# Connecting to SAP BW with Excel PivotTables and ODBO

**By Amyn Rajan, Bruce Johnston, Dermot MacCarthy**

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Excel is considered by some to be the most commonly used BI tool in the world. Excel PivotTables are a practical way to access and analyze SAP BW data. Excel is ubiquitous and well understood, and Pivot-Tables are an excellent way to explore the world of SAP BW data. However, the first hurdle you face, as a new user, is connecting to your SAP BW data source. Connecting PivotTables to a SAP BW data source is relatively straightforward, if you know a few important items that we will outline here.

What follows is a step-by-step description of the process that will get you connected to your data. Note that all steps presented here work the same way for Excel 2000, 2002, and 2003.

### The PivotTable Wizard

Connecting to SAP BW and populating an Excel PivotTable is a three-step process. First, you must decide what you want to create. Second, you must specify the data source you want to use. And third, you must use this data source to populate a PivotTable or PivotChart report. It all begins with the PivotTable and PivotChart Wizard.

To start the PivotTable and PivotChart Wizard, select the Data menu and click on "PivotTable and PivotChart Report..." The "PivotTable and PivotChart Wizard – Step 1 of 3" dialog box will appear.



Here is where you choose whether to create a Pivot-Table or a PivotChart. In this example, we will create a PivotTable, but the process for a PivotChart is similar.

Since the new PivotTable must obtain its data from a SAP BW OLAP server, you must select "External data source" before proceeding to the next step in the wizard.

When you click on "Next>" the "PivotTable and PivotChart Wizard – Step 2 of 3" dialog box appears.

Click on "Get Data..." This launches Microsoft Query, the tool you use to open existing data sources and specify new ones. The "Choose Data Source" dialog box appears.
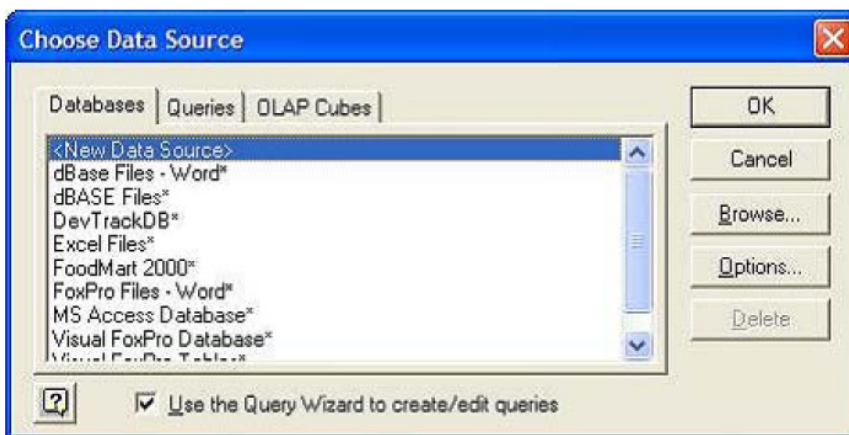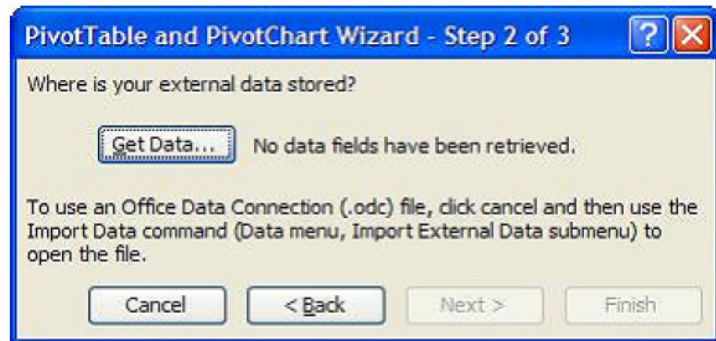
Select the "OLAP Cubes" tab. Note that <New Data Source> is automatically selected. When you click OK to begin defining a new OLAP data source, the "Create New Data Source" dialog box appears.

**Creating a New SAP BW Data Source**
To create a new data source, you will be taken through four steps. The first step is to choose a name for the new data source. We will call ours "bwtest".

