

# Beginning SharePoint with Excel



Gini Courter and  
Annette Marquis

## **Beginning SharePoint with Excel**

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# Working with SharePoint Lists in Excel

**C**orporate America is littered with Excel data that needs to be updated by multiple users: shared Excel workbooks stored on network drives, attachments e-mailed from one manager or administrative assistant to the next, and workbooks that are copied and then need to be consolidated or merged. Excel and SharePoint together provide superior support for multiuser lists, including offline editing and conflict resolution. This chapter will help you rethink your strategies for shared Excel lists.

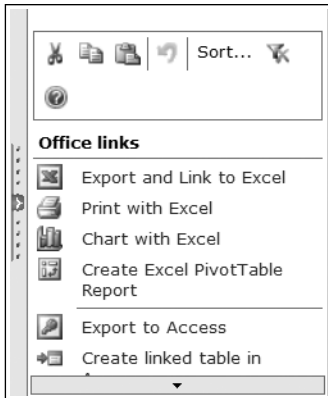
## Taking SharePoint Data Offline with Excel

One of the most useful yet least used SharePoint features is the ability to take list data offline in Excel. You can export any SharePoint list to Excel for offline use, including Contacts and Events lists that also integrate with Outlook.

### Exporting to Excel from a Datasheet View

To export to Excel from a datasheet view, follow these steps:

1. In a datasheet view, use the task pane to export the list.
2. Click the **Task Pane** button to open the task pane (shown in Figure 3-1), and then click the **Export and Link to Excel** link to launch Excel.



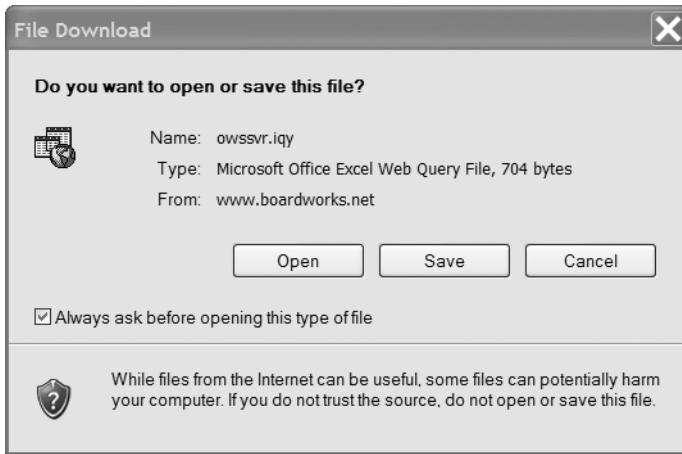
**Figure 3-1.** *Open the Datasheet view task pane to export a list to Excel.*

3. When the Open Query dialog box appears, click the **Open** button to export the SharePoint data to Excel.

## Exporting to Excel from a Standard View

To export to Excel from a standard view, follow these steps:

1. Choose a standard view that includes the columns of data you want to export. If a suitable view doesn't exist, create it (see Chapter 4 for detailed instructions on creating views). Don't worry about grouping or totals—they won't be included in the exported data.
2. With your view selected, click the **Export to Spreadsheet** link on the Actions list on the left side of the screen to open the File Download dialog box, shown in Figure 3-2.



**Figure 3-2.** *Export the list to Excel or save the query separately in the File Download dialog box.*

3. To export the data to Excel, click the **Open** button.
4. After Excel launches, you'll be prompted to open or save the query. Click **Open** to export the SharePoint list data to Excel.

