Applies to:
This article applies to SAP_BW 350 and SAP_BW 700 with highest support package SAPKW70017. For more information, visit the Business Intelligence homepage.

Summary
Customers are the most valuable assets in any business. Identifying the potential and valuable customers who have given maximum sales in a said Fiscal year, helps to expand your business. This may further help in Churn Management, to understand, monitor and predict customer attrition behavior. APD helps in gaining these new insights to your data.

Author: Brinto Roy
Company: Larsen & Toubro Infotech Ltd.
Created on: 13 May 2009

Author Bio
Brinto Roy is working as a SAP BI Consultant with L&T Infotech Ltd.
**Business Scenario: Customer Credit Score Analysis**

Customers are the most valuable assets in any business. Identifying the potential and valuable customers who have given maximum sales in a said Fiscal year, helps to expand your business and provides knowledge about the credit behavior of your clients. This may further help in Churn Management, to understand, monitor and predict customer attrition behavior. APD helps in gaining these new insights to your data.

**What is APD**

The Analysis Process Designer is the application environment for the SAP data mining solution. The Analysis Process Designer (APD) makes it possible to find and identify the hidden or complex relationships between data in a simple way. The APD workbench provides an intuitive graphical interface that enables you to visualize, transform, and deploy data from your business warehouse. Various data transformations are provided for this purpose, such as statistical and mathematical calculations, and data cleansing or structuring processes.

An APD generally consists of three parts:

- **Data Sources**: Read data from InfoProviders, Attributes of a Characteristic, Query, Flat Files, Database Tables
- **Transformations**: Filter restricted amount of data, Aggregate Data, Join data from different Data Sources, ABAP Routines, Formula, Sort data, etc.
- **Data Targets**: Write data directly to Data Store Objects (DSOs), Flat files, Update CRM Attributes, Change attributes of a Characteristics, etc.

**Step by Step Guide**

For the Business Scenario discussed above, let us assume the following as example:

**Data Sources**

Attributes of characteristic **Customer** (Master Data) and a Data Store Object (DSO) containing **Sales** data.

**Transformation**

The inbuilt function Aggregate Data is used to aggregate the Sales Amount, and Join function is used to join the data fetched from Customer characteristic and Sales data DSO. The Filter function restricts the values according to Country (for this example).

**Data Targets**

A Direct Update DSO is used to store the resultant data.

**Online Reporting**

An InfoCube will receive data from the Direct Update DSO.
Creating an Analysis Process Designer (APD)

The APD can be accessed from DW Workbench (RSA1) → Edit tab → Analysis Process Designer, or alternatively through Tx: RSANWB.

Click on or Right click on any existing Application to create a new Analysis Process designer.

Analysis Process Designer

Enter a description for the New APD.
Creating Data Sources

Select the ‘Attributes of a Characteristic’ option from the Data Sources section, and drag and drop into the Work Area.

Enter the Source when prompted in the next screen:

The Screen will look like this:
Similarly create another data Source for the Sales DSO. Drag and drop the ‘InfoProvider’ option and enter the Sales DSO name when prompted.

Choose the required Characteristics and Key Figures from the available list on the left hand side, in the ‘Field Selection’ tab.
Now the two Data Sources will be shown as below:

**Creating Transformations**

The next step is to transform the data according to our need. Select the ‘Aggregate’ function to summarize the Sales data according to Sales Amount.

Join the Source Sales Data DSO to the Aggregate function.

Right Click on the ‘Aggregate’ function to go to the Properties of the transformation.
Choose the required fields for Grouping and the key figures for which the aggregation has to be maintained.

The available options for aggregation level are:

- **SUM**: Summation
- **MIN**: Minimum
- **MAX**: Maximum
- **CNT**: Number of Aggregated Records
- **CN0**: Number of Aggregated Records (Only Values Not Equal to Zero)
- **AVG**: Average
- **AV0**: Average (Only Values Not Equal to Zero)
- **NOP**: No Aggregation (X, If More Than One Value Uneq. to 0 Occurs)
Next we need to join data from the two Data Sources. Drag and drop the ‘Join’ function into the Work area.

Connect the Data Sources to the Join Function. Right click on the Join function to go to Properties.

Provide an appropriate Description for the Join function. Map the two Sources on the basis of the common fields and check the boxes (✓) against the required fields, to make them available for the next level.
For this example, let us filter the resultant data on the basis of Country. Select ‘Filter’ function from the Function selection area, Drag & drop into our work area.

Connect the ‘Join’ function to the ‘Filter’. Right click on filter and click Properties.

Give a proper description to it, and select the fields for selection.
In the next tab ‘Filter Conditions’, put the values for restricting the amount of data.

