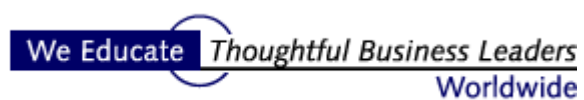


A Beginning Guide to the Excel 2007 Pivot Table

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I. What is a Pivot Table?

Excel's Pivot Table is probably the most useful and time-saving tool for analyzing data that's in table format. In the simplest Pivot Table, one identifies a row value, a column value, and a data value. The data value (usually a numeric value) in this simple Pivot Table is automatically summarized at each row and column intersection.

The illustration at right shows a small part of a table of data in Excel 2007.

The data can be organized into a Pivot Table where Region values are the Pivot Table's row field, Product values are the column field, and Revenue values are summarized in the data field.

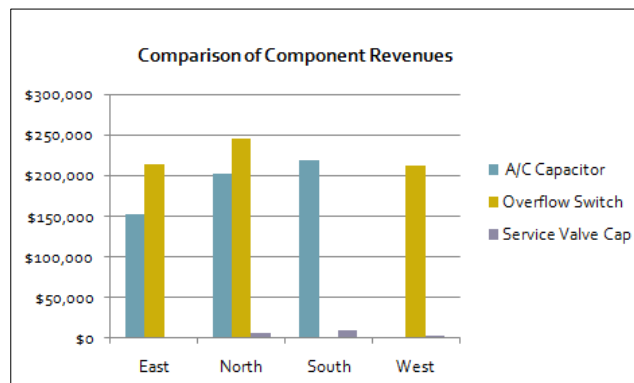
	B	C	D	E	F	G
9	Region	Product	Date of Sale	Customer	Units Sold	Revenue
10	North	A/C Capacitor	1/5/2007	Swervarama Incorporated	100	50000
11	North	A/C Capacitor	1/6/2007	Mordor Sisters Corp.	20	10000
12	North	A/C Capacitor	1/9/2007	Markoff, Mancoff, & Minute	10	5000
13	South	A/C Capacitor	1/16/2007	Krescent Supply	15	7500
14	South	A/C Capacitor	2/23/2007	Markoff, Mancoff, & Minute	12	6000
15	South	A/C Capacitor	3/6/2007	Quilty Brothers Inc.	10	5000
16	East	A/C Capacitor	3/8/2007	Formerlee-Better Systems	5	2500
17	South	A/C Capacitor	3/14/2007	Markoff, Mancoff, & Minute	18	9000
18	East	A/C Capacitor	3/28/2007	Quilty Brothers Inc.	20	10000
19	East	A/C Capacitor	4/2/2007	Minx Madness Inc.	10	5000
20	North	A/C Capacitor	4/20/2007	Orange Service & Supply	15	7500
21	North	A/C Capacitor	5/18/2007	Orange Service & Supply	12	6000
22	South	A/C Capacitor	5/22/2007	A-1 National	10	5000
23	East	A/C Capacitor	5/24/2007	Esternex-Tek Ink.	5	2500
24	South	A/C Capacitor	6/4/2007	Sensor-Best Ltd.	18	9000
25	South	A/C Capacitor	6/5/2007	Bessmer Systems	10	5000
26	East	A/C Capacitor	6/5/2007	Esternex-Tek Ink.	20	10000
27	North	A/C Capacitor	6/12/2007	Better Living Air Supply	15	7500
28	East	A/C Capacitor	6/13/2007	Sensor-Best Ltd.	12	6000
29	East	A/C Capacitor	7/6/2007	Quilty Brothers Inc.	10	5000
30	South	A/C Capacitor	7/13/2007	Sensor-Best Ltd.	5	2500
31	North	A/C Capacitor	8/6/2007	Swervarama Incorporated	18	9000
32	South	A/C Capacitor	8/16/2007	Soroz Repair-All	20	10000
33	East	A/C Capacitor	8/27/2007	Soroz Repair-All	10	5000

At each row/column intersection is the sum of Revenue for that combination of row and column value. For example:

Total Revenue for A/C Capacitors in the East region is \$152,500.
 Total Revenue for Overflow Switches in the West region is \$211,875.
 Total Revenue for Service Valve Caps in the North region is \$6,615.

A	B	C	D
Row Labels	A/C Capacitor	Overflow Switch	Service Valve Cap
East	\$152,500	\$213,375	
North	\$202,500	\$244,500	\$6,615
South	\$218,500		\$10,170
West		\$211,875	\$4,050

The data can be presented as a Pivot Table, as a Pivot Chart, or as both at the same time.



The Pivot Table invites data exploration and analysis: “slicing and dicing” large amounts of data is easy. The example Pivot Table above shows revenues for only three of the 14 products in the data. The Pivot Table can help a user spot trends and patterns in the data and allows for easy comparisons. Using a Pivot Table one can zoom in on particular data or parts of the data for micro-analysis or zoom out for macro views.

Most of the features of the Pivot Table are intuitive for the user comfortable with the Windows/Office interface.¹ The Pivot Table invites experimentation. After a few sessions with Pivot Table basics you’ll feel comfortable exploring the more advanced features on your own.

II. Basic Excel 2007 Pivot Table Creation

Source Data Requirements

The most basic of Pivot Tables is created from source data that’s in a table or range in an Excel workbook. Data suitable for use in a Pivot Table must have these characteristics:

1. The top row of data contains column headers.
2. Each row of data is a record about a particular entity or transaction.
3. Each column of data holds the same kind of information.
4. There are no entirely blank rows in the data.
5. There are no entirely blank columns in the data.
6. If a column contains numbers, use a zero instead of a blank cell when you don’t have a value.

In Excel 2007 a range of data that has the characteristics above can be specifically designated as a **table**. A Pivot Table can still be constructed, however, even if the data has *not* been so designated. In this case, it’s simply called a **range**. If you generate a Pivot Table from a range, the range must have the characteristics named above. Below is an example of a range that meets all the characteristics but the first. This data range has no header row, making it unsuitable as the source data for a Pivot Table.

	B	C	D	E	F	G	H	I
7	South	A/C Capa	2/23/2007	Markoff, M	12	6000	1200	4800
8	South	A/C Capa	3/6/2007	Quilty Brot	10	5000	1000	4000
9	East	A/C Capa	3/8/2007	Formerlee	5	2500	500	2000
10	South	A/C Capa	3/14/2007	Markoff, M	18	9000	1800	7200
11	East	A/C Capa	3/28/2007	Quilty Brot	20	10000	2000	8000
12	East	A/C Capa	4/2/2007	Minx Madr	10	5000	1000	4000
13	North	A/C Capa	4/20/2007	Orange Se	15	7500	1500	6000
14	North	A/C Capa	5/18/2007	Orange Se	12	6000	1200	4800
15	South	A/C Capa	5/22/2007	A-1 Nation	10	5000	1000	4000
16	East	A/C Capa	5/24/2007	Esternex-T	5	2500	500	2000
17	South	A/C Capa	6/4/2007	Sensor-Be	18	9000	1800	7200
18	South	A/C Capa	6/5/2007	Bessmer S	10	5000	1000	4000
19	East	A/C Capa	6/5/2007	Esternex-T	20	10000	2000	8000
20	North	A/C Capa	6/12/2007	Better Livir	15	7500	1500	6000
21	East	A/C Capa	6/13/2007	Sensor-Be	12	6000	1200	4800
22	East	A/C Capa	7/6/2007	Quilty Brot	10	5000	1000	4000

¹ If you’re switching from the 2003 Pivot Table, however, you’ll probably find you spend a bit of time at first locating the old features in their new, 2007 locations.

Below left is a Pivot Table created from the range *with no header row*. Below right is the version when *a header row is added*.

Sum of 5000	Column Labels	
Row Labels	A/C Capacitor	Grand Total
East	41000	41000
North	21000	21000
South	46500	46500
Grand Total	108500	108500

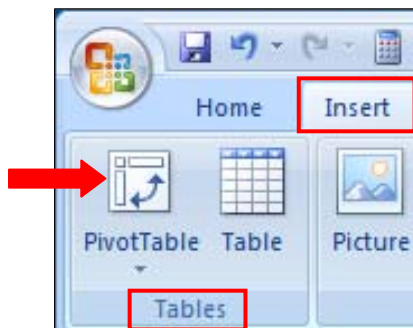
Created from invalid source data (no header row).