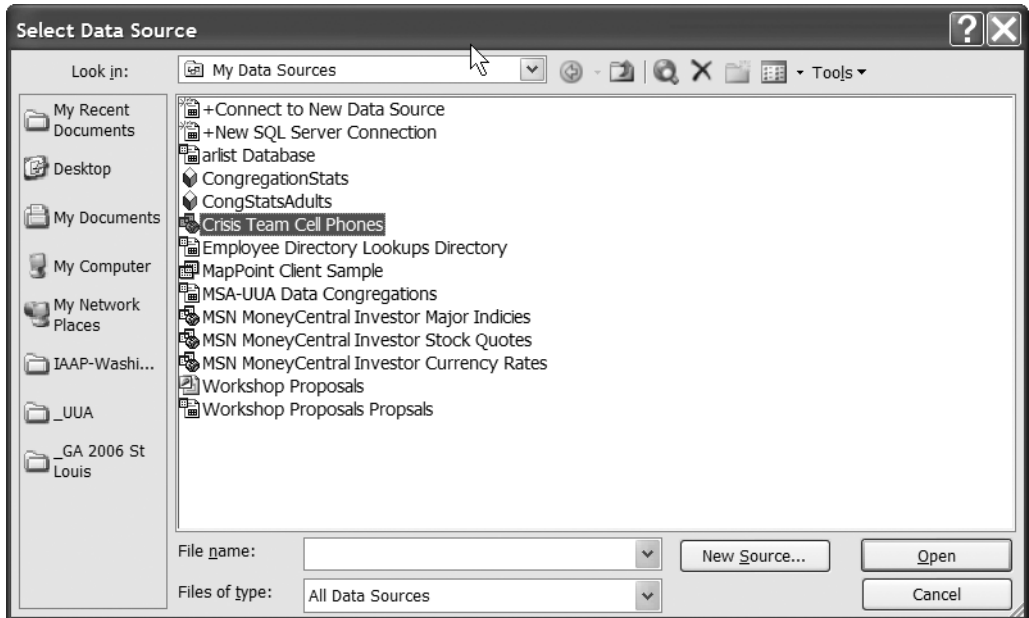
## Saving and Using a Query

The **Export to Spreadsheet** link in the Datasheet view task pane creates a query and automatically opens the query in Excel to export the data. Exporting from a standard view provides an additional useful option. Instead of choosing **Open** in the File Download dialog box, you can save the query definition as a separate file. The query file can be used in Excel, Microsoft Query Editor, Access, or any other application that can process a query (IQY) file. If you have a SharePoint list that you want to use in more than one Excel worksheet, it's more efficient to save the query file separately.

Click the **Save** button in the File Download dialog box to save the query file. If you'll be the only person using the query, save it in the My Documents\My Data Sources folder on your computer, the default location for queries. (If other people will use the query, save it in a network shared folder. Choose a file name that accurately describes the data source rather than the name of the SharePoint site, which might have more than one list you'll want to query.)

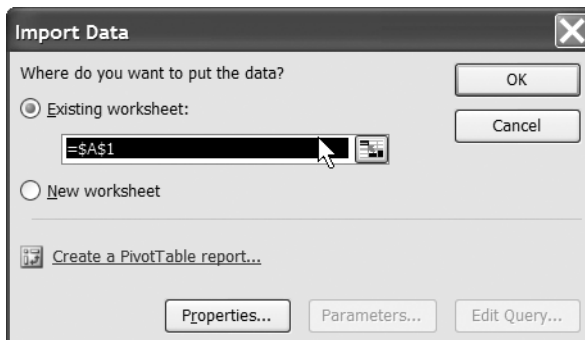
After you've saved the query, follow these steps to use the query to create an offline copy of the SharePoint list data in Excel:

1. Open the Excel workbook where you want to display the SharePoint list data.
2. Choose **Data ► Import External Data ► Import Data** to open the Select Data Source dialog box, shown in Figure 3-3.



**Figure 3-3.** Choose your query in the Select Data Source dialog box.

3. Select the query and click **Open**.
4. In the Import Data dialog box, choose a location for the query results: a new worksheet or a single cell in an existing worksheet (see Figure 3-4).



**Figure 3-4.** Choose a location for the query results in the Import Data dialog box.

- Click the **Properties** button to open the External Data Range Properties dialog box, shown in Figure 3-5. If you want Excel to refresh the query automatically every time you open the workbook, select the **Refresh data on file open** checkbox. Click **OK** to close the dialog box.

**External Data Range Properties**

Name: Crisis Team Cell Phones

Query definition

☒ Save query definition  
☐ Save password

Refresh control

☐ Enable background refresh  
☐ Refresh every 60 minutes  
☒ Refresh data on file open  
☐ Remove external data from worksheet before saving

Data formatting and layout

☒ Include field names  
☐ Include row numbers  
☒ Adjust column width  
☒ Preserve column sort/filter/layout  
☒ Preserve cell formatting

If the number of rows in the data range changes upon refresh:

☒ Insert cells for new data, delete unused cells  
☐ Insert entire rows for new data, clear unused cells  
☐ Overwrite existing cells with new data, clear unused cells

☐ Fill down formulas in columns adjacent to data

OK Cancel

**Figure 3-5.** Set options for the query in the External Data Range Properties dialog box.

- Click **OK** to close the Import Data dialog box and insert the query results into the Excel worksheet, as shown in Figure 3-6.

