Integrating Excel with Word and PowerPoint

Excel is the accountants' tool of choice for analyzing data, but their analyses often find their way into formal reports and presentations. Most accountants and business professionals use simple cut-and-paste processes or rekey their analyses to integrate them into Word and PowerPoint; however, these Microsoft Office products offer a full range of options for integrating data among and between them. This session contains all of the tips, tricks, and techniques necessary to ease the process of integrating Excel with Word and PowerPoint.

Introduction

Excel is the accountants' tool of choice for analyzing data, but their analyses often find their way into formal reports and presentations. Most accountants and business professionals use simple cut-and-paste processes or rekey their analyses to integrate them into Word and PowerPoint; however, these Microsoft Office products offer a full range of options for integrating data among and between them. Tables and text in Word documents and PowerPoint presentations can be linked and updated as analyses in Excel is updated or changed. Alternatively, existing or new Excel analyses can be embedded in Word or PowerPoint so that users do not have to manage linked documents. Linking summary data in reports and presentations to the underlying detail in the source documents is easily accomplished with hyperlinks. This session contains all of the tips, tricks, and techniques necessary to ease the process of integrating Excel with Word and PowerPoint.

Learning Objectives

Upon completing this session, participants should be able to:

- Use linked or embedded Excel analysis to automate the process of updating reports or presentations;
- List the eight ways in which Excel data can be pasted into Word;
- Describe the process of linking or embedding multi-page Excel objects into Word;
- Explain how to modify the Quick Access Toolbar to facilitate working with hyperlinked documents; and
- Describe how to link data cells from Excel into Word text, such as in notes to financial statements.

Embedding Objects in Office Applications

In assembling reports for printing, users often cut and paste financial data from Excel into Word and, to a lesser degree, text from Word documents into Excel. Other users link or embed Excel objects in Word or embed Word objects in Excel using the Object Linking and Embedding (OLE) capabilities of Windows and Office. Pasting linked or embedded objects differs from pasting static text or financial data. With a linked or embedded object, it is possible to open and edit the object *in place*. In other words, a user can edit a linked or embedded Excel worksheet from within Word, or edit a linked or embedded Word document from within Excel. This saves time and improves productivity. Whenever a user opens a document that includes a linked object, the user is prompted to refresh the link.

Pasting Excel into Word

The most common practice among accounting practitioners is to paste financial data from Excel into Word. Word provides better control of headers, footers, and pagination, and generally provides for higher quality document printing, which is the *raison d'être* for using Word. When pasting Excel into Word, a user can choose from several different paste commands in the **Clipboard** group on the **Home** tab.

1. **Paste** – Excel data is entered into a Word table with the source formatting intact. This result is equivalent to Paste Special, Formatted Text (RTF) or Paste Special, HTML.

2. **Paste Special, Formatted Text (RTF)** – Excel data is entered into a Word table with the source formatting intact. This result is equivalent to Paste.

3. **Paste Special, HTML** – Excel data is entered into a Word table with the source formatting intact. This result is equivalent to Paste.

4. **Paste Special, Unformatted Text** – Excel data is entered as text in a Word document with each row on a different line in Word. Data from cells in adjacent columns are tabbed or spaced across the page. If a single cell or single column of cells containing text is pasted, each cell will be entered as a separate paragraph. The format of the data will take the characteristics of the Normal style in Word.

5. **Paste Special, Picture (Windows Metafile or Enhanced Metafile)** – This is the equivalent in Word of pasting a Camera object in Excel. The source layout and formatting remain intact. Word will attempt to scale the picture to fit within the margins. Large pictures may be truncated. Windows Metafile pictures are 16-bit graphics while Enhanced Metafile pictures are 32-bit graphics.

6. **Paste Special, Bitmap** – This is similar to Paste Special, Picture. The source layout and formatting remain intact and will yield better results when Paste Special, Picture auto-scaling distorts the image in some way. Bitmaps cannot be scaled and result in larger file sizes.

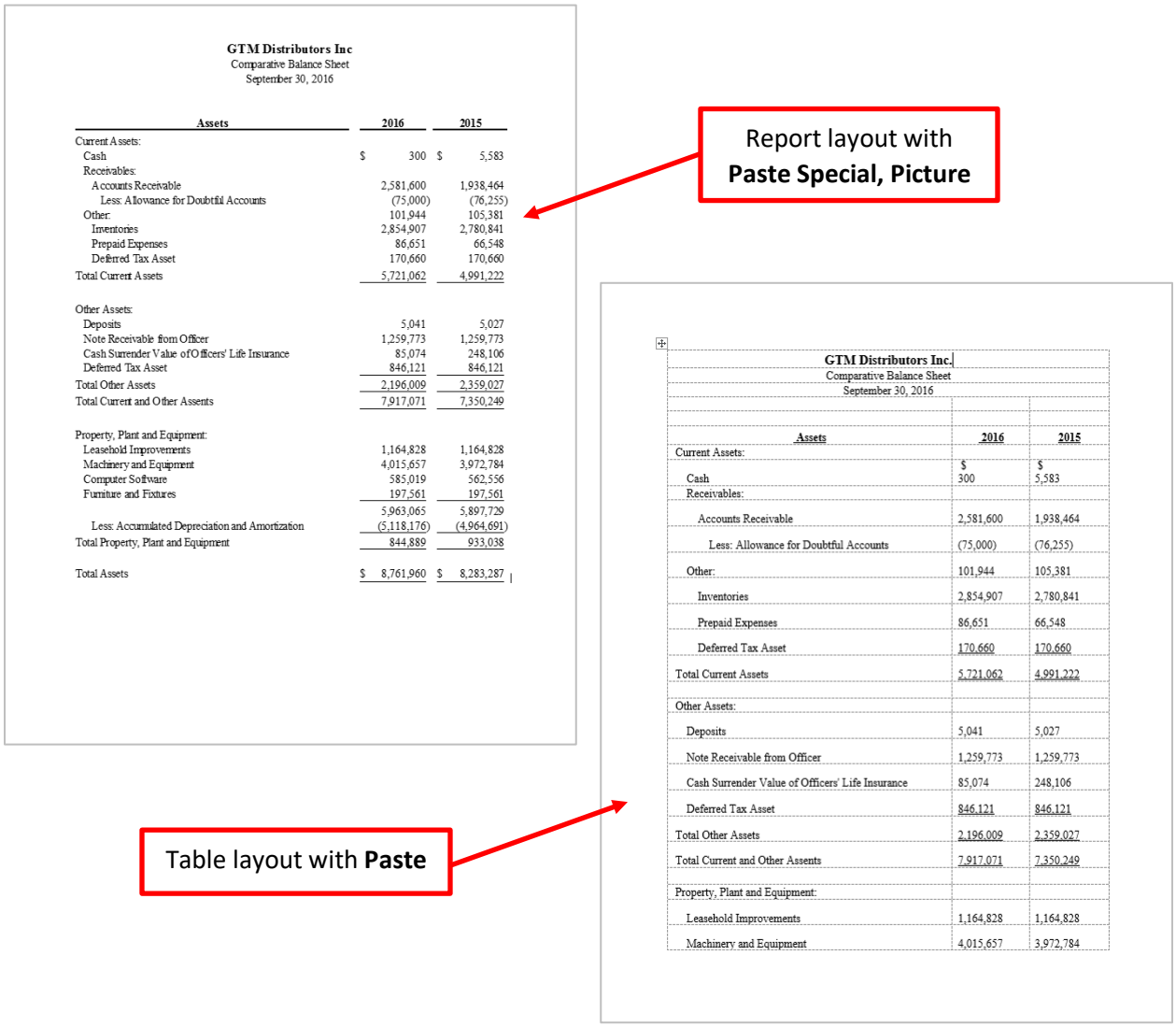
7. **Paste Special, Word Hyperlink** – This creates a hyperlink to the data source. CTRL + Click the link to jump to the source file. The Excel data is entered into a Word table with the source formatting intact. This command is only available when pasting a link.

8. **Paste Special, Microsoft Excel Worksheet Object** – This creates an embedded Excel object in a Word document that can be edited in place within Word. The source layout and formatting remain intact.

Each of the **Paste Special** commands can be pasted *with or without a link* to the original Excel worksheet. Links allow updates made to the source worksheet to flow through to the target document whenever the link is refreshed. Note that the ability to paste links is *not* available when using the Paste buttons in Word.

Under most circumstances, users will get better results by pasting a picture of an Excel range, such as a balance sheet, income statement, or cash flow statement, into Word rather than pasting the range as formatted text (the default). If your report will not fit on a single page in Word, paste multiple page-sized pictures instead because Word will only print the first page of multi-page linked or embedded Excel objects. This is an inherent limitation of all linked or embedded objects in Microsoft Office.

Figure 1 shows the difference in results between **Paste** and **Paste Special, Picture (Windows Metafile)**. Given the inherent problems of working with Word tables, pasting Excel data as a picture will give most users better results.



Assets	2016	2015
Current Assets:		
Cash	$ 300	$ 5,583
Receivables:		
Accounts Receivable	2,581,600	1,938,464
Less: Allowance for Doubtful Accounts	(75,000)	(76,255)
Other:	101,944	105,381
Inventories	2,854,907	2,780,841
Prepaid Expenses	86,651	66,548
Deferred Tax Asset	170,660	170,660
Total Current Assets	5,721,062	4,991,222
Other Assets:		
Deposits	5,041	5,027
Note Receivable from Officer	1,259,773	1,259,773
Cash Surrender Value of Officers' Life Insurance	85,074	248,106
Deferred Tax Asset	846,121	846,121
Total Other Assets	2,196,009	2,359,027
Total Current and Other Assents	7,917,071	7,350,249
Property, Plant and Equipment:		
Leasehold Improvements	1,164,828	1,164,828
Machinery and Equipment	4,015,657	3,972,784
Computer Software	585,019	562,556
Furniture and Fixtures	197,561	197,561
	5,963,065	5,897,729
Less: Accumulated Depreciation and Amortization	(5,118,176)	(4,964,691)
Total Property, Plant and Equipment	844,889	933,038
Total Assets	$ 8,761,960	$ 8,283,287

Figure 1 - Pasting a Picture vs. Pasting Formatted Text from Excel into Word

Pasting Static Pictures

Pasting an Excel report or analysis as a picture into Word usually yields the best results. Simply highlight and copy the appropriate range (making sure not to exceed an area that will fit on one page) in Excel. Then, in Word, click **Paste, Paste Special** on the **Home** tab. Select **Picture (Enhanced Metafile)** and click **OK**. To remove the gridlines in the pasted picture, perform the following steps.

1. Right-click on the picture and choose **Properties** to open the **Format Picture** pane.
2. In the **Format Picture** pane, click the **Picture** icon at the top.
3. Expand the **Picture Corrections** section.
4. In the **Presets** drop-down gallery, select **Brightness: 0% (Normal) Contrast: +40%** to remove the gridlines as shown in **Figure 2**.

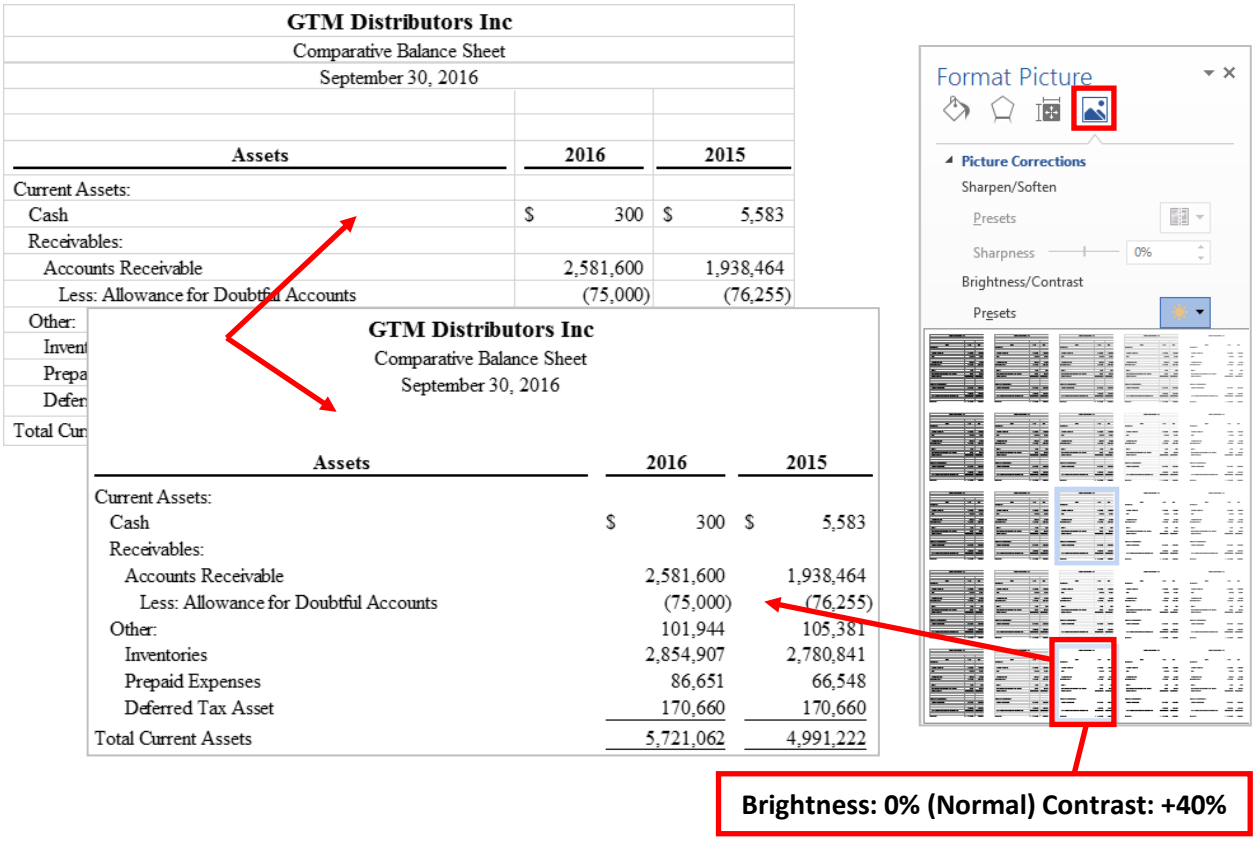


Figure 2 – Removing Gridlines from a Static Picture

Pasting Linked Pictures

Paste links whenever flow-through reporting is desired. That way, as the data in the linked Excel worksheet is modified, the updated data will flow through to the Word document. However, when pasting linked pictures into Word from Excel, the pasted pictures do not have the picture correction options available with static pictures. That's because the entirety of the picture (layout, formatting, gridlines, etc.) flows through from the linked source worksheet. To remove the gridlines in Word, users must turn off the gridlines in the linked worksheet in Excel. Note that enabling the gridlines at a later time in Excel will again display them in the linked picture in Word. This behavior presents a problem for most users because they

depend on the gridline structure for formula building and navigation. To remedy this situation requires a rethinking of the report creation and presentation process.