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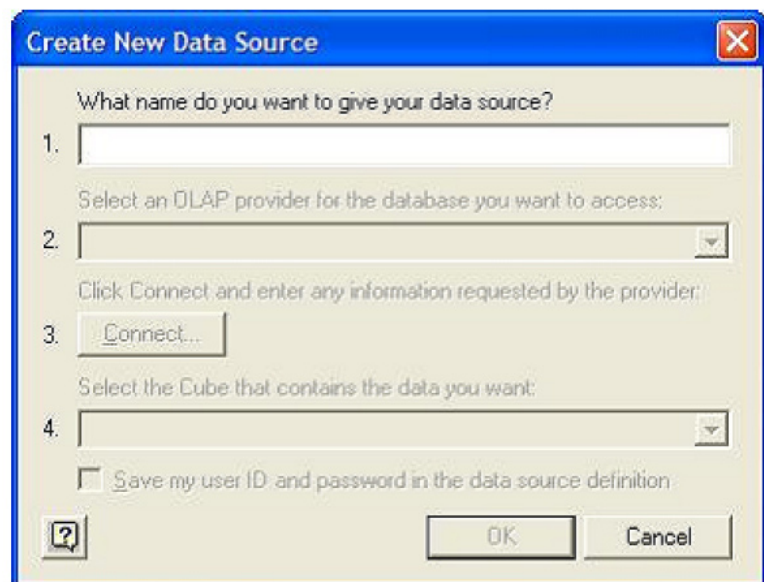
The second step is to select an OLAP provider from the drop-down list. To connect to SAP BW, select the "SAP BW OLE DB Provider" from the list.
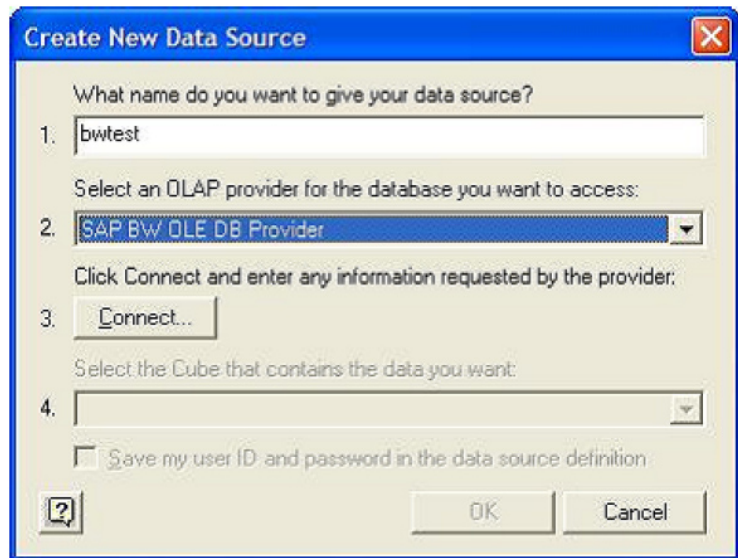


The third step is to test the connection to the new data source by clicking on the "Connect..." button. The SAP Logon dialog box will appear. Select the desired SAP BW system and click OK. You will be prompted to enter your User ID and Password.

After you enter your logon information and click OK, you will be returned to step 4 of the "Create New Data Source" dialog box, where you will choose an InfoCube or QueryCube from the drop-down list. Your PivotTable will be populated from this InfoCube or QueryCube. For this example, we will choose the InfoCube called "$0D_DECU," one of the demo cubes.
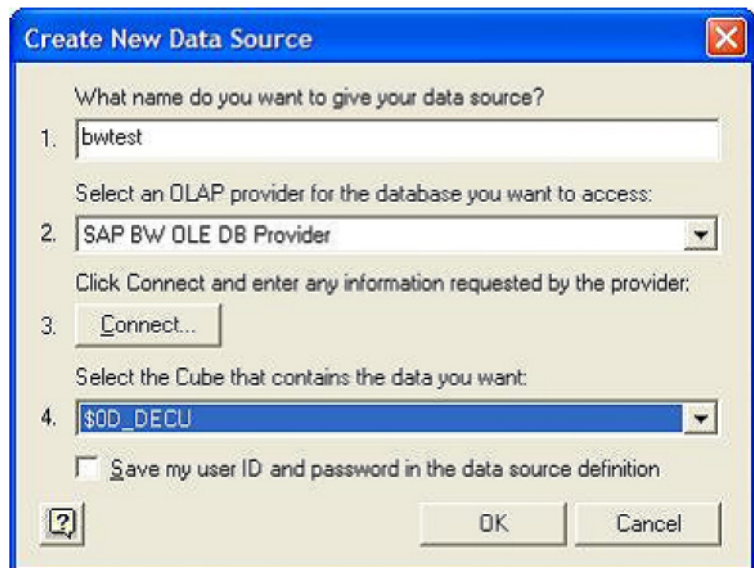


Click OK to finish creating the new data source. You will be returned to the "Choose Data Source" dialog box. The new data source, "bwtest," now appears in the list on the OLAP Cubes tab.