Sum of Revenue	Column Labels	
Row Labels	A/C Capacitor	Grand Total
East	41000	41000
North	26000	26000
South	46500	46500
Grand Total	113500	113500

Created from valid source data.

Pivot Table Creation Steps

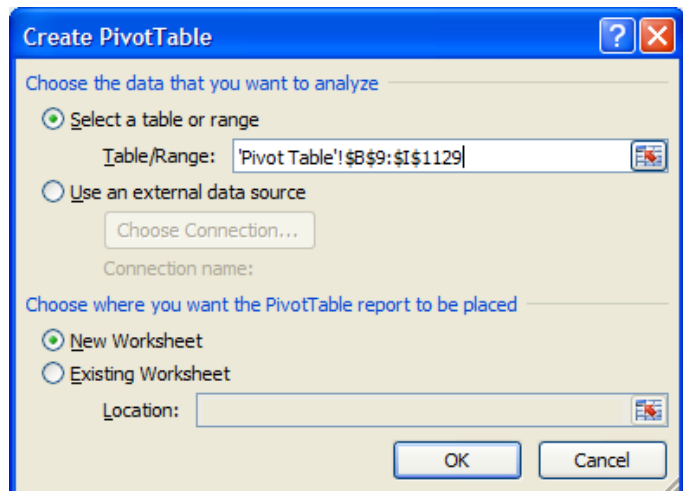
1. Make sure your table or range has the characteristics required for Pivot Table source data.
2. Click any single cell in the table or range and choose the "Insert" tab on the Excel ribbon.
3. Find the "Tables" group at left and click the PivotTable button to open the "Create PivotTable" dialog.



	B	C	D
9	Region	Product	Date of Sale
10	South	Condenser Fan Mo	1/4/200
11	North	Overflow Switch	1/4/200
12	North	A/C Capacitor	1/5/200
13	South	A/C Condensate Pi	1/5/200
14	North	A/C Condensate Pi	1/5/200
15	South	Refrigerant Line Ins	1/5/200
16	North	A/C Capacitor	1/6/200
17	East	Overflow Switch	1/6/200
18	East	Overflow Switch	1/6/200
19	North	Refrigerant Line Ins	1/6/200
20	North	A/C Condensate Pi	1/8/200
21	East	Compressor Crank	1/8/200
22	North	A/C Capacitor	1/9/200
23	North	Evaporator Fin Corr	1/10/200
24	East	Overflow Switch	1/10/200
25	East	Compressor Crank	1/11/200

4. Because a single cell in your source data is current, Excel completes the "Table/Range" identification for you by "looking" left, right, up, and down until it encounters a worksheet edge or a blank row or column. Excel identifies everything inside that area as the source data range.

By default, the Pivot Table will be created on a new worksheet that Excel inserts into the workbook.



- Leave the defaults in the “Create PivotTable” dialog and click OK. Excel adds a new worksheet to the workbook and displays the “PivotTable Field List” and a Pivot Table “build space”.

If you’re accustomed to creating Pivot Tables with the 2003 or earlier version of Excel, notice that Microsoft has redesigned the field list and revamped the “build space” entirely. In addition, the *way* you build a Pivot Table in 2007 is completely different. Unless you change 2007’s default setting back to “Classic PivotTable layout”, you can no longer drag items from the Field List and drop them onto the Pivot Table. In Excel 2007, you build a Pivot Table by clicking and/or dragging fields from the top of the Field List to *value areas at the bottom of the Field List*. Excel uses this information to build the Pivot Table in the build space.

“Build space”.

Field names from the source data.

Drop zones that create the Pivot Table structure.

- You need at least two fields in a Pivot Table report (a row or column field and a data field), but three or more fields (a row field, a column field, and a data field) are the usual. Drag a field name from the top of the list at the top of the dialog to one of the “drop areas” at the bottom of the dialog. Each field has a check box to its left to allow you to easily add (or remove) that column data from the Pivot Table. If you turn on the check

mark for a text field, the Pivot Table automatically adds that field to the “Row Labels” drop area. If you turn on a check mark for a numeric field, the Pivot Table automatically adds that field to the “Values” drop area.

Row Labels	Sum of Units Sold
East	8760
A/C Capacitor	305
Compressor Crankcase Heater	510
Compressor Protection Delay Timer	1425
Freon Leak Repair Kit	3675
Overflow Switch	2845
North	37027
A/C Capacitor	405
A/C Condensate Pump	257
Compressor Crankcase Heater	332
Compressor Protection Delay Timer	1150
Condenser Coil Fin Comb	77
Condenser Fan Blades	15373
Condenser Fan Motor	1189
Evaporator Fin Comb	327
Freezestat	600
Freon Leak Repair Kit	3625
Overflow Switch	3260
RBM 90-340 Switching Relay	585
Refrigerant Line Insulation	9700
Service Valve Cap	147
South	24753
A/C Capacitor	437
A/C Condensate Pump	154

In the illustration above, when the boxes to the left of the text fields “Region” and “Product” are checked, these fields are automatically designated as “Row Labels” at the bottom of the Field List and appear that way in the Pivot Table build space. When the numeric field “Units Sold” is checked, it is automatically designated as a “Values” field at the bottom of the Field List and appears in the data area of the Pivot Table build space. Because the Pivot Table automatically summarizes anything dropped into the data area, the “Units Sold” label is changed to “Sum of Units Sold” and Excel applies a sum summary if possible.

An Important 2003 → 2007 Difference

In an Excel 2003 Pivot Table you could drag fields from the Field List and drop them directly on the Pivot Table structure in the worksheet. In Excel 2007, you build the Pivot Table structure entirely within the Field List. Drag field names from the top of the Field List to the Field List drop zones for “Report Filter”, “Column Labels”, “Row Labels”, and “Values”. Or, turn on the check box to the left of a Field List field name and Excel will locate the field in the drop area that makes most sense. Fields that hold text automatically display in the “Row Labels” drop zone. Fields that hold numbers automatically display in the “Values” drop zone. Excel builds the Pivot Table based on the arrangement of fields in the Field List. You can drag and drop field names *within* the Field List, but not *from the Field List to the Pivot Table structure*.²

² If you like the old drag-and-drop directly to the Pivot Table, open the 2007 PivotTable Options dialog and on the “Display” tab check “Classic PivotTable layout”.

7. Drag the “Product” field to from the “Row Labels” area to the “Column Labels” area to change the way the data is displayed and summarized.

Sum of Units Sold	Column Labels		
Row Labels	A/C Capacitor	A/C Condensate Pump	Compressor Crankcase Heater
East	305		510
North	405	257	332
South	437	154	414
West			
Grand Total	1147	411	1256

When you click off the Pivot Table the field list is hidden. When you click back on the Pivot Table the field list redisplay. The field list dialog has an X icon in the upper-right-hand corner; you can turn off the display of the field list even if you’re working with the Pivot Table.

How the Cache is Used in Pivot Table Construction

At this point in your work with the Pivot Table, its behind-the-scenes operation isn’t critical. But it’s a good idea to understand right from the start that Excel creates the Pivot Table from a copy of the source table or range that it keeps in cache memory, not directly from the source itself. In this way, a Pivot Table is unlike a chart or a formula that uses worksheet data. With a chart or formula, when the underlying (source) data changes, the chart or formula result also changes automatically. Not so with the Pivot Table and its source data. Here are a couple of obvious reasons for this behavior:

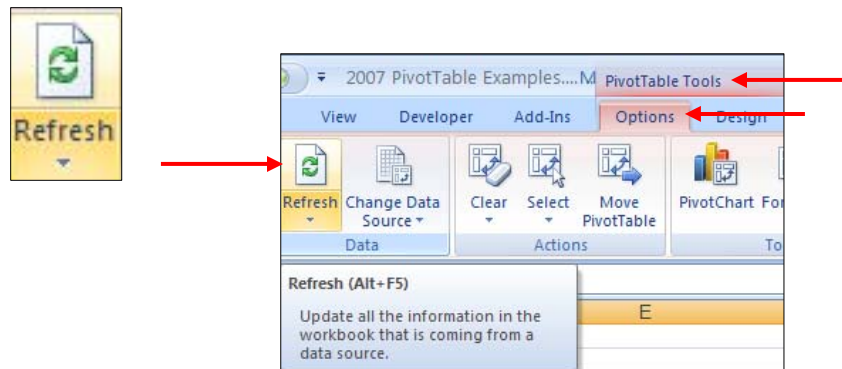
- If your data were being updated often, it would be disconcerting to build and manipulate a Pivot Table while its values were constantly changing. The kind of data for which a Pivot Table is particularly useful is often data that’s updated or added to frequently.
- You decide when to update the Pivot Table from the data (that is, when to “renew” the cache and by extension the Pivot Table) and so capture all the updates at one time. This makes Pivot Table operations faster.

