

# Sage Summit 2012 Conference

## Excel-Based Information Management

### With Sage 300 Construction and Real Estate Office Connector

Session Code: C-0641

Product: Sage 300 Construction and Real Estate

CPE Credit: 1

#### Presenters:

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#### Description

Participate in this hands-on session to build upon your working knowledge of Office Connector Query. You'll learn how to form a strategy for deploying Office Connector Query, Write, and Import to accomplish specific business goals related to information management. Intermediate to advanced Excel techniques will be showcased, and Office Connector Write and Import will be explained in such a way that even a nontechnical person who desires specific business results will be able to visualize how Office Connector tools can be leveraged to get the information you need for decision making. This working session is a must for anyone that wants to delve in and start actively learning what is possible with Excel integration and your Sage 300 Construction and Real Estate software.

#### Learning Objectives

At the end of today's session, you will be able to:

- Apply knowledge of Office Connector Query, Write and Import to solve specific information management requirements.
- Utilize proper syntax when using the Office Connector Write and Import functions.
- Construct a basic design strategy with a working solution to address a specific information management need.

## To Do After the Conference

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## Notes

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# Exercise #1 – Enhancing an Existing Report

## Part 1 – Make a Copy of the Template

1. Open Windows Explorer
2. Navigate to the following folder: **C:\ProgramData\Event1\OC2\Reports**
3. Click on **JC Cost To Complete.xlt**, press **Ctrl** + **C**, and then press **Ctrl** + **V**.

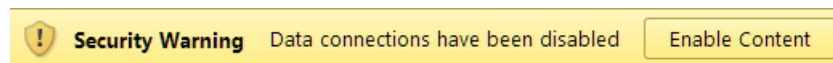
## Part 2 – Add a Drop-Down List for Jobs

In this part, you will add a simple drop-down list for the job number. The method used here is just one of several ways to do this.

1. Right-click on **JC Cost To Complete - Copy.xlt** (copied in Part 1) and click **Open**.



**NOTE:** You may see the following alert at the top of the window:



This comes up because, by default, Excel disables features of a workbook or template that could be harmful if file is not from a trusted source. For example, Excel macros from an unknown publisher could have malicious intent or the query text associated with data connections could expose sensitive information or make unintended changes to your data.

Since this template is from a trusted publisher, click **Enable Content**.



**FOR MORE INFORMATION:** See the following knowledge base article:

<http://kb.event1software.com/?p=45>

2. Click the **Admin** worksheet.
3. Click in cell **G5**.
4. Click the **Add-Ins** tab on the ribbon.
5. Click **Query Wizard** on the Office Connector toolbar.
6. In the **Select Sage Timberline Office Company** window, select **Timberline Construction** and click **OK**.
7. Press **Ctrl** + **F** and type: `jc job`




**NOTE:** When you click **OK**, the selection will move to the **JC Job (1)** table.

8. Click **Next**
9. In the **JC Job (1) fields** list, check the **Job** box and click **Next**.
10. Add a condition to exclude closed jobs
  - a. Click **Add Condition**
  - b. In the **Field** list, scroll down and select **Status**.



**TIP:** You can also type the first few letters of the field name (e.g., "st") to jump to the first field starting with that set of letters.

- c. In the **Comparison** box, select **Not equal**.
  - d. In the **Compare to** box, select **Literal Value** for **Value Type**.
  - e. In the **Value** box, type: `Closed`
  - f. Click **OK**
11. Click **Next**
12. In the **Layout** box, uncheck **Include field names**
13. Click **Finish**
14. Click in cell **C5**
15. Click the **Data** tab on the ribbon
16. In the Data Tools group, click  **Data Validation**









**NOTE:** The **Data Validation** button is a button drop-down. This means you can click the button to bring up the desired window or you can click the drop-down to see more options. If you click the drop-down, select the **Data Validation** option for this step.

17. In the **Allow** box, select **List**
18. In the **Source** box, type: `=qryJCJob1`
19. Click **OK**
20. Right-click on the column header for column **G** and click **Hide**
21. Test the drop-down list
  - a. Click the drop-down button in cell **C5** and pick job **03-001**.
  - b. Click in cell **C7** and type: `5/31/2011`
  - c. Click **Refresh Report**


## Part 3 – Write-Enable the Job Schedule

In this part you will add the capability for the user to update the job schedule and then write the updated schedule dates back to the job record using Office Connector Write.

1. Click the **Cost To Complete** worksheet.
2. In the left margin of the worksheet, click the row expander  to show rows  through .
3. Select columns  through , right-click, and click Unhide.
4. Click in cell .
5. Click the **Add-Ins** tab of the ribbon



**TIP:** Prior to using the Write Wizard, you would ordinarily make note of the cell addresses (or names) of cells containing the data you want to write. This way, when you scroll to the location where you will insert the TSWrite functions and the cells containing the data are no longer visible, you've noted their locations.



6. Click  **Write Wizard** on the Office Connector toolbar
7. In the list of tables, select **JC Job(1)** and click **Next**
8. Leave the selection on **Modify Only** and click **Next**
9. In the grid showing the **Job** key field, enter the following in the **Value** column and click **Next**: JobID



**NOTE:** "JobID" is a defined name in this template that refers to Admin!E5. Rather than specifying that the job number is in cell Admin!E5, you can therefore specify that it is in cell JobID, which is much more understandable.

