GDP Reporting

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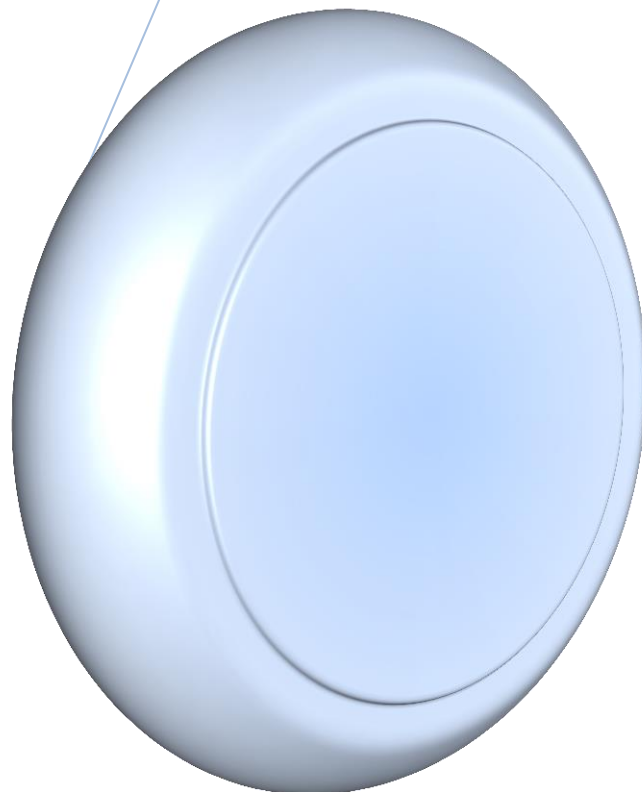**5/28/2014**

Table of Contents

Screenshot 1 : BI Server PRD Report Look and Feel - **Page 3**

Screenshot 2 : PRD Based report from report designer view – **Page 3**

Screenshot 3 : Interactive report on edit mode displaying Year parameter with multiselect button type – **Page 4**

Screenshot 4 : PentaHO Dashboard based designer based dashboard showing pie chart and tabular data with filtering Year , country and currency Prompts – **Page 5**

Screenshot 5 : Analyzer reports – **Page 5**

1. Business Case

The objective of this assignment is to demonstrate capability to address the GDP worlds Data values which is in USD and get them converted into multiple currencies with their appropriate exchange rates based on their yearly exchange rates. GDP indices values are provided with USD $ values for all the countries for which we need to find a solution to report with EURO and GBP values using PentaHO reporting modules capability.

The Business Problem is desired to be developed with PentaHO BI & DI 5.0 versions.

2. Data Model

Data has been collated from the below sources.

1. http://databank.worldbank.org/data/databases.aspx
2. http://www.ecb.europa.eu/stats/exchange/eurofxref/html/index.en.html
3. http://www.oanda.com/currency/average

The data has been analysed and planned to be load into a MySQL Database with a Star Schema. The Star Schema has been designed with SQL Power Architect Data Modeller.

The Data model for this reporting has been done with 4 dimensions and 1 fact. On that 2 dimensions are conformed dimensions.

3. ETL

The ETL performed using PentaHO Data Integration tool with folder as a repository structure.

The Source data for the ETL are as below

1. gdpsource table under GDP Schema (DDL * Data Dump Supplied with delivery)
2. gdp.xlsx (supplied under \GDP\Source Files\PDI Transformation)

There are 4 dimension and 1 fact Kettle transformation files to load these sources.

A total of 691145 records loaded in fact with approximate 10 min at my local environment with all the 5 different currency values with a lookup on yearly average exchange rates

No Update record or CDC is involved for Simplicity of the design.

4. Report Design's

4.1 PentaHO Report Designer - Canned Reports

Canned report as per requirement with 3 parameters is designed as below with YEAR (int) with validation. The Report can display GDP Values in 5 different currencies.

The Report has been designed with Pie chart which is also parameterised for all the above filters.

