

Upload, Model, Analyze, and Report

by Mark Rittman

Quickly load information to Oracle Business Intelligence Cloud Service and share the reporting with your coworkers.

Oracle Business Intelligence Cloud Service brings the analysis and dashboard capabilities of Oracle Business Intelligence to Oracle Cloud, along with a new self-service interface that makes it easy for nontechnical users to upload and report on departmental data sets. In this article, I'll demonstrate how to upload a spreadsheet containing sales data to Oracle Business Intelligence Cloud Service, model the data into a dimensional star schema, and then create analyses and a dashboard to be used in a department.

Oracle Business Intelligence Cloud Service: Bringing Oracle Business Intelligence to the Cloud

Oracle Business Intelligence Cloud Service, part of the Oracle Cloud platform as a service (PaaS), gives users the ability to upload spreadsheet, file, and other data sets to a secure cloud-based database environment, create simple data models, and then use these to build rich interactive analyses and dashboards that can be secured and shared within a department. Data can be uploaded with Oracle SQL Developer; the Oracle Application Express web services API; or, as I will describe in the article example, Oracle Business Intelligence Cloud Service's web-based data upload service.

A typical use case for Oracle Business Intelligence Cloud Service is departmental knowledge workers who want to take a set of data they are working on and make it available to others in the organization quickly, without having to involve the IT department in the process.

The example, which uses a Microsoft Excel spreadsheet document as the datasource, steps through the process, from data upload to the final dashboard. To follow along with the example in this article, you will require access to an Oracle Business Intelligence Cloud Service instance, and you will need to download the spreadsheet file I'll be using from bit.ly/omagbics1.

Upload the Spreadsheet and Create the Data Model

To upload the spreadsheet and create a simple data model to present its data to report developers, follow these steps:

1. Using your web browser, navigate to your Oracle Cloud login page and enter your **User Name, Password, and Identity Domain** details. After you have logged in, go to the Oracle Business Intelligence Cloud Service home page and click **Load Data**, as shown in Figure 1.