Refreshing the Pivot Table from Source Data

When you’re ready to refresh the Pivot Table from the cache and source data (as described above):

1. Click any cell in the Pivot Table to make the Pivot Table active.
2. A special PivotTable Tools tab displays and contains an “Options” tab.

3. Find the “Data” group and click the “Refresh” button.³ Excel updates the Pivot Table you created with any changes, additions, or deletions made to the underlying worksheet data.



Building a New Pivot Table Based on an Existing One

In previous versions of Excel, if you began creating a new Pivot Table using the same data with which you’d already created a Pivot Table, a prompt appeared asking if you wanted to base the new Pivot Table on the existing one. With Excel 2007, that option is no longer available. You can reproduce an existing Pivot Table by selecting it and copying it to a new location, but the “original” and the “copy” remain separate Pivot Tables. Changes you make to one do not affect the other.

III. Basic Excel 2007 Pivot Table Modifications

Expand Information

Use the PivotTable Field List to add additional fields to a Pivot Table. In the example below, all eight fields in the source data are used. Notice the filter icons in the field list to the right of the “Product” and “Customer” field names. The filter icons are a reminder that these fields are showing only *some* and not *all* of the data.

Product	A/C Capacitor				
	Column Labels				
	A-1 National				
Row Labels	Sum of Units Sold	Sum of Revenue	Sum of COGS	Sum of Profit	
East	5	2500	500	2000	
11/6/2007	5	2500	500	2000	
South	10	5000	1000	4000	
5/22/2007	10	5000	1000	4000	

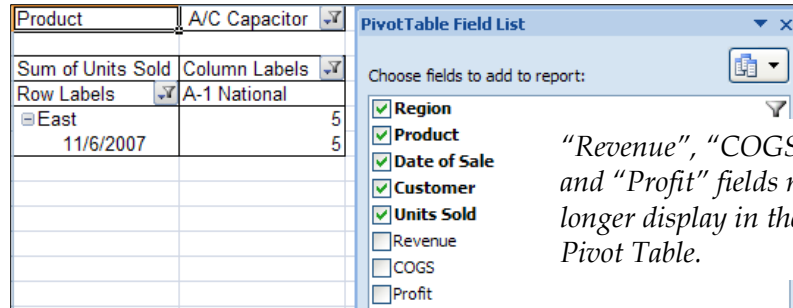
PivotTable Field List	
Choose fields to add to report:	
<input checked="" type="checkbox"/> Region	
<input checked="" type="checkbox"/> Product	
<input checked="" type="checkbox"/> Date of Sale	
<input checked="" type="checkbox"/> Customer	
<input checked="" type="checkbox"/> Units Sold	
<input checked="" type="checkbox"/> Revenue	
<input checked="" type="checkbox"/> COGS	
<input checked="" type="checkbox"/> Profit	

All the fields in the source data cache are used in this Pivot Table. All the field list fields are checked on.

³ In earlier versions of Excel the Refresh icon was a red exclamation mark.

Restrict Information

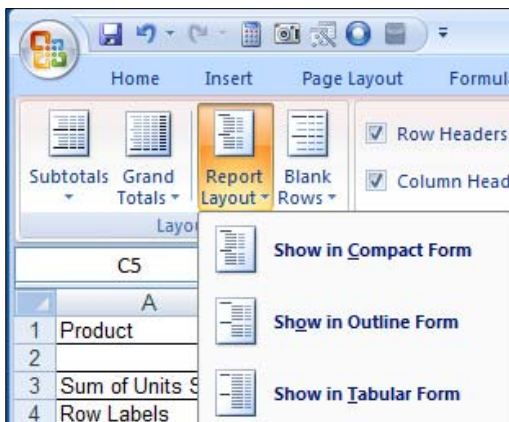
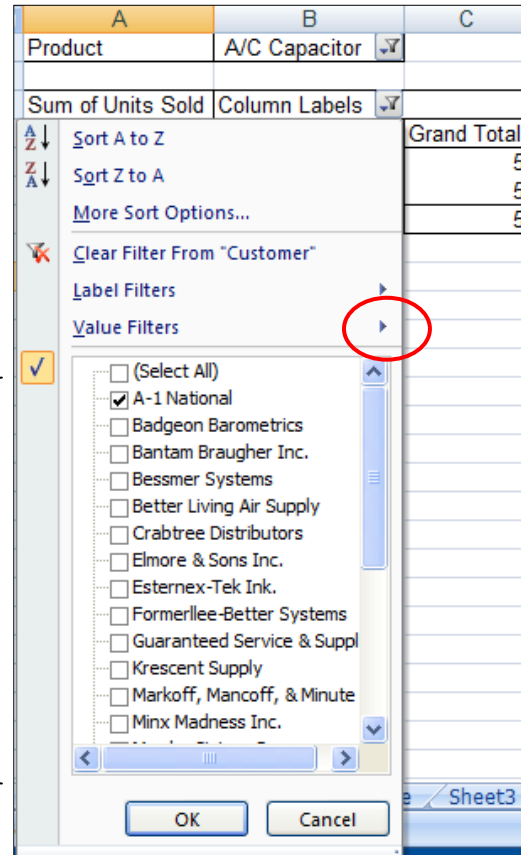
Restrict the information shown in the Pivot Table either by removing fields (uncheck any field list field) or by filtering a field to show particular instances.



At right the “Column Labels” drop down is clicked to display the sort and filter dialog for this field. A simple way to limit the amount of data displayed is to uncheck the “Customer” names you don’t want to see in the Pivot Table. Here, only one “Customer” is checked.

(If you don’t see a drop-down to the right of a Pivot Table label, click that field in the field list to turn on a drop-down, and use that drop-down icon.)

Customer names



Change the Pivot Table View

With a Pivot Table selected and the context-specific “PivotTable Tools” tab visible, select the “Design” tab and find the “Layout” group. The Layout group is divided into options for subtotals and grand totals (at left) and report layouts (at right). Click the “Report Layout” button to see the three possible 2007 Pivot Table layouts: Compact, Outline, and Tabular. The illustrations below show the differences between these layouts.

Compact layout (new default for Excel 2007)

	A	B
1	Product	(All)
2		
3	Sum of Units Sold	Column Labels
4	Row Labels	Badgeon Barometrics
5	East	112
6	3/29/2007	12
7	7/4/2007	100
8	North	1334
9	2/21/2007	50
10	3/7/2007	42
11	3/14/2007	200
12	3/22/2007	155
13	4/17/2007	12
14	5/8/2007	15
15	7/17/2007	310
16	7/18/2007	300

In this new view, inner row items are shown in the same column as outer row items. This permits “rolling up” detail by clicking the minus icon to hide inner row information.

	A	B
1	Product	(All)
2		
3	Sum of Units Sold	Column Labels
4	Row Labels	Badgeon Barometrics
5	East	112
6	North	1334
7	South	950
8	West	200

If you used the Pivot Table in a previous version of Excel, this is the layout with which you’re familiar. If a row field contains two variables (here, “Region” and “Date of Sale”), each variable has its own column. Region occupies Column A and Date of Sale occupies Column B. This remains true even if the “Date of Sale” data

	A	B	C
1	Product	(All)	
2			
3	Sum of Units Sold		Customer
4	Region	Date of Sale	Badgeon Barometrics
5	East		112
6	North		1334
7	South		950
8	West		200

Outline layout

	A	B	C
1	Product	(All)	
2			
3	Sum of Units Sold		Customer
4	Region	Date of Sale	Badgeon Barometrics
5	East		112
6		3/29/2007	12
7		7/4/2007	100
8	North		1334
9		2/21/2007	50
10		3/7/2007	42
11		3/14/2007	200
12		3/22/2007	155
13		4/17/2007	12
14		5/8/2007	15
15		7/17/2007	310
16		7/18/2007	300

is hidden. In this case, Column B retains the header “Date of Sale” and appears empty.