Most accountants build their analyses and reports for presentation or publication. Their work product *is* their presentation product. In a more sophisticated "flow-through" reporting environment, the work product and presentation product must be separated. In this case, we want the gridlines enabled for work but disabled for presentation. This can be accomplished easily by creating a presentation worksheet linked by formulas to the working worksheet within the same workbook. The gridlines are then disabled on the presentation worksheet, which serves as the source of the picture for linking into Word. Perform the following steps to create a presentation worksheet as shown in **Figure 3**.

1. Insert a new worksheet and name it **Balance Sheet Presentation**.
2. Highlight and copy the report of interest. In this example, highlight and copy the entire **Balance Sheet** consisting of the range **A1:C65**.
3. Positon the cursor in cell **A1** on the new presentation worksheet and click **Paste, Paste Special** to open the **Paste Special** dialog box. Click **Paste Link** to build formulas in the new worksheet linked to the original data.
4. Without breaking the highlighted range, click **Paste, Paste Special** to open the **Paste Special** dialog box a second time. Select the **Format** radio button and click **OK** to paste the formats to the new worksheet.
5. Again, without breaking the highlighted range, click **Paste, Paste Special** to open the **Paste Special** dialog box a third time. Select the **Column widths** radio button and click **OK** to adjust the column widths in the new worksheet.

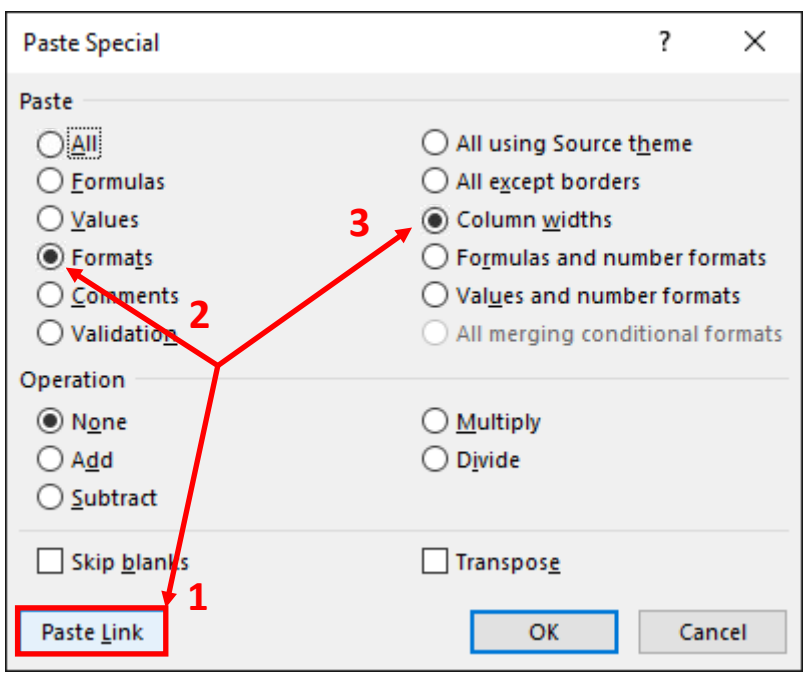


Figure 3 – Using a Triple-Paste Technique to Create a Presentation Worksheet

6. Note that blank cells in the original worksheet show up as zero in the presentation report. To eliminate the zeros, we need to modify the formula that was created by the process. Position your cursor in cell **A4**. Modify the formula so that it reads as follows.

=IF('Balance Sheet'!A4="","','Balance Sheet'!A4)

7. Copy the formula down through cell **A65** using the **Auto Fill** handle, making sure to select **Fill Without Formatting** in the **Auto Fill Options** box. Without breaking the highlighted range, copy the formulas across to column **C**, again making sure to select **Fill Without Formatting** in the **Auto Fill Options** box. Turn off the gridlines to complete the task.

This simple process produces a worksheet that is identical to the original, except that it is built on formulas so that as the working sheet is updated, the changes flow through to the presentation sheet. It is this sheet that will serve as the source for linking pictures into Word. When using linked pictures, Paste Special, Paste link: Bitmap will usually yield the best results.

Pasting Multi-Page Reports

Word will only print the first page of multi-page static, linked, or embedded Excel objects. If your report will not fit on a single page in Word, paste multiple page-sized pictures instead. In order to get the three- or four-line report headings to repeat and print on the second and succeeding pages, use *page headers* in Word. The header in Word can be typed in or copied from the Excel report presentation sheet. If the header is *linked* to Excel, the report header in Word will be updated whenever the Excel report is changed. For example, in linking a two-page Balance Sheet into Word, apply headers containing the statement headings to the Word document. First, paste the Asset section into the report body on the first page, insert a page break, and then paste the Liabilities and Equity section into the report body on the second page. To produce a linked multi-page Balance Sheet with linked headers in Word, do the following.

1. First, highlight and copy the **Balance Sheet** headings (cells **A1:A3**) from the **Balance Sheet Presentation** worksheet (without gridlines). Open Word to a blank document. Double-click in the header margin to open the **Header** section. Click inside the **Header** section and select **Paste, Paste Special, Paste link: HTML Format**. This will insert a linked Word table as the document header. Press **Return** so that there are two blank rows following the linked table to provide head space for the report. Click in the **Document** section to close the Header.

2. Highlight and copy the **Asset** section of the **Balance Sheet** (cells **A6:C35**) from the **Balance Sheet Presentation** worksheet and paste it into Word using **Paste, Paste Special, Paste link: Bitmap**.

3. Press **CTRL + Enter** to enter a page break in the Word document.

4. Next, highlight and copy the **Liabilities and Stockholders' Equity** section of the **Balance Sheet** (cells **A38:C65**) from the **Balance Sheet Presentation** worksheet and paste it into Word using **Paste, Paste Special, Paste link: Bitmap**.

The process to produce this linked multi-page report in Word is displayed in **Figure 4**. Using this design strategy, accountants and business professionals can easily create reports in Word that are linked to the underlying data in Excel. As the Excel report is modified, the changes will flow through to the Word report, improving productivity while reducing errors. Users will be prompted to update the report each time the Word document is opened. Moreover, the pictures serve as hyperlinks to the source Excel workbook. Double-clicking on a linked picture will open Excel and the workbook to which the picture is linked. To prevent broken links, make sure the files are in the same folder when the links are created and store or move them together in a single folder.

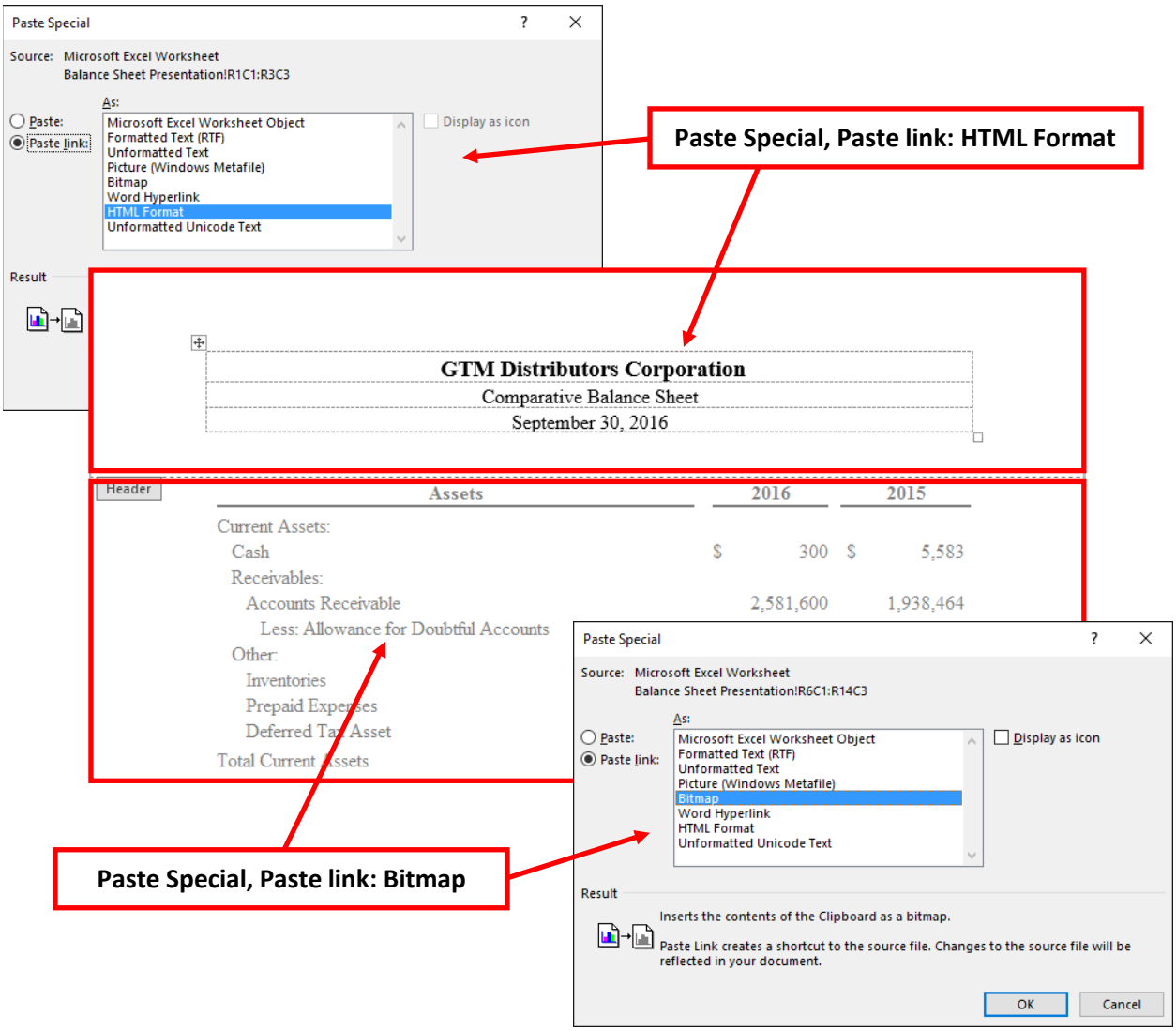


Figure 4 – Creating a Multi-Page Linked Report in Word

Pasting Camera Objects

The **Camera** in Excel, which will be covered comprehensively in *Excel's Top 15 All Time Hints and Tips*, allows users to cut and paste *dynamic pictures* of data ranges, which can then be arranged in any layout for display or printing. To use the **Camera**, first add the tool to the Quick Access Toolbar (QAT) in Excel. Just click on the drop-down arrow at the far right end of the QAT and select **More Commands**. In the **Excel Options** dialog box, select **Commands Not in the Ribbon**. Scroll down the list of commands and select the **Camera** tool. Click **Add** and then **OK** to close the dialog box as shown in **Figure 5**.

The use of the **Camera** is very similar in operation to cut and paste. Highlight the range to be copied and then click the **Camera** toolbar button. Navigate to the worksheet that will serve as the composite report and click with your mouse on the sheet to paste a *picture* of the data snippet. Similarly, Camera objects can be pasted into Word documents. To paste a *static* Camera object into Word, select **Paste, Paste Special, Picture (Enhanced Metafile)** and click **OK**. A **Picture Correction** must be applied to eliminate any visible gridlines.

