

Presenting Financials and Other Numbers
So People Will Understand You

PAINTING WITH NUMBERS

RANDALL BOLTEN

Foreword by Tom Campbell

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WILEY

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*For Rachel and Molly,
my favorite girls
and my two favorite writers*

Contents

| | | |
|---------------------|--|------|
| | Foreword | xiii |
| | Preface | xv |
| | Acknowledgments | xvii |
| INTRODUCTION | This Book Is <i>Not</i> About Numbers—Honest! | 1 |
| | Being “Literate” | 2 |
| | It’s What <i>They</i> Think That Matters | 2 |
| | What You Were Never Taught | 3 |
| | The Ultimate Goal | 5 |
| | Some Notes about Reading This Book | 5 |
| PART I | The Rules | 11 |
| CHAPTER 1 | Numerals Matter | 13 |
| | Lining Up the Numbers | 14 |
| | The Units of Measure | 16 |
| | Precision | 17 |
| | Negative Numbers: What Do They Mean? | 20 |
| CHAPTER 2 | Looks Matter | 25 |
| | The <i>Tabula Rasa</i> Decision | 26 |
| | The “Where’s Waldo?” Effect | 27 |
| | White Space Is Your Friend | 29 |
| | . . . But White Space Is Not <i>Always</i> Your Friend | 30 |
| | Time and Other Dimensions: Across or Down? | 33 |
| | Borders, Shading, and Other Visual Effects | 35 |
| | Comments and Artwork | 41 |
| | The “Ransom Note” Effect | 43 |
| | Two Truly Helpful Hints | 44 |

| | | |
|------------------|--|-----|
| CHAPTER 3 | Words Matter | 47 |
| | Mean What You Say and Say What You Mean | 48 |
| | Choosing between Precision and Presentability | 52 |
| | Treating Words Like Numbers | 55 |
| | Remember the Title. Please. | 57 |
| | | |
| CHAPTER 4 | Your Audience Matters | 61 |
| | The <i>Right</i> Amount of Data | 62 |
| | Appropriate Emphasis on Critical Information | 64 |
| | Consistency | 67 |
| | Meaningful and Relevant Numbers | 69 |
| | Respect for Your Audience's Time | 73 |
| | Wrap-Up for Part I: The Rules | 77 |
| | | |
| PART II | The Tools | 81 |
| | | |
| CHAPTER 5 | You Can Pay Me Now | 83 |
| | The Instant Payoff Tips | 85 |
| | Instant Payoff Tip #1: Set Up Templates and Styles | 85 |
| | Instant Payoff Tip #2: Customize Your Toolbar | 86 |
| | Instant Payoff Tip #3: Learn Some Shortcut Keys | 87 |
| | Instant Payoff Tip #4: Use Consistent Formats | 89 |
| | Instant Payoff Tip #5: Learn to Use Excel as a Database | 90 |
| | Instant Payoff Tip #6: Learn to Use the Lookup & Reference Functions | 94 |
| | Instant Payoff Tip #7: Organize Data for Easy Computation | 95 |
| | Instant Payoff Tip #8: Learn to Use Automated Help | 98 |
| | Instant Payoff Tip #9: Don't Learn Too Many Ways to Do the Same Thing | 99 |
| | | |
| CHAPTER 6 | ... Or Pay Me Later | 103 |
| | The Long-Term Payoff Tips | 104 |
| | Long-Term Payoff Tip #1: Use Sensible, Intelligent Filenames and Folder Organization | 104 |
| | Long-Term Payoff Tip #2: Use Consistent Formats | 106 |
| | Long-Term Payoff Tip #3: Design Intelligent, Intelligible Formulas | 106 |
| | Long-Term Payoff Tip #4: Use Named Ranges | 110 |
| | Long-Term Payoff Tip #5: Use Named Formulas or Macros | 112 |
| | Long-Term Payoff Tip #6: Links: A Force That Can Be Used for Good or Evil | 117 |