10. In the **JC Job (1) fields** list, check the following boxes and then click **Next**.
  - **Estimated Start Date**
  - **Revised Start Date**
  - **Actual Start Date**
11. In the **Value** column, supply the following values for these fields:

<b>Estimated Start Date</b>	N7
<b>Revised Start Date</b>	O7
<b>Actual Start Date</b>	P7

12. Click **Finish**.
13. Click in cell .
14. Click  **Write Wizard** on the Office Connector toolbar
15. In the list of tables, select **JC Job(1)** and click **Next**
16. Leave the selection on **Modify Only** and click **Next**

17. In the grid showing the **Job** key field, enter the following in the **Value** column:

JobID

18. In the **JC Job (1) fields** list, check the following boxes and then click **Next**.

- **Estimated Comp Date**
- **Revised Comp Date**
- **Actual Complete Date**

19. In the **Value** column, type the following values for these fields:

<b>Estimated Comp Date</b>	N8
<b>Revised Comp Date</b>	O8
<b>Actual Complete Date</b>	P8

20. Click **Finish**.



**TIP:** Look at the formulas in cells **V7** through **X8**. Notice that they are all identical except for two arguments; the field being written to, and the cell containing the data. If we had first placed the field names in cells **V1** through **X2**, we could have created one TSWrite formula in cell **V7** and then copied it across and down. The cell references, being relative, would have incremented and identified the correct field names and cell values, producing the same results. When you have to create many formulas that are very similar, this technique can save you time!

21. Select columns **R** through **AD**, right-click on the column header for column **R**, and click **Hide**.

22. Select the range of cells from **N7** to **P8** (the schedule fields).


23. Click the **Home** tab of the ribbon.

24. In the **Styles** group, click the **Cell Style** named **Data Entry**.



**NOTE:** This step simply changed the style of the cells to indicate that they are available for data entry. This also unchecks the Protected box so that these cells remain editable even if the worksheet is protected.

25. Test the newly added writing capability.


- a. Click in cell **O7** and type: 1/13/2011
- b. Click in cell **O8** and type: 11/15/2011
- c. Click the **Add-Ins** tab of the ribbon
- d. Click  **Send Data to Timberline** on the Office Connector toolbar
- e. In the **Approve Changes** window, a list of the fields to be updated is displayed. Review the list and then click **Write**.



**NOTE:** After the data has been written, a recap report will be displayed in your browser. This shows a listing of each record and field that was successfully updated as well as any issues that were encountered. Afterwards, you will receive a prompt asking if you want to refresh data. This may be beneficial if any of the queries or functions show the values that would have been updated because you will be able to see the updated information after it has refreshed.

## Part 4 – Import-Enable the Misc Worksheet Values

In this part, you will add the capability to send the values from certain columns to job cost miscellaneous worksheets. Since this involves the creation of transactions, Office Connector Import will be utilized to create an import file.

1. Select columns **Q** through **Y**
2. Right click on the column-header for column **Q** and click **Unhide**
3. Click in cell **T13**
4. Click the **Add-Ins** tab of the ribbon
5. Click  **Import Wizard** on the Office Connector Import toolbar
6. In the **Type of import** list, select **JC Misc Worksheet Import File** and click **Next**
7. In the **Transaction Columns** list, check the box for the following columns and then click **Next**:
  - **Job**
  - **Extra**
  - **Cost Code**
  - **Transaction Type**
  - **Transaction Date**
  - **Description**
  - **Amount**
  - **Action**
8. Click **Link selected columns to cells in my worksheet**
9. On the **Job** row, click the drop-down arrow in the **Value** column and select **JobID**.
10. In the grid, supply the following values in the Value column:

Cell Reference	Column	Value
<input checked="" type="checkbox"/>	<b>Extra</b>	A13
<input checked="" type="checkbox"/>	<b>Cost Code</b>	B13
<input type="checkbox"/>	<b>Transaction Type</b>	MiscAmount3
<input checked="" type="checkbox"/>	<b>Transaction Date</b>	AsOfDate
<input checked="" type="checkbox"/>	<b>Description</b>	Q13
<input checked="" type="checkbox"/>	<b>Amount</b>	M13
<input type="checkbox"/>	<b>Action</b>	Replace



**TIP:** For the cell addresses, you can alternatively click the cell-selector on the far right edge of the value column and click on the required cell. In the case of the **Transaction Date**, you can click the drop-down and select **AsOfDate** since this is a named cell.



11. Click **Finish**.

**NOTE:** You may receive the following pop-up notification:


*The return value of the TSIImport function can be useful for debugging a new workbook, but has no practical value in everyday use.*

*It is a good practice to hide the TSIImport columns prior to deploying a workbook to end users.*

Unlike regular Excel functions that are intended to return a value that you want to see or use in some way, the TSIImport function acts as an instruction to Office Connector. It therefore doesn't return a useful value.

12. Click in cell **U13**

13. Click the **Add-Ins** tab of the ribbon

14. Click  **Import Wizard** on the Office Connector Import toolbar

15. In the **Type of import** list, select **JC Misc Worksheet Import File** and click **Next**

16. In the **Transaction Columns** list, check the box for the following columns:

- **Job**
- **Extra**
- **Cost Code**
- **Transaction Type**
- **Transaction Date**
- **Description**
- **Amount**
- **Action**

17. Click **Link selected columns to cells in my worksheet**

18. On the **Job** row, click the drop-down arrow in the **Value** column and select **JobID**.

19. In the grid, supply the following values in the Value column:

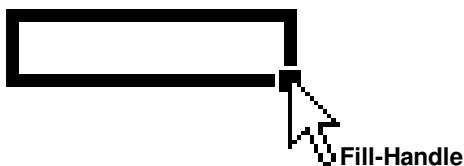
Cell Reference	Column	Value
<input checked="" type="checkbox"/>	<b>Extra</b>	A13
<input checked="" type="checkbox"/>	<b>Cost Code</b>	B13
<input type="checkbox"/>	<b>Transaction Type</b>	MiscAmount2
<input checked="" type="checkbox"/>	<b>Transaction Date</b>	\$B\$6
<input checked="" type="checkbox"/>	<b>Description</b>	Q13
<input checked="" type="checkbox"/>	<b>Amount</b>	N13
<input type="checkbox"/>	<b>Action</b>	Replace


20. Click **Finish**.

21. Select cells **T13** and **U13** then double-click on the fill handle in order to copy the formulas down to each row.



**NOTE:** The fill-handle is the solid box in the lower-right corner of the cell: When you double-click this box, the formula in the cell will be copied down.