Screenshot 1 : BI Server PRD Report Look and Feel
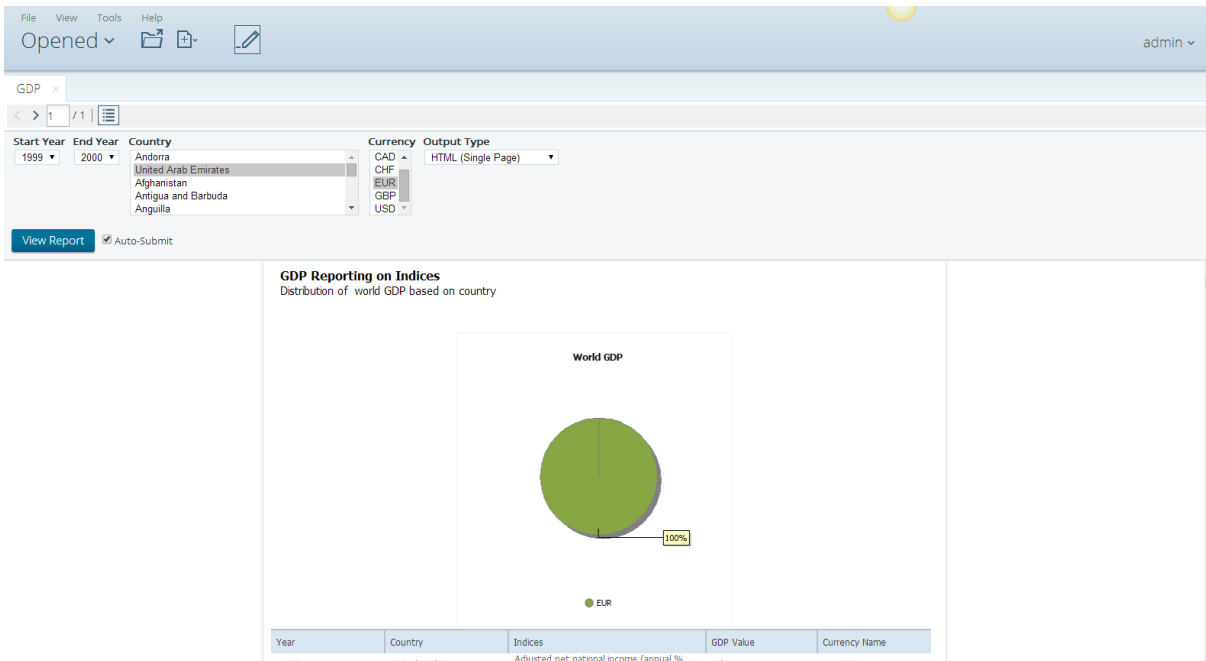
Screenshot 2 : PRD Based report from report designer view
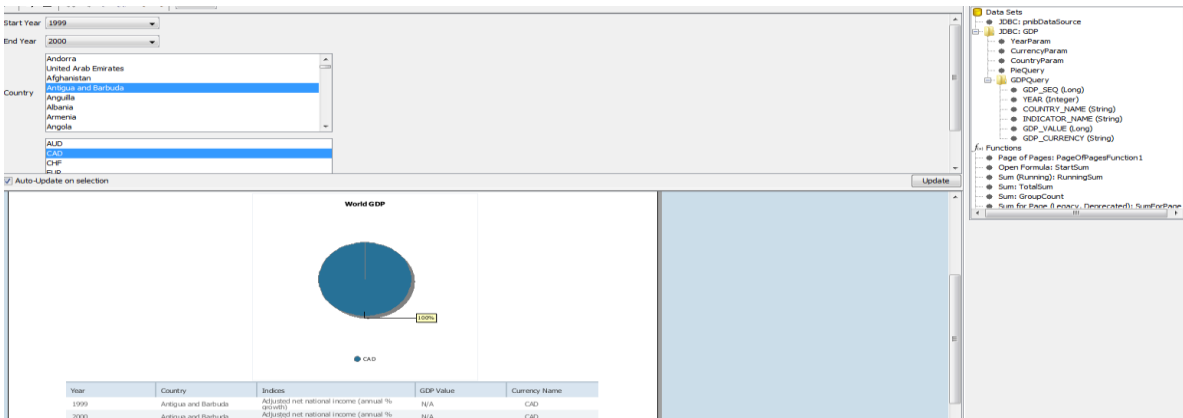
Parameter Validation

Post Processing Formula : =IF([paramYearFrom] > [paramYearTo]; NA(); [paramYearTo])
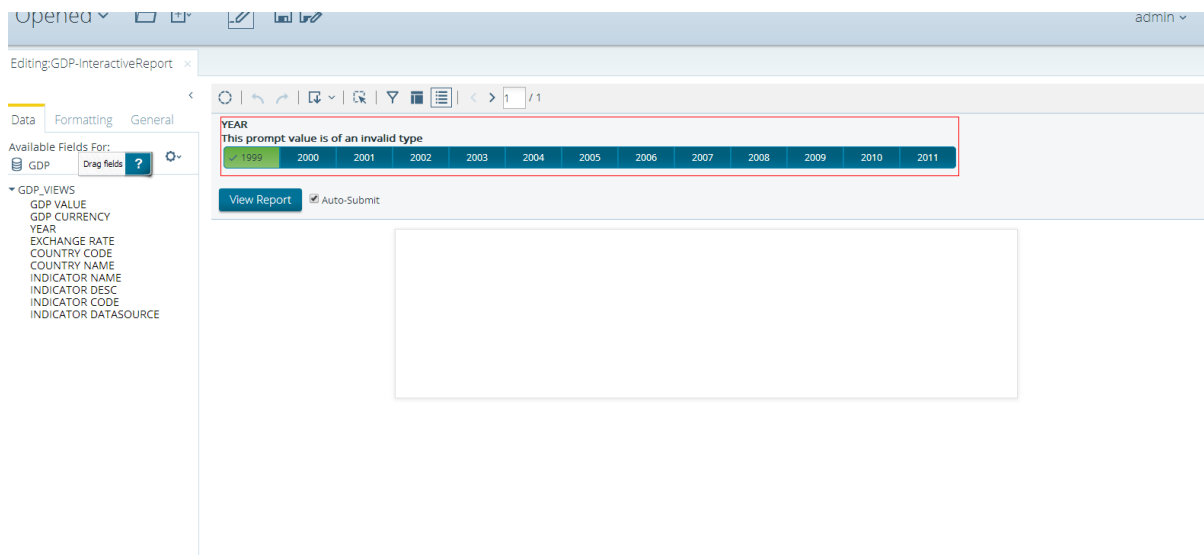
Interactive Reports