| | | |
|-------------------|---|------------|
| | Long-Term Payoff Tip #7: Make Different Types of Cells Visually Distinguishable and Physically Separate | 118 |
| | Long-Term Payoff Tip #8: Document Your Work! | 120 |
| | Long-Term Payoff Tip #9: Check Your Work! | 121 |
| | Long-Term Payoff Tip #10: Avoid Cool New Features | 122 |
| CHAPTER 7 | Graphs: The “Cartoons” of Numbers | 125 |
| | Why Do People Use Graphs? | 126 |
| | Help Your Audience | 127 |
| | First, Do No Harm | 138 |
| CHAPTER 8 | The Pitfalls of Presentations and PowerPoint | 153 |
| | Why Do People Make Fun of Business Presentations? | 154 |
| | Real Estate Is a Scarce and Precious Commodity | 154 |
| | Help Your Audience | 156 |
| | First, Do No Harm | 161 |
| | Some Basic Truths That Go Double for Quantation | 162 |
| | Wrap-Up for Part II: The Tools | 166 |
| PART III | Real Mastery | 169 |
| CHAPTER 9 | It’s Clear, But Is It Meaningful? | 171 |
| | The War of the Adjectives | 171 |
| | A Quantation Professional | 173 |
| | Relating to Your Audience in a Constructive Way | 174 |
| CHAPTER 10 | 53 . . . Uh, Is That a Lot? | 179 |
| | What Is a Key Indicator? | 180 |
| | What Makes a <i>Good</i> Key Indicator? | 183 |
| | A Simple Example | 185 |
| | How Do You Present Key Indicators Effectively? | 185 |
| | A Note on Precision | 190 |
| | A Note on Dashboards | 191 |
| CHAPTER 11 | The One Report <i>Every</i> Organization Needs | 197 |
| | A Sample Natural P&L, and What Makes It a Good One | 199 |
| | 1. One Page! | 200 |
| | 2. Decision-Focused Line Items | 200 |
| | 3. Appropriate Dollar Amounts, Neither Too Big Nor Too Small | 204 |

| | |
|---|------------|
| 4. Intuitive Organization of the Line Items | 205 |
| 5. Understandable Categories, Meaningful to All Users | 208 |
| 6. Plain-English Terminology | 208 |
| 7. Consistent Look-and-Feel | 209 |
| 8. Key Results Equal to the Corresponding Numbers in the Accounting System (or an Explanation Why Not) | 209 |
| Mapping the Chart of Accounts | 211 |
| Generate a Natural P&L from a Spreadsheet, or from the Accounting System? | 212 |
| Now Let's Talk about the Columns | 213 |
| APPENDIX 11A A Sermon to the Accounting Purists | 219 |
| CHAPTER 12 The Gaps in GAAP | 225 |
| Rules-Based versus Principles-Based | 226 |
| Where Is All This Headed? | 227 |
| "Expensing" Stock Options | 228 |
| Software Revenue Recognition | 230 |
| Tying GAAP to Internal Management Reports | 232 |
| APPENDIX 12A Some Notes on GAAP | 235 |
| What Is GAAP? | 235 |
| Stock Options | 236 |
| Revenue Recognition | 237 |
| CHAPTER 13 Quantation: It's Not Just for Business Anymore | 239 |
| One Taxpayer at a Time | 240 |
| All the Taxpayers at Once | 243 |
| What's <i>Really</i> Going on Here? | 249 |
| CHAPTER 14 Quantation in Ordinary Life | 255 |
| Models | 255 |
| The Meaning of Words | 260 |
| That Quiz I Promised | 263 |