The data source has now been created and saved in an .oqy file by Microsoft Query. The next time you want to create a PivotTable from this data source, simply select the OLAP Cubes tab in Microsoft Query, select the data source, and click OK. You won't have to repeat the steps above to reuse an existing data source.

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**Populating the PivotTable**

Make sure that the data source you want to use is highlighted in the dialog and click OK to return to Excel. You will return to step 2 of the PivotTable and Pivot-Chart Wizard.
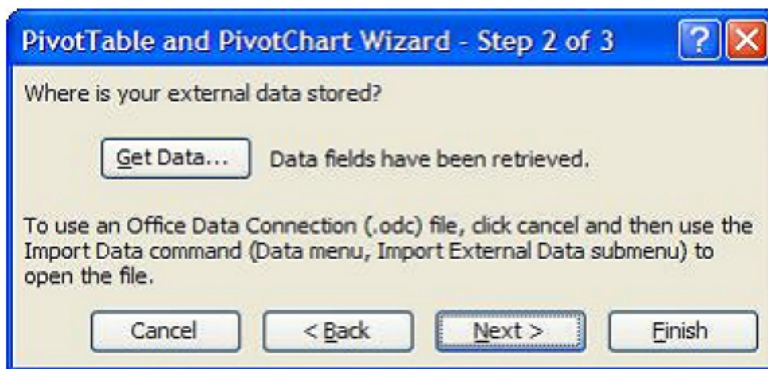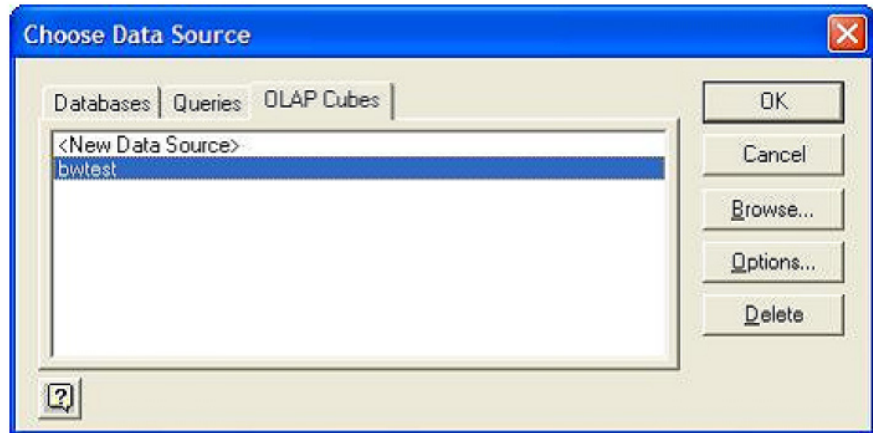
Now you can either click "Next" to choose layout and location options for your new PivotTable, or you can just click "Finish" to accept the PivotTable layout defaults and to locate the Pivot-Table on the current worksheet.

At this point, if you're using Excel XP or Excel 2003, you may see the following error message:
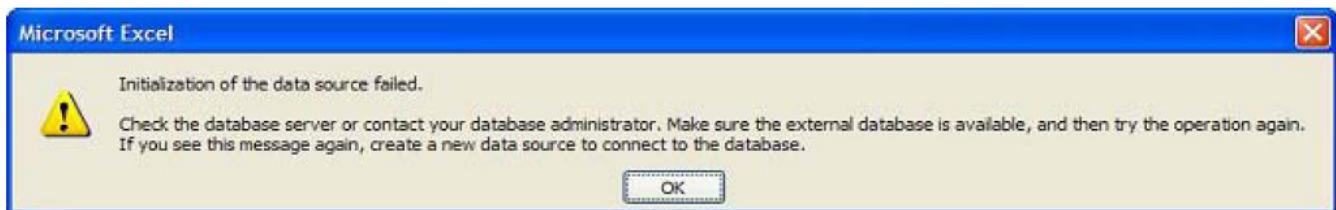
This error message is false. If you click OK, the process of creating the PivotTable will continue. If you want to know in detail why this error occurs and how to make it disappear, see "Initialization of the data source didn't really fail after all…"

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## Initialization of the data source didn't really fail after all...

When attempting to connect to the SAP BW ODBO Provider from Excel XP or Excel 2003, a false error message occurs just before the final logon prompt. This is caused by what can charitably be described as a misunderstanding between Excel and the SAP ODBO Provider.

