Sample Universe on Microsoft OLAP Cube

Applies to:

SAP BusinessObjects XI4, the information design tool and Microsoft Analysis Services 2005 & 2008. For more information, visit the Business Objects homepage.

Summary

This article describes the content of the sample universe for Microsoft Analysis Services. It also explains how to set up the universe in the information design tool and how to make it available to client tools.
Download the attached file here.

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Author Bio

Marc Daniau joined Business Objects in 1992 as project consultant. He joined the product group in 1998 to work on EPM products in San Jose and then moved to the semantic layer team in Paris.

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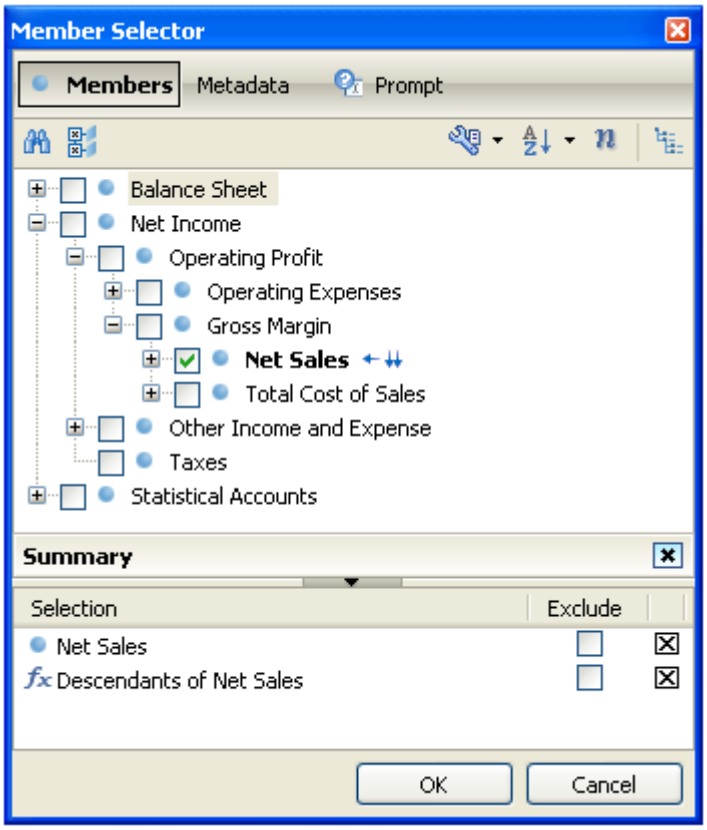
The “Sales & Marketing” Universe

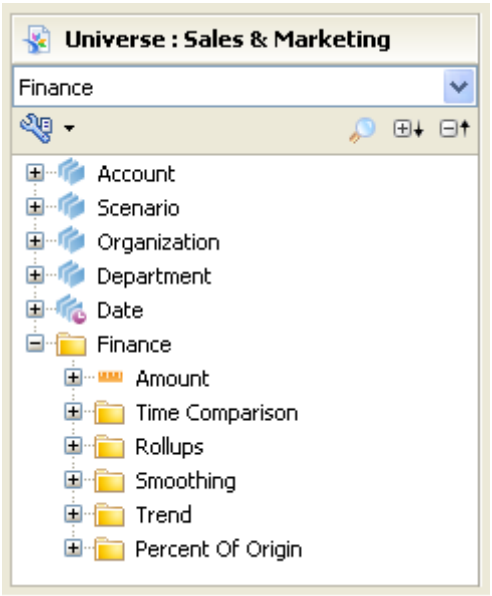
The “Sales & Marketing” universe is based upon the ‘Adventure Works’ sample cube from Microsoft. Its scope covers a subset of the dimensions and measures found in the OLAP cube. The universe contains hierarchies (level-based as well as parent-child) that allow for member selection.



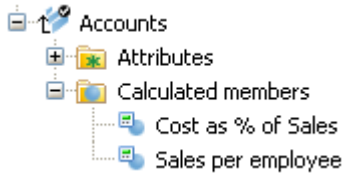
MDX based objects like calculated measures, calculated members and named sets have been added for analysis purposes using the information design tool. The outline of the universe is organized into three views: Finance, Sales and Performance.