Tabular layout

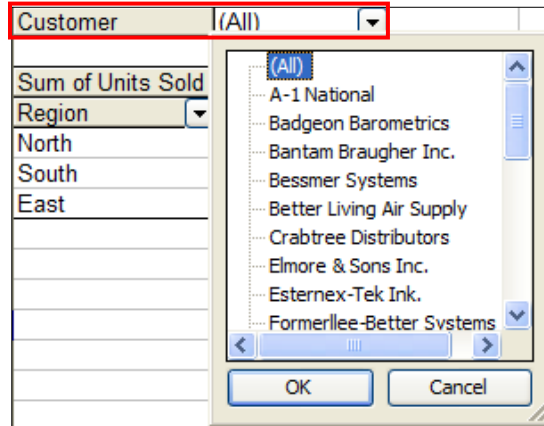
Tabular layout adds an automatic subtotal after each outer row field.

	A	B	C
1	Product	(All)	
2			
3	Sum of Units Sold		Customer
4	Region	Date of Sale	Badgeon Barometrics
5	East	3/29/2007	12
6		7/4/2007	100
7	East Total		112
8	North	2/21/2007	50
9		3/7/2007	42
10		3/14/2007	200
11		3/22/2007	155
12		4/17/2007	12
13		5/8/2007	15
14		7/17/2007	310
15		7/18/2007	300

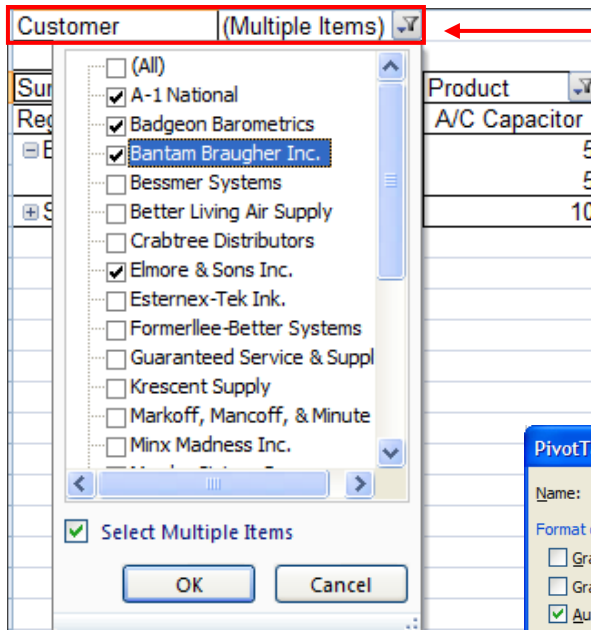
The New Report Filter

The pre-2007 Pivot Table had an optional Page Field that allowed the Pivot Table user to see *all* the data in the page field *or* to limit the view of data by slicing through the data by a single Page Field selection.

*The 2003 Page Field.
Selection options are (All) or
a single item.*



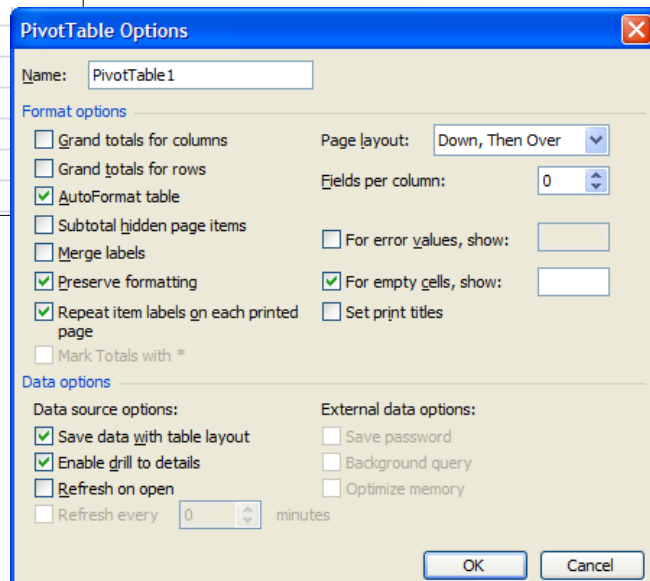
The Excel 2007 Pivot Table has replaced the 2003 Page Field with a “Report Filter” field. The Report Filter also is optional and is located in the same position in the Pivot Table (in the upper left-hand corner).



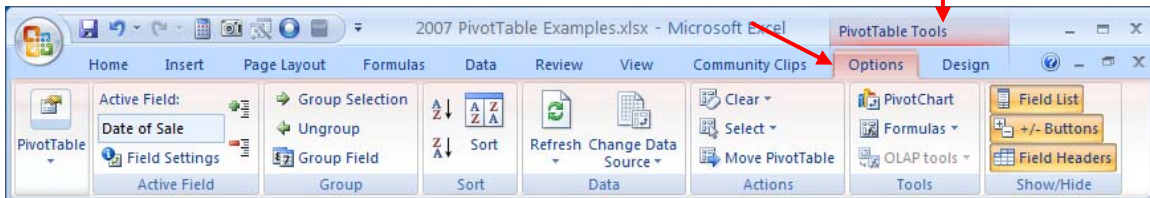
*The 2007 Report Filter.
Selection options are (All), a
single item, or multiple items.*

Set Pivot Table Options

The Excel 2003 Pivot Table had options bundled together in a single “PivotTable Options” dialog box. The Excel 2007 Pivot Table organizes options in a ribbon and in a multi-tabbed dialog.



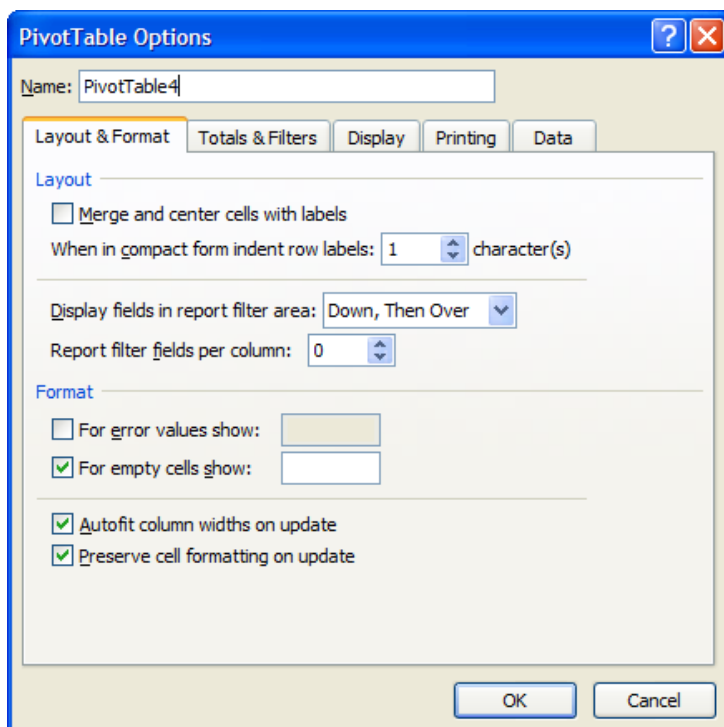
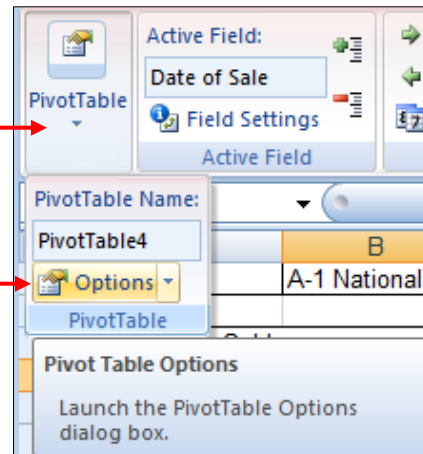
With a 2007 Pivot Table selected, the “PivotTable Tools” context ribbon item has its own “Options” tab. With the “Options” tab selected, these groups are visible: “Active Field”, “Group”, “Sort”, “Data”, “Actions”, “Tools”, and “Show/Hide”.