The issue is that newer versions of Excel attempt to perform a silent logon without providing a password, which of course will fail in the case of the SAP ODBO Provider. Perhaps not coincidentally, it actually works fine with the Microsoft Analysis Services ODBO Provider, because Analysis Services uses NT Integrated security by default. (Integrated security relies on the Windows logon credentials of the current user, which saves the user the hassle of having to type in yet another password)

You might think that you can stop this error message from appearing by checking the box on the "Create New Data Source" dialog box that says, "Save my user ID and password in the data source definition." Unfortunately, this does not work.
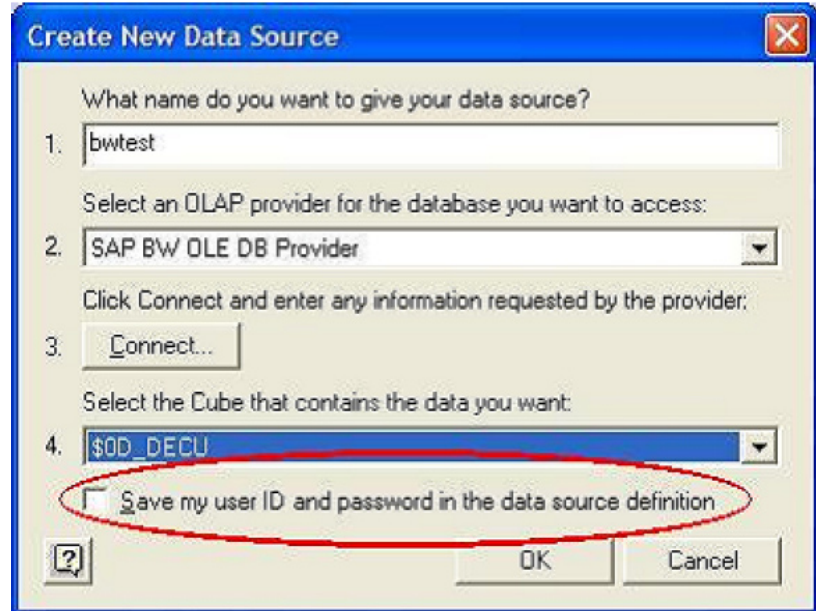


This does not work because the SAP BW Provider relies on the SAP Logon control, which encrypts the password and does not provide a decrypted version of it that Excel can use.

Fortunately, there is a workaround. Find the .oqy file that was created by MSQuery when you defined your BW data source. It should be in \Documents and Settings\<User>\Application Data\Microsoft\Queries, where <User> is your user name. Note that the Application Data folder is hidden, so you may need to change your Folder Options settings to make hidden files and folders visible.

Once you find the .oqy file, open it with Notepad. There should be a line in the file that begins with Connection=. This is an OLE DB connection string. Add the following to this line: Password=<pwd>, where <pwd> is your BW password. You can add this between any of the existing items in the connection string, but it is probably easiest to add it as the first item. For example:

Connection=Password=<pwd>;Provider=...

Now, save your changes to the .oqy file. The next time you connect with Excel, the error message will not appear, and neither will the SAP Logon dialog box, since the SAP Provider now has enough information to make the connection to BW.

The downside to this workaround is that it involves putting your SAP BW password in plain text, in a file on your local hard drive. This is a security risk, so you should decide carefully whether avoiding the unnecessary error message is worth the risk.

