Excel® 2007 Charts

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About the Author

John Walkenbach is a leading authority on spreadsheet software and principal of J-Walk and Associates Inc., a small Tucson-based consulting firm that specializes in spreadsheet application development. John is the author of about 50 spreadsheet books and has written more than 300 articles and reviews for a variety of publications, including *PC World, InfoWorld, PC Magazine, Windows,* and *PC/Computing.* He also maintains a popular Web site (The Spreadsheet Page, `www.j-walk.com/ss`) and is the developer of the Power Utility Pak, an award-winning add-in for Microsoft Excel. John graduated from the University of Missouri and earned a master's and Ph.D. degree from the University of Montana.

Acknowledgments

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Introduction

Welcome to *Excel 2007 Charts.* This book is intended for spreadsheet users who want to get the most out of Excel's charting and graphics features. I approached this project with one goal in mind: to write the ultimate Excel charting book that would appeal to users of all levels.

As you probably know, most bookstores offer dozens of Excel books. The vast majority of these books are general-purpose user guides that explain how to use the features available in Excel (often by simply rewording the text in the help files). Most of these books include a chapter or two that cover charts and graphics. None, however, provides the level of detail that you'll find in this book.

I've used Excel for almost 15 years, and I've been creating charts for more than 30 years. Back in the precomputer days, I often spent hours creating a publication-quality chart by hand, using rulers, graph paper, and rub-off lettering. Today, creating such a chart with Excel would require only a few minutes — and would probably look much better.

Many Excel users tend to overlook the powerful charting features available. For many, creating anything but the simplest chart often seems like a daunting task. This book starts with the basics and covers every aspect of charting, including macros. If I've done my job, working through this book will give you some new insights and perhaps a greater appreciation for Excel.

What You Should Know

This is *not* a book for beginning Excel users. If you have absolutely no experience with Excel, this may not be the best book for you. To get the most out of this book, you should have some background using Excel. Specifically, I assume that you know how to:

- Create workbooks, enter data, insert sheets, save files, and perform other basic tasks.
- Navigate through a workbook.
- Use the new Excel 2007 Ribbon interface.
- Work with dialog boxes.
- Create basic formulas.
- Use common Windows features, such as file-management and copy-and-paste techniques.

Later chapters cover VBA programming, and the main focus there is on creating and controlling charts using VBA. These chapters assume a basic knowledge of VBA, and those who have some experience with VBA will benefit most from these programming chapters. They'll be able to customize the examples and make them even more powerful. These chapters may inspire nonprogrammers to spend some time understanding VBA.

> **NOTE**
>
> Most of the material in this book is also relevant to those who need to create charts in Microsoft Word 2007 or Microsoft PowerPoint 2007. Choose Insert ⇨ Chart from the Ribbon, and you'll have yourself the beginnings of a chart. The chart uses dummy data in an Excel workbook that's opened for you automatically. Replace the dummy data with real data, and then format the chart to your liking. The Chart Tools context menu in Word and PowerPoint is identical to the one in Excel.

What You Should Have

To use this book, you need to have a copy of Microsoft Excel 2007 for Windows. No exceptions. Excel 2007 is so different from previous versions that this book doesn't even make an attempt at backward compatibility. If you use a previous version of Excel, locate a copy of the initial edition of this book (*Excel Charts,* published in 2003 by Wiley).

To use the examples on the companion CD-ROM, you'll need a CD-ROM drive. The examples on the CD-ROM are discussed further in Appendix A, "What's on the CD-ROM?"

Hardware requirements? The faster the better. And, of course, the more memory in your system, the happier you'll be. I strongly recommend using a high-resolution video mode: at least 1024 x 768 and preferably higher. When working with charts, it's very convenient to be able to see lots of information without scrolling. My normal setup is a dual-monitor system, with two 1600 x 1200 displays.

Conventions Used in This Book

Take a minute to skim the following sections and discover some of the typographic conventions used throughout this book.

Ribbon Commands

Excel 2007 features a brand new "menuless" user interface. In place of a menu system, Excel uses a context-sensitive Ribbon system. The words along the top (such as Home, Insert, Page Layout, and so on) are known as *tabs.* Click a tab, and the Ribbon displays the commands for the selected tab. Each command has a name that is (usually) displayed next to or below the icon. The commands are arranged in groups, and the group name appears at the bottom of the Ribbon.