Interactive reports are designed using GDP reporting using PentaHO Metadata editor and PentaHO interactive reporting module (PIR)

Used **Concept editor** to have centralised font alignment for this report which is Tahoma

Report is built with one YEAR PARAMETER and Below columns from all the dimensions which would be useful for the adhoc reporting

<u>Screenshot 3 : Interactive report on edit mode displaying Year parameter with multiselect button type</u>
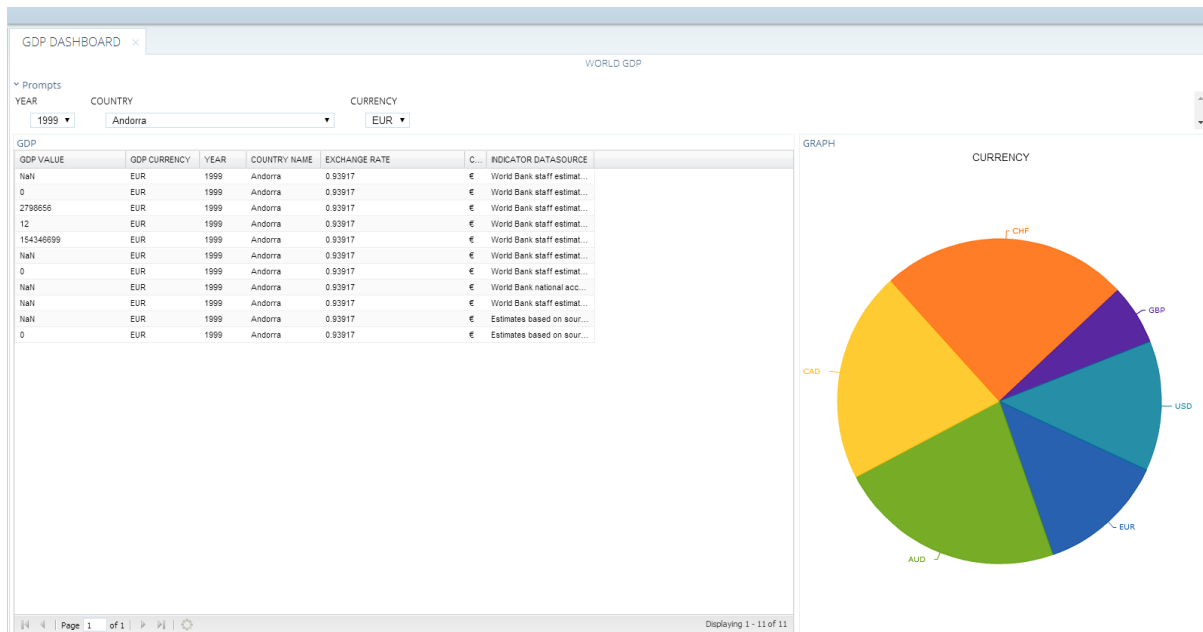
Dashboard Designer Reporting