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Before the PivotTable will display, you will be prompted for your SAP BW Password one last time. When you enter it and click OK, the PivotTable appears.
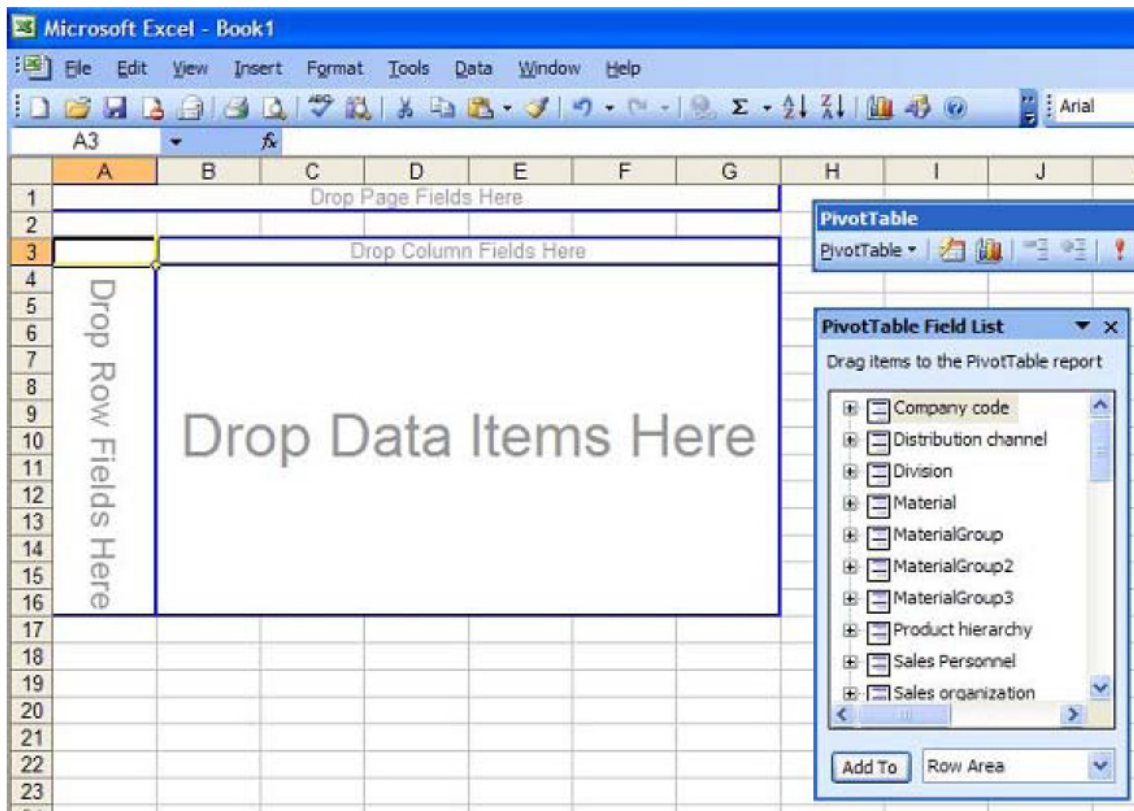


The new PivotTable looks virtually identical to any other PivotTable, except that you can see the characteristics from your chosen SAP BW cube in the PivotTable Field List. If you scroll down, you will see key figures in the list as well.

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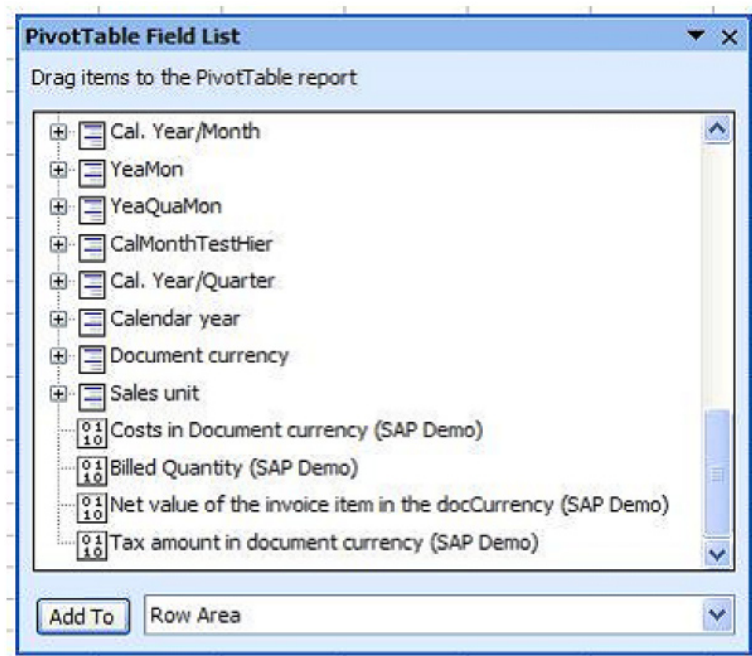
You can drag and drop characteristics and key figures onto the PivotTable, just like you would drag fields onto any other PivotTable. The difference is that your data is coming directly from your SAP BW server over a live connection.



From here, you can begin to explore the world of your SAP BW data. Exploring your data is an extensive topic, which is not covered here, but now you have the tools to get started.

**About Simba Technologies**

Simba Technologies Incorporated (www.simba.com) builds development tools that make it easier to connect disparate data analysis products to each other via standards such as, ODBC, JDBC, OLE DB, ODBO (OLE DB for OLAP), and XML for Analysis. Independent software vendors that want to extend their proprietary architectures to include advanced analysis capabilities look to Simba for strategic data connectivity solutions. Customers use Simba to leverage and extend their proprietary data through high performance, robust, fully customized, standards-based data access solutions that bring out the strengths of their optimized data stores. Through standards-based tools, Simba solves complex connectivity challenges, enabling customers to focus on their core businesses.

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## About the Authors

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