The convention I use is to indicate the tab name, followed by the group name, followed by the command name. So, the command used to toggle word wrap within a cell is indicated as follows:

```
Home➪Alignment➪Wrap Text
```

When a chart is selected, Excel displays additional "contextual" tabs. So, for example, to add a title to the selected chart, I indicate the command as follows:

```
Chart Tools➪Layout➪Labels➪Chart Title➪Above Chart
```

Formula Listings

Formulas usually appear on a separate line in `monospace font`. For example, I may list the following formula:

```
=VLOOKUP(StockNumber,PriceList,2,False)
```

VBA Code Listings

This book also contains examples of VBA code. Each listing appears in a `monospace font`; each line of code occupies a separate line. To make the code easier to read, I typically use one or more spaces to create indentations. Indentation is optional, but it does help to delineate statements that go together.

If a line of code doesn't fit on a single line in this book, I use the standard VBA line continuation sequence: a space followed by an underscore character. This indicates that the line of code extends to the next line. For example, the following two lines comprise a single VBA statement:

```
If ActiveChart Is Nothing Then _
    MsgBox "Please select a chart or activate a chart sheet."
```

You can enter this code either exactly as shown on two lines, or on a single line without the trailing underscore character.

Key Names

Names of keys on the keyboard appear in normal type — for example, Alt, Home, PgDn, and Ctrl. When you should press two keys simultaneously, the keys are connected by a plus sign: "Press Ctrl+G to display the Go To dialog box."

Functions, Procedures, and Named Ranges

Excel's worksheet functions appear in all uppercase characters, like so: "Use the SUM function to add the values in column A."

Unless you're dealing with text inside quotation marks, Excel is not sensitive to case. In other words, both of the following formulas produce the same result:

```
=SUM(A1:A50)
=sum(a1:a50)
```

Excel, however, will convert the characters in the second formula to uppercase.

In Part III, the VBA chapters, terms such as names of objects, properties, and methods that appear in code listings show up in `monospace` type in regular paragraphs as well: "In this case, `Application.ActiveChart` is an object, and `HasTitle` is a property of the object." Macro and procedure names appear in normal type: "Execute the UpdateChart procedure." I often use mixed uppercase and lowercase letters to make these names easier to read. Named ranges appear in italic: "Select the *WeeklySales* range."

Mouse Conventions

The mouse terminology in this book is all standard fare: pointing, clicking, right-clicking, dragging, and so on. You know the drill.

What the Icons Mean

Throughout the book, icons appear next to some text to call your attention to points that are particularly important.

NOTE
I use Note icons to tell you that something is important — perhaps a concept that may help you master the task at hand or something fundamental for understanding subsequent material.

TIP
Tip icons indicate a more efficient way of doing something, or a technique that may not be obvious. These will often impress your officemates.

ON THE CD-ROM

These icons indicate that an example file is on the companion CD-ROM. (See Appendix A for more details about the CD-ROM.)

CROSS-REFERENCE

I use the Cross-Reference icon to refer you to other chapters that have more to say on a particular topic.

WARNING

I use Warning icons when the operation that I'm describing can cause problems if you're not careful.

How This Book Is Organized

I had many ways to organize this material, but I settled on a scheme that divides the book into three main parts.

Part I: Chart Basics

This part is introductory in nature and consists of Chapters 1 through 6. Chapter 1 presents an overview of Excel's charting features. Chapter 2 presents some terminology and introduces the types of charts Excel supports. In Chapter 3, I discuss various ways to work with chart data series. Chart formatting and customizations are covered in Chapter 4. Chapter 5 discusses chart analytical features, such as trendlines and error bars. The part concludes with Chapter 6, a discussion of other types of graphics supported by Excel.

Part II: Mastering Charts

Part II consists of seven chapters that cover intermediate to advanced material. Chapter 7 covers interactive charts — charts that can be modified easily by an end user. Chapter 8 contains a wide variety of common and not-so-common charts, including ways to generate quite a few "nonstandard" charts. Chapter 9 discusses several ways to display data directly in cells, including small "sparkline" charts. Chapter 10 covers mathematical and statistical charting techniques. In Chapter 11, I cover pivot charts (charts generated from a pivot table). Chapter 12 offers suggestions to help you avoid common mistakes and make your charts more visually appealing. The final chapter in this part is Chapter 13, which is devoted to nonserious charting applications, yet contains lots of useful information.

Part III: Using VBA with Charts

The three chapters in Part III deal with VBA. Chapter 14 presents an overview of VBA as well as some basic VBA charting examples, and Chapter 15 shows more advanced examples. Chapter 16 discusses Excel's color system for VBA programmers.

Appendixes

This book includes two appendixes. Appendix A describes all the files on the companion CD-ROM. Appendix B lists additional charting-related resources on the Internet.

How to Use This Book

You can use this book any way you please. If you choose to read it from cover to cover while lounging on a sunny beach in Kauai, that's fine with me. More likely, you'll want to keep it within arm's reach while you toil away in your dimly lit cubicle.