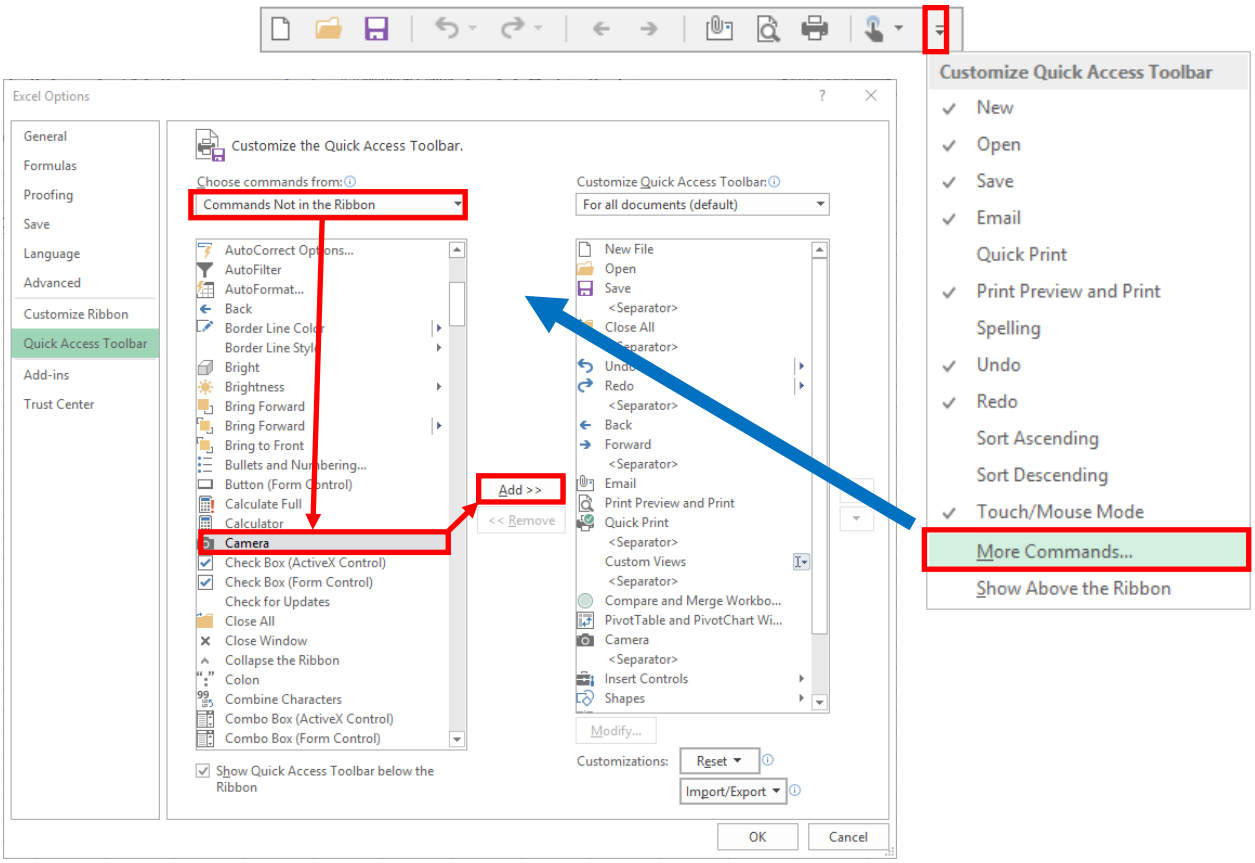


Figure 5 - Adding the Camera to the QAT

To paste a *linked* Camera object into Word, select **Paste, Paste Special, Paste link: Bitmap** and click **OK**. A **Picture Correction** will *not* eliminate any visible gridlines. The gridlines must be disabled in the source Excel worksheet as covered previously.

Embedding Excel in Word

Creating or pasting an Excel worksheet object in Word provides users with the ability to format the embedded or linked object *in place*. In other words, there is no need to open Excel to modify the object. Just double-click on an Excel object, and Word will transform itself into Excel and allow full editing and control of the worksheet. When editing is complete, just click in the Word document outside of the Excel object, and the application will transform itself back into Word. This is very useful for small tables or analyses that accompany a report**.** Since the data is embedded in the report and not in a separate Excel workbook, users can easily update the data when necessary. Note that if you link or embed a *multi-page* Excel object in Word, only the first page of the object will print in Word.

Embedding a New Workbook

There are several ways to embed Excel objects in Word. To insert a new Excel workbook, click **Insert, Table, Excel Spreadsheet**. Alternatively, click **Insert, Object, Microsoft Excel Worksheet** to insert a new workbook. Note the wide variety of objects that can be embedded. In both instances, a blank workbook displaying seven columns by ten rows will be added to the document. The workbook object can be resized by dragging the borders. The ribbon will reflect the tabs and commands found in Excel, and users will have

full Excel functionality while the object is open. In effect, Word has transformed itself into Excel. Note that a single worksheet tab is displayed in default, but users may add additional worksheets and build very sophisticated models within the object. When a user completes the object editing process and clicks back into Word, the object will reflect whatever is visible when the editing process is ended. In other words, the space within the object borders represent a window to the underlying workbook object. To adjust what is seen in Word, activate the Excel object and then select and scroll the desired worksheet to change what is displayed. Make sure to turn off the gridlines before you end the editing process! **Figure 6** shows an Excel object being edited inside a Word document.

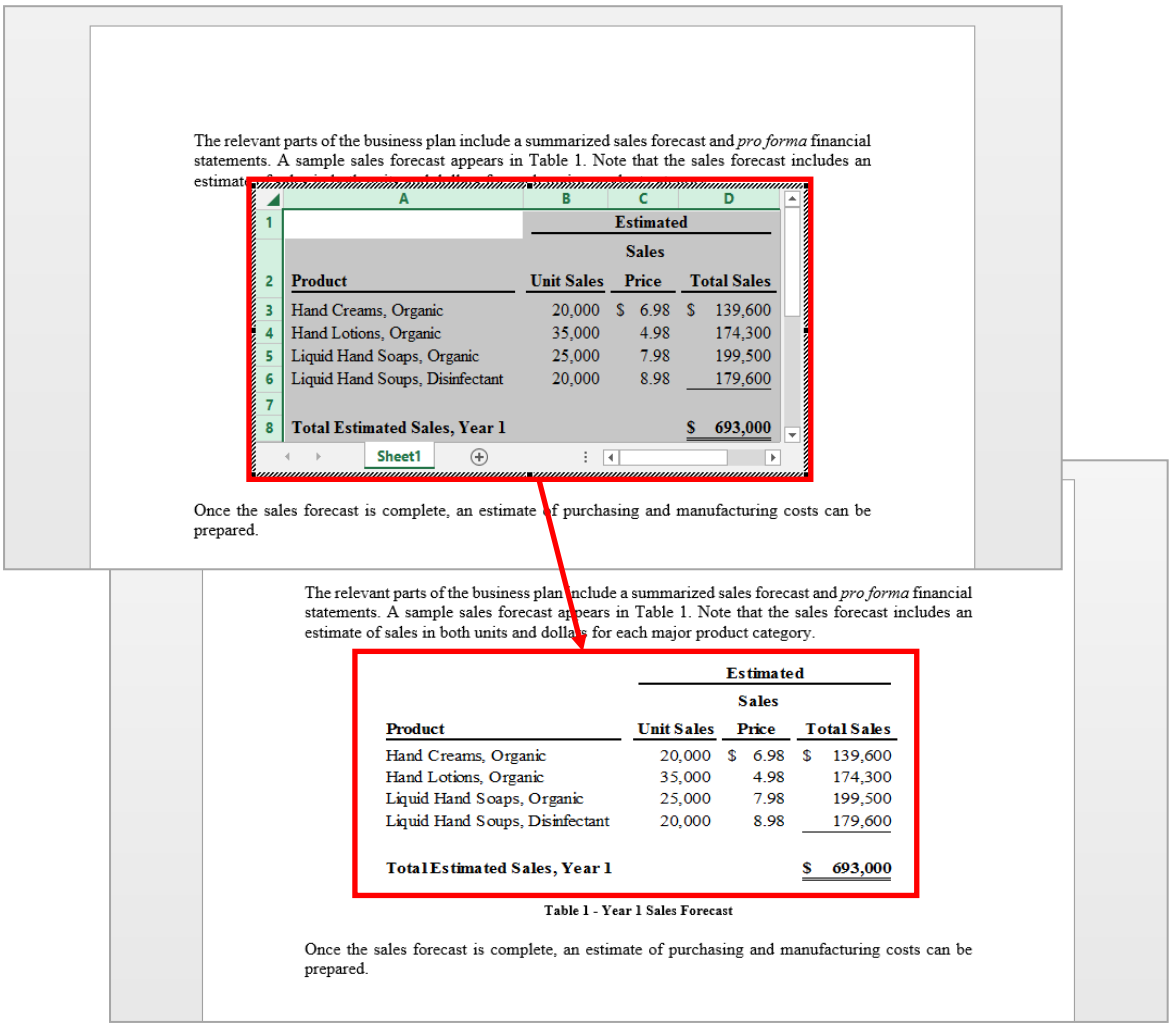


Figure 6 - Editing an Embedded Excel Worksheet Object in Word

Embedding an Existing Workbook

There are several ways to embed existing Excel objects in Word. The simplest way is to copy a range in an existing worksheet and then paste it into Word using **Paste, Paste Special, Microsoft Excel Worksheet Object**. Alternatively, click **Insert, Object**. On the **Create from File** tab, click **Browse**, select the desired workbook in the file system, and click **Insert**. Click **OK** to complete the process and embed the Excel workbook in Word. Both methods embed a copy of an existing Excel workbook into Word that is

disconnected from the original workbook. To edit an embedded object, double-click on the object. Note that users may choose to paste a *linked* Excel worksheet object. Linked worksheet objects display the same characteristics and functionality as linked pictures covered previously.

Review of Linked and Embedded Objects

The main differences between linked objects and embedded objects are where the data is stored and how the data is updated after you place it in a Word document. When an Excel object is linked, information can be updated if the source file is modified. Linked data is stored in the source file. The Word document, or destination file, stores only the location of the source file and displays a representation of the linked data. Linking is useful when you want to include information in a document that is maintained independently, such as data collected by a different department or staff member, and when you need to keep that information up-to-date in a Word document.

When an Excel object is embedded in a Word document, information in the Word document doesn't reflect changes in the source Excel file because the document and the source workbook are disconnected. Embedded objects become part of the Word file. After they are inserted in Word, their data is accessible and modifiable only within the document in which they are embedded. Because all of the data is contained in a single Word document, embedding is useful when you don't want the information to reflect changes in the source file, or when you want document recipients to be able to update the data easily from within Word.

Updating Linked Objects

In default, linked objects are updated automatically. This means that Word updates the linked information every time a user opens the Word document or any time the source Excel file changes while the Word document is open. However, users can change the settings for individual linked objects so that a linked object is not updated or so that it is updated only when a reader chooses to update it manually.

Users can also permanently break the connection between a linked object and its source Excel workbook. When the connection is broken, the object becomes a *static* picture of the Excel content and users can no longer edit the object in the Word document.

To modify the way links are updated, click **File, Info** and then click **Edit Links to Files**. In the **Links** dialog box, highlight the link to be updated or configured.

1. To update the link, click **Update Now**.
2. To configure the link for manual updating, select **Manual update** in the **Update method for selected link** section.
3. To prevent a link from being updated, check **Locked** in the **Update method for selected link** section.
4. To break the connection between a linked object and its source, click **Break Link**.

To disable automatic updating of all linked objects in Word, click **File, Options, Advanced**. Scroll down to the **General** section and uncheck **Update automatic links on open**.

Linking Cells into Word

A powerful reporting technique is to embed and link single Excel cells within Word text. For example, an Excel workbook could contain an income statement of a particular client. Whenever a related Word document makes reference to specific values in the income statement, the required values could be linked from the Excel workbook. Do the following to link single cells of Excel data into Word.

1. From within Excel, copy the appropriate cell to the clipboard.

2. In Word, put the cursor at the point where the Excel value is to be inserted.

3. From the **Home** tab, select **Paste, Paste Special, Paste link: Unformatted Text**. Make sure to select **Paste link** so that changes in Excel will flow through to the text in Word. Click **OK** to complete the operation. *Unformatted Text* is chosen so that the formatting of the inserted cell will match the style of the surrounding text in the Word document.

4. Insert spaces as desired to space the Excel value properly within surrounding text.

Figure 7 shows the process of pasting a single Excel cell into Word text. Note the **Paste link** selection on the left in the **Paste Special** dialog box. In this example, the reporting entity, reporting date, and all four amounts have been pasted from Excel with links. Each pasted value is treated as a field in Word, hence the gray shading when the cursor is positioned inside a value.