22. Select columns **R** through **X**.
23. Right-click on the column-header for column **R** and click **Hide**.
24. Test the newly added import capability
  - a. Enter some numbers in column **M** (Cost To Complete)
  - b. Click the **Add-Ins** tab of the ribbon.
  - c. Click  **Save Import File** of the Office Connector Import toolbar
  - d. In the **Import file** box, the filename should be `JCMWTran.txt` and the path will be your Sage Timberline Office data folder.
  - e. Select **Launch Office Connector – Import Misc Worksheets**
  - f. Click **OK**. If a notification pops up indicating that the file already exists, click **Replace**.



**NOTE:** The following notification message may appear:

*Note that the import task may default to the last used import file, which may not be the same as the import file you just created. Please be sure to select the following file:*

This means that Office Connector Import has created the import file using the name you provided but to complete the importing of the data, another program is used. The program that imports the data remembers the last filename that it was used with. If this filename is different than the one you just created, you'll need to make sure to select your file.

- g. In the **Import File** box, type: `JCMWTran.TXT`
- h. Click **Import**



**NOTE:** After the file has been imported, a recap report is displayed in your browser showing the results of the import. This may include a list of records that were skipped because they contained transactions with a zero amount (which is not allowed). A list of the transactions that were successfully created will also be displayed.



**NOTE:** You might notice that the transaction amounts don't match what you entered in the worksheet. This is because we identified the "Replace" action. This causes transactions to be created that represent the difference between the current value and the replacement value. The transaction amounts you see are therefore the amounts that needed to be added or subtracted to the existing values in the master file in order for them to equal the amounts on your worksheet.

## Part 5 – Save the Updated Template

1. Click the **Information** worksheet
2. Click in cell **D45** and type: `Revision 19-SUMMIT`
3. Click in cell **D46** and type today's date and time.
4. Click the **Admin** worksheet.
5. Click in cell **C5** and press the **Delete** key.
6. Click in cell **C7** and type: `1/1/1901`



**NOTE:** We use this date as the default rather than leaving the cell blank. This is because a blank is not a valid date and may not work with the queries and functions in the template.

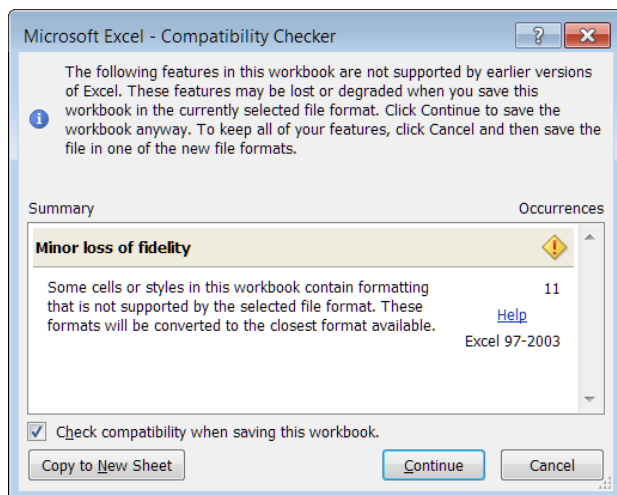
7. Click **Refresh Data**
8. Click **File** and then **Save**
9. You will receive a notice:

*“This workbook contains external data. Do you want Microsoft Excel to clear the data before saving the template and then automatically refresh the data whenever the template is opened?”.*

Click **No**.



**NOTE:** When saving the template, you may receive the following notice:



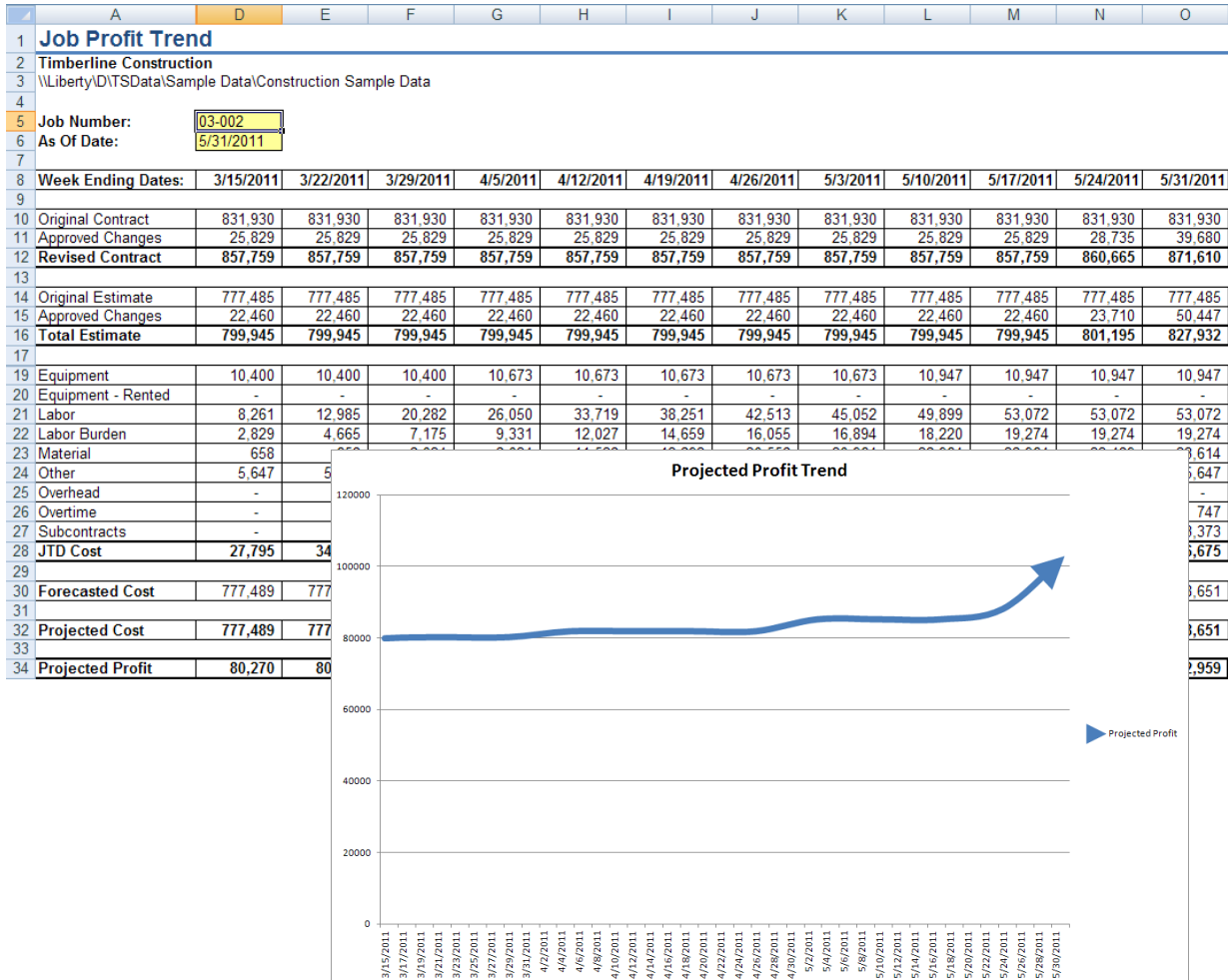
This is because the template was saved as an Excel 97-2003 Template so that it will be compatible with current versions of Excel as well as Excel 2003. This notice is telling you that since you are using a newer version of Excel, there are some formatting and other features that apply to the current version of Excel, but not older versions. If you have used any styles or formatting that aren't supported by the older versions, they will therefore be lost. This window helps you identify potential issues that you may want to address.