To open the multi-tabbed “Options” dialog, choose the drop-down on the “PivotTable” button at the far left of the “Options” tab and select *Options* from the context menu that displays.

Click the drop-down on the PivotTable button.

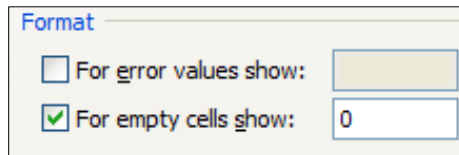
Choose “Options” to open the “PivotTable Options” multi-tabbed dialog.



Most of the options from the single-tab 2003 “PivotTable Options” dialog (plus some new options) are rearranged on this multi-tabbed 2007 “PivotTable Options” dialog.

Examples of especially useful option settings:

On the **Layout & Format** tab choose what to display for empty Pivot Table cells.



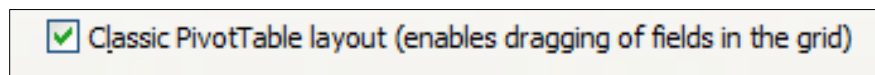
The screenshot shows the 'Format' tab of the PivotTable Options task pane. It contains two options: 'For error values show:' with an empty text box, and 'For empty cells show:' with a text box containing the number '0'. The 'For empty cells show:' option is checked.

On the **Totals & Filters** tab, turn on and off grand totals for rows and columns.



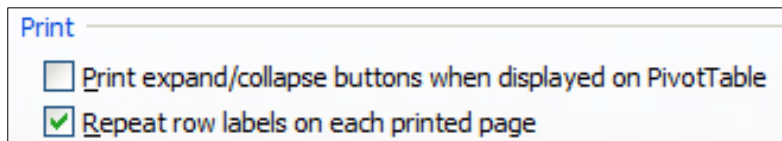
The screenshot shows the 'Grand Totals' section of the Totals & Filters tab. It contains two options: 'Show grand totals for rows' and 'Show grand totals for columns'. Both options are unchecked.

On the **Display** tab, turn on the Classic Pivot Table layout. With the classic layout restored you can drag and drop fields from the field list directly onto the Pivot Table in the worksheet. (This is the way the 2003 Pivot Table worked.)



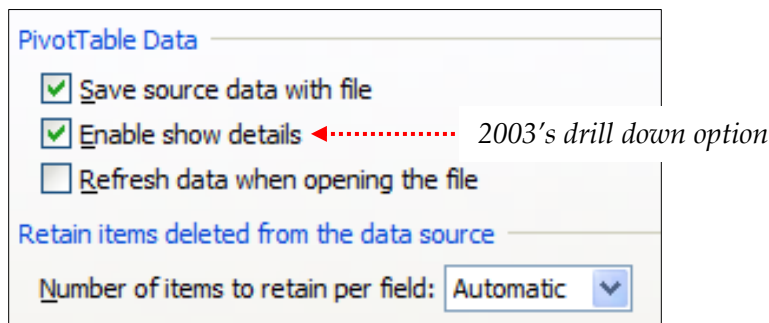
The screenshot shows the 'Classic PivotTable layout (enables dragging of fields in the grid)' option in the Display tab. The option is checked.

On the **Printing** tab, print or don't print the expand/collapse buttons that Excel displays when you work with a Pivot Table in the default "Compact View".



The screenshot shows the 'Printing' tab of the PivotTable Options task pane. It contains two options: 'Print expand/collapse buttons when displayed on PivotTable' and 'Repeat row labels on each printed page'. The 'Repeat row labels on each printed page' option is checked.

On the **Data** tab, options to control the source data.

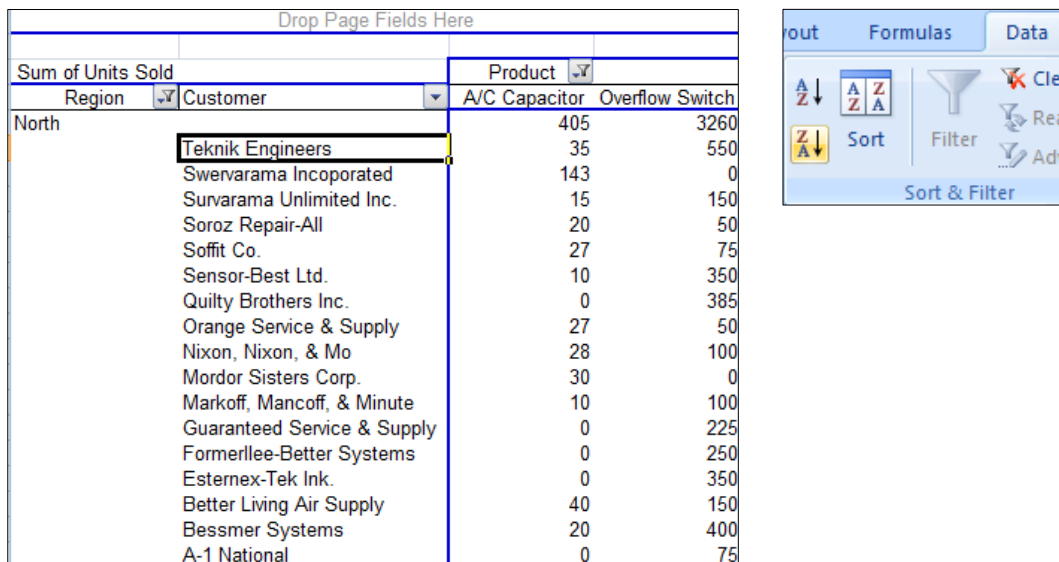


The screenshot shows the 'PivotTable Data' tab of the PivotTable Options task pane. It contains three options: 'Save source data with file' (checked), 'Enable show details' (checked), and 'Refresh data when opening the file' (unchecked). A red dotted arrow points from the 'Enable show details' option to the text '2003's drill down option'. Below these options is a section titled 'Retain items deleted from the data source' with a dropdown menu set to 'Automatic'.

Sorting: “External” and “Internal”

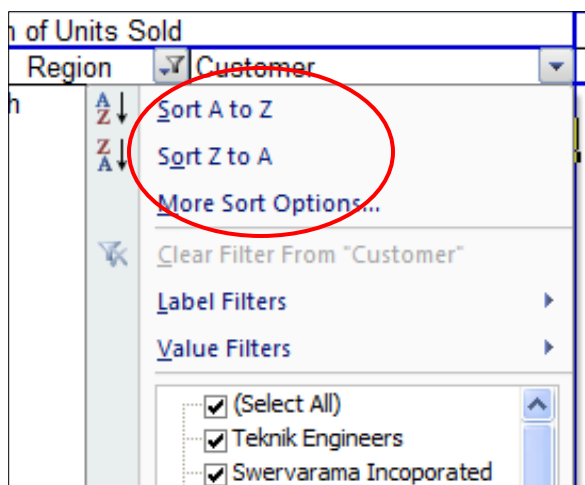
Like the 2003 Pivot Table, the 2007 Pivot Table can be manipulated by some Excel features (“external”) but has duplicate “internal” features as well. The sort is an example of this kind of feature.

In the (classic view) Pivot Table illustrated below, the “external” Excel sort button on the “Data” tab in the “Sort & Filter” group has been used to sort Customer in descending order. There’s nothing wrong with this sort, but it has a downside. That is that if you modify the Pivot Table (add fields, remove fields, change the layout) Excel isn’t likely to remember that you want Customers sorted descending.