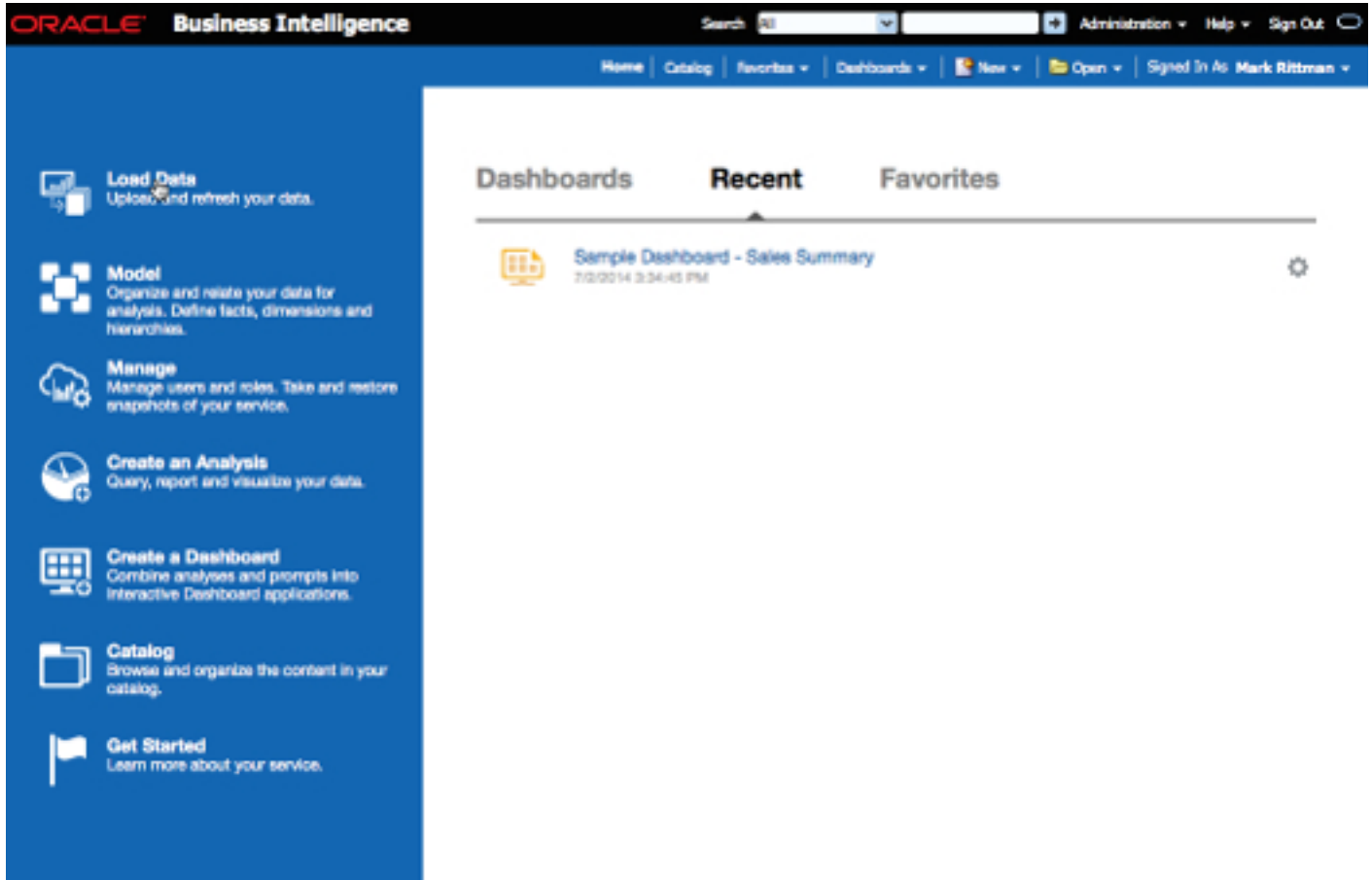


Figure 1: The Oracle Business Intelligence Cloud Service Home Page

2. On the Select Data page of the data loader, click **Load Data** at the top of the page to start the upload process. When prompted, click **Upload** and select the **product_sales_100_rows.xls** file from your local file system. After the file contents have uploaded, check the details shown in the preview pane to confirm that the file contents look correct. (There should be rows of transaction data, and the transaction elements should be separated by commas.) Leave the **The first line contains header names** checkbox checked to tell the data loader that the first row of the file contents contains the column header names, and click **Next** to continue.
3. On the Select Destination page of the data loader, select **New Table** for **Data Destination** and name the table **SALES_TRANS_DATA**. Then click **Next**, **Next**, and **OK** to accept the upload defaults and complete the upload process.

4. Now that you have uploaded the spreadsheet containing rows of transaction data, you can use the Model feature of Oracle Business Intelligence Cloud Service to create a simple star schema data model for report users to employ when accessing the spreadsheet data. To create this model, return to the Oracle Business Intelligence Cloud Service home page and this time click **Model**.

5. When the Data Modeler page is displayed, first click **Lock to Edit** to lock the model so that only you can make changes to it. Then select the **SALES_TRANS_DATA** table in the **Database** panel on the left side of the page and click the **Table Actions** icon to the right of the table name. Select **Add to Model -> as Fact and Dimension Tables**, as shown in **Figure 2**.