	A	B	C	D	E	F	G
1	ID ▾	Last Name ▾	First Name ▾	Department ▾	Priority ▾	Mobile Phone ▾	Notes ▾
2	1	Brito	Leonardo	IT	2	734-555-7511	
3	2	Hoeh	Jamie	Security	1	734-555-1212	Authorized to lock down physical facilities
4	3	Vaughn	Clifton	IT	1	734-555-3321	Leads disaster recovery process team
5	4	Garcia	Helio	PR	1	734-555-4071	Route all media contacts to Helio
6	5	Pszenica	Yves	Finance	1	734-555-3737	
7	6	Morse	Robb	Manufacturing	1	734-555-7512	
8	7	Annadi	Jagan	Facilities	1	734-555-1798	
9	8	Lawrence	Nancy	Facilities	2	734-555-6732	
10	9	Hurley	John	PR	2	734-555-8312	
11	10	Holm	Keith	IT	3	734-555-3774	
12	11	Holm	Aidan	Security	2	735-555-8798	
13	*						

**Figure 3-6.** The SharePoint data, imported as an Excel list

## Working with Offline Data in Excel

Working with the SharePoint data in Excel is similar to working with an Excel list that's been previously published in SharePoint. You don't have to be online to edit the SharePoint list data, even while online users are working with the SharePoint list. You can edit the list and add rows (records), then save the workbook locally until you're back on the network and ready to synchronize your offline data with the SharePoint list.

If you have a group of users who need to update the same data set, a SharePoint list allows each user to export and work with the data independently and simultaneously. As you'll see, SharePoint manages any conflicts that occur when two or more users make different changes to the same data element.

Many users prefer to work with their SharePoint lists offline in Excel:

- *Managers*: During budget “crunch time” when they're finalizing line items and many users need to update different rows in the same list
- *Sales people*: Logging sales leads and customer information on the road instead of waiting until they return to the office
- *Developers*: Recording actions taken to resolve items in an Issues log
- *Information workers*: Editing lists during peak hours on a slow network
- *Frequent flyers and other travelers*: Working with list data when they don't have access to their corporate SharePoint site

## SharePoint Calculated Fields in Excel

If the SharePoint list you exported to Excel includes calculated fields, the calculations are reflected in the Excel list. For example, the Sales by Quarter SharePoint list shown in Figure 3-7 includes a calculated Year to Date column.

Product Type ▼	Q1 Sales ▼	Q2 Sales ▼	Q3 Sales ▼	Q4 Sales ▼	Year to Date ▼
TV	72,000	78,000	100,000		\$250,000
Magazine	37,500	34,000	21,000		\$92,500
Web	92,400	101,620	86,700		\$280,720
Radio	0	39,000	45,000		\$84,000
TV	98,500	100,000	94,000		\$292,500
Magazine	25,000	21,000	29,000		\$75,000
Web	130,000	150,000	140,350		\$420,350
Magazine	100,200	130,200	90,200		\$320,600
Web	81,000	70,000	94,000		\$245,000
TV	59,000	61,000	57,000		\$177,000

**Figure 3-7.** Portion of a SharePoint list with a calculated field, Year to Date



The following calculation is used for the Year to Date field:

=[Q1 Sales]+[Q2 Sales]+[Q3 Sales]+[Q4 Sales]

When the list is exported to Excel, Excel converts the SharePoint formula to an Excel formula, as shown in Figure 3-8.