Region	Customer	A/C Capacitor	Overflow Switch
North	Teknik Engineers	35	550
	Swervarama Incorporated	143	0
	Survarama Unlimited Inc.	15	150
	Soroz Repair-All	20	50
	Soffit Co.	27	75
	Sensor-Best Ltd.	10	350
	Quilty Brothers Inc.	0	385
	Orange Service & Supply	27	50
	Nixon, Nixon, & Mo	28	100
	Mordor Sisters Corp.	30	0
	Markoff, Mancoff, & Minute	10	100
	Guaranteed Service & Supply	0	225
	Formerlee-Better Systems	0	250
	Estermex-Tek Ink.	0	350
	Better Living Air Supply	40	150
	Bessmer Systems	20	400
	A-1 National	0	75

The alternative to an “external” Excel sort is an “internal” Pivot Table sort. Get to this sort by clicking the Customer field label drop-down. Along with offering various selection options, the context dialog that displays also includes sort options.



Sort A to Z

Sort Z to A

More Sort Options...

Clear Filter From “Customer”

Label Filters

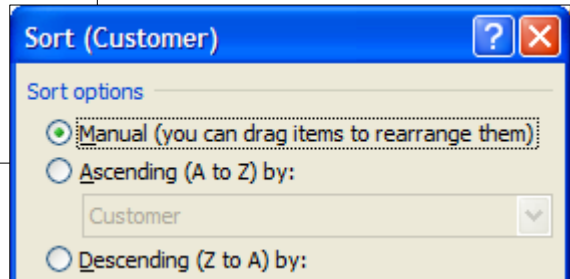
Value Filters

(Select All)

Teknik Engineers

Swervarama Incorporated

Choosing *More Sort Options...* from this list opens this additional “Sort (Customer)” dialog.



Sort (Customer)

Sort options

☒ Manual (you can drag items to rearrange them)

☐ Ascending (A to Z) by:

Customer

☐ Descending (Z to A) by:

Formatting, Including Styles and Themes

You may want to format a single element of a Pivot Table (Teknik Engineers' data) below left) or an entire structural element (the Customer column, below right). The Excel 2007 Pivot Table allows you to use "regular" Excel formatting tools.

Sum of Units Sold		
Region	Customer	
North	Teknik Engineers	35 550
	Swervarama Incorporated	143 0
	Survarama Unlimited Inc.	15 150
	Soroz Repair-All	20 50
	Soffit Co.	27 75
	Sensor-Best Ltd.	
	Quilty Brothers Inc.	
	Orange Service & Supply	
	Nixon, Nixon, & Mo	
	Mordor Sisters Corp.	
	Markoff, Mancoff, & Minute	
	Guaranteed Service & Supply	
	Formerlee-Better Systems	
	Esterne-Tek Ink.	
	Better Living Air Supply	
	Bessmer Systems	
	A-1 National	

Sum of Units Sold		
Region	Customer	Product
North		A/C Capacitor Overflow Switch
	Teknik Engineers	405 3260
	Swervarama Incorporated	35 550
	Survarama Unlimited Inc.	143 0
	Soroz Repair-All	15 150
	Soffit Co.	20 50
	Sensor-Best Ltd.	27 75
	Quilty Brothers Inc.	10 350
	Orange Service & Supply	0 385
	Nixon, Nixon, & Mo	27 50
	Mordor Sisters Corp.	28 100
	Markoff, Mancoff, & Minute	30 0
	Guaranteed Service & Supp	10 100
	Formerlee-Better Systems	0 225
	Esterne-Tek Ink.	0 250
	Better Living Air Supply	0 350
	Bessmer Systems	40 150
	A-1 National	20 400
		0 75

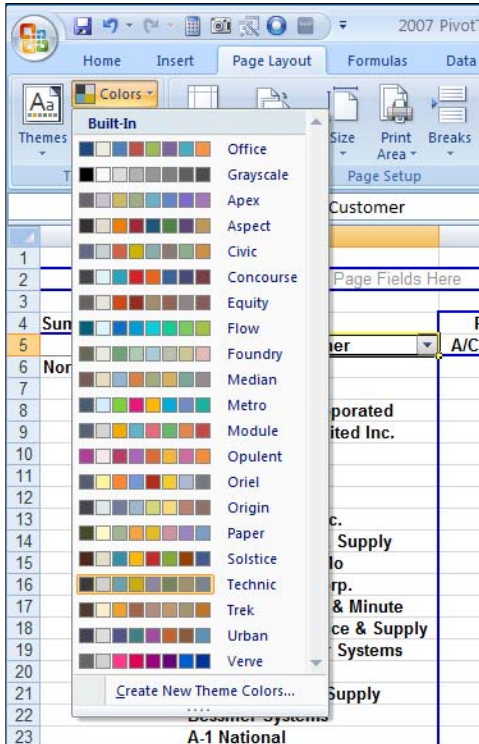
In addition to these specific formatting tools, the 2007 Office applications have style and theme-based formatting options.

Make a cell in the Pivot Table current, choose the "Design" tab from the special "PivotTable Tools" tab, and choose the "PivotTable Styles" group. Hover the mouse over a style to see how that style looks applied to your Pivot Table.

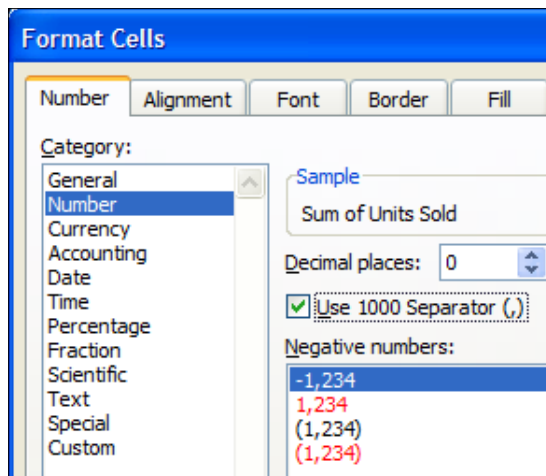
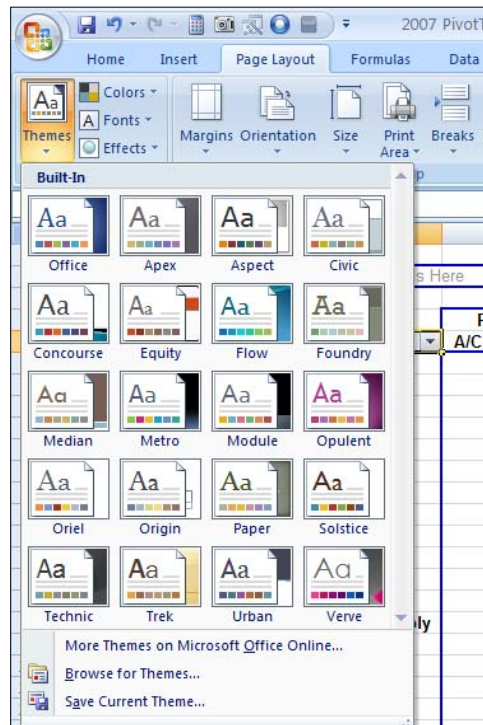
Sum of Units Sold		
Region	Customer	Product
North		A/C Capacitor
	Teknik Engineers	405
	Swervarama Incorporated	35
	Survarama Unlimited Inc.	143
	Soroz Repair-All	15
	Soffit Co.	20
	Sensor-Best Ltd.	27
	Quilty Brothers Inc.	10
	Orange Service & Supply	0
	Nixon, Nixon, & Mo	27
	Mordor Sisters Corp.	28
	Markoff, Mancoff, & Minute	30
	Guaranteed Service & Supply	10
	Formerlee-Better Systems	0
	Esterne-Tek Ink.	0
	Better Living Air Supply	40
	Bessmer Systems	20
	A-1 National	0

Styles types are "Custom", "Light", "Medium", and "Dark".

If you don't like any of the available color schemes in the styles group available to you, change to one of the other 19 Office "document themes".



Change to a new document theme by clicking the “Page Layout” tab and choosing the “Themes” group. Change colors, fonts, and effects individually, or select from predefined themes that control colors, fonts, and effects.



Right-click the label for a field and choose either *Format Cells...* (or if the field holds numbers either *Format Cells...* or *Number Format...*) to open the familiar “Format Cells” dialog at left.