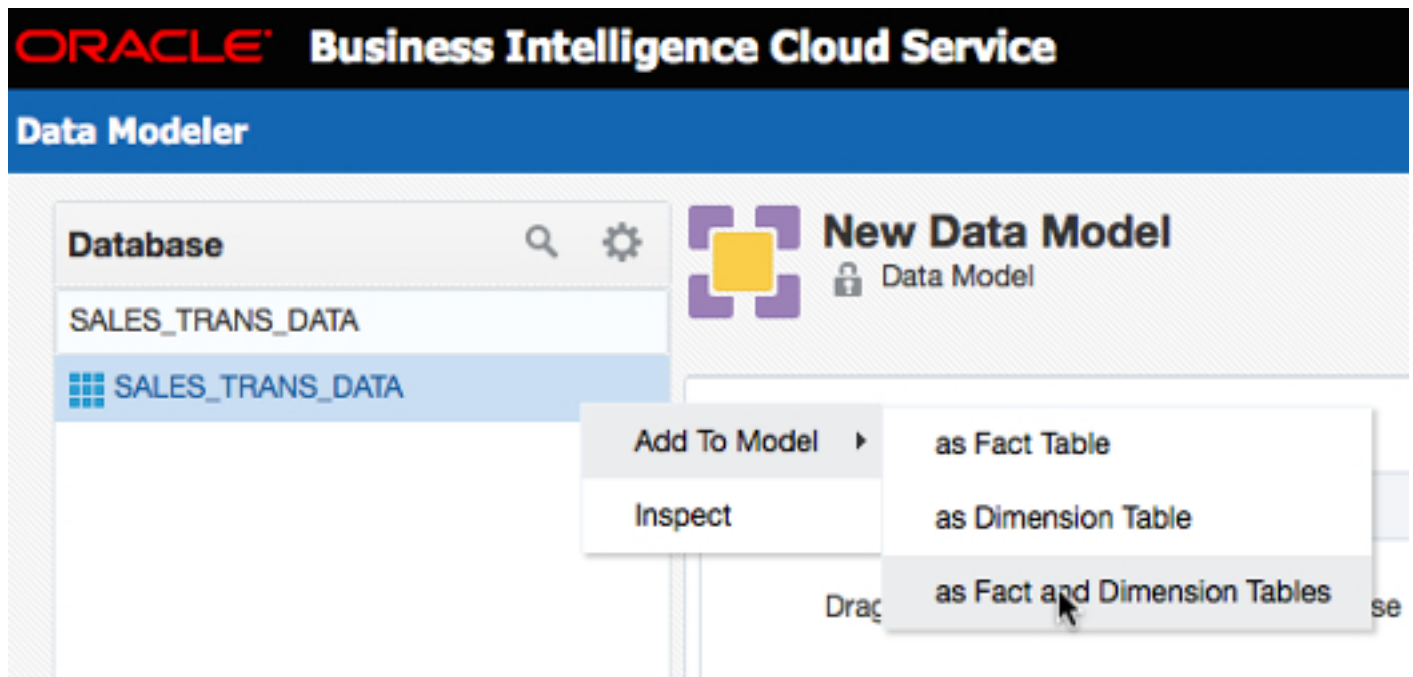


Figure 2: Adding the Table to the Data Model

6. A dialog box displays the columns from your source table, **SALES_TRANS_DATA**, on the left and areas for the fact table and dimension tables on the right. Update the fact table name to **SALES**, change the existing dimension table name to **CHANNELS**, and click **Add** (next to the **Dimension Tables** area) to add two more dimension tables, and name them **CUSTOMERS** and **PRODUCTS**. Then drag and drop the **Source Table** columns into the following data model table areas to create your initial data model:

SALES: AMOUNT_SOLD, QUANTITY_SOLD, TIME_ID
CHANNELS: CHANNEL_ID, CHANNEL_DESC, CHANNEL_CLASS
CUSTOMERS: CUST_ID, CUST_CITY, CUST_STATE_PROVINCE
PRODUCTS: PROD_ID, PROD_DESC, PROD_CATEGORY

Then, within each of the dimension table areas, check the checkbox next to the primary key columns—**CHANNEL_ID**, **CUST_ID**, **PROD_ID**—to designate them as primary keys and automatically add those same columns to the **SALES** fact table; the dialog box looks like **Figure 3**. Click **Next**, **Create**, and **Done** to create the initial data model and the database view objects.