The alternative is to save the template in the native format of Excel 2007 and higher by selecting the Excel Template file type.

# Exercise #2 – Job Profit Trend

In this exercise, you will build a trending report that displays the profitability that was projected for a given job and how the weekly projections have changed over the past twelve weeks. This analysis makes use of the cumulative contract value, estimate, and change orders, as well as forecasted cost to complete values that may have been entered or imported into Misc Worksheets each week.

The final step of the report includes the creation of a chart that graphically depicts the trend in the profit projections:



## Part 1 – Start New Report

1. On the Windows Desktop, double-click **Office Connector Launch Pad**
2. Click the **Reports** tab
3. Double-click **(New Report).xlt**



**NOTE:** When building an Office Connector report, you are not required to start with this template. You can start with a blank Excel workbook if you want. Using this template simply gives you a jump-start on some of the report's structure and styles.

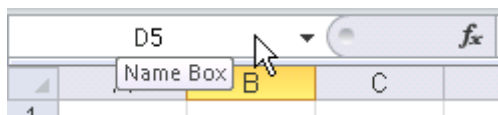
4. In the **Select Sage Timberline Office Company** window, select **Timberline Construction** and click **OK**
5. Click the **Report** worksheet
6. Select rows **5** through **13**, right-click on one of these row labels, and then click **Delete**
7. Click in cell **A1** and type: `Job Profit Trend`

## Part 2 – Create Parameter Cells

1. Click in cell **A5** and type: `Job Number:` .
2. Click in cell **D5** and then in the **Name Box**, type: `JobNumber` .



**TIP:** The **Name Box** is located in the upper left corner of the worksheet. The cell address of the selected cell is normally displayed here. To assign a name to a cell, you can click inside this box, type a name, and press Enter. Later, you can refer to the cell (in formulas for example) using its name rather than its cell address.



3. While still in cell **D5**, type: `03-001`
4. Click in cell **A6** and type: `As Of Date:`
5. Click in cell **D6** and then in the **Name Box**, type: `AsOfDate`
6. While still in cell **D6**, type: `5/31/2011`
7. Select cels **D5** and **D6**, then in the **Styles** group (of the Home tab) click the **Cell Style** named **Data Entry**



**NOTE:** The Data Entry style exists to provide an easy visual means to identify the cells where the user is intended to type. When the worksheet is protected, the Data Entry cells will remain unprotected.

## Part 3 – Add 12-Month Column Captions

1. Click in cell **O8** and type: =AsOfDate



**NOTE:** If cell **O8** displays a number (e.g., 40694), this is because Excel doesn't know yet that the cell should be formatted as a date. Dates are actually stored as numbers behind the scenes and so the number 40694 represents the number of days that have elapsed since January 1, 1900. To format this value as a date, right-click the cell, click **Format Cells** and then choose the first date format.

2. Click in cell **N8** and type: =O8-7
3. Copy the formula that is in cell **N8** to cells **D8** through **M8**


## Part 4 – Add Row Labels

1. Type the following labels into these cells:

	<b>A</b>	<b>B</b>
10	Original Contract	Scheduled value
11	Approved Changes	Aprvd schdl val chng
12	Revised Contract	
13		
14	Original Estimate	Original estimate
15	Approved Changes	Approved est changes
16	Total Estimate	




**NOTE:** The values in column B are being used to identify the applicable transaction types for each row. Make very certain to enter these values exactly as shown here (with attention to the use of upper and lower case characters).

2. Click in cell **A18**.
3. Click the **Add-Ins** tab of the ribbon.
4. Click  **Query Wizard** on the Office Connector toolbar.
5. Select the table named **JC Standard Category** and click **Next**
6. In the **JC Standard Category fields** list, check the following boxes:
  - **Category**
  - **Description**
  - **Accumulate As**
7. Click **Finish**
8. Select cells **B18** through **B27** (the entire contents of the **Description** column).
9. Right-click and click **Cut**
10. Click in cell **C18**, right-click, and then click **Insert Cut Cells**
11. Click in cell **A30** and type: Forecasted Cost At Completion
12. Click in cell **B30** and type: Misc worksheet 2

13. Click in cell **A32** and type: *Projected Cost*
14. Click in cell **A34** and type: *Projected Profit*

## Part 5 – Add Contract and Estimate Amounts

1. Click in cell **D10**.
2. Click  **Sum Wizard** on the Office Connector toolbar.
3. Select the table having **JC Transaction** in the **Table** column and **CURRENT.JCT** in the **File** column, and click **Next**
4. In the **JC Transaction fields** list, check the **Amount** box and click **Next**
5. Add a condition for the Job Number
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Job**
  - c. In the **Comparison** box, select **Equal**
  - d. In the **Compare to** box, select **Cell Reference** for the **Value Type**
  - e. Click the drop-down in the **Value** box and select **JobNumber**
  - f. Click **OK**
6. Add a condition for the As Of Date
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Transaction Date**
  - c. In the **Comparison** box, select **Less or equal**
  - d. In the **Compare to** box, select **Cell Reference** for the **Value Type**
  - e. In the **Value** box, type: *D\$8*



**TIP:** Make sure to enter the dollar sign in the correct place. This way, when the formula is copied, the row number in the copies won't change.


