Report Generation using Business Intelligence Tools: A comparative Study

Harshil T. Kanakia
MCA Department
S.P.I.T. Mumbai, India

Abstract— The time is changing rapidly and there is lots of competition exists amongst the companies. So to keep their position up in the market, business manager has to make proper decision. To help the business manager in making the best decisions, there are various business intelligence tools available like JasperSoft, Vanilla, Pentaho, OpenI, SpagoBI. In this paper, I evaluated and compared 2 business intelligence tools: JasperSoft and Vanilla. Both of these tools are open source. The reason for selecting these tools is they are freely downloadable and they can be installed and run from any of the operating systems. This article shows the implementation of Jaspersoft Components like JasperSoft Studio and iReport generation and Vanilla Components like BIMetadata designer and BIWorkflow designer. The conclusion part of this paper includes the comparison of Jasper Soft Business Intelligence Tool and Vanilla Business Intelligence Tool.

Keywords— business intelligence, business intelligence tools, business intelligence tools components.

I. INTRODUCTION

Business Intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help organizations make better business decisions. [2]

Business intelligence tools are the tools that provides robust reporting, data analysis and data integration for organizations to make faster and better business decisions. There are various types of Business Intelligence tools available like Spreadsheet, Reporting and querying software, Online Analytical Processing, Data Mining, Data Warehousing, Dashboards.

In this paper, I implemented and compared two BI tool: JasperSoft [3], Vanilla [4].

JasperSoft Business Intelligence tool provides sophisticated reporting, interactive analysis to everyone from casual business users to business analyst and executives. It is available in two editions: Open Source and Professional. It is a graphical report design tool. It can also perform interactive analysis/OLAP.[3]

Vanilla is a True Open Source BI Platform sponsored by BPM-Conseil. Vanilla Business Intelligence tool provides an integrated and secured workspace to deliver business intelligence documents (report, dashboards) to end users. Vanilla provides a complete set of development modules: BI Metadata Designer, OLAP Schema Designer, BI Dashboard Designer, BI Workflow Designer, Report Designer Plugins for iReport and BIRT.[4]

The objective for selecting these tools is to improve the quality of data, to find the position of the firm, to understand market conditions and future trends based on analyzing the companies data, to find out what the other firms in the market are doing.

II. BUSINESS INTELLIGENCE TOOLS

This paper provides detailed information on JasperSoft Business Intelligence Tool [3]and Vanilla Business Intelligence Tool [4].

A. JasperSoft Business Intelligence Tool(http://www.jaspersoft.com/):

The JasperSoft Business Intelligence tool is a comprehensive Business Intelligence Suite that provides robust reporting, report sevrer, data analysis, and data integration or organizations that want to make faster, better business decisions. The following few sections describes the architecture and components of JasperSoft Business Intelligence Tool.

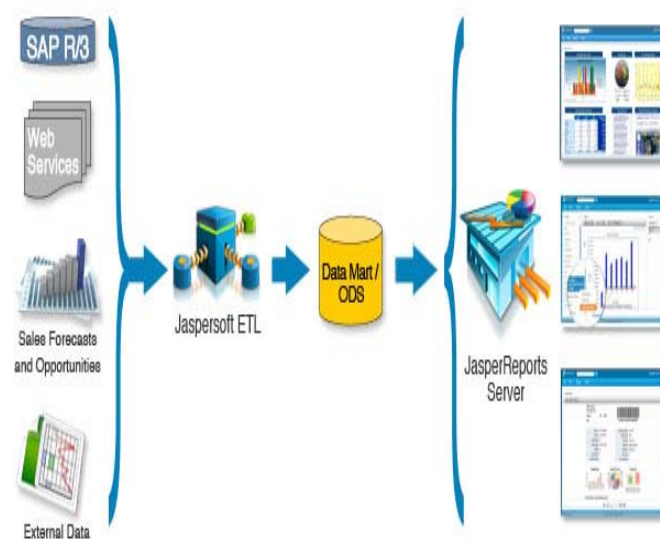#### a. Architecture of JasperSoft Business Intelligence Tool:

Figure 1 Architecture of JasperSoft BI tool.

