Contents
1. Kyubit Self-Service BI Concepts ........................................................................................................... 3
   1.1. Self-Service Data Models .................................................................................................................... 3
   1.2. Self-Service Data Analysis & Visualization ......................................................................................... 3
2. Kyubit Self-Service BI Overview .............................................................................................................. 4
   2.1. End-user experience .............................................................................................................................. 5
   2.2. How it works ......................................................................................................................................... 5
   2.3. Pros ....................................................................................................................................................... 5
   2.4. Limitations ........................................................................................................................................... 5
   3.1. Create Analytic Model from CSV file ................................................................................................. 6
   3.2. Create Analytic Model from Query results .......................................................................................... 8
   3.3. Data Definition .................................................................................................................................... 10
   3.4. Organize Structures Additionally ....................................................................................................... 13
   3.5. Processing of Analytic Model ............................................................................................................. 15
   3.6. Usage in Analysis and Dashboards ...................................................................................................... 17
1. **Kyubit Self-Service BI Concepts**

1.1. Self-Service Data Models

Kyubit BI software provides features and tools to quickly create data models (Analytic Models) in Kyubit application from the data stored in **CSV files** or **SQL query results**, by the regular end-user without involvement of BI professionals or third-party analytic software modules or special databases (OLAP). Such Self-Service Analytic Models can be used to create data analysis, reports, KPIs and dashboards by the same regular end-user with drag-and-drop and other user-friendly actions in the Kyubit application. In other word, Kyubit BI application provides all what it takes for a regular end-user to build data models for analysis and data visualization. Data models (Analytic Models) consist of the Measures, Dimensions, Hierarchies and Details that are used while analyzing prepared model in analysis grid/chart view or preparing insights on the dashboard. While preparing data to create new Analytic Model, source data needs to be organized in rows and columns. Later in the process, user defines Analytic Model structure by defining which column contains values for model structures like measures, dimensions or details to complete the final Analytic Model processing.

1.2. Self-Service Data Analysis & Visualization

Once Self-Service data model (Analytic Models) is created in Kyubit BI application, same user as well as other authorized users can quickly create data analysis, charts and reports based on the same ‘Analytic Model’ with simple and comprehensive approach (drag-and-drop) that does not require special skills or training. Furthermore, created analysis/report could be used while creating dashboard charts, tables and KPIs, to visualize prepared data insights by the regular end-user. Kyubit BI includes features to quickly design dashboard layout by drag-and-drop various charts, connecting with previously prepared queries or analyses, positioning and resizing dashboard elements, setting display options for individual dashboard element and setting overall dashboard style.
2. Kyubit Self-Service BI Overview

Kyubit 'Analytic Model' is a Self-Service BI analytic feature that could be quickly utilized using your data from CSV files and SQL query results, without creating OLAP cubes. With analytic models, end-user can create pivot tables, analytic reports and dashboards, using measures, dimensions, slicers and many features similar to OLAP analysis.

In many situations you have a set of data you wish to analyze, but you probably will not engage creating OLAP cubes, which almost always requires knowledge, time, tools, etc. With Kyubit Self-Service BI, end-user can quickly import and configure Analytic Models, which behaves almost like you have OLAP cubes ready for analysis. Set of values from CSV files or query results is transformed to analytic models and Self-Service BI tools are ready for all Kyubit users to use them in analysis and dashboards, while values from the same data sources could be scheduled to update regularly with new values based on our preference.
2.1. End-user experience

After Kyubit Self-Service BI 'Analytic Model' is processed, authorized end-users can start analysis, that will look the same as if they are analyzing OLAP cube structures (very similar). End-users can create analysis, reports and create dashboards based on created analysis the same way they are doing with OLAP based analyses. Most features, like drill-down, drill-through, expanding, slicing, ordering, isolating are included in Analytic model analysis.