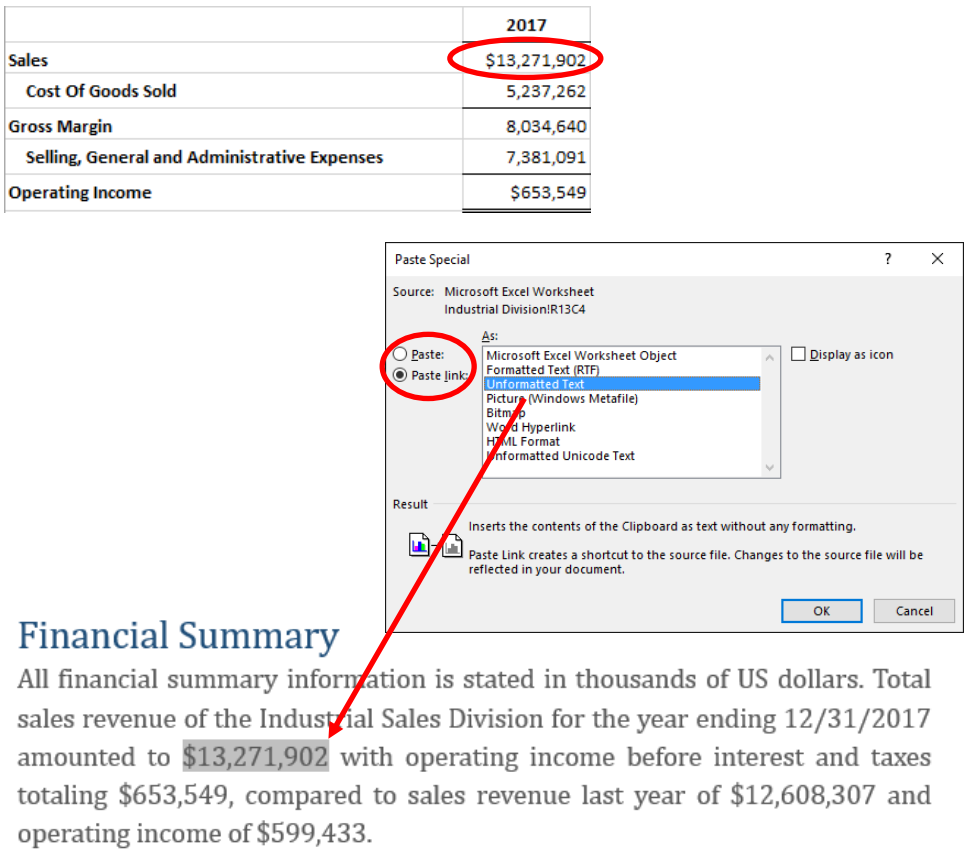


Figure 7 - Pasting Single Excel Cells into Word Text

Linking Cells with the Accounting Format

Excel's Accounting Format adds a space to the beginning and end of any pasted value, which may cause spacing problems in a Word document. This is especially troublesome when a value linked from Excel ends a sentence or has punctuation marks immediately following the linked cells. The sentence ending period or other punctuation mark will appear one space to the right of the value. This cannot be corrected from within Word. Users must change the source formatting of the linked cells to Currency in Excel, with or without the dollar sign, and with the appropriate number of decimal points. If the cell is linked into Word, the format change will flow-through. Otherwise, re-paste static values.

Since most accountants and business professionals routinely use the Accounting Format in their financial reports, having to change formats just to facilitate linking cells into Word is unpalatable. To work around this issue, we can employ a strategy similar to the one employed in linking entire reports. In this case, we will create a new worksheet for Linked Cells that contains formulas referencing the original worksheets. The values on the Linked Cells worksheet will be formatted with the Currency format. These are the cells that will be linked to Word, thereby providing the number formats necessary to produce "flow-through" reporting without changing the number formats on the original reports as shown in **Figure 8**.

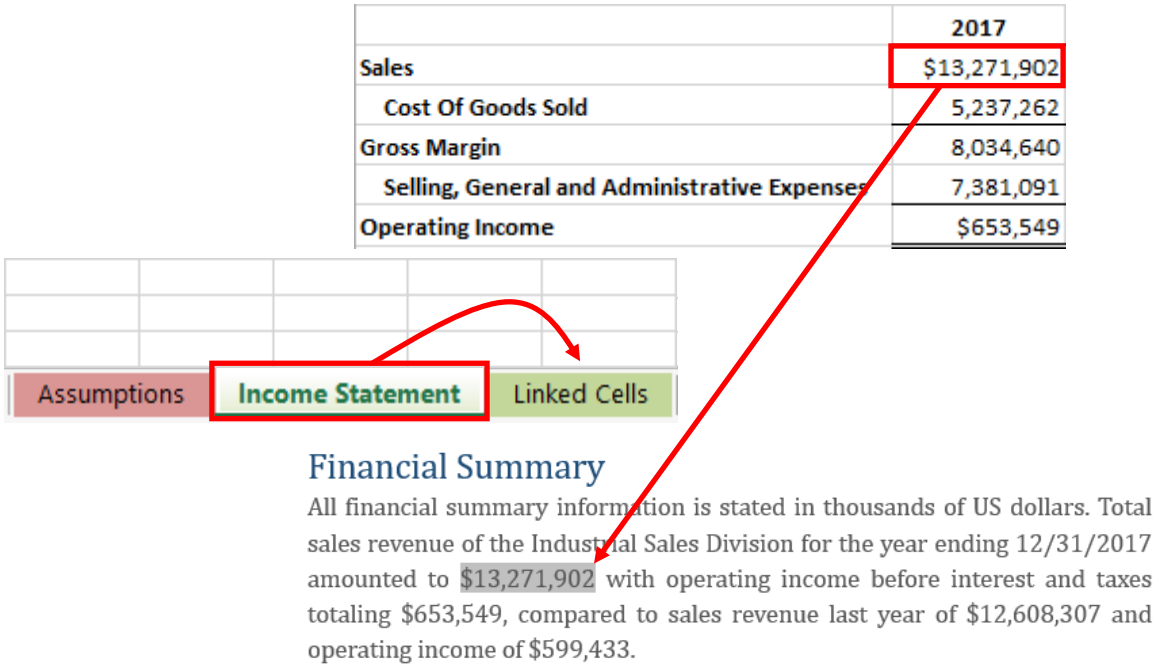
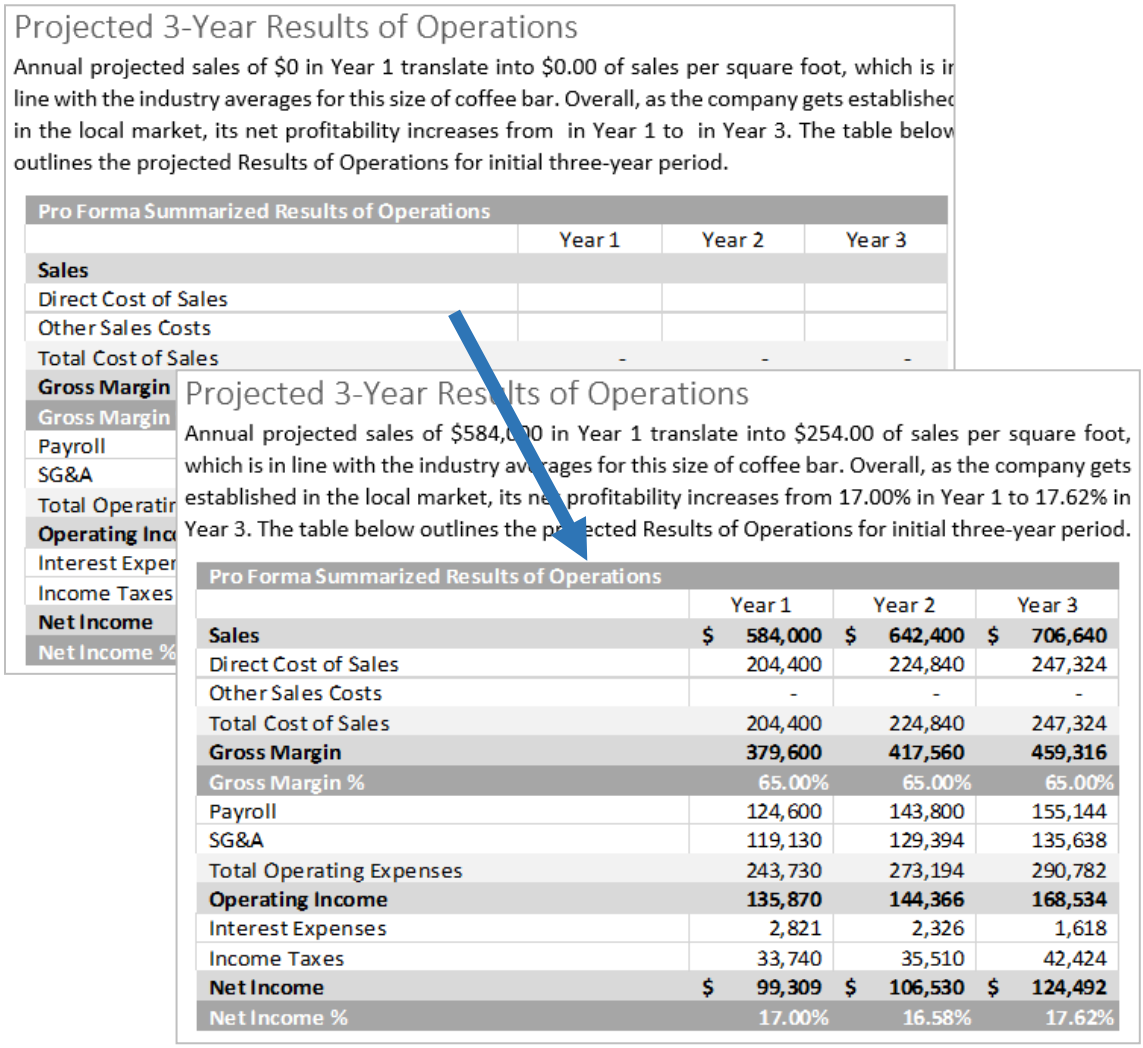


Figure 8 – Using Linked Cells to Overcome the Problem of Using the Accounting Format in Reports

Linking Cells from Embedded Worksheets

In the previous section, cells were linked from existing Excel workbooks into Word documents in order to integrate financial data into the text of a report. This same process of linking cells into report text is also available with embedded objects. This is especially useful in performing templated engagements, such as producing a draft business plan for a client. Having the analysis embedded in the reports themselves saves time and eliminates problems associated with linked documents. The templates envisaged would contain embedded Excel placeholders for analysis with the key cells already linked to the appropriate report text. Simply filling in and completing the analysis in the embedded Excel worksheets would produce most of

the report. **Figure 9** displays a template with an embedded Excel worksheet that contains cells that are linked to the report text.



Projected 3-Year Results of Operations

Annual projected sales of $0 in Year 1 translate into $0.00 of sales per square foot, which is in line with the industry averages for this size of coffee bar. Overall, as the company gets established in the local market, its net profitability increases from in Year 1 to in Year 3. The table below outlines the projected Results of Operations for initial three-year period.

Pro Forma Summarized Results of Operations	Year 1	Year 2	Year 3
Sales			
Direct Cost of Sales			
Other Sales Costs			
Total Cost of Sales	-	-	-
Gross Margin			
Gross Margin			
Payroll			
SG&A			
Total Operatin			
Operating Inc			
Interest Exper			
Income Taxes			
Net Income			
Net Income %			

Projected 3-Year Results of Operations

Annual projected sales of $584,000 in Year 1 translate into $254.00 of sales per square foot, which is in line with the industry averages for this size of coffee bar. Overall, as the company gets established in the local market, its net profitability increases from 17.00% in Year 1 to 17.62% in Year 3. The table below outlines the projected Results of Operations for initial three-year period.

Pro Forma Summarized Results of Operations	Year 1	Year 2	Year 3
Sales	**$ 584,000**	**$ 642,400**	**$ 706,640**
Direct Cost of Sales	204,400	224,840	247,324
Other Sales Costs	-	-	-
Total Cost of Sales	204,400	224,840	247,324
Gross Margin	**379,600**	**417,560**	**459,316**
Gross Margin %	65.00%	65.00%	65.00%
Payroll	124,600	143,800	155,144
SG&A	119,130	129,394	135,638
Total Operating Expenses	243,730	273,194	290,782
Operating Income	**135,870**	**144,366**	**168,534**
Interest Expenses	2,821	2,326	1,618
Income Taxes	33,740	35,510	42,424
Net Income	**$ 99,309**	**$ 106,530**	**$ 124,492**
Net Income %	17.00%	16.58%	17.62%

Figure 9 – A Template with an Embedded Excel Worksheet Linked to Report Text

Pasting Word into Excel

A less common practice among accounting practitioners is to paste footnotes or reports from Word into Excel. While Word provides better control of headers, footers, and pagination, the bulk of analysis and data usually resides in Excel. Under these circumstances, some practitioners prefer to paste financial footnotes and other short reports from Word into Excel for printing in order to avoid the common problems associated with pasting Excel data into Word. When pasting Word into Excel, a user can choose from several different paste commands on the **Home** tab.

1. **Paste** – Each paragraph of Word data is entered into a single cell in Excel with consecutive paragraphs being entered one after the other in a single column. The source formatting remains intact, but the text does not bleed over to adjacent blank cells on the right as text in Excel normally does.