Finance view

The Finance business layer view includes various calculated measures for time series analysis.

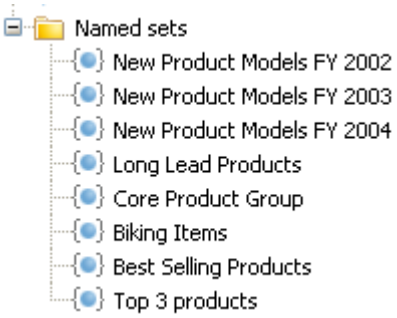


Its Account parent-child hierarchy has been augmented with calculated members.

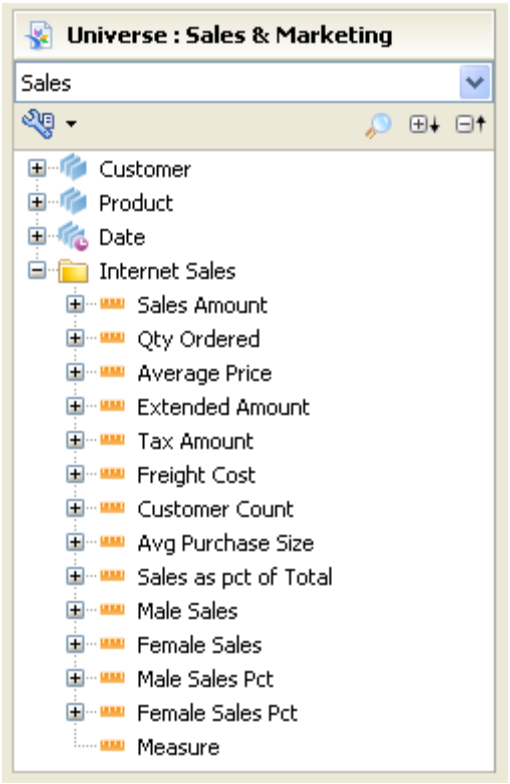


Sales view

The Sales business layer view includes Named Sets of products: some are server sets found in the OLAP cube (e.g. Core Product Group); others were defined with the information design tool (e.g. Top 3 Products). The named set “Biking Items” illustrates the use of the Microsoft specific MDX function VisualTotals.

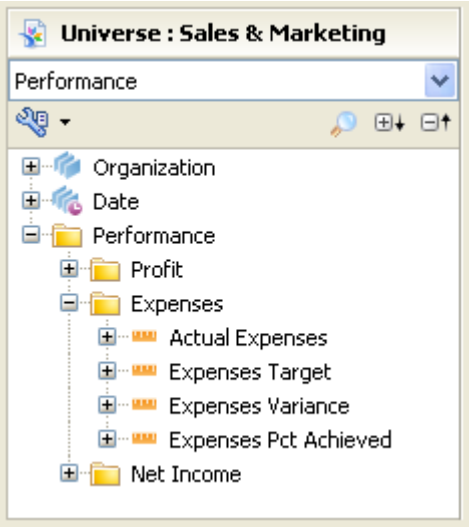


The Sales business layer view provides calculated measures for percent of total and gender analysis. It also includes a prompted measure.



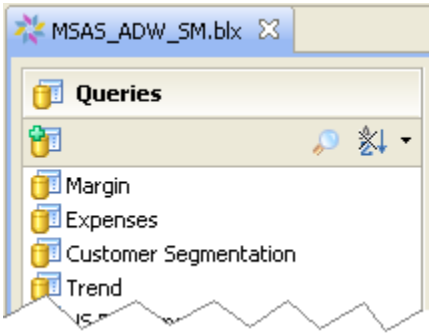
Performance view

The calculated measures in the Performance business layer view make use of the KPI feature of Microsoft Analysis Services.



Sample queries

The business layer contains sample queries to help you get familiar with the dimensional concepts provided by the information design tool.