| | | |
|-------------------|---|-----|
| PART IV | Wrap-Up | 269 |
| CHAPTER 15 | Speaking Truth to Power | 271 |
| | My “Tell the Truth” Syllogism | 272 |
| | Reason #1 for Telling the Truth: It’s the Right Thing to Do | 272 |
| | Reason #2: It’s in Your Employer’s Interest | 272 |
| | Reason #3: It’s in <i>Your</i> Interest | 273 |
| | Reason #4: You Will Get Caught | 273 |
| | Reason #5: It’s the “Gotcha” of This Book | 275 |
| | Don’t Be So Smug, You Civil Servants and Elected Officials! | 276 |
| | Your Audience Has a Role, Too | 276 |
| CHAPTER 16 | Now, What’s the <i>First</i> Thing You Do? | 281 |
| | My Last, Best Tip | 282 |
| | It’s Just a Skill | 282 |
| | Where We Have Been | 283 |
| APPENDIX | Jazz Meets Theology | 287 |
| | Revisitation | 288 |
| | The Sins of Presentation | 289 |
| | The Sins of Behavior | 297 |
| | The Deadliest Sin of All | 301 |
| | About the Author | 305 |
| | Index | 307 |

Foreword

I first met Randall Bolten in early 2009, as I was beginning my run for California statewide office. He was my contact for a dinner speech I was giving, and I sent him some economic data to be turned into slides and a handout. What came back was not just a correct and accurate presentation of the data, but one that was clear, concise, and comprehensible. Based on that experience, I retained Randall to prepare the economic and fiscal policy handouts that I used throughout the campaign. My data and graphical presentations became a mainstay of how I presented my public policy suggestions. I feel strongly that clearly and honestly presented data is essential to an informed electorate, and Randall made it possible for me to put that belief into practice.

Looking back on my terms in the U.S. Congress, in the California State Senate, and as Director of Finance for California, I am struck by how often arguments are won on the basis of how the numbers are presented. I am also struck by how great the temptation is for shading numerical data. Some of that temptation comes simply from the presenter's lack of skill at presenting numbers. But some of that temptation also comes from the view—which, sadly, is all too often correct—that the audience will not speak up when they do not understand or are skeptical of the information put in front of them, and will, instead, be swayed simply by the amount, or exclamatory nature, of the data presented.

As Director of Finance for the State of California, I had to reconcile many different ways of presenting similar data from different departments of the state government. In that position, it was obvious that how clearly and coherently information is presented has a huge impact on how effective the presentation is. It was also obvious that a consistent approach to presenting the underlying numbers—in essence, creating a “common language”—is critical in a complex organization like the government of the State of California to making intelligent decisions, and to fostering a team approach to problem solving.

As a Dean in both public and private universities, I was introduced to new ways of presenting similar data, and my ability to comprehend the information was strongly affected by the way the data were presented.

In all of my roles, the ability to explain decisions to a larger audience—voters, students, faculty, trustees, legislature, press—demanded a need for simplicity, clarity, and transparent honesty. In the best-functioning organizations I have been associated with, the key players have had this ability when presenting

statistics, financial data, and other numbers, and their audience has expected and demanded no less.

I'm delighted that a book like *Painting with Numbers* is available. I am confident that the lessons Randall Bolten sets forth in this book, a first of its kind, will have a hugely positive effect on the level of public debate, and thus, the quality of the choices we make in our public and private lives.

Tom Campbell

Preface

Everybody talks about the weather, but nobody does anything about it.

—Mark Twain

The concept for *Painting with Numbers* was one of those ideas that just emerged slowly over time. During my nearly 20 years as chief financial officer of high-technology companies in Silicon Valley, I saw small changes in documents containing numbers make a huge difference in how well they were understood. This happened over and over. In the case of financial documents, poorly understood reports could lead to mass confusion or even mistakes costing millions of dollars. But the right presentation of that same information could make an audience think *aha!* and motivate outstanding performance.

I also couldn't help observing that the people generating these reports—extremely competent and intelligent people—often overlooked the nuances of these small changes and the effect they had on their audiences. When we reviewed the results afterward, though, they readily saw the connection. It became increasingly clear to me that presenting numerical information is a *communication* skill, and not some sort of black art practiced only by the “numbers guys.” I've stated that premise in hundreds of conversations since I began writing this book—with people ranging from accounting students and administrative assistants to CEOs and corporate directors—and the response has always been enthusiastic agreement. At the same time, though, very few of the people I spoke with had any sense of what that *meant* for how they should lay out numbers on a page, or a computer monitor, or a projection screen.