- f. Click **OK**
7. Add a condition for the transaction type
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Transaction Type**
  - c. In the **Comparison** box, select **Equal**
  - d. In the **Compare to** box, select **Cell Reference** for the **Value Type**
  - e. In the **Value** box, type: *\$B10*



**TIP:** Make sure to enter the dollar sign in the correct place. This way, when the formula is copied, the column letter in the copies won't change.

- f. Click **OK**
8. Click **Finish**
9. Copy the formula in cell **D10** to the following ranges of cells:
  - **D10:O11**
  - **D14:O15**
  - **D30:O30**
10. Using Excel's SUM function add totals on rows **12** and **16** for columns **D** through **O**

## Part 6 – Add Cost Amounts

1. Click in cell **D19**.
2. Click the  **Sum Wizard** on the Office Connector toolbar
3. Select the table having **JC Transaction** in the **Table** column and **CURRENT.JCT** in the **File** column, and click **Next**
4. In the **JC Transaction fields** list, check the **Amount** box and click **Next**
5. Add a condition for the Job Number
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Job**
  - c. In the **Comparison** box, select **Equal**
  - d. In the **Compare to** box, select **Cell Reference** for the **Value Type**
  - e. Click the drop-down in the **Value** box and select **JobNumber**
  - f. Click **OK**
6. Add a condition for the As Of Date
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Accounting Date**
  - c. In the **Comparison** box, select **Less or equal**
  - d. In the **Compare to** box, select **Cell Reference** for the **Value Type**
  - e. In the **Value** box, type: **D\$8**
  - f. Click **OK**
7. Add a condition for the transaction type



- a. Click **Add Condition**
- b. In the **Field** list, select **Transaction Type**
- c. In the **Comparison** box, select **Like**
- d. In the **Compare to** box, select **Literal Value** for the **Value Type**
- e. In the **Value** box, type: `__ cost`



**NOTE:** The value consists of two consecutive underscore characters, followed by a space, and then followed by the word “cost” in lower case. Each underscore character represents a single-character wildcard that can be any letter or number. This means that transaction types like “AP cost”, “EQ cost”, “IV cost”, “JC cost”, “PR cost”, “SM cost” will all match the criteria.

- f. Click **OK**
8. Add a condition for the category
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Category**
  - c. In the **Comparison** box, select **Equal**
  - d. In the **Compare to** box, select **Cell Reference** for the **Value Type**
  - e. In the **Value** box, type: `$B19`
  - f. Click **OK**
9. Click **Finish**
10. Copy the formula from cell **D19** to all cells in the range **D19:O27**
11. Click in cell **A28** and type: `JTD Cost`
12. Using Excel’s SUM function, add totals for rows **19** through **27** in columns **D** through **O**

## Part 7 – Add formula for Projected Cost and Profit

1. Click in cell **D32** and type: `=MAX(D28, IF(D30<>0, D30, D16))`



**NOTE:** The IF function in this formula checks to see if a forecasted cost-to-complete value was entered. If so, that value is used, but if not, the total estimate is used. In either case, if the job to date cost is greater, then the job to date cost will be used (due to the MAX function).

2. Copy the formula from cell **D32** to cells **E32** through **O32**
3. Click in cell **D34** and type: `=D12-D32`
4. Copy the formula from cell **D34** to cells **E34** through **O34**

## Part 8 – Hide columns


1. Select columns **B** and **C**
2. Change the background color to a medium gray



**TIP:** Giving columns that you intend to leave hidden a different color will help you know which columns you may later need to re-hide if you do future work on the report.

3. Right click on the column label for column **B** or **C** and then click **Hide**

## Part 9 – Create a Profit Trend Graph

1. At the bottom of the workbook click  to add a new worksheet
2. Right-click on the tab for the new sheet, click **Rename**, and then type: `Trend Graph`
3. Click on the **Report** worksheet
4. Select cells **D8** through **O8**
5. While holding down the **Ctrl** key, click on cell **D34** and drag the mouse pointer to the right, stopping at cell **O34**.
6. Click the **Insert** tab of the ribbon
7. In the **Charts** group, select the first **2-D Line** chart.
8. Right-click on the edge of the newly created chart and click **Cut**
9. Click on the **Trend Graph** worksheet
10. Right-click in cell **A1** and click **Paste**
11. Using the lower-right grab-handle of the chart, expand its size to fill most of the screen.
12. Right-click on the blue-line that represents “**Series 1**” and click **Format Data Series**
13. Click **Line Style**
14. In the **Width** box, type: `6 pt`
15. For the **End type**, select **→**
16. For the **End size**, select the largest size
17. Check **Smoothed line**
18. Click **Close**
19. Right-click the **Series 1** label and click **Select Data**
20. In the **Legend Entries (Series)** box, click **Edit** and then in the **Series name** box, type: `=“Projected Profit”`

21. Click **OK** and then **OK** again to dismiss the windows
22. Right-click the **Admin** worksheet and click **Delete**. Click **Delete** again in the pop-up notice asking you to confirm that you want to permanently delete the data.

## Part 10 – Test Your Report

1. Click on the **Report** worksheet and enter different job numbers to see how the results change:
  - 03-001
  - 03-002
  - 03-003

## Part 11 – (Optional) Pie Chart for Cost Types

1. Click in cell **D18** of the Report worksheet and type: *Week 1*
2. Click in cell **D18** and then click down on the fill-handle and drag the mouse pointer to the right, stopping at cell **N18**, and then release the mouse button.