2.2. How it works

After you import your data from CSV files or SQL query Results and process 'Analytic Model', Kyubit creates special structures in Kyubit internal "KyubitAnalyticModels" SQL database, that are suitable for quick analytic SQL queries. While analyzing data Kyubit is creating SQL queries to bring analytic results from Kyubit Analytic Models database. In other words, Kyubit is using SQL technology, combined with ColumnStore indexes and some smart caching to bring data analysis. Only technology prerequisite is MS SQL Server, which is prerequisite for the whole product anyway.

2.3. Pros

- Main reason to use 'Analytic Model' is for regular user to quickly add set of data for analysis, dashboard usage, scheduled subscriptions and sharing with other users.
- CSV data format should be friendly to all users while preparing data to be used. Any set of data could be exported from Excel to CSV file (semicolon (;) delimited).
- Great usage of Date filters (if data contains date values) that are much friendlier to be used than OLAP ‘date’ structures. Quickly select absolute or relative date filter values in analysis, report or dashboard filters.

2.4. Limitations

There are limitations to Kyubit Self-Service BI 'Analytic Model' usage, that should be known before using new Kyubit technology. Kyubit Analytic Model is not created in mind to replace more serious analytic engines, like OLAP technology, but to bring simple solution for smaller data sets that should be analyzed quickly with very little knowledge of data analysis and structures.

- 'Analytic Model' will perform great with hundreds of thousands of rows of data, while we would not recommend to be used with millions of rows of data. This question greatly depend on the hardware on which SQL server is running, but millions of rows of data should be used with in-any-case more robust and scalable OLAP technology.
- There are no limitations to number of category members (rows) in grid analysis and reports, while analytic grid and report can contain maximum of 128 series (columns) of values in analysis for each measure in analysis.
- On category axis there could be multiple category levels expanding (drill-down) to explore data in more details, while series members cannot be expanded.
3. **Step-by-step Self-Service BI**

3.1. **Create Analytic Model from CSV file**

Data stored in CSV file, delimited by **semicolon (;)**, can be quickly uploaded to Kyubit application and immediately is ready for the step of 'Data Definition'.

**Numeric** and **date values** in CSV file should respect current Kyubit BI server **regional settings** format for decimal separator and date format.

- Prepare CSV file based on the columns and rows that contains data for analysis. If data is in Excel file, convert to CSV with semicolon (;) delimiter.
- Create new Analytic model, add some name, save it and then upload CSV file. Once uploaded, file is automatically saved to this model.

- After upload, select 'Data' tab to inspect sample data from CSV file. Creating analytic model is ready for next step of 'Data Definition' explained below.
3.2. Create Analytic Model from Query results

If the data for analytic model are based on existing data from relational databases, create SQL query that will be used to retrieve data for new model. Any valid SQL query could be used to run against SQL server or ODBC data sources registered in Kyubit application.

- Under 'Data Sources' select New Analytic Model, change input type to 'Query', select data source for query and set query text. This query will be used to get data for this analytic model.
- When query is defined, click on 'Run Query' button or 'Data' tab to get query sample results for inspection. At the same time, analytic model creation is ready for 'Data Definition' step explained below.
3.3. Data Definition

When source for new analytic model is defined (CSV file or query), next step is to define **role of each column** in provided data set on the 'Data' tab. Possible definition for the columns are 'Measure', 'Dimension', 'Date' and 'Details'.

**Measure**

Measure is value from our data set that will be used for aggregations while analyzing analytic model. Typically, using Sum, Avg, Count and other aggregations. Measure has to be of **numeric values** in Kyubit Analytic Model.

**Dimension**

Dimension values are used to slice and analyze measure values, used in required context. Analytic results are based on measures and dimension members on categories and series.

**Date**

Date column could be used as filter in analysis. Because analyzing business data mostly include filtering based on certain period, this is extremely useful element for analysis. Date cannot be used on analysis categories and series.