Think about it. A significant portion of our school years, especially in elementary and middle school, is devoted to training us to write and speak correctly, clearly, succinctly, and eloquently. We are taught grammar, vocabulary, diction, sentence structure, and paragraph organization. Even beyond our basic education, we are expected to continue to improve our grasp of the nuances of effective writing and speaking—*about* a particular subject, *to* a particular audience, *with* a particular purpose in mind. Bookstore shelves are loaded with books intended to sharpen those skills, with titles including *The Elements of Style*; *Eats*,

Shoots & Leaves; The Careful Writer; The Business Letter Handbook; How to Write a Million-Dollar Memo; and Public Speaking: An Audience-Centered Approach.

Still, mathematics for the most part continues to be taught as a computation skill, not as a language for describing complex problems and situations. And although there are plenty of books about how to *understand* numbers, about the underlying mathematics, and even about how people try to fool you with numbers, there are *no* books focused solely on how to make yourself understood when you are presenting numbers.

Because the need to present numbers is critical in so many places in our society, I'm grateful and flattered that Tom Campbell agreed to write the Foreword for *Painting with Numbers*. His remarkable career has included public service as an elected legislator (U.S. Representative and State Senator) and executive branch appointee (California Budget Director when the state last reported a budget surplus); a Ph.D. economist, lawyer, and law professor; and a dean of both a business school (U.C. Berkeley, Haas School of Business) and a law school (Chapman University School of Law). Perhaps more important, he speaks and writes with precision, grace, humor, and a respect for his audience.

My goal with *Painting with Numbers* is to enable you to become as skilled at presenting numbers to an audience as the most articulate among us are at writing for and speaking to an audience. Whether you are an accounting, finance, or engineering professional who presents numbers as an essential part of your job; or you are a corporate law, litigation, human resources, marketing, investor relations, fundraising, or other professional who presents numbers less frequently (but when you do the stakes are high); or you are a government official or elected representative responsible for understanding and explaining important issues of fiscal management, taxation, healthcare, or other areas of public policy; or you are a senior manager or board member who must make complex decisions under time pressure based on the information presented to *you*—this book is for you. Enjoy!

Randall Bolten
Glenbrook, Nevada
February, 2012

Acknowledgments

First, my sincerest thanks go to Taylor Ray, editor extraordinaire, who understood what *Painting with Numbers* was about from the very beginning and stuck with the project through all its stops and starts. She was both immensely supportive and unfailingly candid, and worked tirelessly to make sure I honored my compact with the reader.

A few played special roles in the creation of this book. Joel Orr helped me get organized, explained the ins and outs of the publishing business, and offered wisdom that was rabbinical in the best sense of the word. John Cardozo demonstrated that a friend is someone who reads every word you've written even when he has more important things to do. And Tom Campbell not only agreed to apply its lessons to the electorate and lend his name to this book, he was the most punctilious, yet most insightful, witty, and supportive of readers—and this while running for statewide office in California.

Many people read parts of this book and made invaluable comments, including Stephen Few, Shomit Ghose, Dana Hendrickson, Karl May, Barbara McMurray, Larry Moseley, Ethan Thorman, Linda Wilson, and Donna Winslow. The finance team at Fortinet (Robert Lerner, Tim Emanuelson, Keith Andre, Jim Bray, Daneya Denson, Doug May, Scott Robinson, and Simran Singh) met with me frequently as a group to offer their from-the-trenches perspectives. To readers I somehow failed to mention, my apologies and my thanks.

My professional colleagues in the Silicon Valley chapter of Financial Executives International deserve special thanks as a group. Many made contributions to the content of this book, whether they knew it or not, and all indulged me patiently as I talked through my ideas.