**TIP:** This technique will automatically create column labels of Week 1 through Week 11.

3. Click in cell **O18** and type: *Current*
4. Unhide column **C**
5. Select cells **C18** through **O27**
6. Click the **Insert** tab of the ribbon
7. Click the **PivotTable** drop-down button and click **PivotChart**
8. Click **OK** to accept the default options
9. In the **PivotTable Field List** box, check the boxes for **Accumulate As** and **Current**
10. Right-click on the edge of the chart and click **Change chart type**
11. Click **Pie**, click the first pie chart type shown, and then click **OK**
12. In the **Chart Layouts** group of the **Design** tab, the first option (having a tool-tip of **Layout 1**):



13. Rename the newly created chart worksheet as: *Cost Type Summary*

## Part 12 – (Optional) Boost Performance

As built so far, each TSSUM function will trigger Office Connector to submit a query to the database that will return the requested value. Since there are a number of TSSUM functions in the worksheet, this means that several “round-trips” between your workstation and the server will occur. By replacing the table argument (“CURRENT\_JCT\_RECORD\_1”) with a prepared SQL statement, we can tell Office Connector up-front what subset of data we are going to work with. That data is then copied into memory so that each TSSUM function has it immediately available when each formula is calculated. This reduces the number of “round-trips” to the server and increases the performance of the report.



**TIP:** In almost all cases, the table argument of any Office Connector function can be replaced with a SQL statement. The result of the SQL statement is treated like a hidden table that resides in memory.

1. Click the **SQL** worksheet
2. Click in cell **B6** and type: `sqlJobTrans`
3. Click in cell **B7** and type:

```
= "SELECT TJOB, TCAT, TRANTYP, TRANDAT, TACTDAT, TAMOUNT FROM
CURRENT_JCT_RECORD_1 WHERE TJOB=' ' & JobNumber & ' ' AND TRANTYP
IN ('Scheduled value', 'Aprvd schdl val chng', 'Original
estimate', 'Approved est changes', 'Misc worksheet 2') OR
TRANTYP LIKE '__ cost'"
```



**NOTE:** The above formula returns a SQL statement that, when executed, returns a table containing transactions for the specified job and only the specific columns needed by this report.

4. Click cell **B7** and then click in the **Name Box** and type: `sqlJobTrans`
5. Click the **Report** worksheet
6. Press **Ctrl** + **H** to bring up the **Find and Replace** window
7. In the **Find what** box, type: `"CURRENT_JCT_RECORD_1"`
8. In the **Replace with** box, type: `sqlJobTrans`
9. Click **Replace All**
10. Click **Close** in the Find and Replace window
11. Click in cell **D19** and press **F2**.

12. Use the left arrow key to move to the following section: LIKE '\_\_\_ cost '

Change this

- From: LIKE '\_\_\_ cost '
- To: LIKE '\*cost\*'



**NOTE:** Since the data is being filtered on the workstation and not by the server, a slight syntax change is required regarding the use of the wildcard characters.

13. Copy the formula from cell **D19** to the cell in the range of **D19:O27**

# Exercise #3 – Subcontractor Application For Payment

In this exercise you will create an Excel-based solution that can be used to automate payment applications from subcontractors. Current values for a given subcontract are queried to produce a billing worksheet. This can be sent to a subcontractor for completion (using a free viewer license of Office Connector on their end). Once the subcontractor has entered their billing amounts, the workbook can be sent back and then imported into Accounts Payable.

Item Number	CO#	Description	Original Contract	Approved Changes	Revised Contract	Previously Billed	Billed This Period	Total Billed	% Billed	Balance To Bill
1		2x6x10 S&B Studs	2,503.88	-	2,503.88	10.00	-	10.00	0%	2,493.88
2		2x6 R.L. S&B Studs	910.50	-	910.50	20.00	-	20.00	2%	890.50
3		2x12 R.L. Ceiling Joists	5,235.38	-	5,235.38	30.00	-	30.00	1%	5,205.38
4		Bridging Sets 1x4	549.00	-	549.00	40.00	-	40.00	7%	509.00
5		Roof Sheathing 3/4"	27,200.00	-	27,200.00	-	-	-	0%	27,200.00
6		2x6 R.L. Bulkhead	682.88	-	682.88	732.88	-	732.88	107%	(50.00)
7		2x8 R.L. Tiltup Form	1,593.38	-	1,593.38	1,653.38	-	1,653.38	104%	(60.00)
8		Nails - 16d common	186.75	-	186.75	-	186.75	186.75	100%	-
9		Sheetrock nails 1 3/4 x 1	366.60	-	366.60	-	150.00	150.00	41%	216.60
10		Shot Anchors	24.75	-	24.75	-	-	-	0%	24.75
11		Poly Vapor Barrier 6 mil	53.00	-	53.00	-	-	-	0%	53.00
12		Un-faced Insulation 3x2	1,125.00	-	1,125.00	-	500.00	500.00	44%	625.00
13		GWB 5/8" Thick All Size Reg	837.00	767.25	1,604.25	-	-	-	0%	1,604.25
14		Plaster	206.25	-	206.25	-	-	-	0%	206.25
15		CS 309 Curing Compound	625.00	-	625.00	625.00	-	625.00	100%	-
16		Forms Steel, Curb & Gutter	1,452.00	-	1,452.00	1,452.00	-	1,452.00	100%	-
17		Forms Oil	14.56	-	14.56	14.56	-	14.56	100%	-
18		Forms Oil	218.40	-	218.40	218.40	-	218.40	100%	-
19		Screed Pipe	2,041.20	-	2,041.20	2,041.20	-	2,041.20	100%	-
20		Lift Inserts, Tiltup	1,141.16	-	1,141.16	1,141.16	-	1,141.16	100%	-
21		Weld Plates, Tiltup	895.44	-	895.44	891.80	-	891.80	100%	3.64
22	2	8x2"x4" studs	-	234.00	234.00	-	-	-	0%	234.00
23	2	20"x2"x6" joists	-	136.50	136.50	-	-	-	0%	136.50
24	2	Storage Shelving	-	687.50	687.50	-	-	-	0%	687.50
<b>Totals</b>			<b>47,862.13</b>	<b>1,825.25</b>	<b>49,687.38</b>	<b>8,870.38</b>	<b>836.75</b>	<b>9,707.13</b>	<b>20%</b>	<b>39,980.25</b>

## Part 1 – Start New Report

1. On the Windows Desktop, double-click **Office Connector Launch Pad**
2. Click the **Reports** tab
3. Double-click **(New Report).xlt**



**NOTE:** When building an Office Connector report, you are not required to start with this template. You can start with a blank Excel workbook if you want. Using this template simply gives you a jump-start on some of the report's structure and styles.