**Details**

Some information from data set are not good analytic material to be used on analysis categories and series, but should only be available when asked for details of aggregated data. For example, information such are 'address' and 'phone number', we are hardly going to use as aggregating data, but still we like to use as 'Details' on aggregated results. Setting such columns as 'Details' ensures more compact analytic model, faster processing and smaller size on the disk.
Example data definitions...

<table>
<thead>
<tr>
<th>Measure</th>
<th>Date</th>
<th>OrderDate</th>
<th>year</th>
<th>month</th>
<th>day</th>
<th>ModelName</th>
<th>size</th>
<th>Color</th>
<th>FaxName</th>
<th>LastName</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,171.0</td>
<td>29.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>29</td>
<td>Reo-350</td>
<td>62</td>
<td>Red</td>
<td>Cole</td>
<td>Watson</td>
<td>M</td>
</tr>
<tr>
<td>$1,912.15</td>
<td>29.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>29</td>
<td>Mountain-100</td>
<td>44</td>
<td>Silver</td>
<td>Rachael</td>
<td>Martinez</td>
<td>F</td>
</tr>
<tr>
<td>$1,512.15</td>
<td>29.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>29</td>
<td>Mountain-100</td>
<td>44</td>
<td>Silver</td>
<td>Sydney</td>
<td>Wrights</td>
<td>F</td>
</tr>
<tr>
<td>$413.15</td>
<td>29.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>29</td>
<td>Reo-350</td>
<td>62</td>
<td>Black</td>
<td>Ruben</td>
<td>Prasad</td>
<td>M</td>
</tr>
<tr>
<td>$1,912.15</td>
<td>29.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>29</td>
<td>Mountain-100</td>
<td>44</td>
<td>Silver</td>
<td>Christy</td>
<td>Zhu</td>
<td>F</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>30.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>30</td>
<td>Road-200</td>
<td>44</td>
<td>Red</td>
<td>Colin</td>
<td>Altand</td>
<td>M</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>30.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>30</td>
<td>Reo-350</td>
<td>62</td>
<td>Red</td>
<td>Albert</td>
<td>Alvarez</td>
<td>M</td>
</tr>
<tr>
<td>$1,912.09</td>
<td>30.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>30</td>
<td>Mountain-100</td>
<td>48</td>
<td>Black</td>
<td>Julia</td>
<td>Ruiz</td>
<td>M</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>30.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>30</td>
<td>Mountain-100</td>
<td>38</td>
<td>Silver</td>
<td>Curtis</td>
<td>Xu</td>
<td>M</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>31.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>31</td>
<td>Reo-350</td>
<td>48</td>
<td>Red</td>
<td>Edward</td>
<td>Brown</td>
<td>M</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>31.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>31</td>
<td>Reo-350</td>
<td>48</td>
<td>Red</td>
<td>Emma</td>
<td>Brown</td>
<td>F</td>
</tr>
<tr>
<td>$413.15</td>
<td>31.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>31</td>
<td>Road-350</td>
<td>51</td>
<td>Red</td>
<td>Brad</td>
<td>Ding</td>
<td>M</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>31.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>31</td>
<td>Reo-350</td>
<td>52</td>
<td>Red</td>
<td>Martha</td>
<td>Xu</td>
<td>F</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>31.12.2010</td>
<td>00:00:00</td>
<td>2010</td>
<td>December</td>
<td>31</td>
<td>Reo-350</td>
<td>56</td>
<td>Red</td>
<td>Katrina</td>
<td>Raj</td>
<td>F</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>1.1.2011</td>
<td>00:00:00</td>
<td>2011</td>
<td>January</td>
<td>1</td>
<td>Road-200</td>
<td>55</td>
<td>Red</td>
<td>Courtney</td>
<td>Edwards</td>
<td>F</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>1.1.2011</td>
<td>00:00:00</td>
<td>2011</td>
<td>January</td>
<td>1</td>
<td>Reo-350</td>
<td>44</td>
<td>Red</td>
<td>Abigail</td>
<td>Henderson</td>
<td>F</td>
</tr>
<tr>
<td>$2,171.29</td>
<td>2.1.2011</td>
<td>00:00:00</td>
<td>2011</td>
<td>January</td>
<td>2</td>
<td>Reo-350</td>
<td>62</td>
<td>Red</td>
<td>Sydney</td>
<td>Rogers</td>
<td>F</td>
</tr>
</tbody>
</table>