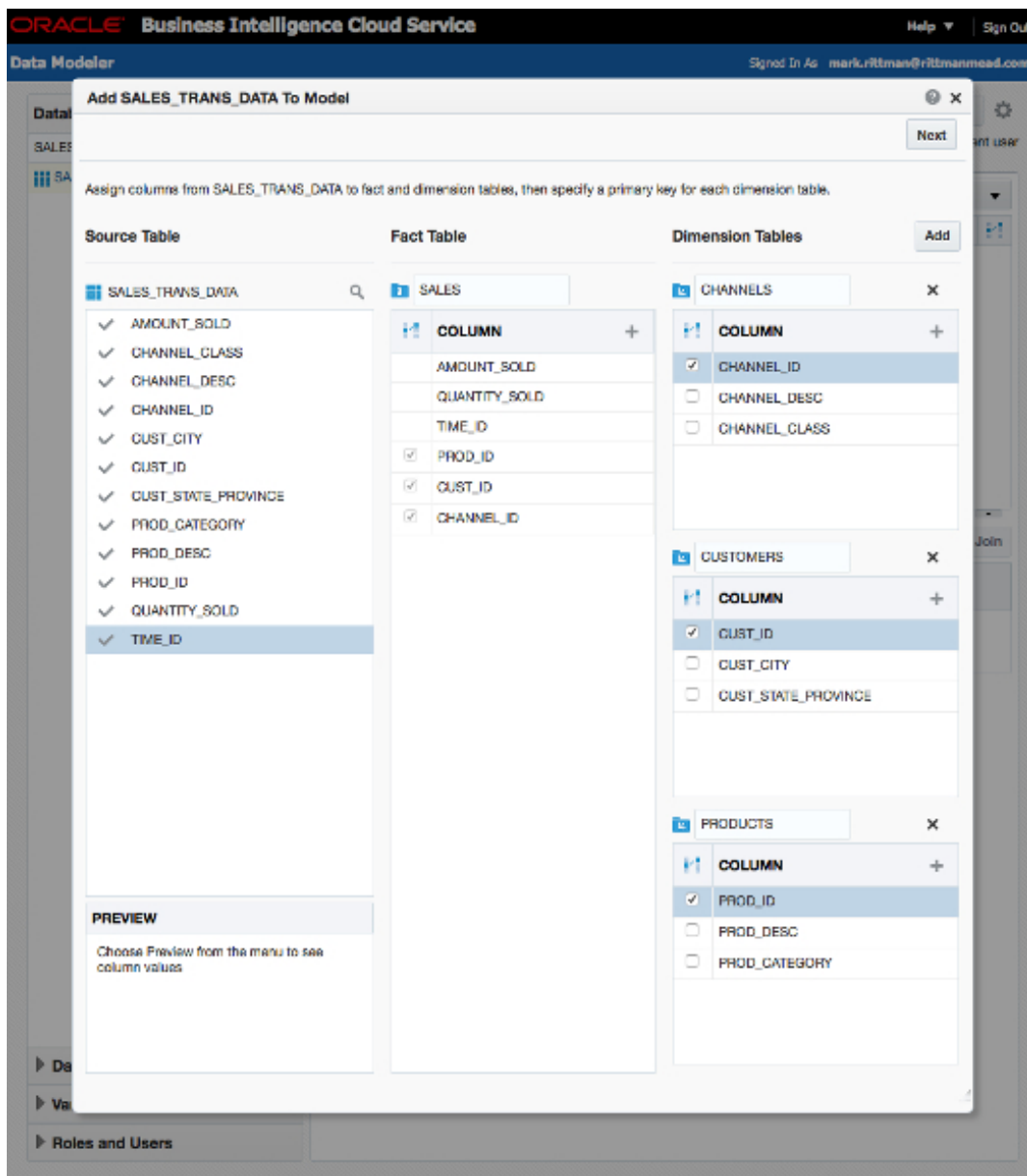


Figure 3: Creating the Initial Data Model

7. There are two more steps you will want to carry out before creating reports against this data, the first of which is mandatory and the other optional. The mandatory step is to set the default aggregation method for the measures in your fact table. To do this, click the fact table name (**SALES**) on the New Data Model page (which is now showing). In the **Aggregation** column for each fact table column, set the aggregation method to **Sum** for the **AMOUNT_SOLD** and **QUANTITY_SOLD** columns, and then click **Done**.