2. **Paste Special, HTML** -- This is the equivalent of Paste. Each paragraph of Word data is entered into a single cell in Excel with consecutive paragraphs being entered one after the other in a single column. The source formatting remains intact, but the text does not bleed over to adjacent blank cells on the right as text in Excel normally does.

3. **Paste Special, Text** – Each paragraph of Word data is entered into a single cell in Excel with consecutive paragraphs being entered one after the other in a single column. The format of the data will take the characteristics of the default style in Excel. The text bleeds over to adjacent blank cells on the right as labels in Excel normally do if the cells in which the Word data was pasted are formatted as General, Number, Currency, or Percentage. If the cells are formatted as Accounting, the pasted text will not bleed over to adjacent blank cells when the text exceeds 280 characters. Limitations also apply to the number of characters that will bleed over to adjacent blank cells when the cells are formatted as Text.

4. **Paste Special, Unicode Text --** This is the equivalent of Paste Special, Text except the text is in Unicode format.

5. **Paste Special, Hyperlink** – This creates a hyperlink to the data source. Click the link to jump to the source file. All of the text is entered in a single cell, but text that exceeds 255 characters is truncated. The text bleeds over to adjacent blank cells on the right as labels in Excel normally do if the cells in which the Word data was pasted are formatted as General, Number, Currency, or Percentage.

6. **Paste Special, Picture (Enhanced Metafile)** – This is the equivalent of pasting a Camera object in Excel. The source layout and formatting remain intact. Excel will truncate any picture that is greater than one page in length. If **Paste Special, Paste link: Picture (Enhanced Metafile)** is chosen, any changes to the source document will flow through to the Excel worksheet.

7. **Paste Special, Microsoft Word Document Object** – This creates an embedded Word object in an Excel worksheet that can be edited in place within Excel. The source layout and formatting are intact.

Each of the **Paste Special** commands can be pasted with or without a link to the original Word document. Links allow updates to the source document to flow through to the target worksheet whenever the link is refreshed.

Pasting a formatted sentence, paragraph, or document from Word into Excel will almost always yield unsatisfactory results. If you want fully formatted text, you will get better results by pasting a picture of a Word page, such as the notes to financial statements, or by inserting or pasting a Microsoft Word Document Object into Excel. Pictures greater than one page in length will be truncated, and only the first page of multi-page Microsoft Word Document Objects will print from within Excel. Paste multiple page-sized pictures or objects to work around these limitations.

If you want to manipulate and format your data in Excel, use **Paste, Paste Special, Text**. Each paragraph will be pasted into an individual cell. However, make sure that you format the column in which you paste the data to the **General** format so that the text will bleed over to adjacent blank cells on the right. Cells containing text in Excel can contain, display, and print up to 32,768 characters if the cells containing the labels are formatted as General (or Number, Currency, or Percentage), which is more than sufficient to hold a paragraph of text pasted from Word. **Figure 10** displays the differing results of pasting Word text

into Excel. Note that the method used in pasting the data and the number format applied to the destination cells determine how the data will be displayed in Excel.

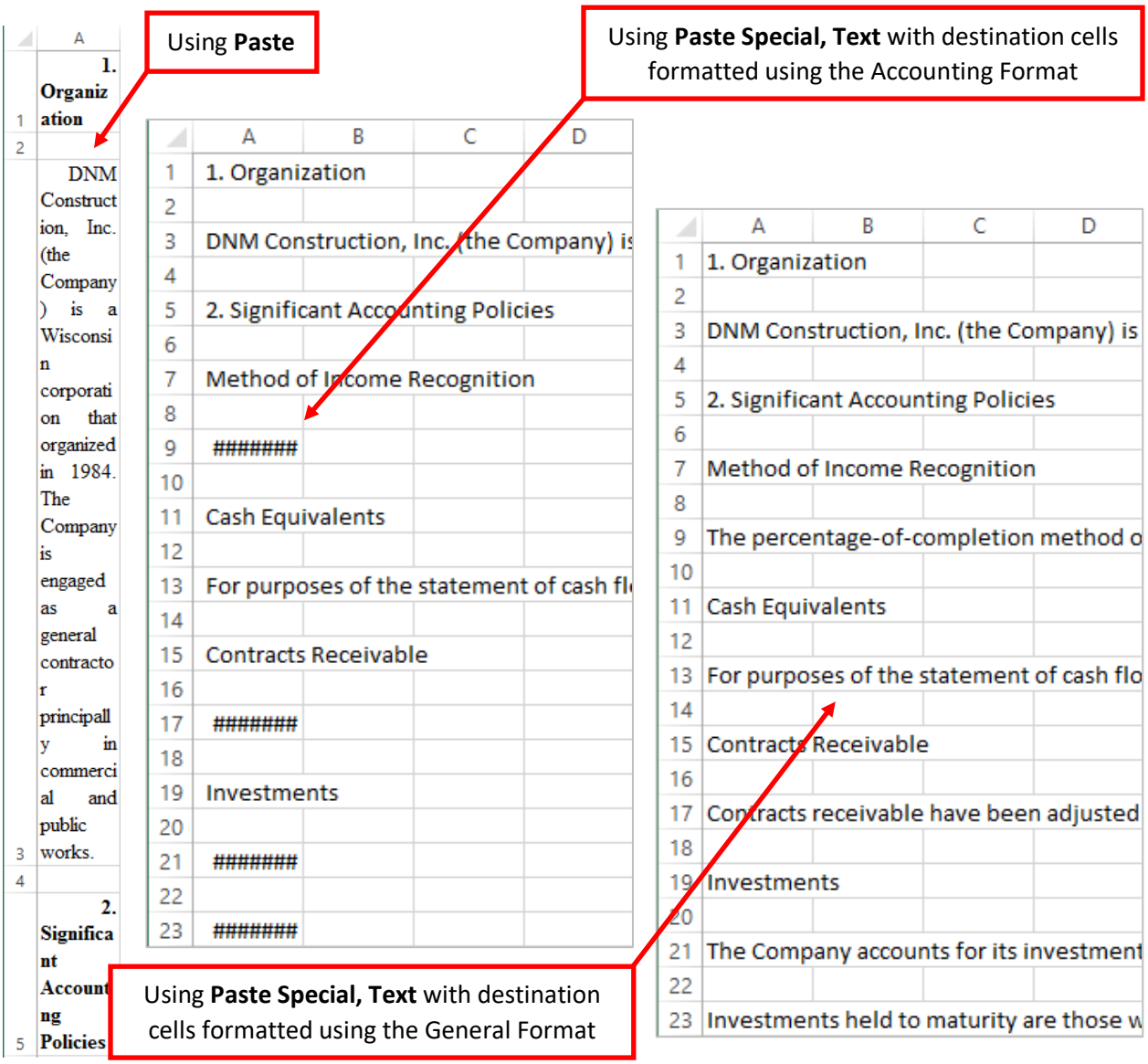


Figure 10 – Differing Results of Pasting Word Text into Excel

To manipulate and format text pasted from Word, do the following.

1. Apply the **General** format to column **A** that will serve as the destination for the pasted text from Word.
2. Modify the margins so that the **Left** and **Right** margins are set to **1** inch, and content is **Centered on page: Horizontally**. Set any headers and footers to align with the 1-inch margins. Click the **Header/Footer** tab in the **Page Setup** dialog box and check **Align with page margins**.
3. Paste the text from Word into the column **A** using **Paste Special, Text**. The text should bleed over blank cells to the right of the paste column.

4. Open and close **Print Preview** to force a vertical page break to be visible on the screen. Widen column **A** to the visible page break.
5. Adjust the cell alignment for the destination column. Click column **A**, then right-click and select **Format Cells** in the context-sensitive menu. On the **Alignment** tab, set the **Horizontal** alignment to **Justify** and **Vertical** alignment to **Top**. Check **Wrap text** so that text wraps in the cells and click **OK**.
6. Adjust the row heights of cells as required. Apply any necessary formatting (boldface, underline, etc.) to complete the copied report. The completed report should resemble the one in **Figure 11**.

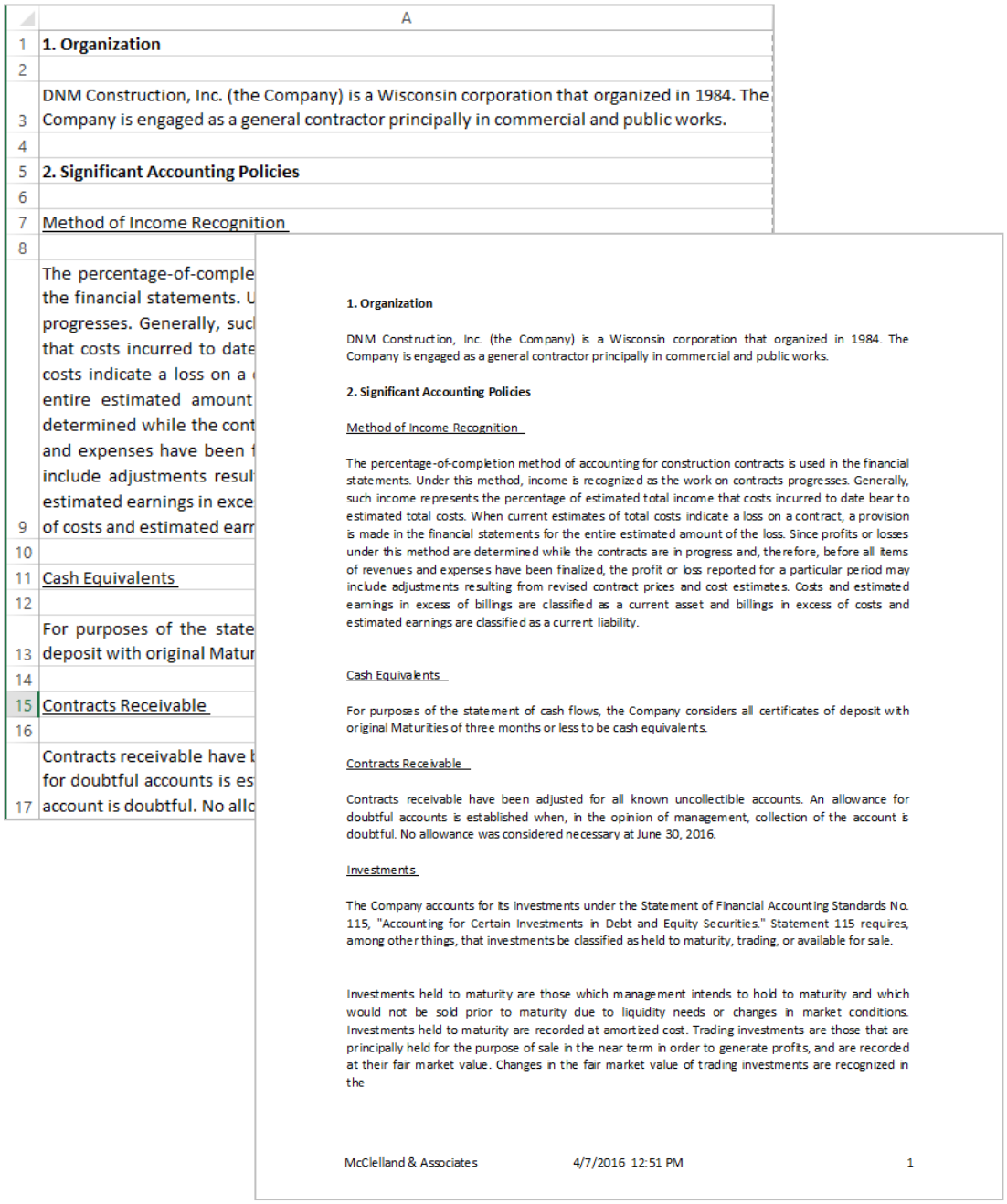


Figure 11 – Copied Word Text Formatted for Printing in Excel

To help you understand the potential for integrating text in Excel, **Figure 12** displays notes to the financial statements formatted for printing. In this example, each paragraph is contained in a single cell.

	A	B	C	D	E
1					**GTM Manufacturing Corporation**
2					Notes to the Financial Statements
3					December 31, 2015
4					
5					
6	(1)				Summary of Significant Accounting Policies
7					
8			(a)		Nature of the Business
9					GTM Manufacturing Corporation. designs and manufactures electronic components and related software used in work automation and internal control systems. The Company's customers include both end users and other control manufacturers located world-wide, but primarily in North America.
10					
11			(b)		Accounting Year
12					The Company's fiscal year begins on January 1 and ends on December 31 of each year.
13					
14			(c)		Inventories
15					Inventories are stated at the lower of cost or market. Cost is determined using the first-in first-out (FIFO) method.
16					
17			(d)		Property, Plant, and Equipment
18					Property, plant, and equipment are stated at cost. Depreciation is computed using the 150% declining balance method. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts, and any resulting gain or loss is reflected in income for the period.
19					
20					Leasehold improvements are amortized using the straight-line method over the shorter of the lease term or estimated useful life of the asset.

