Business Insight and Analysis

Qlik View

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***Abstract* - This document giving the knowledge about the new trends in technology which uses for the benefit of business in terms of analysis and reporting. Document consist of a live case study for a problem faced by an organization and how to overcome from it with the help of new technology.**

I. Introduction

Now a day's data is everywhere but to get useful data from lots of unwanted data and to reach on any analysis is the challengeable task. Analysis and reporting from rough data in less time is very important and essential for every business to grow and stand in the present environment of competition. Data is composed of observable and recordable facts that are often found in operational or transactional systems. Data is useful only when it is presented as information and Information is an integrated collection of facts and is used as the basis for decision making. For analysis of the data and present the results in form of good reporting by which management quickly reach on decision making; we need some technique to perform this. This requirement of business gives birth to the analysis of data which is part of Business Insights and Analytics for which we have a platform called QlikView.

II. Need of QlikView

QlikView is the most flexible Business Intelligence platform for turning data into knowledge. This is considered worldwide and giving its users to easily consolidate, search, and visually analyze all their data for unprecedented business insight using QlikView's simplicity. Effective decision-making is based on having the right information available and easy accessible. Taking just minutes to learn, the automatic associations of QlikView create endless possibilities for making ad hoc queries without requiring tediously defined structures and hierarchies, as is typical in other data analysis tools. QlikView promotes unrestricted analysis of application data, helping users make time-saving and accurate decisions.

It's simple to use by any people without having much knowledge, giving better data mining, in-depth analysis and better data visualization. It's more flexible, broadly distributed and insightful than any other platform. It brings a whole new level of analysis, insight, and value to existing data stores with user interfaces that are clean, simple, and straightforward.

III. History

QlikView was developed by QlikTech, which was founded in Lund, Sweden in 1993. Today, research and development continue to be focused in Lund. Its International Headquarters are in Radnor, Pennsylvania. QlikTech has offices and partners around the world and is experiencing rapid and sustained growth. Information is the lifeblood of any organization. It is the foundation of knowledge, and knowledge is the basis for appropriate action. This can be a distinct competitive advantage. QlikTech delivers fast, powerful and affordable data analysis and reporting solutions, giving users clear insight and enhanced decision-making capabilities across the enterprise.

QlikView is a revolutionary platform that simplifies analysis for everyone. It is user-friendly and provides superfast in memory analysis capabilities by dynamically integrating and presenting data from multiple data sources, or a single Excel or text file. QlikView files can be deployed to users on corporate networks or through sophisticated web-based portals and can be viewed in many different file types. Some of the more common analysis clients for QlikView files include Java Objects, Internet Explorer plug-in, AJAX (Asynchronous JavaScript and XML) Zero-Footprint and Windows-based clients. QlikView analysis files can also be e-mailed, just like a Word or Excel document, and can be secured in many different ways. QlikView files are created using QlikView Desktop and are deployed and distributed using QlikView Server and QlikView Publisher. Users access the files with QlikView in various client types even in their smart phones by web browser.

IV. QlikView Products

Desktop — to build a full-function QlikView application

Clients— for the End User

Server — for Deployment of QlikView applications

Publisher — for Distribution of QlikView applications

V. Source of Data in QlikView

In QlikView we could import data from various sources:

OLE DB

ODBC

Excel Files

Text Files

Access DB

SQL DB

Vertica DB

Big Data

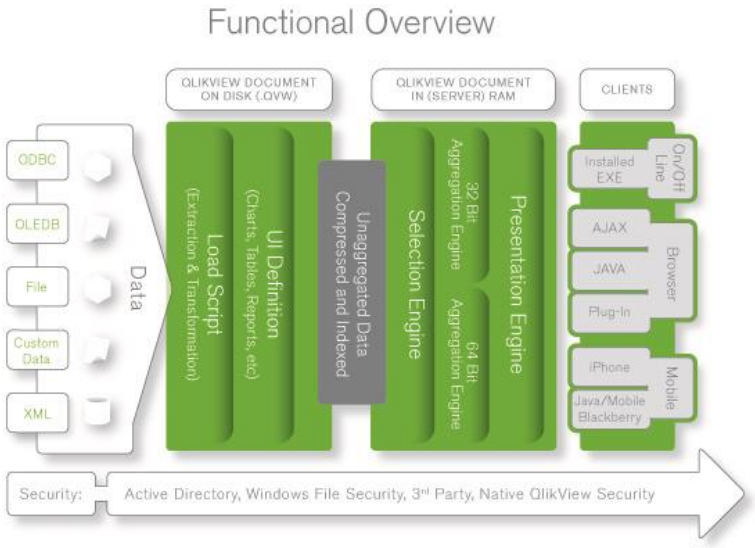
Web Files

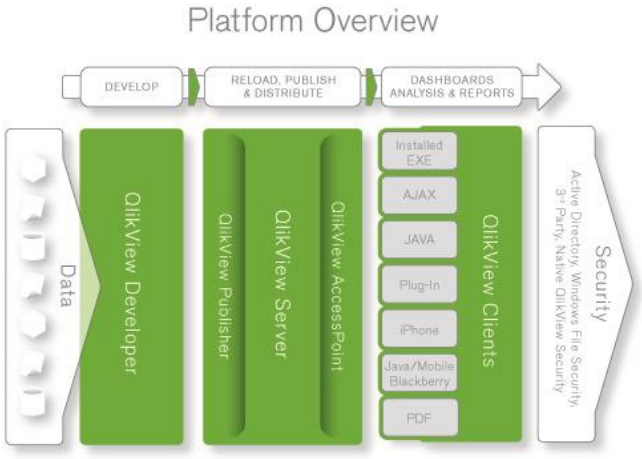
XML Files

VI. Data Storage in QlikView

QlikView is based on the use of flat data loaded in the live memory. The data stored in RAM are retrieved and prepared from a script defined by the user (in pseudo-SQL language). This technique, which is called in memory, can significantly reduce the volume of data (rate of about 10) whilst ensuring the uniqueness of the data fields. When creating a QlikView project, the very first step is to load data within the application. This step is crucial because it determines the structure of the database that will be created within QlikView.

VII. Architecture Behind QlikView





VIII. Case Study

This case study highlights challenges faced by Business organizations in processing data load and refresh it efficiently involving huge data volumes and maintaining robustness of solutions. The study also details

about challenges with current data loading architecture, possibilities of alternative approaches and what works best to improve data load and refresh scenario in current Business Intelligence environment involving very huge data. The implemented solution and its benefits to a BI tool are detailed in this case study as well as scope of implementation across organization teams involved in similar requirements.

A. Problem Statements:

To optimize the monitoring of our deal and order studies, our team requires a centralized application, available to all, which provides better view of deals and order and assists in the planning, forecasting, shipments and delivery of orders after winning the deals. The application should be handy and users could access the live data in easy way even when they are not in office. This application must also meet the safety requirements of confidential data and which will give better view to users with all sorts of Metrics, Charts, Tables and Graphs.

In current solution, QlikView Dashboard were designed in a way to extract data from multiple sources and requiring data load to be repeated multiple times in a short time. As in QlikView data is loading in RAM so it will take lot of time to load the data from any source and after loading we need to perform calculations and analysis and generate lots of metrics.

Below are the overall problems statements:

- Consolidation of data which is coming from different data sources.
- Provide reporting to users on their mobile, so that they could use them anywhere, anytime.
- Share reports with end-users via the internet and to create end-user groups and set-up access restrictions.
- Create and customize the dashboard with QlikView which will give current calculations according to live data.
- Demonstrate, with an example, how helpful the indicators to Deal Planners, sales team, channel users and management for scheduling deals and better view of orders and track them.
- Faster loading, analysis and calculation of data and generate reports for more than 50 Metrics.

B. Our Solution:

We have selected the QlikView platform to developed the Dashboards which provides better solution for all above problems and supported by Smart phones and we could provide reports with help of web-based features of QlikView.

We have developed the application in QlikView and created 7 different dashboards with more than 10 metrics in each dashboard for in depth analysis of their business, according to their requirements separately for each user group and provided access according to their business group and restricted them only to that particular Dashboard like Sales, Channel Partners, Managements, Users etc. The challenges and issues of RAM were resolved by enhancing the application architecture which was achieved by introducing new layers before loading the data in final Dashboards by using QVD's and concept of loading data from different data sources.

First we have created a layer which export the data from different tables of SQL server and loaded the same in one of the QVD by using below scripts.

OLEDB CONNECT TO [Provider=SQLOLEDB.1; Persist Security Info=True;User ID=DPTUSER;Initial Catalog=DPT;Data Source=GVV11589.austin.hpicorp.net,2048;Use Procedure

for Prepare=1;Auto Translate=True;Packet Size=4096;Use Encryption for Data=False;Tag with column collation when possible=False] (XPassword is DFeNaJVONLbKGZdNGTNSDfD);

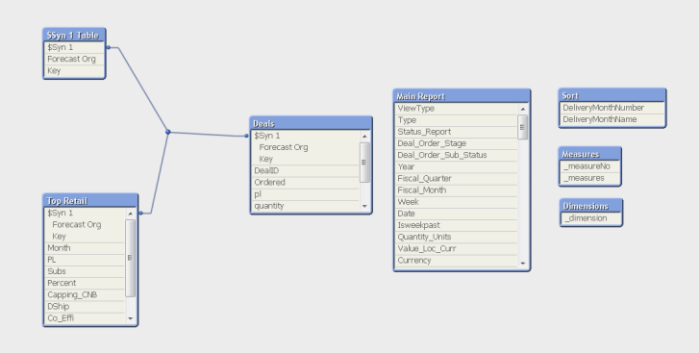
We have introduced another layer to load the data from Excel and text files and save them in form of QVD's by below script. Here vOfflinePath is variable which is giving the path to that particular Excel file and * represent the any character after Top Retail, so it's loaded all the files offline path which starts with Top Retail

[$(vOfflinesPath)Top Retail.xlsx]*
(ooxml, embedded labels, table is tablet);

Than we have loaded the data in final QlikView Dashboard from more than 20 QVD's, in script vPath layer is variable for path which is giving QVD's path.