	D	E	F	G	H	I	J
1	Region ▼	Product Type ▼	Q1 Sales ▼	Q2 Sales ▼	Q3 Sales ▼	Q4 Sales ▼	Year to Date ▼
2	East	TV	72000	78000	100000		=F2+G2+H2+I2
3	East	Magazine	37500	34000	21000		=F3+G3+H3+I3
4	East	Web	92400	101620	86700		=F4+G4+H4+I4
5	East	Radio	0	39000	45000		=F5+G5+H5+I5
6	East	TV	98500	100000	94000		=F6+G6+H6+I6
7	North	Magazine	25000	21000	29000		=F7+G7+H7+I7
8	North	Web	130000	150000	140350		=F8+G8+H8+I8
9	North	Magazine	100200	130200	90200		=F9+G9+H9+I9
10	North	Web	81000	70000	94000		=F10+G10+H10+I10
11	North	TV	59000	61000	57000		=F11+G11+H11+I11
12	North	Radio	71500	80500	78000		=F12+G12+H12+I12
13	West	Radio	97500	0	0		=F13+G13+H13+I13
14	West	Radio	115500	107500	107000		=F14+G14+H14+I14
15	West	TV	67000	87000	46475		=F15+G15+H15+I15
16	West	Magazine	70000	70000	110000		=F16+G16+H16+I16
17	West	TV	36000	44000	40000		=F17+G17+H17+I17
18	West	Web	110000	112000	125000		=F18+G18+H18+I18
19							

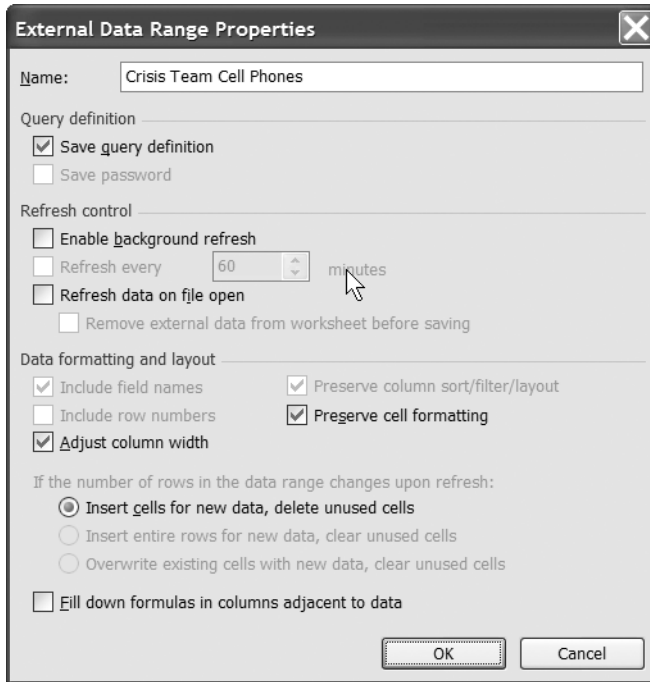
**Figure 3-8.** Calculated fields in SharePoint are converted to formulas in Excel.

The formulas are automatically protected in Excel. Users aren't allowed to overwrite or edit the calculated fields from SharePoint (for more about calculations in SharePoint, see Chapter 5).

## Adding Calculations in Excel

You can add more columns of data in Excel and use the SharePoint list data in your calculations. Add fields starting with the first column to the right of the query results. To have Excel automatically fill the formulas down if the query data returns additional rows, modify the external data source properties:

1. On the List toolbar, click the **List** button.
2. Choose **Data Range Properties** from the menu to open the External Data Range Properties dialog box (see Figure 3-9).



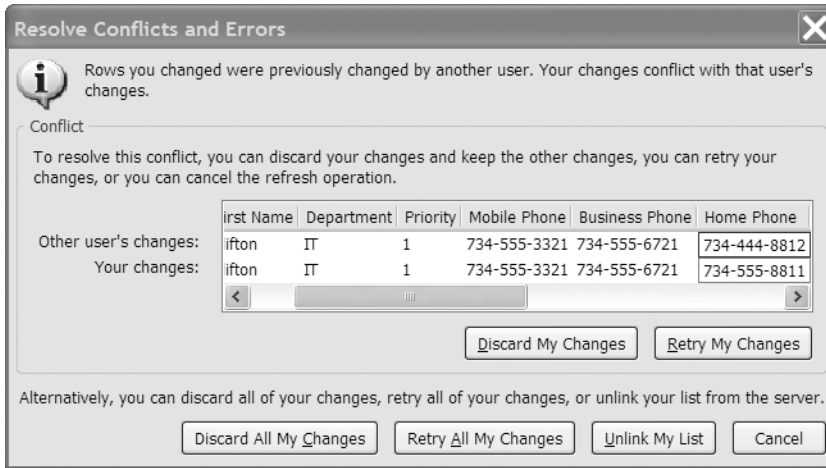
**Figure 3-9.** Enable the “Fill down formulas” checkbox to copy formulas automatically.