Figure 12 - Notes to Financial Statements Formatted for Printing in Excel

Embedding Word in Excel

Similar to the way we embedded Excel objects in Word earlier in this presentation, we can embed Word objects in Excel. This may be useful for consolidating a textual report with its supporting analysis in a single file or for combining notes to the financial statements with the statements themselves. This alleviates the need to maintain multiple files per engagement. Word objects are also useful for providing explanatory text to complex reports, analyses, or charts. Instead of using the cell-based textual capabilities of Excel, users can have the full functionality of Word to write explanations or make annotations.

Embedding an Exiting Word Document

To insert an existing Word document into an Excel workbook, select or insert a blank worksheet. Then, choose **Object** from the **Insert** tab of the ribbon to open the **Insert Object** dialog box. Select **Create from file** and click **Browse**. Navigate the file system to the desired Word document, select it, and click **OK** to complete the process. This will cause the contents of the document to appear on a worksheet in Excel as shown in **Figure 13**. Alternatively, copy the document in Word and then paste it into Excel using **Paste Special, Microsoft Word Document Object**. In both cases, users may choose to link the embedded object

to the original document. This produces the same results as pasting a linked picture using **Paste Special, Paste link: Picture (Enhanced Metafile)**. Note that users may choose to have the embedded or linked document displayed as an icon, which allows quick and easy access to related documents from within an Excel workbook.

Recall that only the first page of an embedded object will be displayed and printed in a host document. This is more problematical with Word objects because of the way text flows from page to page. If the documents are less than a page, embedded Word documents work well. For satisfactory results, simply adjust the margins to fit the document properly, scale the embedded object "image" to fit the vertical page break, and remove the borders. To scale the image, simply grab the right-edge of the "image" with your mouse and resize it accordingly. To remove the borders, right-click on the object and select **Format Object**. In the **Format Object** dialog box, click the **Colors and Lines** tab and then select **No Line** in the **Line Color** drop-down box. If the original document is larger than a page, better results can be achieved by importing text using **Paste Special, Text**, as covered previously in this session. This will allow the text to be manipulated and formatted in Excel.

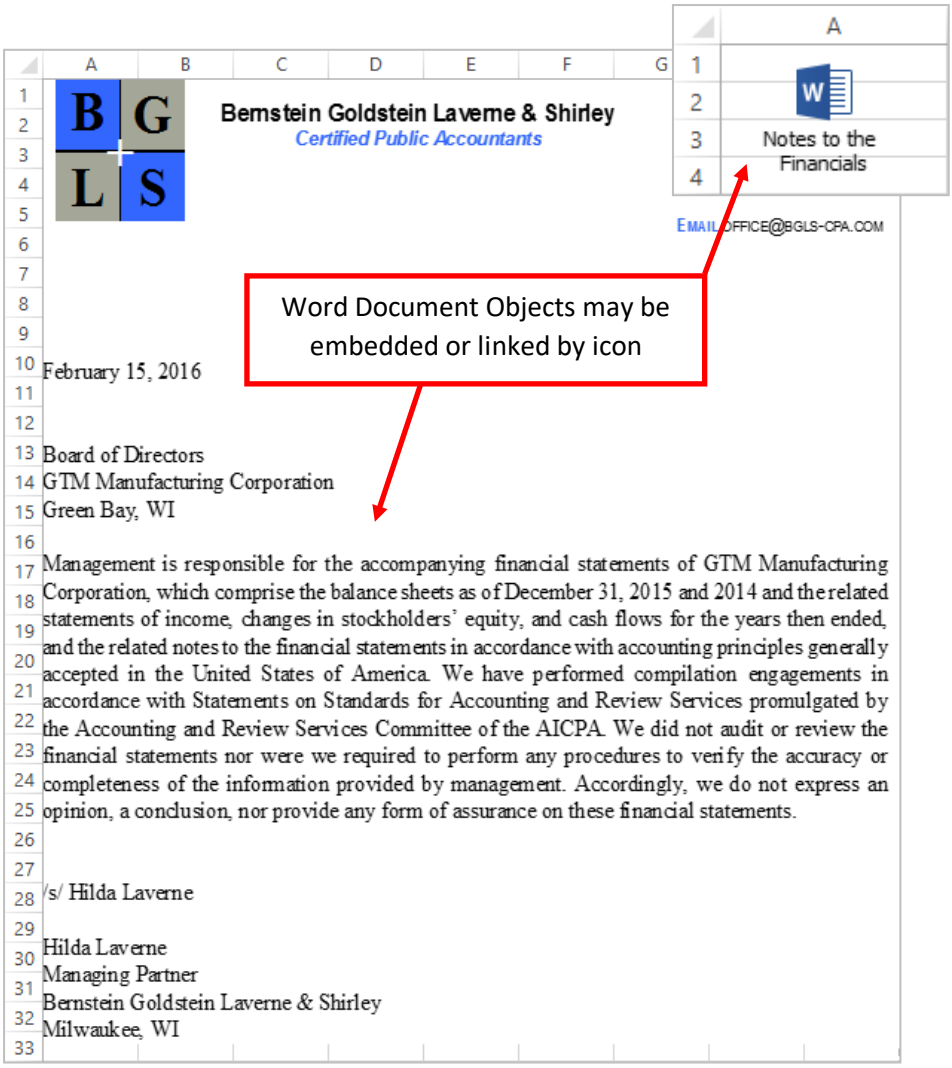
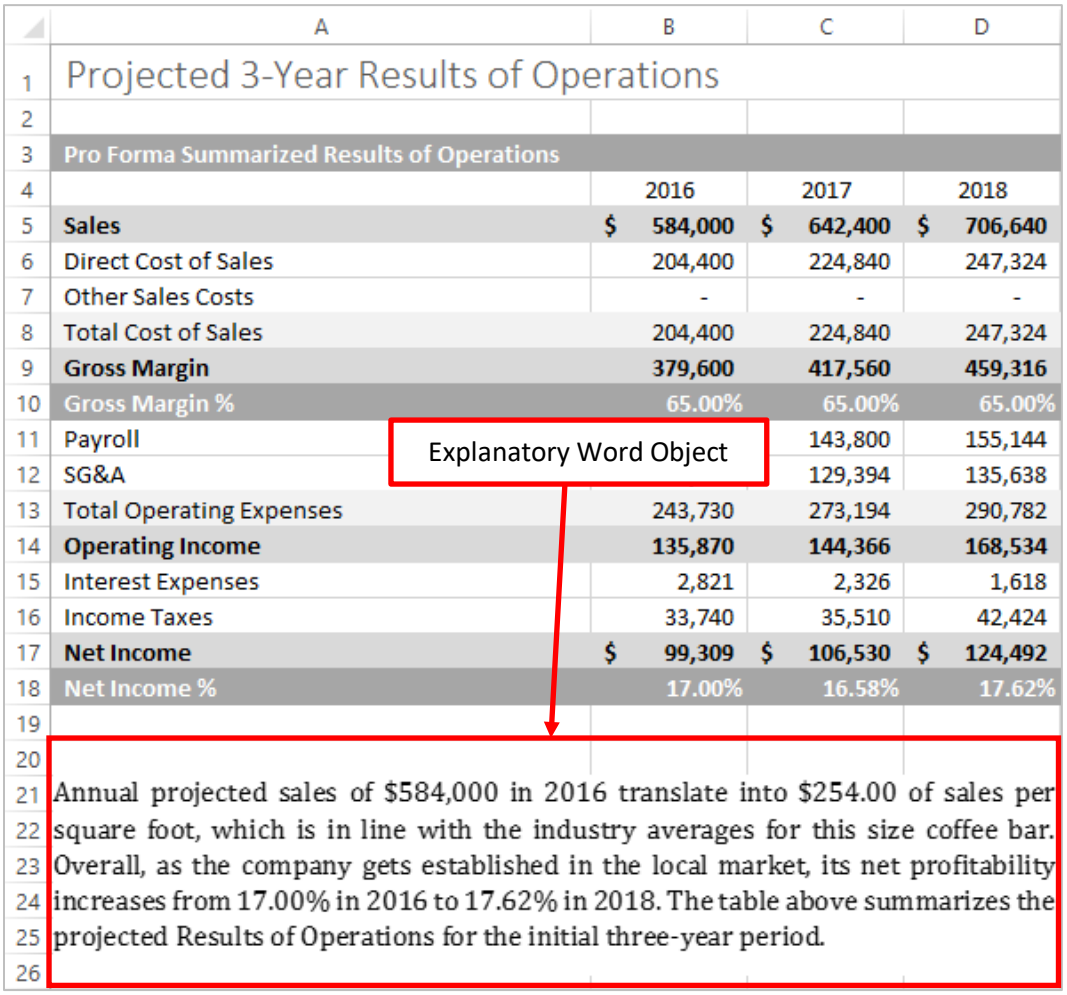


Figure 13 – Word Objects May Be Embedded or Linked by an Icon

Embedding a New Word Document

The process for embedding a new Word document in Excel is the same as embedding an Excel worksheet in Word. For example, Word objects may be useful for providing explanations for analysis or charts as shown in **Figure 14**. With Word objects, users have the full functionality of Word – bulleted or enumerated lists, simple indention with tab settings, case management, etc. To insert a new Word document object, first positon your cursor in the worksheet where the object is to be inserted. Then, click **Insert, Object** on the ribbon, select **Microsoft Word Document** as the **Object type**, and click **OK**. Adjust the size of the object to fit your needs and remove the borders, if desired. Double-click on the object to activate it; click anywhere on the face of the worksheet to deactivate it.



	A	B	C	D
1	Projected 3-Year Results of Operations			
2				
3	Pro Forma Summarized Results of Operations			
4		2016	2017	2018
5	**Sales**	**$ 584,000**	**$ 642,400**	**$ 706,640**
6	Direct Cost of Sales	204,400	224,840	247,324
7	Other Sales Costs	-	-	-
8	Total Cost of Sales	204,400	224,840	247,324
9	**Gross Margin**	**379,600**	**417,560**	**459,316**
10	Gross Margin %	65.00%	65.00%	65.00%
11	Payroll		143,800	155,144
12	SG&A		129,394	135,638
13	Total Operating Expenses	243,730	273,194	290,782
14	**Operating Income**	**135,870**	**144,366**	**168,534**
15	Interest Expenses	2,821	2,326	1,618
16	Income Taxes	33,740	35,510	42,424
17	**Net Income**	**$ 99,309**	**$ 106,530**	**$ 124,492**
18	Net Income %	17.00%	16.58%	17.62%
19				
20				
21	Annual projected sales of $584,000 in 2016 translate into $254.00 of sales per			
22	square foot, which is in line with the industry averages for this size coffee bar.			
23	Overall, as the company gets established in the local market, its net profitability			
24	increases from 17.00% in 2016 to 17.62% in 2018. The table above summarizes the			
25	projected Results of Operations for the initial three-year period.			
26				

Figure 14 – Using a Word Object for Explanatory Text in Excel

Embedding Excel in PowerPoint

On occasion, you might find it beneficial to embed an Excel file in a PowerPoint presentation. This allows you to open that file while the presentation is running so that your audience can see the contents of the file. For accounting and finance professionals, this is often the case when delivering a presentation on a company's financial condition, and someone in the audience wants to see more details. If you have

embedded the company's financial statements in Excel, then opening these statements while the presentation is running is a snap.

Embedding an Existing Workbook

To insert an existing Excel workbook into a PowerPoint presentation, choose **Object** from the **Insert** tab of the Ribbon to open the **Insert Object** dialog box shown in **Figure 15**. Since the workbook already exists, select **Create from file**, browse to the file you want to insert, select it, and click **OK** to complete the process. This will place the contents of the file on the current PowerPoint slide. Alternatively, you may select the **Display as icon** option on the **Insert Object** dialog box to have the workbook displayed as a small icon. Clicking on the icon will open the embedded workbook for viewing.

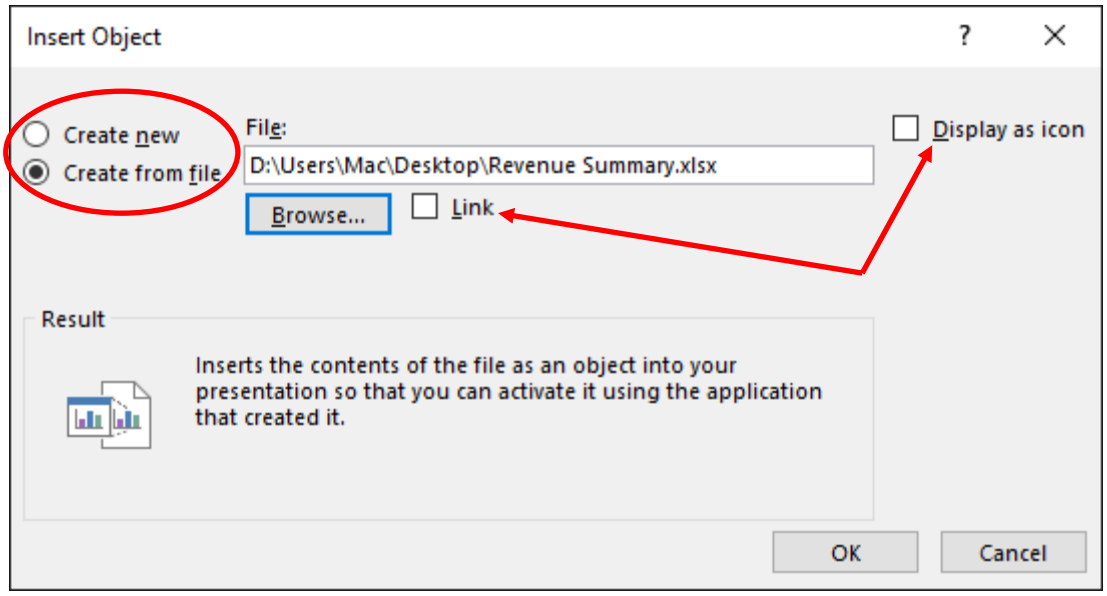


Figure 15 - Insert Object Dialog Box

Inserting an object such as an Excel workbook *embeds* the object into the PowerPoint file. If the object is very large, embedding it may cause the size of the PowerPoint file to become very large. If that's the case, you can *link* the file by checking **Link** in the **Insert Object** dialog box. This inserts the contents of the workbook as a linked picture in PowerPoint without actually storing the object as part of the PowerPoint file. Double-click the linked picture to open the source workbook. Keep in mind that if you link to a file that is not stored on your computer, and you are traveling away from the office and cannot connect to the network on which the file is stored, you will not be able to update the linked information until you are able to establish a connection to the network.