www.kyubit.com - support@kyubit.com
© 2018 www.kyubit.com, All rights reserved.
Example usage of defined structures later in analysis.
Column Caption and Description
While defining data for analytic model, optionally click on the column name and set its caption (if should be different from source) and Column Description.

Format Values
Measure values should be provided as pure numeric value. To configure measure to be presented as formatted numeric value (Currency for example), click on the "Format values" below column name and choose one of the formatting options or write your own.

3.4 Organize Structures Additionally
When each column definition is defined, we can immediately proceed to Processing of Analytic Model, but on the third tab 'Structure' there are additional options to organize analytic model structures. Instead to leave all dimension levels in 'Default dimension', we can create new dimensions and organize levels appropriately to be more comprehensive for end-users.

New Dimension
Create new dimension based on some topic (for example, 'Customer' or 'Product') and assign appropriate analytic levels to this dimension. This way you group analytic levels to certain topic and makes analysis more comprehensive.

New Hierarchy
When analytic levels are related to each other in parent-child relation, it is practical to organize them inside 'Hierarchies'. For example, Year-Month-Day or Continent-Country-City. This way makes analysis easy to drill-down data from higher view to more detailed values for end-user.
Default structure.

Organized structure.
3.5. Processing of Analytic Model

While preparing analytic model, user can save and open same analytic model many times, which is in 'Unprocessed' status. When all data and structures are prepared, click the Process Analytic Model button on the 'Structure' tab to actually start processing of analytic model data and make it ready for analysis and visualizations. Process could take from few seconds to several minutes (or more) depending on number of rows and columns defined for analytic model. All columns not required to be 'Dimension' set to 'Details' structure type, which will speed processing and save space in the 'models' database.

Analytic Model Status

There are 3 analytic model status, Unprocessed, Processing and Processed. While analytic model is processing, it cannot be used by any user. If processing fails for any reason, it reverts to 'Unprocessed' status.

Log

After processing of analytic model, details of processing could be inspected by clicking on the 'Log' button in 'General' tab. If process of analytic model has failed, this is good place to start troubleshooting for the possible cause of the problem.

Schedule model updates

Analytic model could be updated automatically with 'Scheduled Jobs'. Go to Schedule -> Jobs and create new Job 'Process Analytic Model' and time preference for updates to occur. If Analytic model is based on Query, same query will be run against defined data source to bring fresh data into Analytic model. If Analytic model is based on CSV file, schedule job can be created only if CSV file is uploaded from shared folder and path begin with "\" (For example, \SomeMachine\FolderWithData).
Processing of Analytic model could be started manually or with 'Scheduled Jobs'.

Find useful / troubleshooting information in processing 'Log' form.

Schedule Analytic model update from defined model data sources.
3.6. Usage in Analysis and Dashboards

After Analytic model is processed, it is ready for analysis and visualizations. Create analysis and reports in grid/chart view by adding measures and dimensions on categories/series axis or slicer axis. Use ordering, aggregate, isolating and other analytic actions to prepare analytic report of your interest. Once analysis is prepared it could be added to Dashboard and be visualized by many charts and visualization widgets, while at the same time data could be further analyzed by the end-user working with the dashboard (Drill-down, drill-through, drill-by, slicing and other useful analytic actions).

Analysis with Analytic models.
Reports prepared with Analytic models.
Dashboards based on Analytic models.