8. The final data modeling step, which is optional but recommended, is to create a time dimension table containing dates over the usual business period—with attributes to identify the month, quarter, and year for each of those dates—and link the table back to the **SALES** fact table. To create this table automatically, click the **Model Actions** icon (next to **Publish Model** at the top right of the page) and select **Create Time Dimension** from the menu. Then in the **Create Time Dimension** dialog box, name the **Database Table** **DATE_TRANS**; check the **Year**, **Quarter**, and **Month Hierarchy Levels** checkboxes; and then click **Next** and **Create**. When the dialog box reports that the time dimension was created successfully, click **Done**.

To join this time dimension table to the fact table, click **Create Join** on the New Data Model page and join the two tables on SALES.TIME_ID = Time.Date Timestamp. When the join is complete, click the green **Save Changes** icon (next to the join definition) and then, to complete the data model definition process, click **Publish Model** to save your changes and make the data model shown in Figure 4 available to other users.

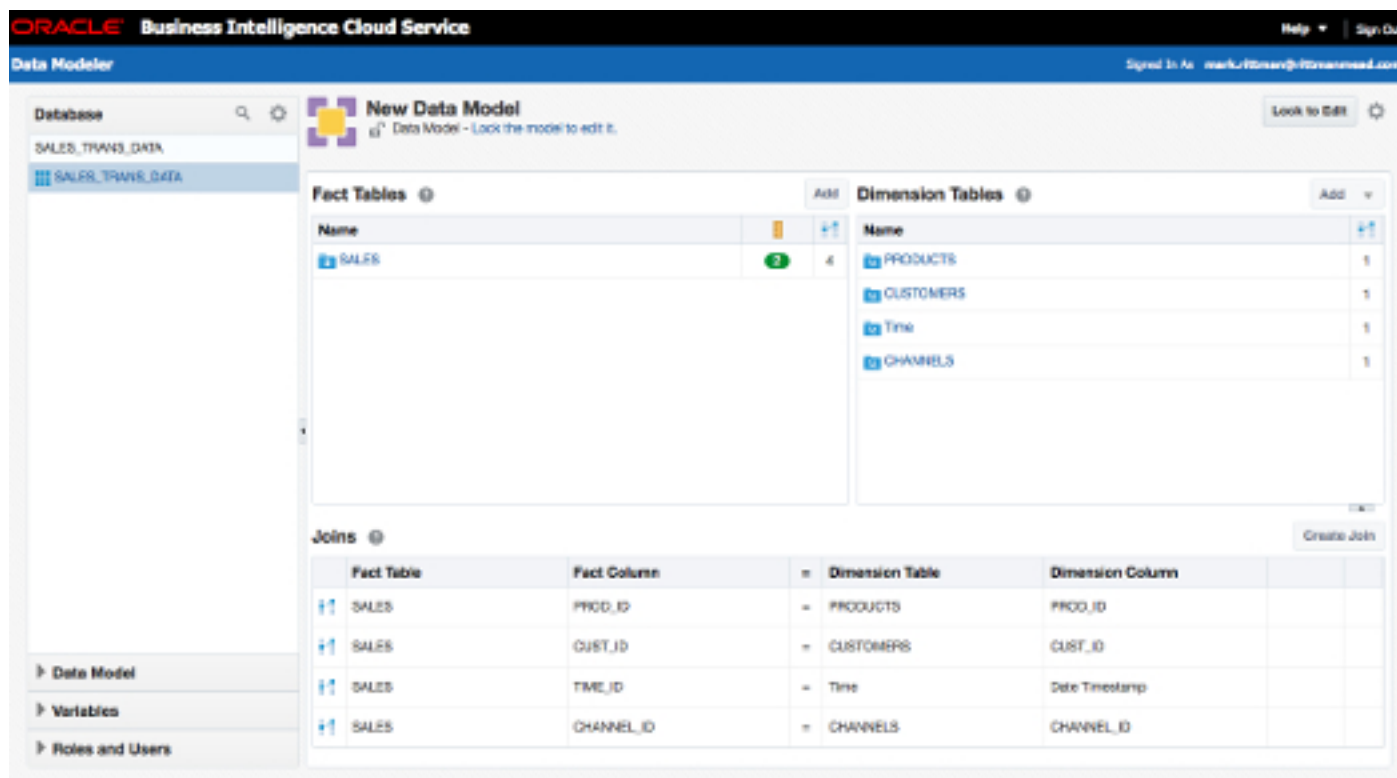


Figure 4: The Completed Data Model

Creating Your Oracle Business Intelligence Cloud Service Analyses and Dashboard

To create a set of sample analyses and include them in a new dashboard, follow these steps that use the data model you created in the previous set of steps:

1. On the Oracle Business Intelligence Cloud Services home page, click **Create an Analysis**. Using the list of tables and columns displayed in the **Subject Areas** panel, double-click the **CHANNELS -> CHANNEL_DESC** column to add it to the Selected Columns area on the right, and then do the same for the **SALES -> AMOUNT_SOLD** column, so that both columns are listed in the **Selected Columns** area.
2. Click the **Results** tab at the top left of the page, and you will see the Amount Sold measure listed by channel name. To show these results graphically, click **New View** (above the **Compound Layout** area) and select **Recommended Visualization for -> Comparing Percentages** to see the Oracle Business Intelligence Cloud Service set of recommended graph types for this type of analysis, as shown in **Figure 5**.

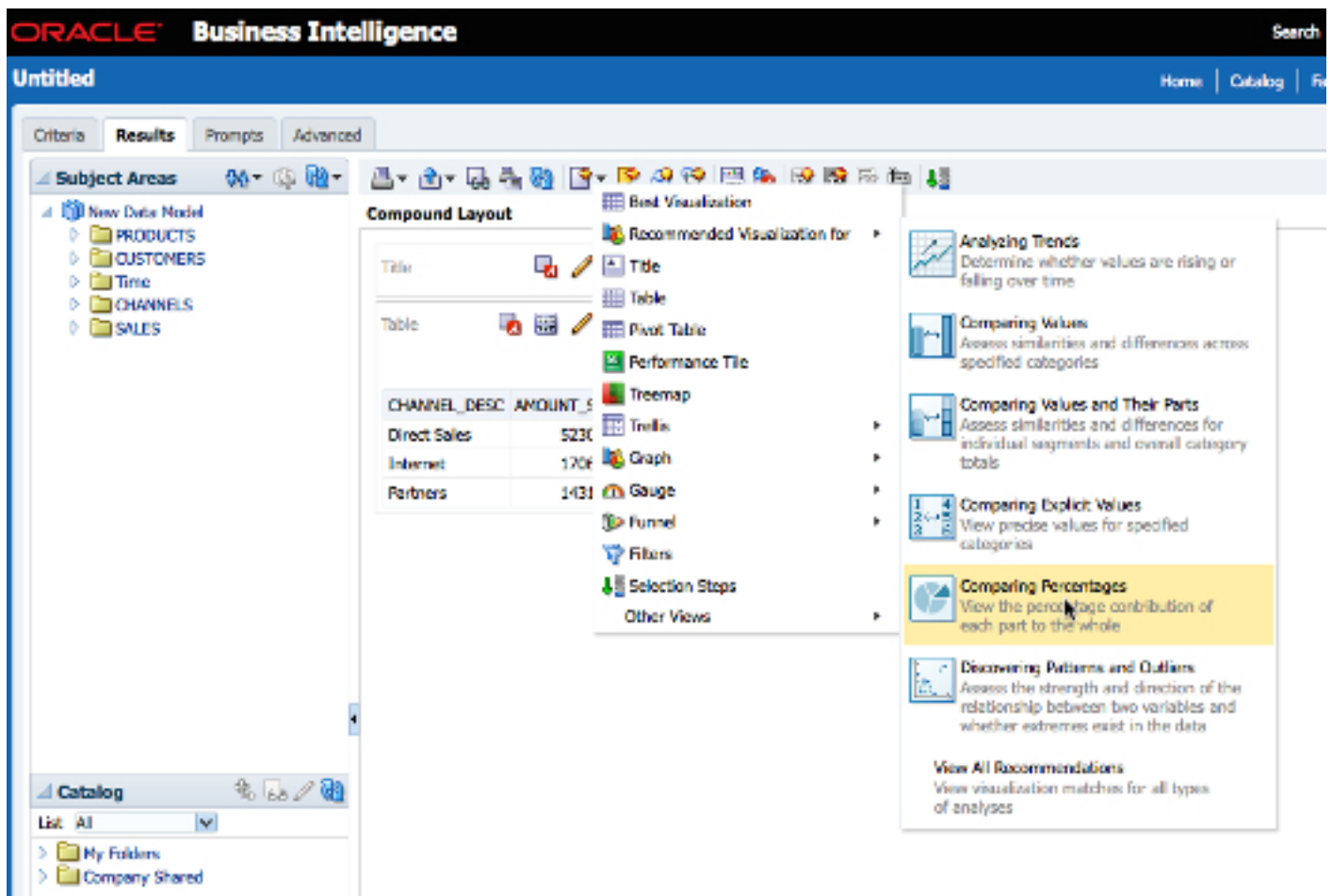


Figure 5: Creating Graphs with Recommended Visualization Types

From the list of visualization types displayed, choose **Pie (Recommended)** from the list and click the **Remove View from Compound Layout** icon ("x") within the Table view to leave just the pie graph. Save this analysis to the catalog by clicking **Save Analysis** at the top right of the page. Then, using the Save As dialog box, first create a new folder called **First Reports** within the Company Shared folder and then save the analysis into this new folder, using the name **Sales by Channel Breakdown**.

3. Now repeat these steps to create a second analysis called **Quantity Sold Over Time** using the **Time -> Date** and **SALES -> QUANTITY_SOLD** subject area columns, and use the **Recommended Visualization** for menu to create a time-series line graph that graphs the amount sold over time.