3. Select the **Fill down formulas in columns adjacent to data** checkbox. Click **OK**.

When you refresh the query data, Excel will automatically fill formulas in columns to the right of, and adjacent to, the query results if the query returns additional rows.

## Synchronizing the Offline Data with SharePoint

When you're ready to synchronize your offline data, save the file locally and then click the **Synchronize** button on the List toolbar. If your synchronization causes a conflict because it includes changes to a data element that another user has already changed, the Resolve Conflicts and Errors dialog box opens, shown in Figure 3-10 (see Chapter 2 for more information about synchronization).



**Figure 3-10.** Resolve conflicts that occur when more than one user changes the same data.

Finally, you can choose to unlink your offline Excel list from the SharePoint list. You can't undo this choice, and if you unlink the list, you won't be able to synchronize the list with SharePoint in the future. If you want to retain the changes you made in Excel without handling any conflicts—perhaps so you can examine the list in SharePoint—click **Cancel** rather than unlinking the list.

Note that the first user is never asked to deal with a data conflict. It's the second user's changes that create the conflict. If a number of people are working with offline copies of the same SharePoint list and editing the same rows, it's a good strategy to synchronize frequently. The longer you wait to synchronize, the greater the possibility that another user has already synchronized a change to a list element you also edited.

If you're at the end of a project or process and won't be using the offline Excel data for a while, you can delete the worksheet or workbook. It's easy enough to create another, fresh offline Excel data set when you need to work with it in the future. If you've added other calculations in Excel, though, you might not want to discard the worksheet or workbook casually. The next time you open the workbook, begin by synchronizing so you start with the current data from SharePoint. If you begin with old data, you increase the potential for conflicts when you synchronize.

## Scenario: The Crisis Response Team System

Most organizations have a crisis or disaster response team: a group of people from various departments who are immediately contacted in case of an emergency. When the power goes out in Michigan and New York, the levees break in New Orleans, or the wind and rain come ashore in Florida, someone pulls out the crisis response plan and starts making phone calls. This is an application that you can create easily using a SharePoint list and offline Excel lists.

We started with a SharePoint Contacts list customized by adding columns for Priority (a choice list indicating who is called first, second, and third) and Department, shown in Figure 3-11. The specifications for the columns from the Crisis Response Team SharePoint list are shown in Figure 3-12.

New Item   Filter   Edit in Datasheet   Link to Outlook   Import Contacts					
Last Name	First Name	Department	Priority	Mobile Phone	Notes
Annadi	Jagan	Facilities	1	734-555-1798	
Brito	Leonardo	IT	2	734-555-7511	
Garcia	Helio	PR	1	734-555-4071	Route all media contacts to Helio
Hoeh	Jamie	Security	1	734-555-1212	Authorized to lock down physical facilities
Holm	Keith	IT	3	734-555-3774	
Holm	Aidan	Security	2	735-555-8798	
Hurley	John	PR	2	734-555-8312	
Lawrence	Nancy	Facilities	2	734-555-6732	
Morse	Robb	Manufacturing	1	734-555-7512	
Pszenica	Yves	Finance	1	734-555-3737	
Vaughn	Clifton	IT	1	734-555-3321	Leads disaster recovery process team

**Figure 3-11.** The Crisis Response Team list includes contact information for all members of the team.

Columns	
A column stores information about each item in the list. Columns currently in this list:	
Column (click to edit)	Type
Last Name	Single line of text
First Name	Single line of text
Department	Single line of text
Priority	Choice
Job Title	Single line of text
Business Phone	Single line of text
Home Phone	Single line of text
Mobile Phone	Single line of text
E-mail Address	Single line of text
Notes	Multiple lines of text

**Figure 3-12.** SharePoint column list for the Crisis Response Team list

Team members and employees in the organization’s security department must have fast and direct access to this list. It’s a SharePoint contacts list, so this is easy to accomplish. Anyone who wants access to the list can click the **Link to Outlook** button to add the Crisis Response Team list to Outlook, as shown in Figure 3-13.