Using PentaHO Dashboard designer component, a dashboard has been built with a table and char component with interactive parameters to filter the table content
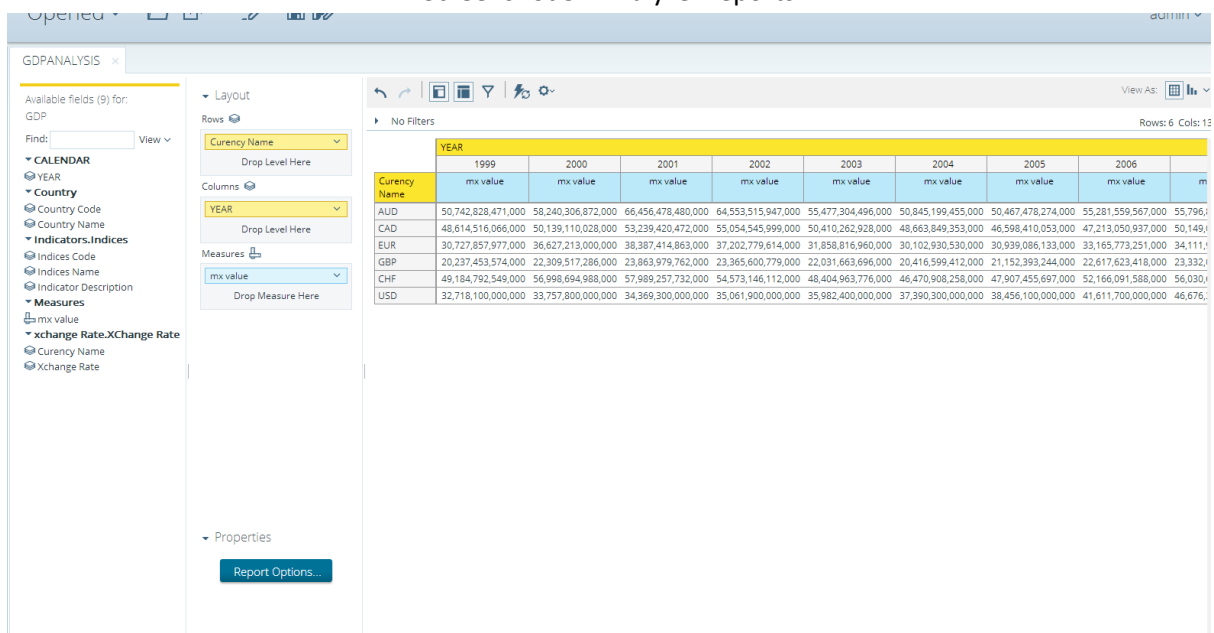
Screenshot 4 : PentaHO Dashboard based designer based dashboard showing pie chart and tabular data with filtering Year , country and currency Prompts
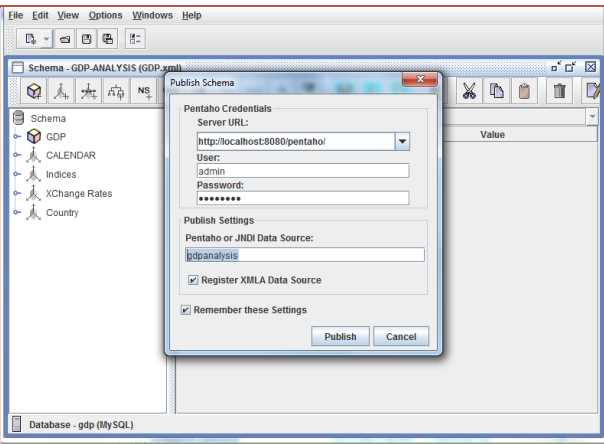

Analyzer Cube Reporting

For GDP reporting artefacts' a sample Mondrian cubes with all the available dimensions and one single measure to calculate the maximum GDP value is built as below. Any Dimensions can be used as Filter to filter the report content.

Screenshot 5 : Analyzer reports

5. Deployment Notes

S.No	Activity	Executable file name	Comments
1	Data Model Creation	GDP DB SCHEMA , GDPTARGET.architect	Use SQL Powe Architect to Alter the shcema
2	Data Loading Strategy	1. COUNTRY_DIM.ktr 2. FACT.ktr 3. Tran_CALENDER_DIM.ktr 4. Tran_INDICATOR_DIM.ktr 5. xchange_dim.ktr	Source for the fact load is from the gdpsource Source for the dimension are loaded from the provided GDP.xlsx
3	Reports	GDP.Zip under Deployment folder	Upload the reporting files into any folder structure of PentaHO Repository
4	Reporting Data Sources for Interactive reporting	Domain for interactive report metadata: **GDP** (GDP_metadata.xmi)	Uses JDBC connection
5	JDBC Connection for reporting	Standard JDBC connection with connection name GDP has to be created	Used by metadata editor / dashboard to talk with db schema
6	JDBC connection for Analysis	Standard JDBC connection for Analysis Reporting with connection name GDPANALYSIS has to be created	Used by analysis mondrain cube
7	Mondrain Cube Publish settings		USE JNDI Data Source as gdpanalysis
8	GDP Data Source Wizard	GDP.XMI	Used for dashboard and other adhoc reporting data sources

6. Summary / Conclusion

The Business issue for the GDP world Indices reporting has been addressed with 5 different currency along with their currency conversion rates from 1999 to 2011. If the source data was available on day level granule we could have done more detail reporting with the Analyzer cubes. As of now for simplicity we have used all the products from PentaHO 5.0 EE to demonstrate pentaho's capability to address business needs on GDP Reporting