I thank current math faculty at St. Albans School—Messrs. Kelley, Hansen, and Eagles—for their feedback on the book and for introducing its lessons to high school students. I also salute some of the teachers from my days as a student there, who made it clear that expressing yourself in your own language and style was not just tolerated, but a sacred obligation—especially Messrs. Means, Saltzman, Ruge, and McCune.

Many folks at Wiley deserve mention. Tim Burgard, Stacey Rivera, Andrew Wheeler, and Helen Cho were a real help to a first-time author and led me to intelligent choices. Natasha Andrews-Noel shepherded this book and a demanding author through a production process that was much more complex than I could

possibly imagine. And my thanks go to Anne Ficklen for the introduction, and to Michael Rutkowski for just nailing the jacket design.

Some people less directly involved with the book itself deserve mention. A few comments made years ago still stick with me and helped spur me to this project: my appreciation goes to Jeff Walker, Woody Rea, Nort Rappaport, and Van Van Auken. I thank Claude and Sue and Leland, who offered excellent company and an indulgent ear, not to mention good food in the dead of winter. Family members Joshua, Susanna, Dede, and Jimmy provided feedback and cheerleading, and have assured me they will generate thousands of orders for this book.

One person was essential to this book in many, many small, and a few big ways. Well done, Petunia!

Even a book about expressing yourself with clarity, precision, and accuracy will inevitably have errors. For these I accept responsibility. I hope you will let me know about them. I also hope that you have gotten value from this book.

INTRODUCTION

This Book is *Not* About Numbers—Honest!

The way you present says a lot about the way you think.

—Irwin Federman, venture capitalist

This book is not about numbers. This book is about *presenting* numbers, and doing it clearly, concisely, elegantly, and, most of all, *effectively*. This distinction between numbers and presenting numbers is critical, and to give you a glimpse of what's to come, let me ask you some questions. When doing *quantation*,¹ have you ever experienced the following:

- Your audience simply didn't "get it"?
- You spent too much time just explaining how to read and understand your tables, charts, or slides, instead of discussing the actual contents of your reports?
- You depended on people to read your materials *before* the meeting or presentation, and when they didn't do it, you couldn't achieve what you wanted?
- You caught some dumb mistakes, but only after it was too late to fix them? Or even worse, *your audience* caught your dumb mistakes?
- Your report/presentation had too much detail for your audience to zero in on the really important stuff? Or even worse, they simply gave up trying to understand?

If your answer is *yes* to any of these questions, then you've felt the agony and frustration of poor quantation. If you've been one of the "victims" in the audience,² then you've known the sinking feeling of watching a presenter's time and credibility painfully slip away.

Being “Literate”

Presenting numbers is the same as presenting any other information. If your audience can’t follow what you are presenting well enough to understand it, then *you* haven’t communicated. It doesn’t matter if your numbers are well-researched, organized with great effort, and *correct*. If no one understands what you’re trying to say, the problem is yours to fix.

Put another way, to do effective quantation you need to “be literate.” And I don’t just mean the more conventionally known definition of “being able to read.” Being literate means much more than that. Being literate is not merely about understanding *words*, but about comprehending *any* information presented to you—images, numbers, charts. It’s not just about *comprehending* information, but about *how you present it*. And it’s not just about what you *know*, but about *people’s perceptions* of what you know. In other words, being literate is about your knowledge, and your ability to present it so others perceive you as knowledgeable.

It’s What *They* Think That Matters

The previous point deserves some extra emphasis. An important part of being literate comes from other people’s perceptions of what you know. To help you understand how this works in real life, consider these questions:

- When you see someone confuse *its* and *it’s*, do you form a general conclusion about the writer’s literacy or even about his or her intellect?
- Do you (like many other people) routinely reject job applicants who have even one typo in their résumé or cover letter?
- Do you form distracting and negative conclusions about people from their unintentionally hilarious errors?

Perception is important, and *based on little things, people form global, and sometimes harsh, conclusions about you*—about your intelligence, your literacy, your grasp of the subject matter, your professionalism, your ethical standards, and your respect for your audience (to name a few traits you probably value).