**Figure 3-13.** Team members can add the Crisis Response Team to Outlook with just one click.

Outlook automatically keeps this list synchronized with the list on the SharePoint site, and Outlook provides a number of different page setups (card style, booklet, phone list) that the team members can use to print the team's contact information to keep at home or in their car. They need a hard copy of the list when the power goes out!

Every month, each department manager is required to update the information for his or her department. Department managers can export the list to Excel and make their changes offline, then synchronize their changes. A SharePoint list exported to Excel, changes in Excel synchronized to SharePoint, SharePoint synchronized to Outlook on team members' desktops: a powerful system created using the built-in functionality of Excel, SharePoint, and Outlook.

## Charting SharePoint Data in Excel

Windows SharePoint Services and SharePoint Portal Server include specialized web parts to create charts and pivot tables for use on SharePoint sites. But you don't have to do all your charting on a web site. After you've exported SharePoint data to Excel, you can do anything with it that you can do with native Excel data, including creating charts to illustrate the data.

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■ **Note** Placement is important. If a query returns ten rows this time, it might return eight or fifteen next time, so you shouldn't place charts below the query results. Locate charts above or to the right of the query results, or on another worksheet.

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In Excel, select the exported SharePoint data you wish to chart, then click the **Chart Wizard** button on the Standard toolbar to launch the Chart Wizard. Create the chart as you would with native Excel data.

You don't need to export the data first. You can launch Excel's Chart Wizard directly from SharePoint. Follow these steps to create a chart directly from SharePoint:

1. Open the list you want to chart in Datasheet view. If it's in Standard view, click the **Edit in Datasheet** button on the list toolbar to switch to Datasheet view.
2. Click the **Task Pane** button to open the task pane.
3. Click the **Chart with Excel** link to open Excel, return the query results, and launch the Chart Wizard with all the query results selected.
4. Complete the steps of the Chart Wizard to create the chart.

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■ **Note** If you have a SharePoint list that's often used for a chart, consider creating a view, Chart Data, that only includes the columns needed for the chart. For information on creating views, see Chapter 4.

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## Creating PivotTable and PivotChart Reports

PivotTable reports are tables that organize and summarize information for easier analysis. PivotChart reports are graphical representations of the same data. PivotTable and PivotChart reports are interactive; you can move information around to compare data and look for trends and relationships. A PivotTable report of the Sales by Quarter data shown earlier in this chapter is displayed in Figure 3-14.

Region	Data	Total
East	Sum of Q1 Sales	300,400
	Sum of Q2 Sales	352,620
	Sum of Q3 Sales	346,700
	Sum of Q4 Sales	
North	Sum of Q1 Sales	466,700
	Sum of Q2 Sales	512,700
	Sum of Q3 Sales	488,550
	Sum of Q4 Sales	
West	Sum of Q1 Sales	496,000
	Sum of Q2 Sales	420,500
	Sum of Q3 Sales	428,475
	Sum of Q4 Sales	
Total Sum of Q1 Sales		1,263,100
Total Sum of Q2 Sales		1,285,820
Total Sum of Q3 Sales		1,263,725
Total Sum of Q4 Sales		

**Figure 3-14.** A PivotTable report of the Sales by Quarter data

There are four areas in a PivotTable report: Data, Rows, Columns, and Page. Numerical data is summarized in the Data Area. Columns that describe the data are placed in the Rows and Columns Areas. Columns used to group data are placed in the Page Area. In the PivotTable report shown in Figure 3-14, the Region field was dropped in the Row Area. The four fields containing sales data (Q1 Sales, Q2 Sales, Q3 Sales, and Q4 Sales) were placed in the Data Area.