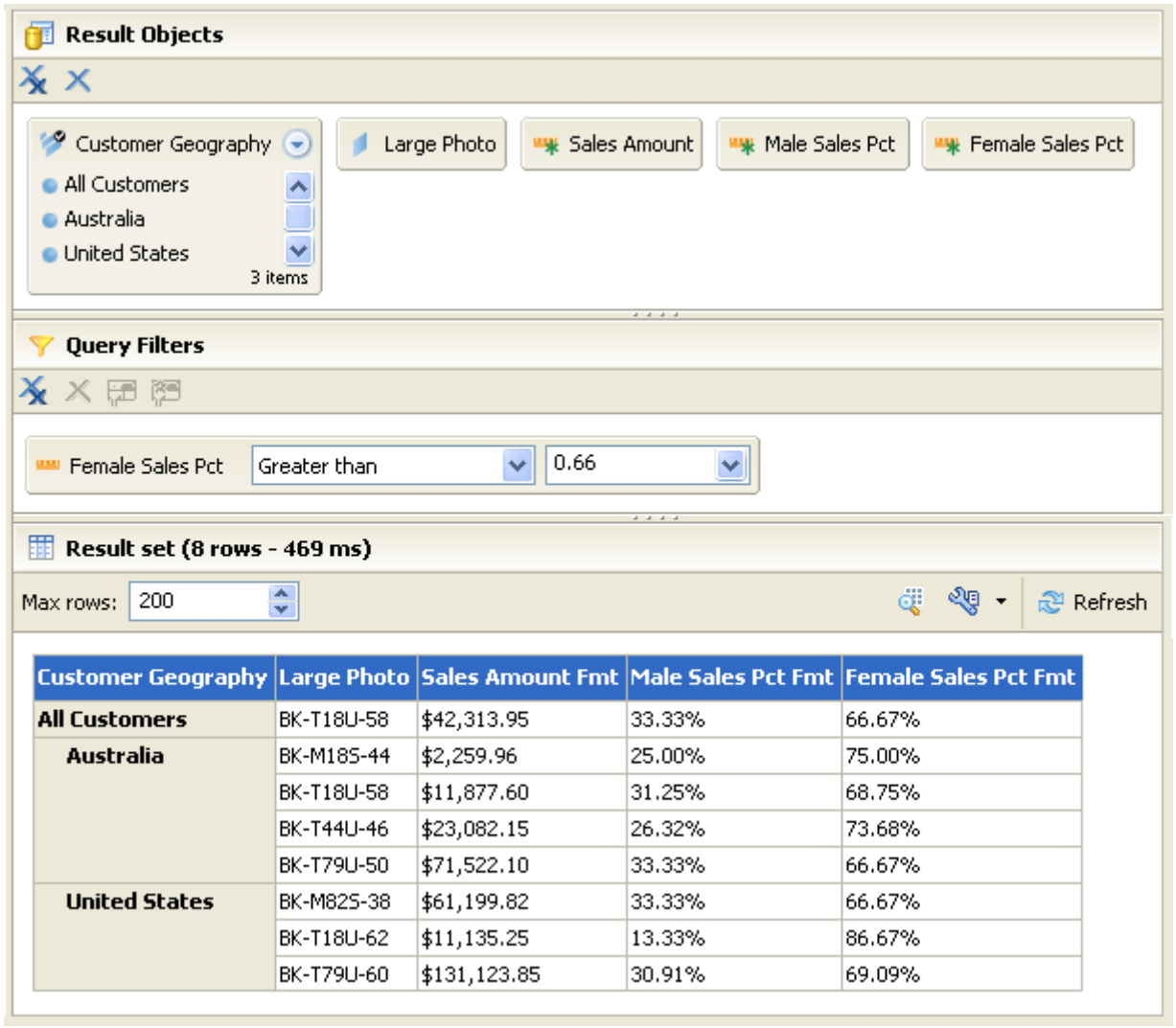
Note that those queries remain local to the business layer within the information design tool for test purposes. They will not be exposed to the client tools like Web Intelligence or Crystal Reports for instance.

The following table summarizes the main features employed in the sample queries.