Owing to the nature of the subject matter, the chapter order is often immaterial. Most readers will probably skip around, picking up useful tidbits here and there. If you're faced with a challenging task, you may want to check the index first to see whether the book specifically addresses your problem.

About the Power Utility Pak Offer

At the back of the book, you'll find a coupon that you can redeem for a discounted copy of my award-winning Power Utility Pak — a collection of useful Excel utilities plus many new worksheet functions. I developed this package using VBA exclusively.

You can also use this coupon to purchase the complete VBA source code for a nominal fee. Studying the code is an excellent way to pick up some useful programming techniques.

You can take the product for a test drive by installing the trial version from the companion CD-ROM.

Reach Out

I'm always interested in getting feedback on my books. The best way to provide this feedback is via e-mail. Send your comments and suggestions to:

```
john@j-walk.com
```

Unfortunately, I'm not able to reply to specific questions. Posting your question to one of the Excel newsgroups is, by far, the best way to get such assistance. For more information about newsgroups, see Appendix B, "Other Charting Resources."

Also, when you're out surfing the Web, don't overlook my Web site ("The Spreadsheet Page"):

```
http://www.j-walk.com/ss/
```

Now, without further ado, it's time to turn the page and expand your charting horizons.

Part I

Chart Basics

Chapter 1

Introducing Excel Charts

In This Chapter

◆ What is a chart?

◆ How Excel handles charts

◆ Embedded charts versus chart sheets

◆ The parts of a chart

◆ The basic steps for creating a chart

◆ Working with charts

When most people think of a spreadsheet product such as Excel, they think of crunching rows and columns of numbers. But, as you probably know already, Excel is no slouch when it comes to presenting data visually, in the form of a chart. This chapter presents an introductory overview of Excel's charting ability, and contains enough information for a typical user to start creating and customizing charts.

What Is a Chart?

I'll start with the basics. A *chart* is a visual representation of numeric values. Charts (also known as graphs) have been an integral part of spreadsheets since the early days of Lotus 1-2-3. Charts generated by early spreadsheet products were extremely crude by today's standards. But, over the years, quality and flexibility have improved significantly. You'll find that Excel provides you with the tools to create a wide variety of highly customizable charts.

NOTE

In the first edition of this book, I offered an apology for the relatively poor visual quality of Excel charts. I'm pleased to be able to retract that apology for the Excel 2007 edition. The charting feature in Excel 2007 has come a long way, and Excel is now capable of producing charts with much better visual appeal.

Displaying data in a well-conceived chart can make your numbers more understandable. Because a chart presents a picture, charts are particularly useful for summarizing a series of numbers and their interrelationships. Making a chart can often help you spot trends and patterns that might otherwise go unnoticed.

Figure 1-1 shows a worksheet that contains a simple column chart that depicts a company's sales volume by month. Viewing the chart makes it very apparent that sales were off in the summer months (June through August), but they increased steadily during the final four months of the year. You could, of course, arrive at this same conclusion simply by studying the numbers. But viewing the chart makes the point much more quickly.
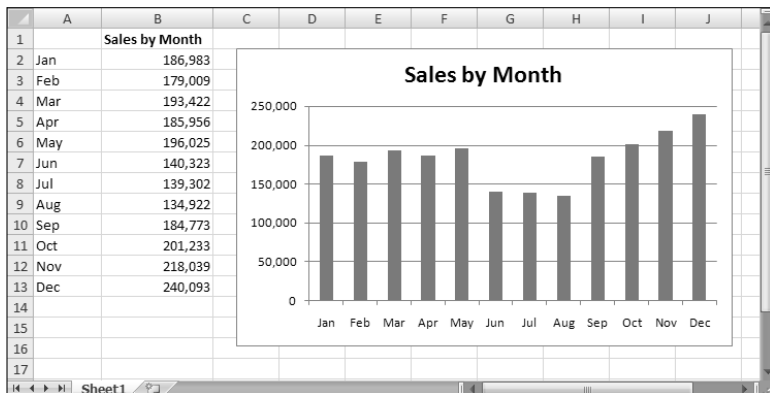

Figure 1-1: A simple column chart depicts the sales volume for each month.

A column chart is just one of many different types of charts that you can create with Excel. By the way, creating this chart was simple: I selected the data in A1:B13, and then I pressed Alt+F1.

ON THE CD

All the charts pictured in this chapter are available in a workbook on the companion CD-ROM. The file is named `introductory examples.xlsx`.

How Excel Handles Charts

Before you can create a chart, you must have some numbers — sometimes known as data. The data, of course, is stored in the cells in a worksheet. Normally, the data that is used by