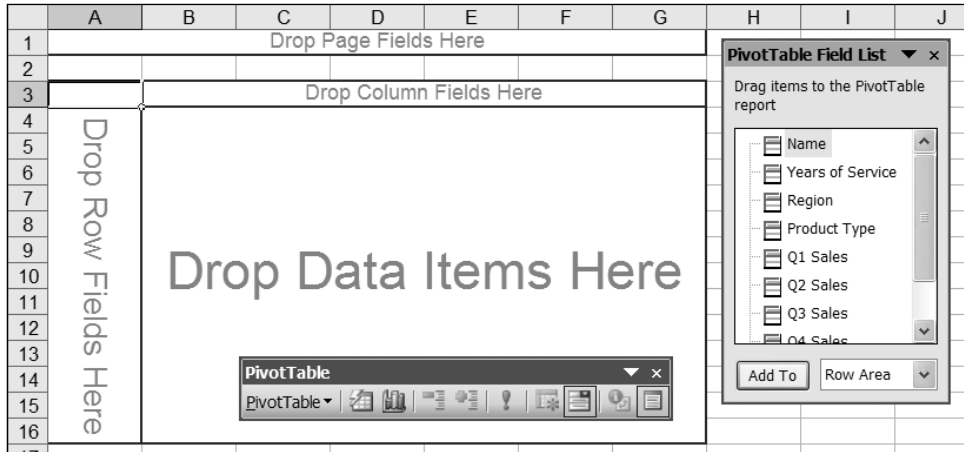
As with charts, you can create PivotTables and PivotCharts directly from a SharePoint datasheet view, or create reports with SharePoint data previously exported to Excel. There's a difference between the two methods. When you create PivotTables and PivotCharts using the SharePoint Datasheet view task pane, the query doesn't export the data from the SharePoint list to the Excel workbook. The report is linked directly to the data in the SharePoint list (to create and display PivotTables and PivotCharts on a page in a SharePoint site, see Chapter 9).

## Creating a PivotTable Report from SharePoint

To create a PivotTable report directly from SharePoint, follow these steps:

1. Display the list in a datasheet view.
2. Click the **Task Pane** button to display the task pane.
3. Click the **Create Excel PivotTable Report** link in the task pane to launch Excel.
4. When the Opening Query dialog box opens, click **Open** to run the query.

5. In the Import Data dialog box, choose a location for the PivotTable report. The PivotTable, PivotTable Field List, and PivotTable toolbar are automatically displayed, as shown in Figure 3-15.



**Figure 3-15.** To create a PivotTable, drag fields from the list and drop them in the four areas of the PivotTable.

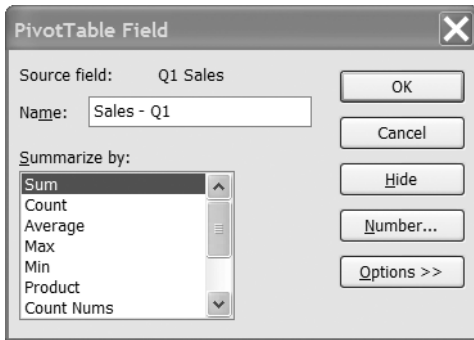
6. To create the PivotTable, drag fields from the Field List and drop them in the areas of the PivotTable.

## Changing Field Settings

When you drop a field that contains numbers in the Data Area, Excel uses the Sum function to summarize the data in the field. If you drop a field that contains any non-numeric data, Excel uses the Count function to summarize the data. The field names used to describe the fields start with the summarization method (Sum of, Count of), followed by the field name.

To change the summarization method or the field name, right-click the field name and choose **Field Settings** from the context menu to open the PivotTable Field dialog box, shown in Figure 3-16.





**Figure 3-16.** Change the summarization method and other field settings in the PivotTable Field dialog box.

To change the summarization method, choose another method from the “Summarize by” drop-down list.

To change the field name, enter a new name in the text box. You cannot use the name of a source field. For example, in Figure 3-16, you cannot name the field **Q1 Sales**, but you can rename it **Sales - Q1**.

## Pivoting the PivotTable Report

Interactivity is what puts the “pivot” in PivotTable reports. You can rearrange the report by moving fields between the Row, Column, and Page areas. Figure 3-17 shows the PivotTable report from Figure 3-14 after the Region field has been dragged from the Row Area to the Column Area.

