based, Client-Focused Business Case Wins Approval 133

Lessons Learned 135

Endnotes 137

Chapter 10 ■ Delivering Services with Excellence 139

Perspective: Leveraging Analytics in a Services Business 139

Challenge: Developing New Business 141

Outcome: Increased Signings, Revenue, and Pipeline 142

Challenge: Predicting Risk of Contracts 142

Outcome: Deployment of Financial Risk Analytics 143

Challenge: Optimizing Workforce Performance 143

Outcome: Large Cost Savings, Improved Productivity, and Faster Client Response Times 147

Challenge: Getting Early Warning About Problems 147

Outcome: Timely Intelligence to Delivery Teams to Help Satisfy Clients 148

Lessons Learned 148

Endnotes 149

Chapter 11 ■ Reflections and a Look to the Future 151

The Journey Continues 151

Reflections 153

Transactional Data 155

Simulation 156

Alerts 157

Forecasting 158

The Future 159

Growth of Data 160

Unstructured Data 161

Cognitive Computing 163

Endnotes 164

Appendix A ■ Big Data and Analytics Use Cases 165

Glossary ■ Acronyms and Definitions of Key Big Data and Analytics Terms 175

Index 183

Foreword

Like many of our clients, IBM® itself is focused on becoming a smarter enterprise. Connected people, integrated processes, and instrumented data: These form the foundation for "smarter." A smarter enterprise makes decisions differently, creates value differently, and delivers value differently…and it all starts with the creative application of analytics.

In my conversations with clients about transformation, they often ask how IBM has approached analytics. Where should we get started? What are you doing inside IBM? What advice would you offer from your experience so far?

To help answer these questions for clients, our analytics practitioners inside IBM collaborated to develop this book. IBM has moved aggressively the past several years to build our analytics capabilities—through hiring talent, developing software, and acquiring firms with analytics tools that enhance our portfolio. IBM itself has been the alpha and beta for the deployment of these new technologies across our operations—from how we manage finance and marketing to how we optimize our supply chain and attract, retain, and develop talent. Indeed, we've found that in virtually every aspect of your organization, you can make smarter, more informed decisions by embedding analytics into how you do business.

I hope you will find our experience relevant and useful as you consider how to best seize on the power of big data, the world's newest natural resource for competitive advantage. Progressive leaders are putting big data to work in fields ranging from finance to farming, from presidential politics to professional sports. It's not just the data; it's the insights gained from analyzing data that give organizations an edge over the competition.

As I tell clients, transformation is hard; it takes ongoing commitment and leadership from the top of the organization. But if there's one truth I've learned about transformation over the years, it's that you should always move

faster than you think you should. That's the only way to stay ahead of today's unrelenting pace of change.

This principle holds true for the adoption of analytics, the centerpiece of the next wave of our transformation. Don't wait for your data to be perfect. The time to start on this journey is now…and we hope our own experience at IBM will help you accelerate the benefits that accrue when you unlock the hidden value and power of your data.

—Linda Sanford

IBM Senior Vice President, Enterprise Transformation

Preface

The genesis for this book came when Doug Dow, Vice President, Business Analytics Transformation, observed that a number of good analytics books were being published, written by experts in analytics, and that IBM had experts with significant experience solving business problems by applying analytics. Dow approached Brenda Dietrich, an IBM Fellow and an eminent operations research and analytics expert. Dietrich was receptive to the idea but was reluctant to sign up to write the book alone. Dow later approached two of his Business Analytics Transformation department members, Emily Plachy and Maureen Norton, who both jumped at the chance to tell IBM's story. Another motivation for the book is that Dow receives frequent requests from clients to learn how IBM is using analytics to elevate business results, so we know that IBM's story is of interest.

As we embarked on the journey to write this book about analytics, we were mindful of the rising tide of materials touting the value of analytics. So what would cause someone to cast his or her net and catch this one? Would a book about the challenges and triumphs, to continue the analogy, of one of the largest global ships on the sea have insights and lessons that others could benefit from, or at least find entertaining enough to read? We decided that this is a story that needed to be told. We decided that C-level executives in Fortune 500 companies, small business owners, and MBA students and faculty would see themselves and their challenges on these pages, and we needed to write this book. Introducing readers to a wide spectrum of ideas about how analytics is much more than a technology and instead is a smarter way of doing business would be reason enough to sail forward.

When we started planning for the book, we decided to organize it by business function. We identified analytics projects within a business function that were realizing value. Next, we interviewed the key members on the

projects. Then, one of the authors volunteered to be the lead writer for that chapter.

We authors made heavy use of IBM Connections, IBM's collaborative software, to interact as we wrote the book, creating a Connections Activity for the book, organized by chapters. During reviews, we added Connections Folders and Files, which helped us keep track of the many reviews and versions of each chapter. With three authors working in different locations, efficient collaboration was essential.

As the writing journey progressed, a common phrase kept coming into our conversations: "All roads lead to the book." The book became a seminal part of our work, feeding and enriching every aspect of our day jobs. We were able to leverage insights from the work to improve insights and results, effect connections between teams that were tackling similar problems, and help other transformation teams tell their stories.

Another very exciting aspect to this book is that we wanted it to be useful to the business leaders of today and tomorrow; reaching students and faculty is a high priority. During the development of the book, two of the authors, Maureen and Emily, developed and taught an innovative three-day pilot workshop at a premier MBA program in Europe, HEC University. Working with Dr. Hammou Messatfa, Technical Leader, European Government Industry, IBM Sales and Distribution, they held a very successful big data and analytics workshop, which led to additional analytic educational initiatives. Just as the book was in the final editing stages, Maureen had the opportunity to teach at a big data and analytics workshop for MBA students in the Middle East as well.

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