IV. 2007 Pivot Table Filters: New and Repackaged

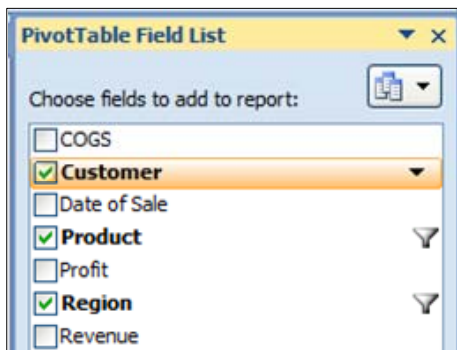
Anyone familiar with the pre-2007 Pivot Table is familiar with the filter tool represented by the drop-down icon to the right of a row field, a column field, or a page field (in 2007 renamed the report filter and refashioned).



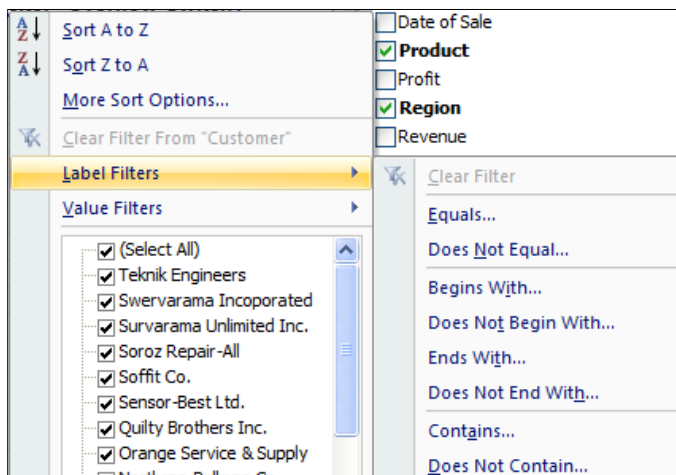
Select the drop-down icon and choose one or more entries from that field.

The Excel 2007 Pivot Table makes some new filter options available. Some of these options are reminiscent of filter options available in the 2003 Autofilter. There are several ways to reach these filter options:

- 1) Left-click the drop-down icon to the right of a Pivot Table field name to display the filter options.
- 2) Right-click a row or column label, choose *Filter* from the context menu that displays, and choose a filter type from the context submenu that displays.
- 3) Click a field name in the Field List and click the down icon that appears to the right of that field name. (A drop-down icon displays only when a field is selected.)



This field list illustration shows that **Customer**, **Product**, and **Region** are fields in the Pivot Table since their check boxes are checked. Filters are currently applied to Product and Region. The Customer field is selected and a drop-down icon displays to its right. None of the other fields show this drop-down icon at present.



Shown at left are some of the **Label Filter** options, or filters that apply to fields that contain text.

The 2007 Pivot Table label filters offer multiple ways to limit a displayed field.

For example, use the “Greater Than...” option to displays Product names that are alphabetically past the single letter “E”. The filtered list includes **Evaporator Fin Comb, Freezestat, Freon Leak Repair Kit**, etc. but *not* **A/C Capacitor, A/C Condensate Pump, Compressor Crankcase Heater**, etc.

Label Filter (Product)

Show items for which the label

is greater than

Use ? to represent any single character
Use * to represent any series of characters

OK

Sum of Units Sold

Product Customer Total

A/C Capacitor 73

A/C Condensate Pump 62

A/C Condensate Pump Total 68

Compressor Crankcase Heater 48

Clear Filter From "Customer" 97

Label Filters 171

Value Filters 62

(Select All)

A-1 National

Badgeon Barometrics

Bantam Braugher Inc.

Bessmer Systems

Better Living Air Supply

Crabtree Distributors

Elmore & Sons Inc.

Esternex-Tek Ink.

Formerlee-Better Systems

Guaranteed Service & Supply

Krescent Supply

Markoff, Mancoff, & Minute

Minx Madness Inc.

OK Cancel

Clear Filter

Equals...

Does Not Equal...

Greater Than...

Greater Than Or Equal To...

Less Than...

Less Than Or Equal To...

Between...

Not Between...

Top 10...

50

79

62

89

105

171

Shown at left is a display of **Value Filter** options for the “Customer” field. In the illustration the “Greater Than...” filter has been selected as a value filter for the “Units Sold” field. The filter is set to show only Customers whose sum of units sold for a product is greater than 40.

Value Filter (Customer)

Show items for which

Sum of Units Sold is greater than 40

OK Cancel

Before the Value Filter is applied.

Sum of Units Sold	Product	Customer	Total
	A/C Capacitor	A-1 National	15
		Bessmer Systems	73
		Better Living Air Supply	40
		Crabtree Distributors	18
		Elmore & Sons Inc.	15
		Esternex-Tek Ink.	25
		Formerlee-Better Systems	62
		Guaranteed Service & Supply	15
		Krescent Supply	15
		Markoff, Mancoff, & Minute	40
		Minx Madness Inc.	22
		Mordor Sisters Corp.	68
		Nixon, Nixon, & Mo	48
		Orange Service & Supply	27
		Quilty Brothers Inc.	40
		Sensor-Best Ltd.	97
		Soffit Co.	27
		Soroz Repair-All	171
		Survarama Unlimited Inc.	62
		Swervarama Incorporated	143
		Teknik Engineers	124

After the Value Filter is applied.

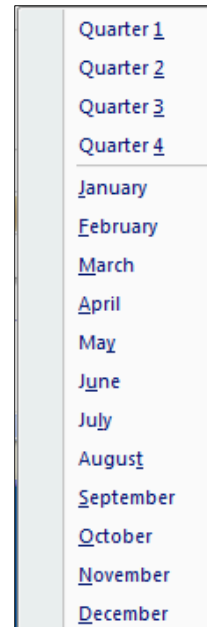
Sum of Units Sold	Product	Customer	Total
	A/C Capacitor	Bessmer Systems	73
		Formerlee-Better Systems	62
		Mordor Sisters Corp.	68
		Nixon, Nixon, & Mo	48
		Sensor-Best Ltd.	97
		Soroz Repair-All	171
		Survarama Unlimited Inc.	62
		Swervarama Incorporated	143
		Teknik Engineers	124

Clicking the drop-down icon for a date field in the Field List gives access to what are called **Date Filters**.

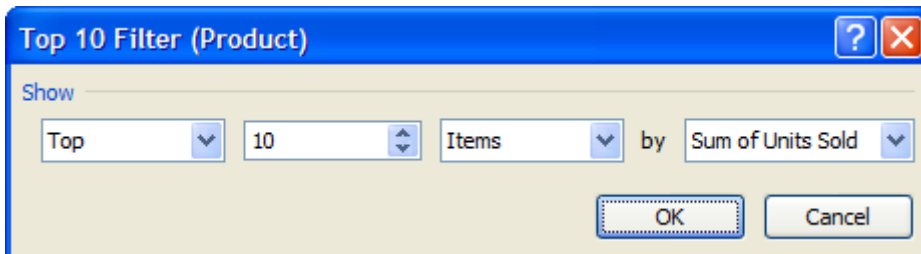
Selection options for dates



A submenu also provides a selection of grouping options for dates. A special dialog described below expands these options.



Choosing a **Value Filter** for a field and then selecting the *Top Ten...* option displays the familiar 2003 “Top 10 Filter” dialog.



This example shows a top 10 filter for a field named Product.