	Region ▼			
Data ▼	East	North	West	Grand Total
Sales - Q1	300,400	466,700	496,000	1,263,100
Sales - Q2	352,620	512,700	420,500	1,285,820
Sales - Q3	346,700	488,550	428,475	1,263,725
Sales - Q4				

**Figure 3-17.** Drag fields from one area to another to modify the PivotTable report.

**Note** If you're relatively new to PivotTables, you can find more information on creating and manipulating PivotTable reports in Excel. Choose Help ► Microsoft Excel Help, then enter **pivot** in the search box. For a quick overview, the Microsoft web site includes a fine demo:

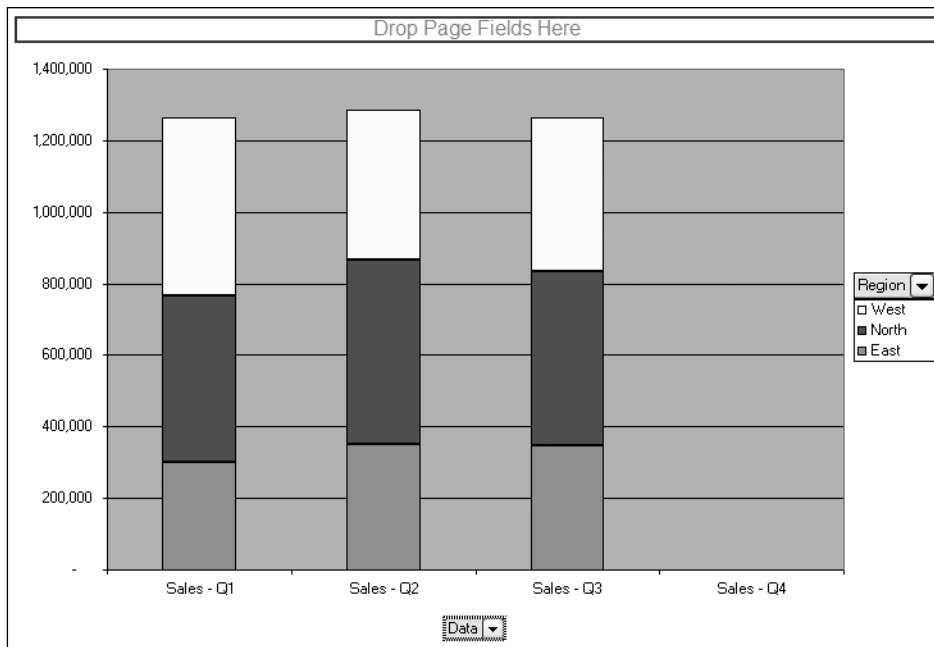
<http://office.microsoft.com/en-us/assistance/HA011989031033.aspx>

It offers a training module as well:

<http://office.microsoft.com/training/training.aspx?AssetID=RC010136191033>

## Creating a PivotChart Report

To create a PivotChart from the data in the PivotTable, click the **Chart Wizard** button on the PivotTable toolbar. Excel charts the PivotTable report data in a separate worksheet, as shown in Figure 3-18.



**Figure 3-18.** Click the Chart button on the ChartWizard toolbar to create a PivotChart based on the current PivotTable report.

## Refreshing PivotTable and PivotChart Data

The data for the PivotTable report or PivotChart is external data stored on the SharePoint site, not in the Excel workbook. You should occasionally refresh the data to retrieve the latest data from the site. How often you refresh depends on how often the data in the SharePoint list is modified. To retrieve current data from the SharePoint list, click the **Refresh Data** button on the PivotTable toolbar.

## Creating a PivotTable Report from Excel Offline Data

To create a PivotTable report using data previously exported to Excel, follow these steps:

1. Select any cell in the list, then choose **Data ► PivotTable and PivotChart Report** to launch the PivotTable and PivotChart Wizard.
2. In the first step of the wizard, choose **Microsoft Office Excel list or database**. Choose the kind of report you want to create and click **Next**.
3. In the second step of the wizard, ensure that the entire list (except the blank row for a new record) is selected. Click **Next**.
4. In the final step of the wizard, choose a location for the PivotTable report and click **Finish** to create the report.

## Summary

This chapter focused on reasons you would choose to export SharePoint lists to Excel, and techniques for exporting and synchronizing lists. Offline synchronization provides convenience for road warriors. You have access to PivotTable and PivotChart reports, and other advanced summarization and analysis tools, as soon as you export to Excel. The combination of SharePoint and Excel provides more functionality and a broader feature set for data manipulation and analysis.