4. In the **Select Sage Timberline Office Company** window, select **Timberline Construction** and click **OK**

## Part 2 – Create Parameter Cells

1. Click the **Admin** worksheet
2. Delete rows **4** through **6**
3. Delete rows **8** through **12**
4. Click in cell **B4** and type the following formula: `=TSCustomCaption("%20")`



**NOTE:** The TSCustomCaption function returns the customized caption for a specific field. In this case, field code %20 identifies the Commitment field which can be renamed in the Custom Descriptions window.


5. Click in cell **D4** and then in the **Name Box**, type: `CommitmentID`
6. In cell **D4**, type the value: `2317`

## Part 3 – Start the Report

1. Click the **Report** worksheet
2. Delete rows **5** through **13**
3. Click in cell **A1** and type: `Subcontractor Application For Payment`



## Part 4 – Add a Query for the Schedule of Values

1. Click in cell **A10**
2. Click the **Add-Ins** tab of the ribbon
3. Click  **Query Wizard** on the Office Connector toolbar
4. Select the **JC Commitment Item** table and click **Next**
5. In the **JC Commitment item fields** list, check the following boxes and then click **Next**
  - **Item Number**
  - **Description**
  - **Amount**
  - **Commitment CO**
  - **Approved commitment CO Amount**
  - **Amount Invoiced**
6. Add a condition for the Commitment ID
  - a. Click **Add Condition**
  - b. In the **Field** list, select **Commitment**
  - c. In the **Comparison** box, select **Equal**
  - d. In the **Compare to** box, select **Parameter** in the **Value Type** drop-down
  - e. In the **Value** box, click the drop-down and select **CommitmentID**
  - f. Click **OK**
7. Click **Next**
8. Click **Finish**

## 9. Change the column captions of the query

- a. Click  **SQL Editor** on the Office Connector toolbar

Change From:	Change To:
<pre>SELECT "ITEM" AS "Item Number", "IDESC" AS "Description", "IAMT" AS "Amount", "ICO" AS "Commitment CO", "IAPPCOA" AS "Approved commitment CO Amount", "IAMTINV" AS "Amount Invoiced"  FROM "MASTER_JCM_RECORD_13"  WHERE "ISUB"=?</pre>	<pre>SELECT "ITEM" AS "Item Number", "IDESC" AS "Description", "IAMT" AS "Original Contract", "ICO" AS "CO#", "IAPPCOA" AS "Approved Changes", "IAMTINV" AS "Previously Billed"  FROM "MASTER_JCM_RECORD_13"  WHERE "ISUB"=?</pre>

- b. Click **Save**

10. Click the column letter for column **D**, then right-click on it and click **Cut**

11. Click the column letter for column **B**, then right-click on it and click **Insert Cut Cells**

## Part 5 – Add Formula Columns


1. Click the column letter for column **F**, then right-click on it and click **Insert**

2. Revised Contract Column

- a. Click in cell **F10** and type: Revised Contract
- b. Click in cell **F11** and type: =D11+E11
- c. Double-click the fill-handle in cell **F11** to copy the formula down to each row

3. Billed This Period Column



- a. Click in cell **H10** and type: Billed This Period
- b. Click in cell **H11** and type: =0
- c. Double-click the fill-handle in cell **H11** to copy the formula down to each row
- d. Select the cells in this column (starting with **H11** through the last row)
- e. Click the **Home** tab on the ribbon

- f. In the **Styles** group, click on the **Cell Style** named **Data Entry**
4. Total Billed Column
    - a. Click in cell **I10** and type: Total Billed
    - b. Click in cell **I11** and type: =G11+H11
    - c. Double-click the fill-handle in cell I11 to copy the formula down to each row
  5. Percent Billed Column
    - a. Click in cell **J10** and type: % Billed
    - b. Click in cell **J11** and type: =IF(F11<>0, I11/F11, 0)
    - c. Double-click the fill-handle in cell **J11** to copy the formula down to each row
    - d. Format the values in column **J** as Percent.
  6. Balance To Bill Column
    - a. Click in cell **K10** and type: Balance To Bill
    - b. Click in cell **K11** and type: =F11-I11
    - c. Double-click the fill-handle in cell **K11** to copy the formula down to each row
  7. Retainage Column
    - a. Click in cell **G6** and type: Retainage %
    - b. Click in cell **H6**.
    - c. Click  **Lookup Wizard** on the Office Connector toolbar
    - d. Select the **JC Commitment** table and click **Next**
    - e. In the **Value** column (for Commitment), type: CommitmentID
    - f. Click **Next**
    - g. Check the **Retainage Percent** box and click **Finish**
    - h. Click cell **H6** and then in the **Name Box**, type: RetainagePct
    - i. Click in cell **L10** and type: Retainage (This Invoice)
    - j. Click in cell L11 and type: =H11\*RetainagePct


## Part 6 – Add Totals

1. Navigate to the second blank row following the list of commitment items (i.e., row 36)
2. Place an Excel SUM function on this row for columns **D** through **I** and columns **K** through **L**.
3. On the total row for column **J**, copy the formula from cell **J11**