There’s one more thing about these little errors and embarrassments: the more important and influential people are, the more likely they are to form these snap judgments, and form them quickly. Not only are these people very busy, but they’re the kind of people who take pride in their speed and decisiveness. And the saddest part about the harshest conclusions is that *people will rarely tell you*. It’s like that little piece of spinach stuck between your teeth all evening at the annual company holiday party. No one mentioned it to *you*, but it sure was amusing conversation the next day in the hallways and the break room.³

So how do you avoid these negative perceptions and make sure that you are received as professionally as possible? If you’re communicating in *words*, you

have lots of tools to guide you that you spent years learning: there's vocabulary, grammar, diction, sentence structure, and paragraph organization. And if you use these tools well, your audience will consider you to be thoughtful and careful. But what about *quantation*? Are there rules and guidelines for presenting numbers? Of course there are, and that's what this book is about.

What You Were Never Taught

The rules and practices that help you present numbers are similar to the rules and practices that make people effective writers and speakers. Unfortunately, very little of your education was probably devoted to developing these skills of quantation. This is especially unfortunate because typically when numbers are presented, significant decisions need to be made. These presentation skills are important even if you don't present numbers often, because when you *do* have to present numbers, it's likely that the stakes are going to be especially high.

Moreover, much of the value you reap from presenting numbers does not result from the time you spend compiling and generating the information, but rather from the time you take designing, organizing, and laying out the information you worked so hard to collect. The time that it takes to design, organize, and lay out your reports typically only takes 20% (or less) of your time. But then there's that "80/20 Rule" that every MBA learns: 80% of the impact of any effort comes from only 20% of the time you spend on that effort. In a nutshell, this book is about spending that 20% of your time to your best advantage so you can become a better communicator of numbers, *and therefore a better communicator in general*.



Let's recap the key points so far:

1. When you present numbers, you are responsible for making sure your audience comprehends the information. Your audience will certainly hold you responsible.
2. If your audience fails to understand the information, your professional image and credibility will suffer. Moreover, you will waste time explaining what your information means instead of addressing your more important goals.
3. Small, innocent mistakes (in both language and numbers) have a disproportionately negative impact on how your skills, professionalism, and intellect are perceived by others.

(continued)

4. The more important someone is, the more likely he or she is to reach these negative conclusions (about your presentation skills, professionalism, and/or intellect). And the more important someone is, the faster he or she will reach that conclusion.
5. All of the above points apply to presenting numbers as surely as they apply to any other communications; unfortunately, most of us haven't been formally taught the skills to do effective quantation. That's a shame, because quantation is a skill that can be taught and learned.
6. When a communication task involves quantation, doing it effectively is important both to the success of the task and to you personally:
 - When you are presenting numbers, the stakes are usually high.
 - If your job requires a lot of quantation (accounting, finance, or marketing analysis, for example) how you present numbers is a big part of your own professional image.
 - If your job doesn't require much quantation, when you do have to present numbers, the stakes are probably *very* high.
7. The quantation task is the least time-consuming task in a project involving collecting, summarizing, organizing, and presenting numbers. If it's done poorly, all of your other good work goes to waste. But if it's done well, it becomes the most important and valuable task in the project.
8. Quantation is not about numbers; it's about communicating to an audience (and you don't have to be the resident "numbers guy" to do it well). Generating clear, effective quantation is what this book is about.

I chose "The way you present says a lot about the way you think" as the epigraph for this Introduction because it relates to all of the reasons listed above. Perhaps Mr. Federman was specifically referring to standing up and giving an oral presentation, but I believe it is apt for *any* way you present information. When you present numbers, you expose every aspect of your thought process (or lack thereof) to your audience.