V. 2007 Pivot Table Grouping Options

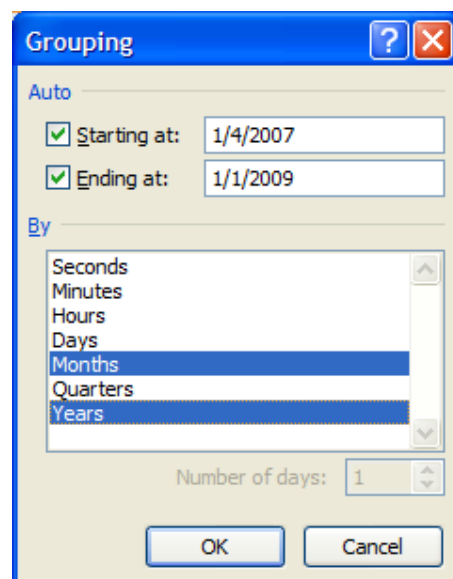
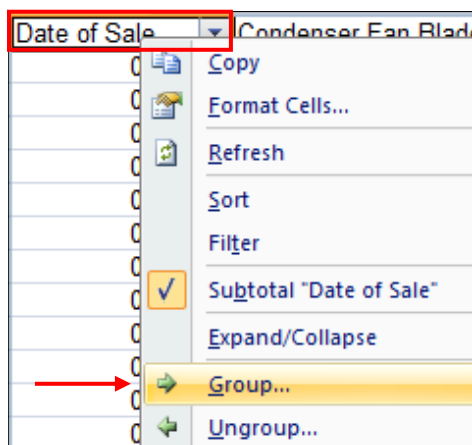
Group (and Select) by Dates

If your source data has many individual dates, grouping by date can be critical in order to make a useful Pivot Table.

Date of Sale	Condenser Fan Blades
01/04/07	
01/16/07	18
01/17/07	
01/18/07	
01/19/07	118
01/22/07	123
01/23/07	155
01/26/07	218
01/30/07	610
02/01/07	
02/02/07	
02/06/07	
02/07/07	450
02/09/07	
02/14/07	400
02/15/07	12
02/20/07	
02/27/07	18
03/07/07	
03/12/07	
03/19/07	17
03/21/07	101
03/22/07	278
03/26/07	528

The 2007 Pivot Table has expanded date selection and grouping options.

Right-click a date field label and choose *Group...* to open the 2003 “Grouping” dialog. This dialog is specific for dates.



A Pivot Table that's overly detailed with date data can be quickly summarized by dates. In the illustration below, data that appears in the data source with day by day records have been grouped by date month and date year.

Sum of Units Sold		Product	
Years	Date of Sale	Condenser Fan Blades	Condenser Fan Motor
2007	Jan	1242	50
	Feb	880	140
	Mar	1374	42
	Apr	848	88
	May	806	95
	Jun	1146	32
	Jul	1278	55
	Aug	653	108
	Sep	155	100
	Oct	978	55
	Nov	1224	85
	Dec	396	72
2008	Jan	828	108
	Feb	450	105
	Mar	641	67
	Apr	1951	85
	May	823	43
	Jun	1207	85
	Jul	1091	35
	Aug	683	105
	Sep	1167	50
	Oct	597	140
	Nov	1060	17
	Dec	2074	83

Group by Text Fields

Grouping by text labels in the 2007 Pivot Table works the same way it did in the 2003 Pivot Table.

In the illustration at right, the first five entries under the "Customer" label were selected. The selection was right-clicked, and the *Group* option was selected. The same process was applied to the 6th through 13th entries.

A "virtual" column (here renamed "Type") is added. Each new grouping is assigned a generic name unless you replace it with your own name. To remove virtual groupings, select a group, right-click, and choose *Ungroup*.

Sum of Units Sold		Product
Type	Customer	Condense
West Coast US	A-1 National	
	Badgeon Barometrics	
	Bantam Braugher Inc.	
	Bessmer Systems	
	Better Living Air Supply	
International	Krescent Supply	
	Crabtree Distributors	
	Elmore & Sons Inc.	
	Esternex-Tek Ink.	
	Formerlee-Better Systems	
	Guaranteed Service & Supply	
	Markoff, Mancoff, & Minute	
	Minx Madness Inc.	
Mordor Sisters Corp.	Mordor Sisters Corp.	
Nixon, Nixon, & Mo	Nixon, Nixon, & Mo	
Northran-Bellman Co.	Northran-Bellman Co.	
Orange Service & Supply	Orange Service & Supply	
Quilty Brothers Inc.	Quilty Brothers Inc.	
Sensor-Best Ltd.	Sensor-Best Ltd.	
Soffit Co.	Soffit Co.	
Soroz Repair-All	Soroz Repair-All	
Survarama Unlimited Inc.	Survarama Unlimited Inc.	
Swervarama Incorporated	Swervarama Incorporated	
Teknik Engineers	Teknik Engineers	

VI. 2007 Pivot Table Calculations

Default Summary Calculations

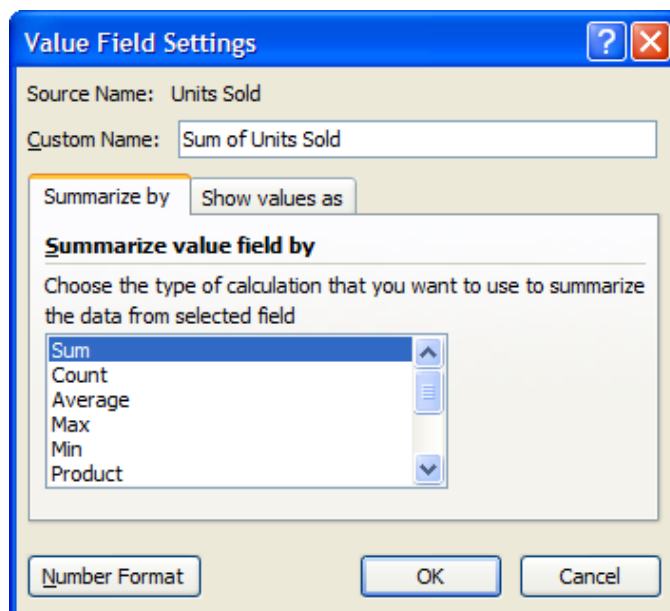
The summary calculation defaults for the 2007 Pivot Table are:

- 1) If an item designated as a Pivot Table value field is a *number*, it's summarized by a SUM operation.
- 2) If an item designated as a Pivot Table value field is *text*, it's summarized by the COUNT operation.
- 3) If an item designated as a Pivot Table value field contains all numbers except for *one* or more blank cells, Excel treats the field as a text field and summarizes with a COUNT. (You can override this default and change the summary from COUNT to SUM.)

Basic Summary Calculations

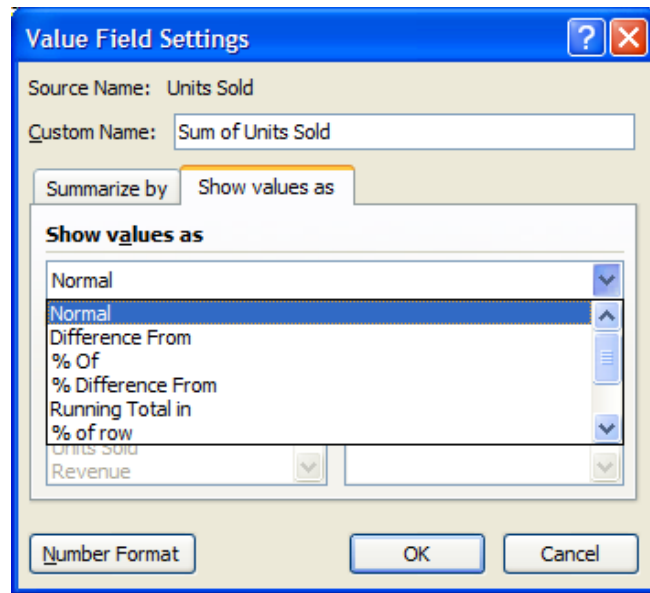
Along with the default summary operations SUM and COUNT, the Pivot Table has a variety of other summary operations. To see the list of these additional operations, right-click the label for a value field and choose the *Value Field Settings...* option from the context menu that displays. Excel opens the "Value Field Settings" dialog for the selected value field.

On the "Summarize by" tab in this dialog are the summary options available: Sum, Count, Average, Max, Min, Product, Count Numbers, StdDev, StdDevp, Var, and Varp.



Intermediate Summary Calculations

In the same dialog but on the “Show values as” tab, the Pivot Table displays more advanced summary options such as “Difference From”, “% Of”, “% Difference From”, etc.



Depending on the option you select you may or may not have to provide more information to the Pivot Table so it can perform the operation you selected. For example, if you choose to show values as “Difference From”, you’re prompted to designate a “Base field” and a “Base item”.