Query name	Showcased features
Margin	Calculated member on parent-child hierarchy, calculations for Time analysis, support of Solve order
Expenses	Member selection on parent-child hierarchies, Prompted Member selection on level-based hierarchy, Year-to-date calculations
Customer Segmentation	Named Sets
Trend	Prompted Time window, calculations for trend analysis, support of VBA statistical functions
US Performance	Support of MSAS specific MDX functions for KPIs, filter on a level

Percent of Origin	Member selection using a level, calculations for Time analysis, filter using a dimension object
Productivity	Calculated member on parent-child hierarchy
Sales by Product Category	Percent of total calculations
Product Analysis	Named set with MSAS specific MDX function VisualTotals
Dynamic Measure	Prompted measure
Gender Analysis	Filter on measure
Customer Age Range	Support of VBA date functions
Top 3 Products	TopCount MDX function

For any given query you can preview the data and even view the underlying MDX script. The bitmap below shows the 'Gender Analysis' sample query.



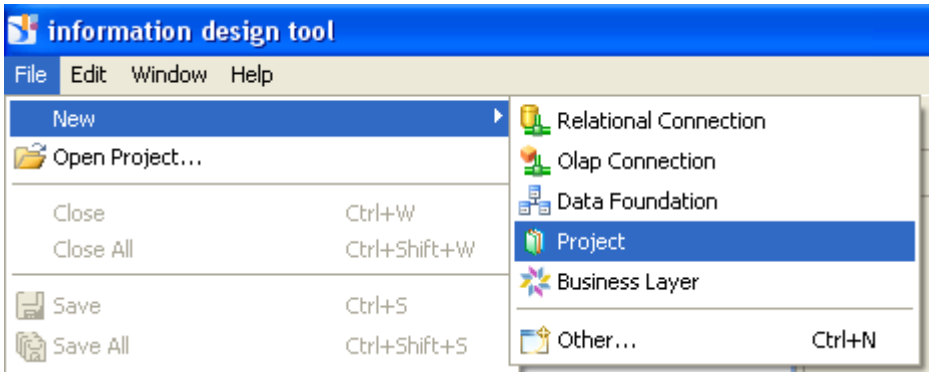
Customer Geography	Large Photo	Sales Amount Fmt	Male Sales Pct Fmt	Female Sales Pct Fmt
All Customers	BK-T18U-58	$42,313.95	33.33%	66.67%
Australia	BK-M18S-44	$2,259.96	25.00%	75.00%
	BK-T18U-58	$11,877.60	31.25%	68.75%
	BK-T44U-46	$23,082.15	26.32%	73.68%
	BK-T79U-50	$71,522.10	33.33%	66.67%
United States	BK-M82S-38	$61,199.82	33.33%	66.67%
	BK-T18U-62	$11,135.25	13.33%	86.67%
	BK-T79U-60	$131,123.85	30.91%	69.09%

Setting up the Universe in Information Design Tool

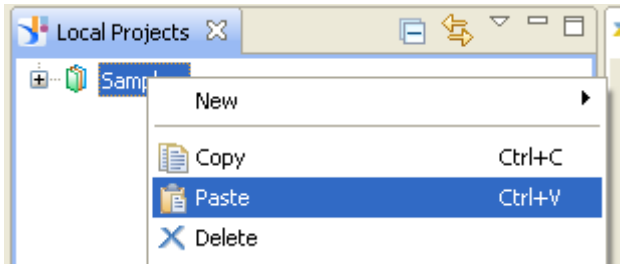
The sample universe for Microsoft Analysis Services consists of two files:

- MSAS.cnx for the OLAP connection
- MSAS_ADW_SM.blx for the business layer.

To install the sample universe, first copy the cnx and blx files on your local file system. Open the information design tool and create a local project.



Copy the two files on your file system and paste them into the local project.



You can now open the business layer and navigate through the business layer. You can see the list of queries but you cannot yet execute them.