*Please note: Nothing in this book is intended to be used as a cookbook. My goal is to give you the tools to enable you to design reports yourself that meet *your* quantation needs. Next is one example, of a printout I found taped to a table in the lobby of a county clerk's office. By the end of this book, you'll be able to identify everything that's wrong with this document, and you'll know how to improve it.*

| MASS CONVERSION FOR METERS TO FEET | |
|---|-------|
| Divide the amount of meters by .3048 to get the proper feet | |
| Meters | Feet |
| 1,524 | 5' |
| 1,5494 | 5'1" |
| 1,5748 | 5'2" |
| 1,6002 | 5'3" |
| 1,6256 | 5'4" |
| 1,651 | 5'5" |
| 1,6764 | 5'6" |
| 1,7018 | 5'7" |
| 1,7272 | 5'8" |
| 1,7526 | 5'9" |
| 1,778 | 5'10" |
| 1,8034 | 5'11" |
| 1,8288 | 6' |
| 1,8542 | 6'1" |
| 1,8796 | 6'2" |
| 1,905 | 6'3" |
| 1,9304 | 6'4" |

The Ultimate Goal

As any good artist or teacher will tell you, you don't create a great painting because you went to the best art schools, used all the available colors, or knew the latest brushstroke techniques. The test of a great painting lies more in the answers to questions like: Does the painting tell a story? Is the viewer led to *care* about that story? Has the artist revealed the essential nature of the subject, regardless of how big or small the canvas is? My goal in *Painting with Numbers* is to give you all you need to know to communicate financials and other numbers so that you can tell your story in a way that is clear, comprehensible, concise, elegant, and, most of all, effective.

Some Notes about Reading This Book

Painting with Numbers covers what you need to know to do quantation effectively. It's divided into four sections: The Rules, The Tools, Real Mastery, and Wrap-Up.

Part I: The Rules discusses the rules and practices that can help you “be literate” when you're doing quantation—much the same way understanding

grammar and using it effectively help you communicate and “be literate” when you write or speak. It’s critically important for you to understand *why* these rules and practices work, so I’ll discuss that as well. The topics covered in this section are:

- **Chapter 1**—numerals—describes how to use the Arabic numeral system, not just correctly, but to your advantage.
- **Chapter 2**—visual appearance—addresses how to convey information just by how you lay it out on the page, and how to use visual effects to enhance your reports.
- **Chapter 3**—words—examines the importance of getting the *words* right, and not just the numbers.
- **Chapter 4**—the audience—reveals how people in general, and your audience in particular, process information, what that means for the way you do quantation, and how the way you present information sends loud signals about your respect for your audience

Part II: The Tools offers a practical, tactical discussion about how to use the principal software tools to maximum advantage in your quantation.

- **Chapter 5—Instant Payoff Tips** for spreadsheets—focuses on skills to help you to be a *faster* user of Excel, so that being under time pressure will not be a barrier to effective quantation. The Instant Payoff Tips will make your work go faster *every* time you create and deliver a spreadsheet.
- **Chapter 6**—Long-Term Payoff Tips for spreadsheets—focuses on how to use Excel to make your life easier when you revisit spreadsheets long after you first delivered them, and how to improve the lives of people who are *users* of your spreadsheets (or inherit your work).
- **Chapter 7**—graphs—discusses how to make visual information comprehensible and meaningful to your audience.
- **Chapter 8**—presentations and PowerPoint—addresses the special factors to consider when you’re presenting numbers to a live audience.

Part III: Real Mastery addresses the importance of subject-matter expertise when delivering quantation, examines practical applications of quantation, and provides examples of widely used reports, with particular emphasis on applying the rules and techniques from the chapters in Part I.

- **Chapter 9**—real professionalism—discusses the perspective you’ll want to bring when you actually sit down to develop your own reports, and interact with your audience as a peer.

