Preface

Why does the World Need—Excel Data Analysis, Modeling, and Simulation?

When spreadsheets first became widely available in the early 1980s, it spawned a revolution in teaching. What previously could only be done with arcane software and large scale computing was now available to the common-man, on a desktop. Also, before spreadsheets, most substantial analytical work was done outside the classroom where the tools were; spreadsheets and personal computers moved the work into the classroom. Not only did it change how the analysis curriculum was taught, but it also empowered students to venture out on their own to explore new ways to use the tools. I can’t tell you how many phone calls, office visits, and/or emails I have received in my teaching career from ecstatic students crowing about what they have just done with a spreadsheet model.

I have been teaching courses related to spreadsheet based analysis and modeling for about 25 years and I have watched and participated in the spreadsheet revolution. During that time, I have been a witness to the following observations:

- Each year has led to more and more demand for Excel based analysis and modeling skills, both from students, practitioners, and recruiters
- Excel has evolved as an ever more powerful suite of tools, functions, and capabilities, including the recent iteration and basis for this book—Excel 2007
- The ingenuity of Excel users to create applications and tools to deal with complex problems continues to amaze me
- Those students that preceded the spreadsheet revolution often find themselves at a loss as to where to go for an introduction to what is commonly taught to most many undergraduates in business and sciences.

Each of one these observations have motivated me to write this book. The first suggests that there is no foreseeable end to the demand for the skills that Excel enables; in fact, the need for continuing productivity in all economies guarantees that an individual with proficiency in spreadsheet analysis will be highly prized by an
organization. At a minimum, these skills permit you freedom from specialists that can delay or hold you captive while waiting for a solution. This was common in the early days of information technology (IT); you requested that the IT group provide you with a solution or tool and you waited, and waited, and waited. Today if you need a solution you can do it yourself.

The combination of the 2nd and 3rd observations suggests that when you couple bright and energetic people with powerful tools and a good learning environment, wonderful things can happen. I have seen this throughout my teaching career, as well as in my consulting practice. The trick is to provide a teaching vehicle that makes the analysis accessible. My hope is that this book is such a teaching vehicle. I believe that there are three simple factors that facilitate learning—select examples that contain interesting questions, methodically lead students through the rationale of the analysis, and thoroughly explain the Excel tools to achieve the analysis.

The last observation has fueled my desire to lend a hand to the many students that passed through the educational system before the spreadsheet analysis revolution; to provide them with a book that points them in the right direction. Several years ago, I encountered a former MBA student in a Cincinnati Airport bookstore. He explained to me that he was looking for a good Excel-based book on Data analysis and modeling—“You know it’s been more than 20 years since I was in a Tuck School classroom, and I desperately need to understand what my interns seem to be able to do so easily.” By providing a broad variety of exemplary problems, from graphical/statistical analysis to modeling/simulation to optimization, and the Excel tools to accomplish these analyses, most readers should be able to achieve success in their self-study attempts to master spreadsheet analysis. Besides a good compass, students also need to be made aware of the possible. It is not usual to hear from students “Can you use Excel to do this?” or “I didn’t know you could do that with Excel!”

Who Benefits from this Book?

This book is targeted at the student or practitioner that is looking for a single introductory Excel-based resource that covers three essential business skills—Data Analysis, Business Modeling, and Simulation. I have successfully used this material with undergraduates, MBAs, Executive MBAs and in Executive Education programs. For my students, the book has been the main teaching resource for both semester and half-semester long courses. The examples used in the books are sufficiently flexible to guide teaching goals in many directions. For executives, the book has served as a compliment to classroom lectures, as well as an excellent post-program, self-study resource. Finally, I believe that it will serve practitioners, like that former student I met in Cincinnati, that have the desire and motivation to refurbish their understanding of data analysis, modeling, and simulation concepts through self-study.
Key Features of this Book

I have used a number of examples in this book that I have developed over many years of teaching and consulting. Some are brief and to the point; others are more complex and require considerable effort to digest. I urge you to not become frustrated with the more complex examples. There is much to be learned from these examples, not only the analytical techniques, but also approaches to solving complex problems. These examples, as is always the case in real-world, messy problems, require making reasonable assumptions and some concession to simplification if a solution is to be obtained. My hope is that the approach will be as valuable to the reader as the analytical techniques. I have also taken great pains to provide an abundance of Excel screen shots that should give the reader a solid understanding of the chapter examples.

But, let me vigorously warn you of one thing—this is not an Excel how-to book. Excel how-to books concentrate on the Excel tools and not on analysis—it is assumed that you will fill in the analysis blanks. There are many excellent Excel how-to books on the market and a number of excellent websites (e.g. MrExcel.com) where you can find help with the details of specific Excel issues. I have attempted to write a book that is about analysis, analysis that can be easily and thoroughly handled with Excel. Keep this in mind as you proceed. So in summary, remember that the analysis is the primary focus and that Excel simply serves as an excellent vehicle by which to achieve the analysis.

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