Consider the PowerPoint slide pictured in **Figure 16**. The financial data contained in the slide is actually a PivotTable in an Excel workbook embedded in the PowerPoint presentation. If, when delivering the presentation, a participant questioned one of the numbers or wanted to see the information filtered differently, the presenter would be able to activate the PivotTable and make the necessary modifications.

Because the PivotTable is an embedded Excel object, the presenter could return to Normal view in PowerPoint, right-click on the embedded object, choose **Worksheet Object**, and then select from **Edit**, **Open**, or **Convert**. Selecting Edit opens the Excel document from within PowerPoint. In effect, PowerPoint turns into Excel similar to the way that Word turned into Excel previously. Note that simply double-clicking

the object in PowerPoint will also cause Excel to open the object in PowerPoint for editing. At this point, users can manipulate the Excel object using any desired Excel functionality. Regardless of how you access Edit mode, clicking outside the object will restore PowerPoint to normal use.

Revenue Summary

Service Revenue	Column Labels				
	2015				2015 Total
Row Labels	Q1	Q2	Q3	Q4	
Web Authoring and Hosting	**37,989,006.00**	**35,057,704.00**	**43,314,945.00**	**44,261,899.00**	**160,623,554.00**
Technology	18,555,663.00	15,521,902.00	17,807,690.00	17,225,719.00	69,110,974.00
Defense Industries	7,243,055.00	7,368,461.00	13,248,617.00	5,584,212.00	33,444,345.00
Life Sciences	6,376,219.00	4,661,611.00	4,268,176.00	11,219,779.00	26,525,785.00
Real Estate	3,762,908.00	3,893,589.00	4,705,574.00	4,354,311.00	16,716,382.00
Services	2,051,161.00	3,612,141.00	3,284,888.00	5,877,878.00	14,826,068.00
Virtualization Services	**38,948,507.00**	**42,012,678.00**	**36,359,431.00**	**40,996,030.00**	**158,316,646.00**
Real Estate	10,174,367.00	13,126,523.00	9,355,805.00	15,129,000.00	47,785,695.00
Life Sciences	12,215,612.00	13,361,327.00	9,559,102.00	7,363,185.00	42,499,226.00
Retail & Wholesale	4,683,831.00	7,664,656.00	8,390,409.00	5,738,901.00	26,477,797.00
Defense Industries	6,609,139.00	3,353,446.00	5,566,906.00	8,322,515.00	23,852,006.00
Technology	5,265,558.00	4,506,726.00	3,487,209.00	4,442,429.00	17,701,922.00
Cloud Services	**13,509,286.00**	**14,173,174.00**	**16,933,097.00**	**20,613,670.00**	**65,229,227.00**
Life Sciences	4,417,592.00	2,434,960.00	4,325,015.00	8,082,545.00	19,260,112.00
Other	2,556,724.00	8,345,441.00	5,753,148.00	1,846,071.00	18,501,384.00
Consumer Products	2,771,926.00	2,268,338.00	4,268,714.00	3,038,455.00	12,347,433.00
Services	3,409,686.00	811,984.00	861,747.00	4,057,791.00	9,141,208.00
Defense Industries	353,358.00	312,451.00	1,724,473.00	3,588,808.00	5,979,090.00
Technology Services	**5,839,442.00**	**4,971,986.00**	**5,536,381.00**	**2,145,842.00**	**18,493,651.00**
Services	909,834.00	1,611,796.00	2,953,882.00	1,131,677.00	6,607,189.00
Life Sciences	2,106,934.00	700,117.00	1,594,834.00	171,734.00	4,573,619.00
Technology	375,476.00	2,075,256.00	323,507.00	147,198.00	2,921,437.00
Defense Industries	848,585.00	469,426.00	557,593.00	603,155.00	2,478,759.00
Media & Entertainment	1,598,613.00	115,391.00	106,565.00	92,078.00	1,912,647.00
Grand Total	**96,286,241.00**	**96,215,542.00**	**102,143,854.00**	**108,017,441.00**	**402,663,078.00**

Figure 16 - Excel PivotTable Embedded in PowerPoint

If you choose to **Open** the object instead of Edit, the object opens in a separate Excel window, leaving the PowerPoint window open and unchanged. Again, you will have access to all Excel functionality in the new window. As you make changes to the Excel workbook, you will see those changes propagate in real time to PowerPoint. In both cases – Edit or Open – once the document is opened, changes made, and the focus returns to the PowerPoint document, saving the PowerPoint document also saves any changes that were made to the embedded Excel workbook.

Embedding a New Workbook

Similar to creating a new Excel object in Word, users can embed new Excel objects in PowerPoint. There is no need to use Excel as an independent application to create simple financial analysis. Simply select

Insert, Object, Excel Worksheet from the ribbon, making sure to select **Create new** in the **Insert Object** dialog box as shown in **Figure 17**. Users will have full Excel functionality from within PowerPoint whenever the object is activated.

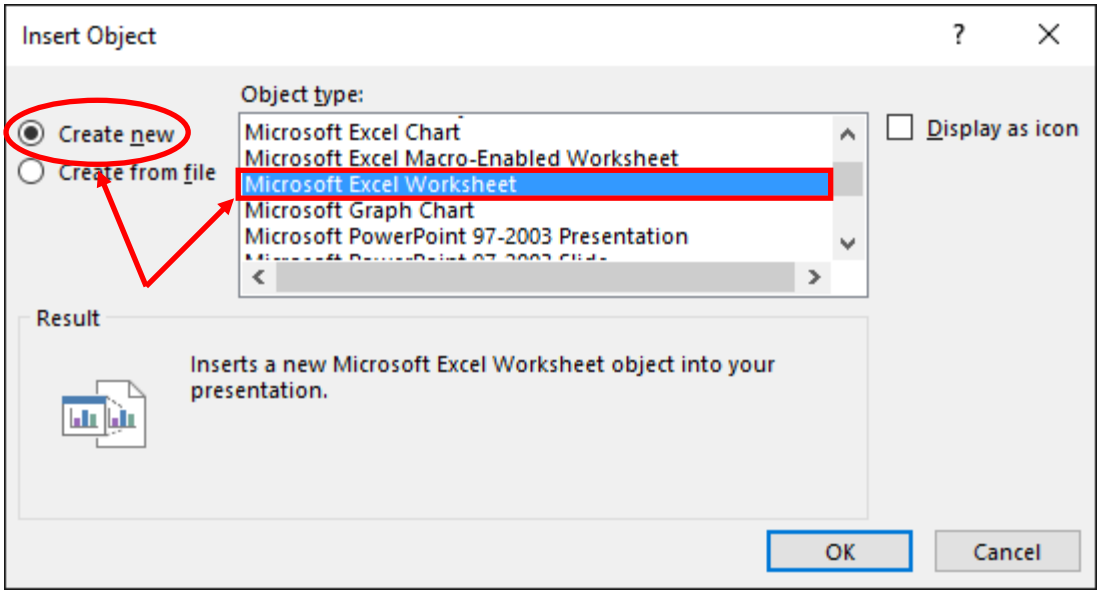


Figure 17 - Inserting a New Embedded Workbook in PowerPoint

Pasting Excel into PowerPoint

While PowerPoint includes the full range of **Paste Special** commands (Microsoft Excel Worksheet Object, HTML Format, Formatted Text (RTF), Unformatted Text, Picture (Enhanced Metafile), Picture (Windows Metafile), Device Independent Bitmap, and Bitmap), it has limited capabilities for pasting linked data (Microsoft Excel Worksheet Object and Attach Hyperlink). Note that users can embed existing worksheet objects using **Paste Special** with or without links to the original workbook. If gridlines are visible in a linked worksheet, the gridlines will flow through to PowerPoint. To eliminate the gridlines, use a strategy similar to the one described earlier in this session for linking Excel worksheets into Word.

Users may also paste Excel data into PowerPoint as text or pictures similar to the way that Excel data can be pasted into Word. All of the available options for pasting Excel data into PowerPoint is available in the **Paste Options** box similar to the one displayed in **Figure 18** for pasting charts. Whenever pictures are pasted, make sure to use a picture correction to eliminate visible gridlines.

Embedding Charts in Word and PowerPoint

When most users think of charts, Excel is the first tool that comes to mind. However, users can create and modify charts in Word and PowerPoint in the same manner as they would in Excel. In fact, all three applications use the same charting engine. PowerPoint has the most advanced charting functionality because it can animate charts. Neither Excel nor Word has that capability. To create a chart in Word, click **Insert, Chart** on the ribbon and then select the desired chart type and click **OK**. Word will create an initial chart and insert an Excel data sheet to hold the chart data. Users can add, edit, or delete the data as required. When the document is saved, the data sheet is imbedded in the document so that the data will be included with the document wherever it goes. Because of the common charting tool, the process for

creating a chart in PowerPoint is virtually identical to the process of building a chart in Word. Choose **Insert, Chart** on the ribbon, select the desired **Chart Type**, and click **OK**. As with Word, the chart data is stored in an Excel worksheet embedded in the slideshow.

Pasting Excel Charts into Word or PowerPoint

In situations where charts have already been created in Excel, users can copy and paste these charts into Word or PowerPoint quickly and easily. Whenever an Excel chart is pasted into Word or PowerPoint, the **Paste Options** box appears at the bottom right-hand corner of the pasted chart as shown in **Figure 18**. Select whether to link or to embed the chart and whether to keep the source formatting or to use the destination theme. Note that pasting a chart as a picture is the least desirable option available because a picture is a static image that cannot be edited in any way for presentation. Users will not be able to adjust font sizes or colors or add animation to the chart for more effective presentation.