## Part 7 – Create the Report Heading

1. Show Commitment Information
  - a. Click in cell **A5** and type: `=TSCustomCaption("%20")`
  - b. Click in cell **B5** and type: `=CommitmentID`
  - c. Click in cell **C5**.
  - d. Click the **Add-Ins** tab of the ribbon
  - e. Click  **Lookup Wizard** on the Office Connector toolbar
  - f. Select the **JC Commitment** table and click **Next**
  - g. In the **Value** column (for **Commitment**), type: **CommitmentID**
  - h. Click **Next**
  - i. Check the box for the following columns and then click **Finish**
    - **Description**
    - **Vendor**
    - **Job**
2. Show Vendor information
  - a. Click in cell **A6** and type: `Vendor`
  - b. Click in cell **D5** and press **Ctrl** + **C**.
  - c. Click in cell **B6** and press **Ctrl** + **V**.
  - d. While still in cell **B6**, click in the **Name Box**, and type: `VendorID`
  - e. Click in cell **C6**.
  - f. Click  **Lookup Wizard** on the Office Connector toolbar
  - g. Select the **AP Vendor** table and click **Next**
  - h. In the **Value** column (for **Vendor**), type: `VendorID`
  - i. Check **Name** and click **Finish**


### 3. Show Job information

- a. Click in cell **A7** and type: Job
  - b. Click in cell **E5** and press **Ctrl** + **C**.
  - c. Click in cell **B7** and press **Ctrl** + **V**.
  - d. While still in cell **B7**, click the **Name Box**, and type: JobID
  - e. Click in cell **C7**
  - f. Click  **Lookup Wizard** on the Office Connector toolbar
  - g. Select the **JC Job** table and click **Next**
  - h. In the **Value** column (for Job), type: JobID
  - i. Check **Description** and click **Finish**
- ### 4. Add data entry cells for invoice information
- a. Click in cell **D5** and type: Invoice
  - b. Click in cell **D6** and type: Date
  - c. Click the **Home** tab of the ribbon
  - d. Select cells **E5** and **E6** and then in the **Styles** group, click on the **Cell Style** named **Data Entry**
- ### 5. Include the total invoice amount
- a. Click in cell **G5** and type: Amount
  - b. Click in cell **H5** and type: =H36

## Part 8 – Import-Enable the Report

1. Add an import instruction for the invoice record
  - a. Click in cell **M5**
  - b. Click  **Import Wizard** on the Office Connector toolbar
  - c. In the **Type of Import** list, select **AP Invoice Import File** and click **Next**
  - d. In the **Record Types** list, select **Invoice** and click **Next**
  - e. In the **Invoice Columns** list, check the following boxes and then click **Next**:
    - **Vendor**
    - **Invoice**
    - **Description**
    - **Amount**
    - **Invoice Date**
    - **Accounting Date**
  - f. Click **Link selected columns to cells in my worksheet**
  - g. Complete the grid as follows:

Cell Reference	Column	Value
<input checked="" type="checkbox"/>	<b>Vendor</b>	VendorID
<input checked="" type="checkbox"/>	<b>Invoice</b>	\$E\$5
<input checked="" type="checkbox"/>	<b>Description</b>	\$C\$5
<input checked="" type="checkbox"/>	<b>Amount</b>	\$H\$5
<input checked="" type="checkbox"/>	<b>Invoice Date</b>	\$E\$6
<input checked="" type="checkbox"/>	<b>Accounting Date</b>	\$E\$6

- h. Click **Finish**
  - i. Click cell **M5**, click in the **Name Box**, and then type: `InvoiceRecord`
2. Add an import instruction for the first distribution record
    - a. Click cell **M11**
    - b. Click  **Import Wizard** on the Office Connector toolbar
    - c. In the **Type of Import** list, select **AP Invoice Import File** and click **Next**
    - d. In the **Record Types** list, select **Distribution** and click **Next**

- e. On the **Parent Record** setup, click the drop-down, select **InvoiceRecord**, and click **Next**
- f. In the **Distribution Columns** list, check the following boxes and then click **Next**:
  - **JC Commitment**
  - **JC Commitment Line Item**
  - **Amount**
  - **Retainage**
  - **Description**
- g. Click **Link selected columns to cells in my worksheet**
- h. Complete the grid as follows:

Cell Reference	Column	Value
<input checked="" type="checkbox"/>	<b>JC Commitment</b>	CommitmentID
<input checked="" type="checkbox"/>	<b>JC Commitment Line Item</b>	\$A11
<input checked="" type="checkbox"/>	<b>Amount</b>	\$H11
<input checked="" type="checkbox"/>	<b>Retainage</b>	\$L11
<input checked="" type="checkbox"/>	<b>Description</b>	\$C11


- i. Click **Finish**
- j. Click in cell **M11** and then click ***f*** (on the formula bar at the top)
- k. In the **FileDefinition** box, type: `IF($H11<>0, "APInvoice", "")`



**NOTE:** This formula change causes the first argument of the TSIImport function to be blank ("") when the billing amount (column H) is zero. When the first argument is blank, Office Connector Import skips that particular instruction. This way, line items that have no billing amount will not result in an invoice distribution record being created.

- l. Double-click the fill-handle in cell **M5** to copy the formula down to all rows
3. Right-click the column label for column **M** and click **Hide**

## Part 9 – Edit Preferences


1. Click the **Add-Ins** tab on the ribbon.
2. Click  **Edit Preferences** on the Office Connector toolbar
3. Click **This Workbook**
4. Check **Save data with report**



**NOTE:** This causes data values in the report to be stored with the workbook so that a live database connection is not needed in order to open the workbook later. For users (such as external subcontractors) who do not own Sage Timberline Office, the Office Connector software can be installed and used in a Viewer mode (with no purchase required) so that the stored data will be displayed.

5. Click **OK**

## Part 10 – Save and Test

1. Save the workbook
2. Enter values for **Invoice** and **Date** as well as dollar amounts in the **Billed This Period** column
3. Click  **Save Import File** on the Office Connector toolbar
4. Complete the steps necessary to import the file into Accounts Payable



# Special Icons

Use the following special icons to call out information. Delete this page when you are finished.



**NOTE:** Enter the text of the note here.



**WARNING:** Enter the text of the warning here.



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