Creating Data Targets

The processed data will now be pushed into the Direct Update DSO that we had created. Select the DSO icon ( ) from the Data Targets to write data directly into the Data Store Object.

Join the two nodes. Go to the Properties menu of the DSO by right-clicking the icon.

Provide the Direct Update DSO name.
Select the first option ‘Overwrite Complete Content of the Data Store Object’ in the next tab ‘Target Area’.

So the final flow looks like below. Next right-click on the connecting link and select ‘Properties’.
Click the ‘Same Info Object’ to automatically assign the corresponding fields.

So the assignment looks like:

Save the analysis process by clicking icon 🖼.

You will be prompted to enter the technical name for the same. Provide as per the naming convention.

Once you have checked the Analysis process using 🔄, activate it by 🔄.

The Analysis process is ready for use. Click on 📦 to execute the process.

On successful execution of the APD, log may be displayed as below:
Analysis Process Designer (APD) – Step by Step – Business Intelligence

Online Reporting
An Info Cube can be created to get data from the Direct Update DSO populated by the APD process. Reporting can be done on this Info Cube.

<table>
<thead>
<tr>
<th>Test APD Cube</th>
<th>Z_CUBE</th>
<th>Manage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS0 DIR_DSO -&gt; CUBE Z_CUBE</td>
<td>0RLZOCQ3LYK00D...</td>
<td>Change</td>
</tr>
<tr>
<td>Direct Update DSO</td>
<td>DIR_DSO</td>
<td>Manage</td>
</tr>
</tbody>
</table>

Integration in Process Chain
The Analysis Process Designer can easily be integrated in a Process Chain using process type ABAP Program.

Create a Variant for the same.

<table>
<thead>
<tr>
<th>Program</th>
<th>APD/VARIANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td></td>
</tr>
</tbody>
</table>
Provide a Description for the variant.

<table>
<thead>
<tr>
<th>Process Variants</th>
<th>APD VARIANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long description</td>
<td>Variant for APD</td>
</tr>
</tbody>
</table>

Enter RSAN_PROCESS_EXECUTE as the Program Name, provide a Program Variant Name and click.

**Process Maintenance: ABAP Program**

<table>
<thead>
<tr>
<th>Variant</th>
<th>APD VARIANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Changed By</td>
<td>282626</td>
</tr>
<tr>
<td>Changed On</td>
<td>14.05.2009</td>
</tr>
<tr>
<td>At</td>
<td>0</td>
</tr>
</tbody>
</table>

Call Mode
- Synchronous
- Asynchronous

Called From
- Local
- Destination

Program to Call

<table>
<thead>
<tr>
<th>Program Name</th>
<th>RSAN_PROCESS_EXECUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Variant</td>
<td>VAR1</td>
</tr>
</tbody>
</table>

Click Create in the next screen.

Enter the name of the Analysis Process to be executed. Click on ‘Attributes’.
### Maintain Variant: Report RSAN_PROCESS_EXECUTE, Variant VAR1

#### Variant Attributes

- **Variant Name:** VAR1
- **Meaning:** Variant for APD

<table>
<thead>
<tr>
<th>Selection Summ</th>
<th>Field Name</th>
<th>Type</th>
<th>Protect field</th>
<th>Hide field</th>
<th>Hide field TMS</th>
<th>Save fields with values</th>
<th>Switch GPS off</th>
<th>Required field</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 009</td>
<td>Analysis Process</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Execute Analysis Process</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Calculate Interim Result</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Name of the Node</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Delete Interim Result</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Calculate Calculation Summary</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Name of the Node</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Delete Calculation Summary</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Name of the Node</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1 009</td>
<td>Delete All Interim Results</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Provide a Description against ‘Meaning’. Click ‘Copy Screen Assignment’ and Save.

Go Back till you reach the Process Chain initial screen. Connect the Start process to the newly created variant. Activate the Process Chain.
Related Content

http://help.sap.com

http://help.sap.com/saphelp_nw04/helpdata/en/49/7e960481916448b20134d471d36a6b/content.htm

For more information, visit the Business Intelligence homepage.
Disclaimer & Liability Notice

This document may discuss sample coding or other information that does not include SAP official interfaces and therefore is not supported by SAP. Changes made based on this information are not supported and can be overwritten during an upgrade.

SAP will not be held liable for any damages caused by using or misusing the information, code or methods suggested in this document, and anyone using these methods does so at his/her own risk.

SAP offers no guarantees and assumes no responsibility or liability of any type with respect to the content of this technical article or code sample, including any liability resulting from incompatibility between the content within this document and the materials and services offered by SAP. You agree that you will not hold, or seek to hold, SAP responsible or liable with respect to the content of this document.