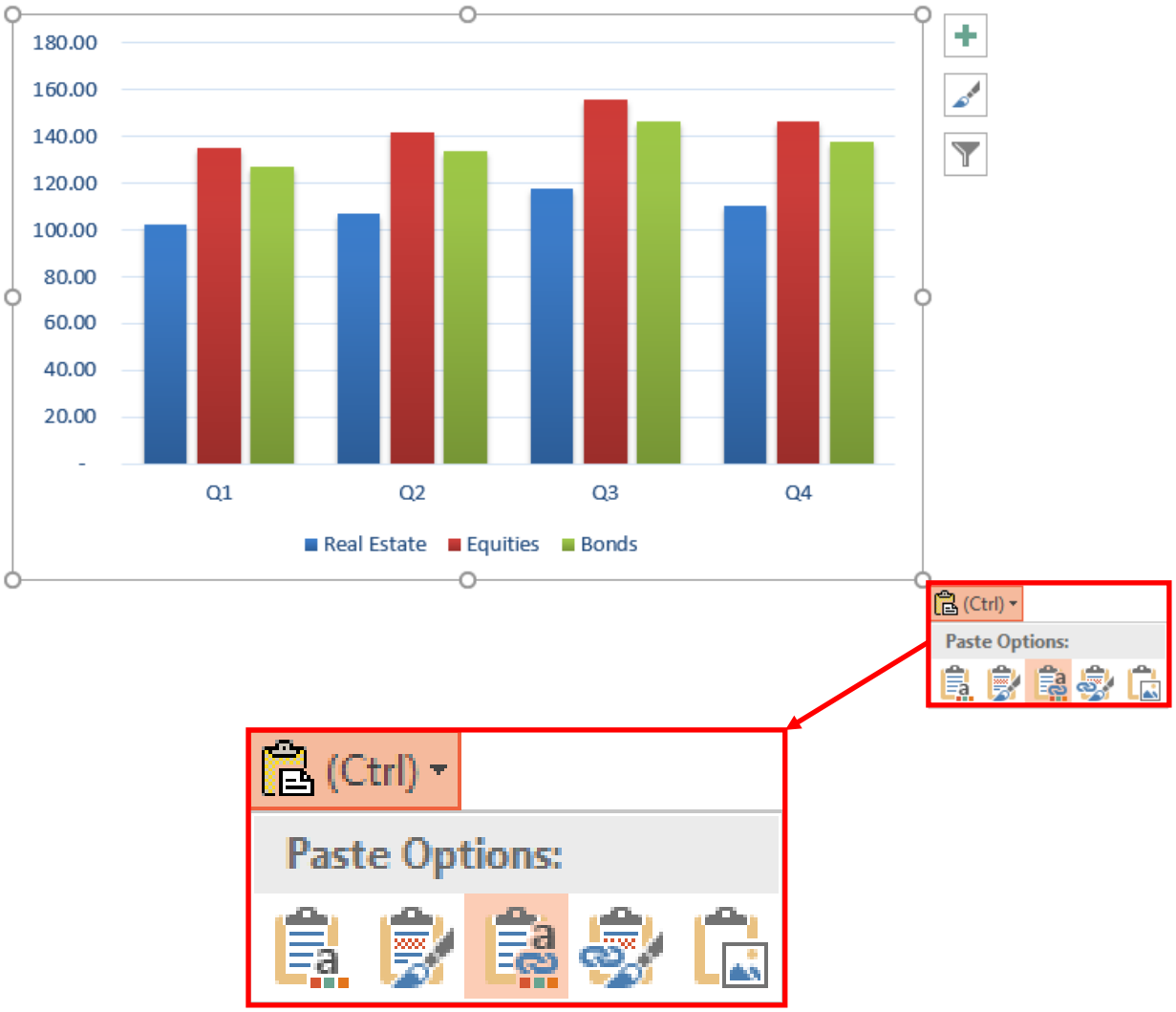


Figure 18 - Pasting an Excel Chart into Word or PowerPoint

Animating Charts in PowerPoint

When displaying a chart during a presentation, the attention of the audience is likely to be focused on the meaning of the chart as a whole, while ignoring the explanation being delivered by the presenter. PowerPoint allows users to control the animation of the data elements. Instead of displaying the entire chart at once, data elements can be presented in the order desired by the presenter, thereby holding the audience's attention more effectively while the chart is being displayed and explained. Linked and embedded Excel charts can be animated just as charts created in PowerPoint.

To control animation of a chart, add the desired **Entrance** effect to the chart. Then, right-click on the **Entrance** effect and select **Effect Options** followed by the **Chart Animation** tab as shown in **Figure 19**. In the **Group Chart** box, select the desired animation effect. Now when the chart is displayed in a presentation, the data elements will be animated and will appear as specified by the presenter.

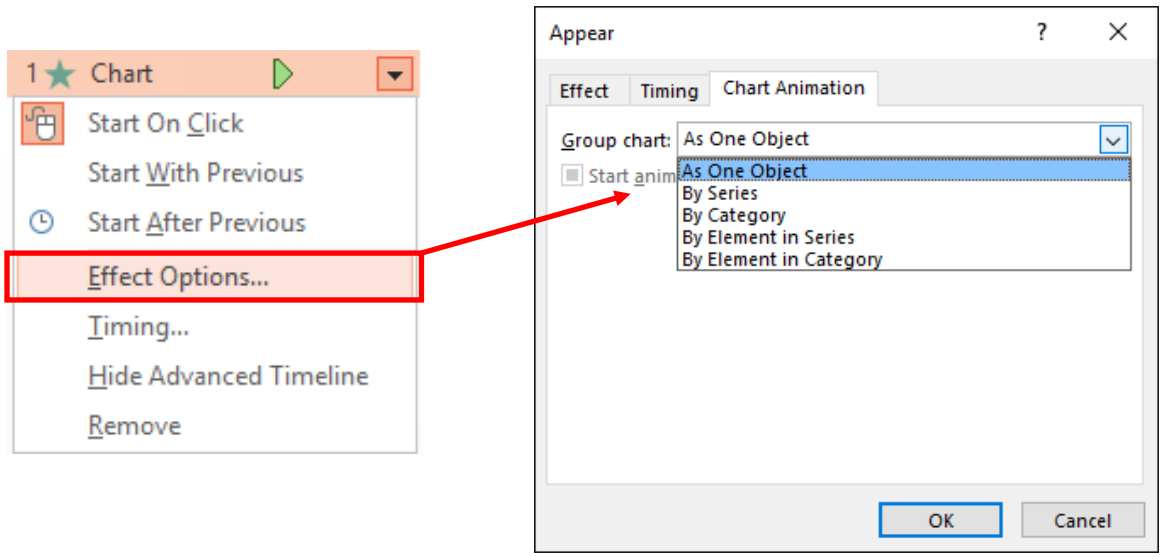


Figure 19 - Adding Animation to a Chart

Dynamic Chart Titles

Communicating effectively with charts requires a strategy. Before creating a chart, take time to determine what is to be communicated by the chart and what type of chart will be most effective at communicating the message. If possible, include the message in the title of the chart. Use string arithmetic to create dynamic chart titles that change automatically when the data is updated. Make sure to link the dynamic title to the *chart title placeholder* and not a text box if you plan on embedding or linking the chart in Word or PowerPoint as shown in **Figure 20**. Note how well the chart communicates the intended message.

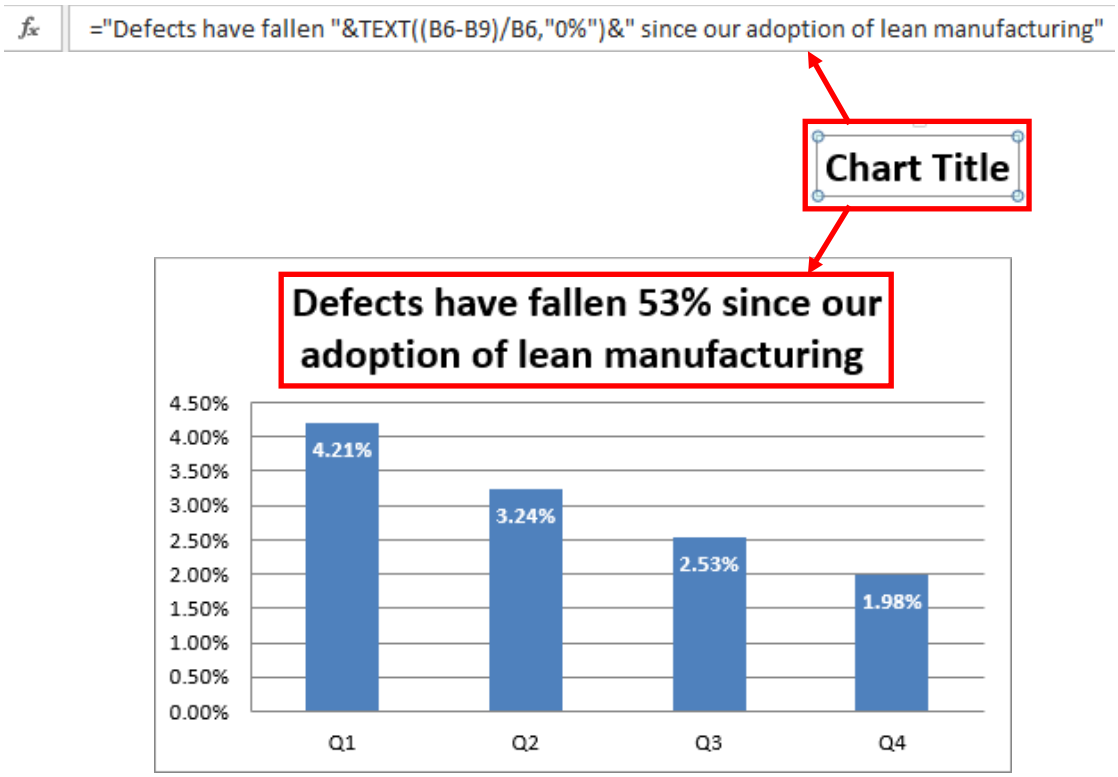


Figure 20 – Using String Arithmetic to Create Dynamic Titles

Using Hyperlinks to Link Excel Data to PowerPoint

Rather than linking or embedding Excel worksheets in PowerPoint slideshows, users can use simple hyperlinks to access detail data during a presentation. To make data access seamless, users should add the Back and Forward buttons to their Quick Access Toolbar (QAT) in Excel, Word, and PowerPoint. Simply click the down arrow at the far right end of the QAT and select **More Commands**. From the **All Commands** pane, add Back and Forward as shown in **Figure 21**.

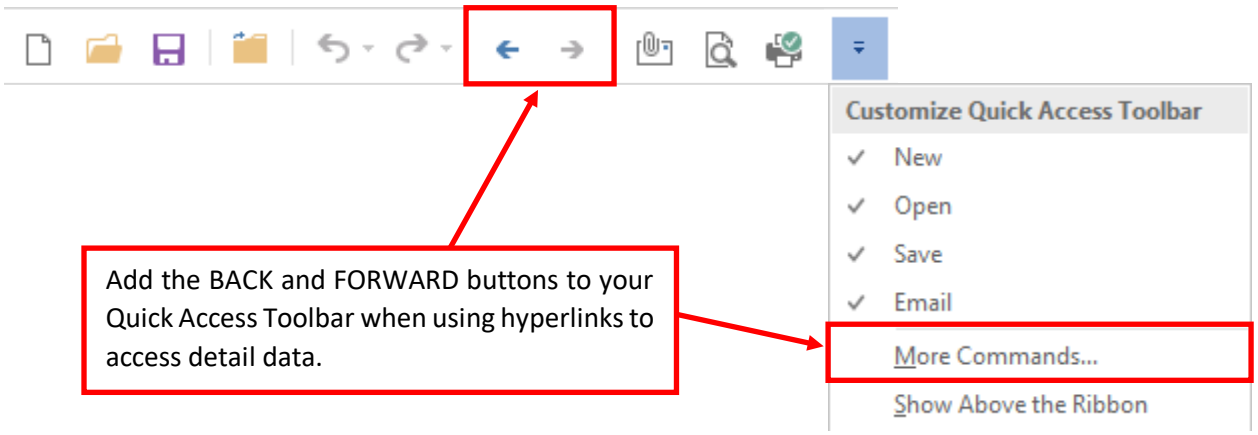


Figure 21 – Add the Back and Forward Buttons to the QAT when Using Hyperlinks

To insert a hyperlink into a PowerPoint slideshow, highlight the text or object that will serve as the link and then select **Insert, Hyperlink** from the ribbon. Click **Existing File or Web Page** in the navigation pane

on the left and then select the appropriate file and click **OK** as shown in **Figure 22**. Before the presentation, make sure to rearrange the worksheet and the worksheet zoom so that the data displays as desired during the presentation.

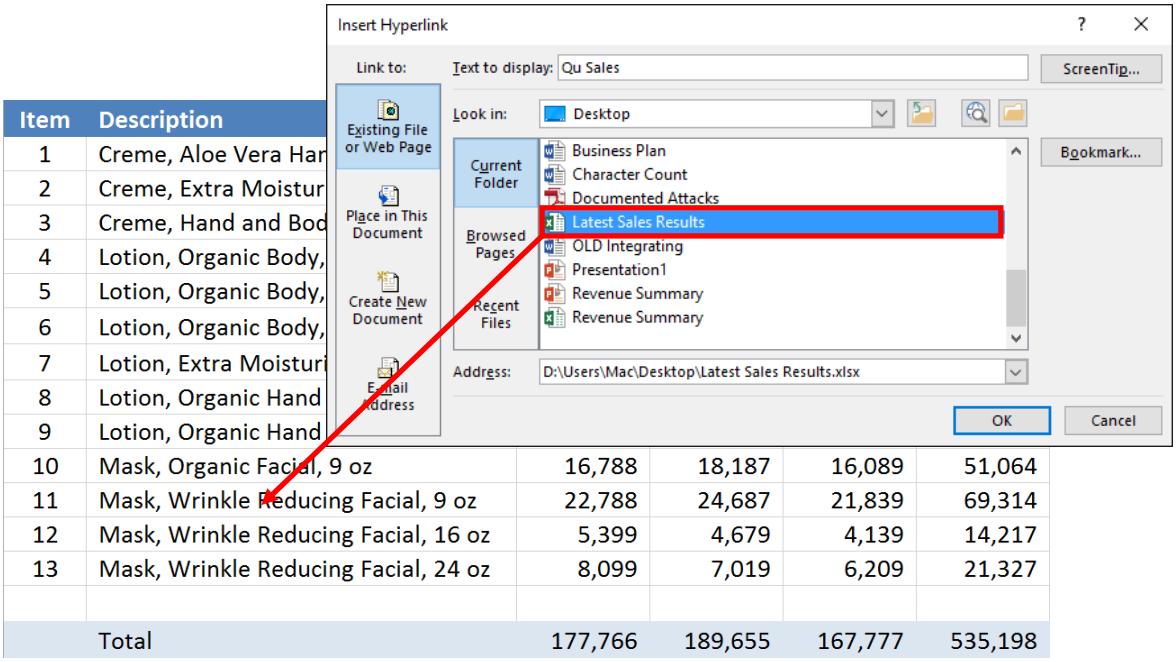


Figure 22 – Using Hyperlinks to Access Detail Excel Data from within PowerPoint