4. Create a third analysis, using this same approach, that shows **SALES -> AMOUNT_SOLD** broken down by **PRODUCTS -> PROD_CATEGORY**, and use the **Recommended Visualization** for menu again to select the best graph type for comparing values, the bar graph. Save this third analysis to the First Reports folder as **Product Sales**.

5. Finally create a performance tile to show the sales for the last month in the data set. To do this, create a new analysis using the **SALES -> AMOUNT_SOLD** and **Time -> Month** columns, and use the **Filter** menu item for the **Time -> Month** column in the **Selected Columns** area to filter the returned values with **Month is equal to / is in 1998 / 03**.

Then, on the **Results** tab, click **Add View** to add a new Performance Tile view to the analysis, and when it is added to the compound layout, click **Edit Analysis** in the view to change the label to **NEW SALES** and the tile style to the second style (which uses white text on a gray background). Click **Done** and the **Results** tab, and then click the **Remove View from Compound Layout** button in the Title and Table views to remove these from the compound layout of the analysis. Save the analysis to the First Reports folder as **Amount Sold Tile**.

All that's left now is to create a dashboard to hold these analyses. To do this, from the Oracle Business Intelligence Cloud Service home page, click **Create a Dashboard** and name the dashboard **Sales Dashboard**. Save the dashboard in the /Company Shared/First Reports/Dashboards folder, and click **OK** to start adding content.

With the dashboard editor now open, drag and drop two column objects from the **Dashboard Objects** panel to create two vertical columns in your dashboard, and use the **Catalog** panel under the **Dashboard Objects** panel to add the **Amount Sold Tile** and **Product Sales** analyses to the left-hand column and the **Quantity Sold Over Time** and **Sales by Channel Breakdown** analyses to the right-hand column. Save the dashboard, which should look like **Figure 6**.