FROM $(v_path_layer_1_transactional_qvd) $(v_string_layer_1_transactional_qvd) MAPPING_MONTHS.qvd (QVD);

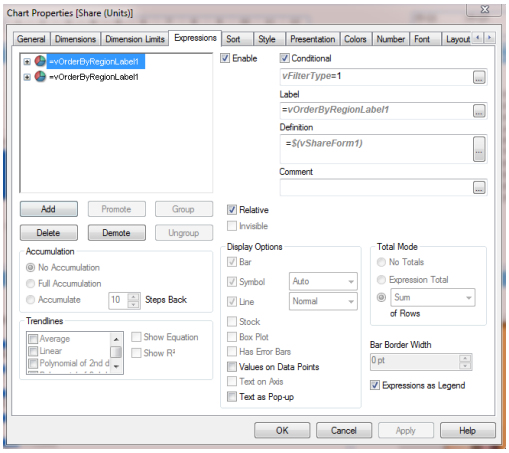
Than we have consolidated data in one of the data model layer.



For metrics, tables, graphs and charts we have introduced another layer by creating a new separate excel file which is consist of all formulas used to analyze the data. We have introduced variables for each formula and used that variables in QlikView DB instead of huge complex expression, which gives the faster speed to dashboard to complete the calculation by saving its RAM. Script:

FROM $(v_path_Data) Formula.xlsx
(ooxml, embedded labels, table is Formula)

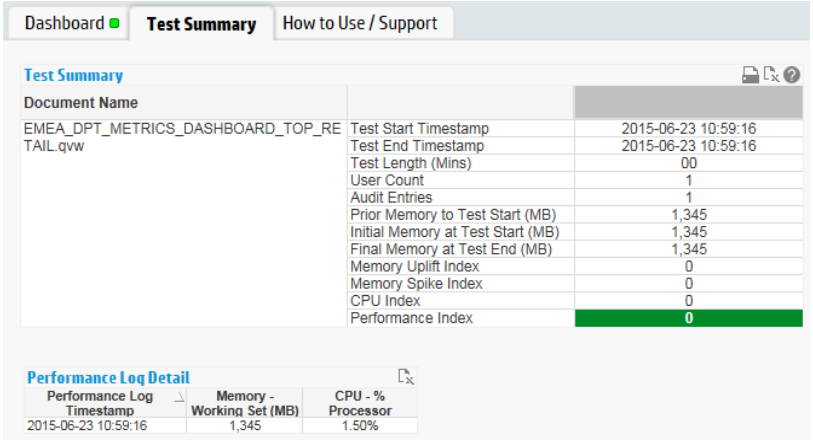
Variable using from formula file instead of huge expression shown in below figure.



And then it gives in-depth complete analysis of the data shows in the figure.

C. Evidence the solution works:

The time summary based on job execution shows in relevance to solution the time taken to complete the loads. Although there is no evidence to show performance w.r.t. previous data load, the current data load is based on volume of 200 Million per metric and we have more than 50 metrics.



D. Current status:

The solution has been implemented in some projects and is currently in production. The solution has already resulted in visible benefits in terms of improved performance, less maintenance effort, flexibility to users and enhanced Business experience.

E. Next steps:

There is an immense scope of implementing this concept and solution for big level in where we are using simple Excel approach and data loading from different sources which needs better on time analysis and facing challenges in maintaining robustness and stability of the applications. The solution would require minimal changes to architecture to make to business ready.

F. Conclusion:

Before QlikView evolved, higher authorities had to rely on the bulk of information which was not as precise as it was required. They had to analyze all the data manually and perform various decision making tasks. Evolving of QlikView Platform made this process simple and more effective as the processes were automated resulting drastic change in the decision making of the system.

Now as we have read about QlikView and its Product, focusing on the cost and efficiency we can firmly state that QlikTech which provides all products and QlikView services free of cost with the purchase of QlikView instance.

The ETL that is Extraction-transformation-load services, Business Insight and Analysis have made an easy, efficient and cost effective way which was not possible as vendors either charged for the same. Also the process for integrating the various data sources was complex. QlikView tool provides simple Platform to do so.

IX. Reference:

1. http://google.com

2. http://hp.com

3. http://athp.hp.com

5. http://www.qlik.com/