- **Chapter 10**—key indicators—discusses how to use ratios and other metrics together with the basic report information to add even more meaning to your quantation, and to make the information easier for your audience to understand.
- **Chapter 11**—the “natural P&L”—examines the challenge of management financial reporting, with a detailed review of the one report that is (or at least should be) the central management report for most organizations.
- **Chapter 12**—GAAP—provides a nontechnical examination of when and how management financial reporting differs from the reporting required by generally accepted accounting principles (GAAP). This chapter might be of particular interest and importance to readers with a professional accounting background, and those dealing with the reporting issues of publicly traded companies.
- **Chapter 13**—U.S. income taxes—reviews in detail how quantation can be used to clarify public policy issues, using the U.S. individual income taxation system as a case study.
- **Chapter 14**—quantation in ordinary life—offers quantation examples from other, more mundane walks of life, and illustrates how quantation shows up in the news and other unexpected places, in ways you might not think of.

Part IV: Wrap-Up is exactly that. Chapter 15 includes my thoughts on ethics, honesty, character, and other cosmic issues, and how all that relates to quantation. Chapter 16 provides a summary of all that we covered, and includes a discussion of how good quantation *begins*. In the Appendix, we revisit all of the Deadly Sins (defined momentarily) in one place, and from some unusual perspectives.

Important Elements to Aid Your Memory. Throughout *Painting with Numbers* you will find structural elements intended to drive home the main points of the book. These elements can be collected in quick lists for future reference. The principal elements are “The Deadly Sins of Presenting Numbers” and “Strong Advice,” both of which appear sprinkled throughout these pages. There are also chapter-specific elements, including the “Instant Payoff Tips” and the “Long-Term Payoff Tips” for efficient and effective spreadsheet delivery, and the “Characteristics of a Well-Designed Natural P&L.”

The Deadly Sins of Presenting Numbers is my metaphor to drive home the notion that seemingly small errors can say more than you ever want (or deserve) about your thought process. The Deadly Sins are quantation errors that you should avoid at all costs, because they are:

- Distracting, defocusing, or annoying to your audience (and not just something people recognize and disregard as a minor error)

- Relatively common
- Easily avoided
- Indications that you don't respect your audience, don't understand what they are looking for, or don't have any idea how to help them understand your information

As an antidote to the Deadly Sins, from time to time I introduce suggestions labeled as **Strong Advice**. I make numerous suggestions in these pages, and most of them are just that—suggestions—but the “Strong Advice” items are counsels that you should *always* follow. When you do, they will make your quantation powerful indeed.

The chapter-specific elements are groups of suggestions that you will find useful in highly tactical situations. The “Instant Payoff Tips” and the “Long-Term Payoff Tips” will be of use in making you a *faster* spreadsheet user. In fact, you might find them most useful if you're *not* a frequent or regular spreadsheet user and haven't had a chance to build up your habits and your memory of the tricks of the trade. The “Characteristics of a Well-Designed Natural P&L” in Chapter 11 is a list of characteristics that will be useful when you have to design a management P&L, but also when you have to manage your organization from reports provided to you.

The Exhibits: No Previous Accounting Experience or Graphics Arts Talent Needed. The majority of the exhibits and corresponding discussions relate to a variety of business situations, but I have designed them so that the discussion will be meaningful even if you have had only a passing exposure to financial statements and no technical accounting experience at all. Moreover, the purpose of the exhibits is to illustrate presentation techniques and not the underlying accounting. So if, when it comes to numbers, you think of yourself as a “poet,” take heart—this book is for you, too. There may be a couple of chapters late in the book that you might choose not to focus on, but that would be because they lack relevance to you, not because they're over your head.

Just as I believe that financial and accounting experience are *not* prerequisites to reading and understanding *Painting with Numbers*, neither is any skill in graphics arts. Every single exhibit in this book was created by me, a real non-artist, using off-the-shelf Microsoft Excel 2010 with an ordinary font (Arial 10 points), and then *pasted* into the pages of this book. In other words, these exhibits look *exactly* like reports that you might generate yourself in Excel. I've tried to make sure that the print in all of the Excel exhibits was sized equally; because of the space limitations of a book page, that meant a somewhat smaller print size than you would see on a paper printout, but the exhibits are still easily readable. For the few exhibits that needed further size reduction, my apologies, but please understand that the main point for those exhibits was about layout, and the readability of the numbers themselves was of less concern. The spreadsheet design practices