Connecting to the OLAP server

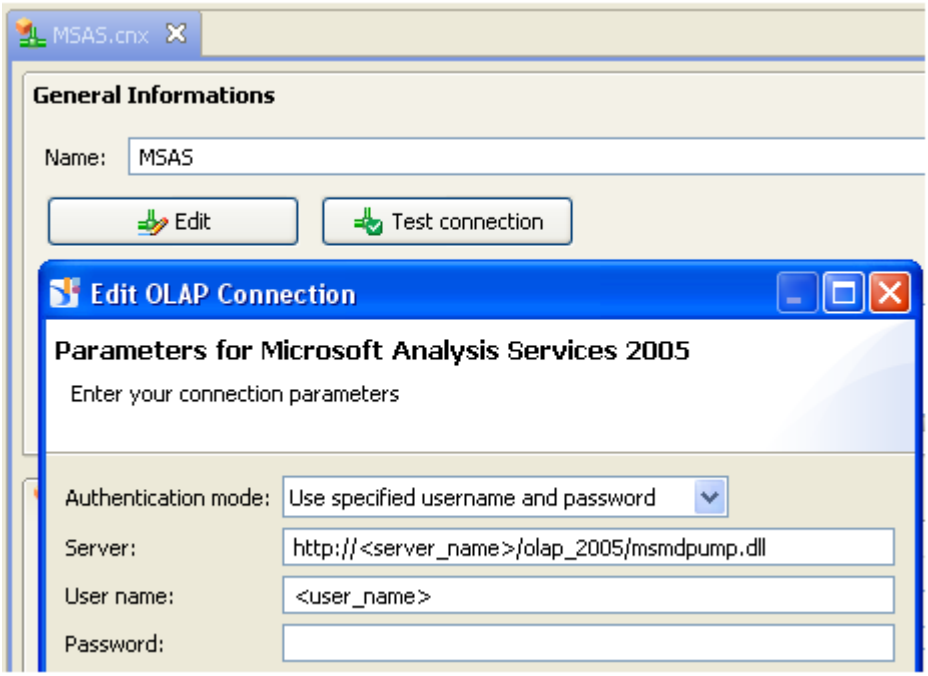
In order to run the universe sample queries, you must have the 'Adventure Works' cube installed and accessible through XMLA.

For more information about the Microsoft sample cube, visit the codeplex page
http://www.codeplex.com/SqlServerSamples

For more information on how to configure the HTTP access to SQL Server, visit the Microsoft page

http://msdn.microsoft.com/en-us/library/cc917711.aspx

When the XMLA access to the cube 'Adventure Works' is configured, open the cnx file in information design tool and edit the OLAP connection. The connection is preset for Analysis Services 2005.



Enter the URL path as the server. Specify the user name and password and click next. Do not specify the cube and click Finish. Test the connection to check that you can reach the OLAP server. Save the connection. You are now ready to run the sample queries in information design tool.

If you are running Microsoft Analysis Services 2008, you can create a new connection based on the OLAP driver Microsoft Analysis Services 2008 of the information design tool. After creating the connection, you need to modify the business layer to make it point to the new cnx file. To do so, open the blx file and select the root node of the business layer. Click the Advanced button, select the cnx file, select the 'Adventure Works' cube and click OK. Answer 'No' when asked to update the business layer. Save the business layer and close it.

Making the Universe Available to Client Tools

In order to use the universe in a client tool, you must publish the business layer as a UNX universe either to the repository for consumption in Crystal Reports or Web Intelligence or to the file system for consumption in Webl Rich Client.

Secured UNX universe

There are two steps to make the sample universe available in the Central Management Server (CMS). First you must publish the connection. To do so, right click on the cnx file in your local project, and select Publish connection to CMS.

After being authenticated and connected to the CMS, choose the folder where to store the connection and answer 'Yes' when asked to create a secured connection shortcut. A new cns file appears in your local project.

We will now modify the business layer to make it point to the cns connection. Open the blx file, and select the root node of the business layer. Click the Advanced button, select the cns connection file, select the 'Adventure Works' cube and click OK. Answer 'No' when asked to update the business layer. Save the business layer and close it.

The second step consists of publishing the business layer to the CMS. Right click on the blx file in your local project, and select Publish to a Central Management Server.

After being authenticated and connected to the CMS, choose the folder where to store the universe and click Finish. The MSAS sample universe is now ready to be used by enterprise client tools.

Local UNX universe

You can publish the sample universe as a local UNX file for consumption by Webl Rich Client. To do so, right click on the blx file in your local project, and select Publish to a local folder.

The UNX file can be placed in the folder 'Universes' under 'Application Data'

…\Application Data\SAP BusinessObjects\SAP BusinessObjects Enterprise XI 4.0\Universes

Related Content

information design tool: create a connection to an OLAP data source

information design tool - eLearning

For more information, visit the Business Objects homepage.

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