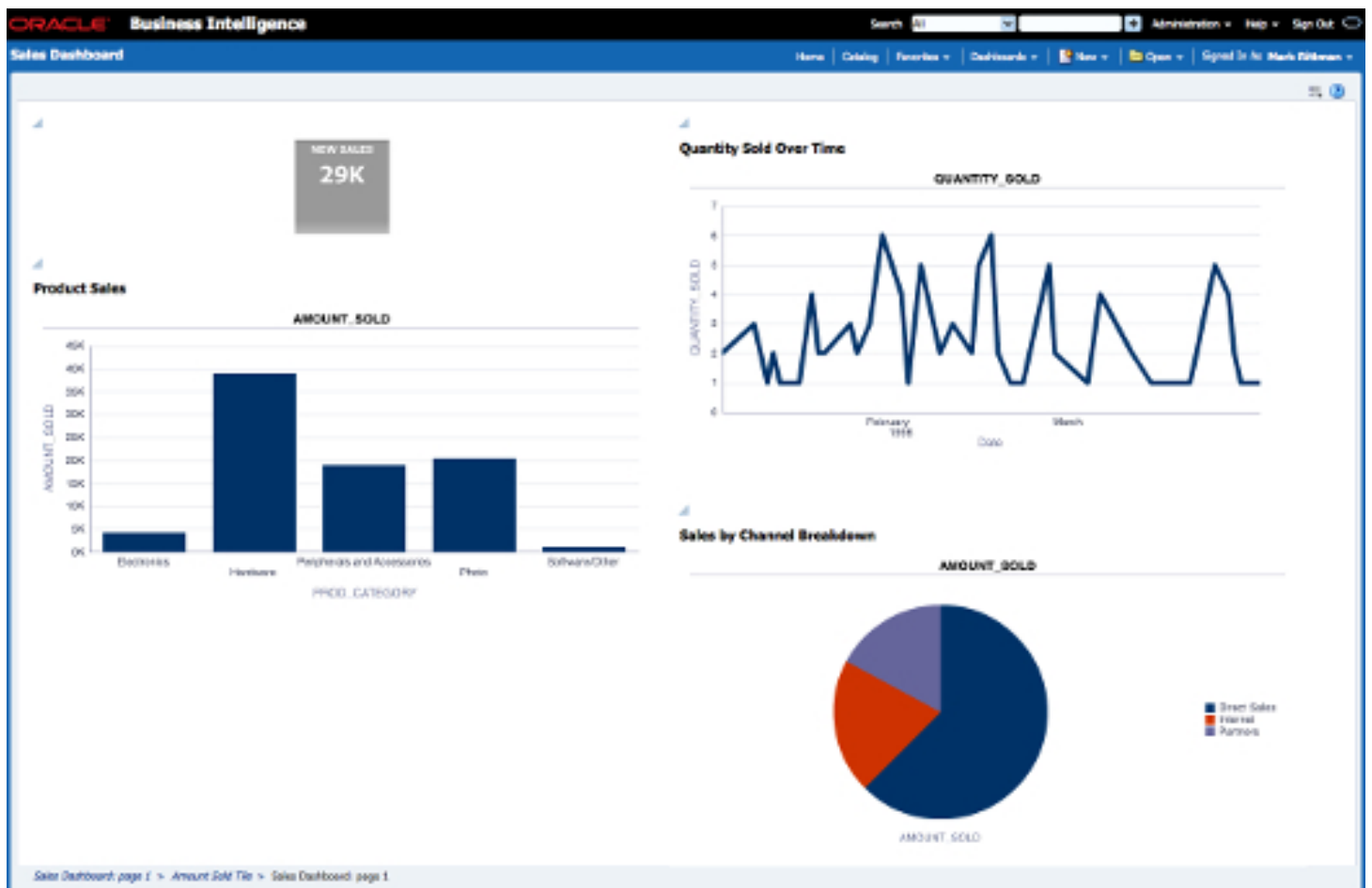


Figure 6: The Oracle Business Intelligence Cloud Services Dashboard

You have now created your first Oracle Business Intelligence Cloud Service dashboard. You can use it to view and interact with the analyses displayed within it, and you can create additional analyses, dashboard pages, and dashboards as well as upload and add new data to your data model. Other users within your Oracle Business Intelligence Cloud Service instance can view the analyses and dashboards you have created, and you can set up roles to control access to data and reports. Refer to the Oracle Business Intelligence Cloud Service online help, videos, and tutorials at bit.ly/oraclebicshelp for more information.

Conclusion

Oracle Business Intelligence Cloud Service makes it possible to quickly deploy analyses and dashboards as part of the Oracle Cloud platform without the need for on-premises software installs or the help of the IT department. In this article, you've seen how to quickly create reports and a dashboard that can be shared with coworkers within your department, using simple self-service tools and the ability to upload spreadsheets and other files to create your reporting data set.