Objectives

- Choose a chart type
- Create a chart
- Modify a chart
- Enhance charts with graphic shapes
- Embed charts
- Print charts

Chapter 3:
Charts: Delivering a Message
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Charts

- A chart is a graphic or visual representation of data
- Multiple chart types can enhance information, adding visual appeal and making it easy to analyze data

Choosing a Chart Type

- Graphic representation of data
- Attractive, clear way to convey information
- Select the type of chart that best presents your message
- Add enhancements to better communicate your information

Choosing a Chart Type (continued)

- Data point - numeric value that describes a single item on a chart
- Data series - group of related data points
- Category label - describes a group of data points in a chart

Which chart would best suit the data shown in the worksheet below?
Questions to Ask

- Percentage of the total revenue by city?
- Percentage of total revenue by product?
- Percentage of total revenue each product produces in each city?
- Percentage of total revenue each city produces in each product?

Column Charts

- Used to show actual numbers rather than percentages
- Displays data comparisons vertically in columns
- The X or horizontal axis depicts categorical labels
- The Y or vertical axis depicts numerical values
- The plot area contains graphical representation of values in data series
- The chart area contains entire chart and all of its elements

Column Charts

- Column chart displays the revenue of software sales by city
  - The height of the column reflects revenue of each city
  - Pittsburgh has the highest revenue and Buffalo has the lowest revenue

Add a 3-D Effect

- 3-D can enhance the display of one set of data

Clustered vs. Stacked

- A multiple data series chart compares two or more sets of data
  - Clustered column chart
    - Groups similar data in columns
    - Makes visual comparison easier
  - Stacked column chart
    - Places (stacks) data in one column with each data series in a different color for each category

Clustered Column Chart

- Shows totals for each software category in a uniquely colored column
Stacked Column Chart

- Total sales in the Y-axis would go up as the total sales go up

Bar Charts

- Column charts with a horizontal orientation
- Emphasizes the difference between items

Bar Chart

- Clustered bar chart shows totals for each software category in a uniquely colored bar

Pie Charts

- Effective way to display proportional relationships
- The pie denotes the total amount
- Each slice corresponds to its respective percentage of the total

Exploded Pie Charts

- Exploded pie charts can be used to emphasize one or more slices of the pie
3-D Pie Chart

- A 3-D pie chart may be misleading.
- One section may "appear" larger than the others, but may not really be larger.

Line Chart

- Shows trends over a long period of time.
- A line is used to connect data points.

Line Charts

Other Chart Types

- A doughnut chart
- A scatter (xy) chart
- A stock chart

Doughnut Chart

- Displays values as percentages of the whole.
- Shows values for each category in each market area.
- Unlike pie chart, displays multiple sets of data.

Scatter Chart

- Shows a relationship between two variables.
- Often used in statistical analysis and scientific studies.
Stock Chart

- Shows the high, low, and close prices for individual stocks over a period of time

Creating a Chart

- Six main steps to create a chart
  - Specify the data series
  - Select the range of cells to chart
  - Select the chart type
  - Insert the chart and designate the chart location
  - Choose chart options/add graphics in charts
  - Change the chart location and size

Six Steps

- Specify the data series
  - The rows and/or columns that contain the data you want to chart
- Select the range to chart
  - Can be a single cell, but most often is multiple cells
  - Cells may be adjacent or non-adjacent
  - Use Shift key to select adjacent cells; use Ctrl key to select non-adjacent cells

Select a Chart Type

<table>
<thead>
<tr>
<th>Chart Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column</td>
<td>Compares categories, shows changes over time</td>
</tr>
<tr>
<td>Bar</td>
<td>Shows comparison between independent variables. Not used for time or dates</td>
</tr>
<tr>
<td>Pie</td>
<td>Shows percentages of a whole. Exploded pie emphasizes a popular category</td>
</tr>
<tr>
<td>Line</td>
<td>Shows change in a series over categories or time</td>
</tr>
<tr>
<td>Doughnut</td>
<td>Compares how two or more series contribute to the whole</td>
</tr>
<tr>
<td>Scatter</td>
<td>Shows correlation between two sets of values</td>
</tr>
<tr>
<td>Stock</td>
<td>Shows high low stock prices</td>
</tr>
</tbody>
</table>

Six Steps (continued)

- Select the chart type
  - Each type presents data in a different way
  - Pick the type that will best visually illustrate the information you want to convey

Six Steps (continued)

- Insert chart and designate location
  - Insert as an embedded object in the worksheet
  - Can print worksheet and chart on one page
  - Insert the chart as a New Sheet
  - Will require you to print the worksheet and chart on separate pages
  - You can choose the location to display the chart
Six Steps (continued)

- Choose chart options using the Design, Layout and Format tabs
  - The Design tab can be used to display data in rows or columns
  - The Layout tab can be used to change the display of chart elements
  - The Format tab can be used to apply special effects

Add a Graphic

- To add a graphic to a chart:
  - In the Illustrations section on the Insert tab, select the medium where the graphic will come from (Picture, Clip Art, Shapes, or SmartArt)
  - Search for and insert the graphic
  - Size and move the graphic on the chart as desired

Chart Enhancements

- Modify charts to enhance and approve look
- Modifications include: color, font, format, scale, or style
- Can change and edit chart elements
- Add data labels
- Enhance with graphics

Six Steps (continued)

- Add graphics to chart
  - May add company logos or representative clip art to personalize charts
  - Remember, less is sometimes more, so be sparing in use of graphics

Change, Edit, and Format Chart Elements

- Change elements such as title and axes
- Edit the contents of a data label
- Approach formatting in two ways:
  - Use tabs
    - Insert, Design, Layout, Format
  - Select chart and use shortcut menu
Add Data Labels and Change Fill Color

- Data labels are values or names of data points
- Labels assist in reading charts
- To accentuate data in chart form, you can change the color or fill pattern or use an image

Enhance Charts with Graphic Shapes

- Add pre-made graphics to chart to emphasize content of a chart
- Shapes are rectangles, circles, arrows, lines, flowchart symbols, and callouts
- Insert shapes using Insert tab or Layout tab

Chart Distribution

- Your visual masterpiece can be shared
- Use charts as documentation in Web pages, memos, reports, research papers, books, and other types of documents
- MS Office 2007 suite applications are integrated and enable data sharing
- Charts can be exported to other applications

Print Charts

- You can print a chart:
  - Including the worksheet in which it is embedded
  - That is embedded, without printing the worksheet
  - That was placed on a separate worksheet
- Always Print Preview to ensure you are printing what you intended
- Select Print from the File menu or click the Print button on the Standard Toolbar

Questions?