The architecture [1] consists of 3 major units: Input, Processing and Output. The organizations data is collected from various data sources like SAP, Web Services and External Data. JasperSoft ETL extracts data from various data sources (Operational Sources), transforms it into the particular format and loads it in the data mart. Various tools like JasperStudio, JasperAnalysis and JasperReports performs operations on data stored in the data marts and produces the output in the form of charts, graph.

b. JasperSoft Business Intelligence Tool Components:

There are 4 JasperSoft components namely JasperReports – Reporting Library, JasperStudio – Graphical Report Designer, JasperServer – Interactive Reporting Server and JasperAnalysis – Interactive Data Analysis/ OLAP. The following few sections describes the component of JasperSoft Business Intelligence Tool.

a) **JasperReports:** JasperReports [3] [6] is a Java reporting library. The JasperReports library is the engine that processes and displays data in comprehensible, pixel-perfect printouts and Web reports. It is useful for all types of applications ranging from routine invoice printing to sophisticated executive dashboards.

b) **JasperStudio:** JasperStudio [3] [6] is a graphical report designer for JasperReports and JasperServer. It simplifies the process of accessing data sources, defining the report layout and compiling reports. It is typically used by report developers to design reports that others access through the JasperServer or through other business applications.
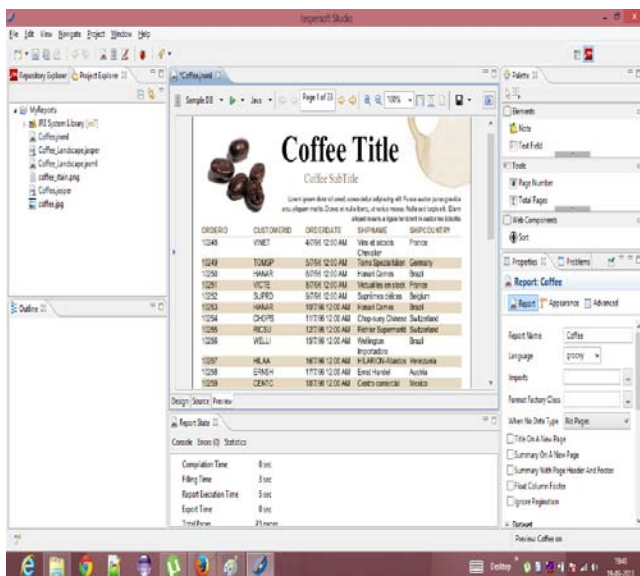

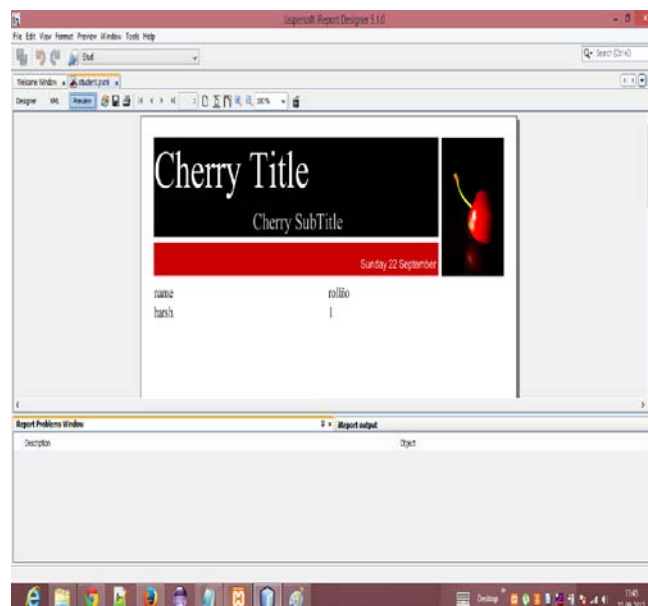Figure 2 Report Generation using JasperSoft Studio.

Figure 3 Report Generation using iReport.

c) **JasperSever:** JasperServer [3] [6] is a stand-alone interactive reporting server enabling delivery of mission critical information on a real-time or schedule basis to the Web, to the printer, or to variety of file formats. JasperServer provides services like Security services, Repository services, user interfaces and scheduling services.

d) **JasperAnalysis:** JasperAnalysis [3] [6] is a ROLAP(Relational Online Analytical Processing) server and end-user application. It is a web based application that allows non-technical users to "slice-and-dice", pivot, drill-down and roll-up data. JasperAnalysis allows users to visualize data as tables and charts.

B. Vanilla Business Intelligence Tool (http://www.bpm-conseil.com/):

Vanilla is an Open Source Business Intelligence Platform sponsored by BPM-Conseil that allows users to create and deploy report, to create and schedule the process, OLAP view and dashboards.

a. Vanilla Business Intelligence Tool Components:

There are 3 components of Vanilla Business Intelligence Tools namely BI Metadata Designer, BI Workflow Designer and BI Dashboard Designer.

a) **BI Metadata Designer:** FreeMetadata [4][5] is the piece used to create an abstraction layer between database and report designer. Using FreeMetadata, we can design business views that hide the complexity of our database. FreeMetadata allows us to represent and organize data from heterogeneous database management systems within a coherent and secured logical structure. The implementation of BI Metadata Designer includes 3 steps. MetaModel(DataSource) creation, Business Model creation and testing the package.
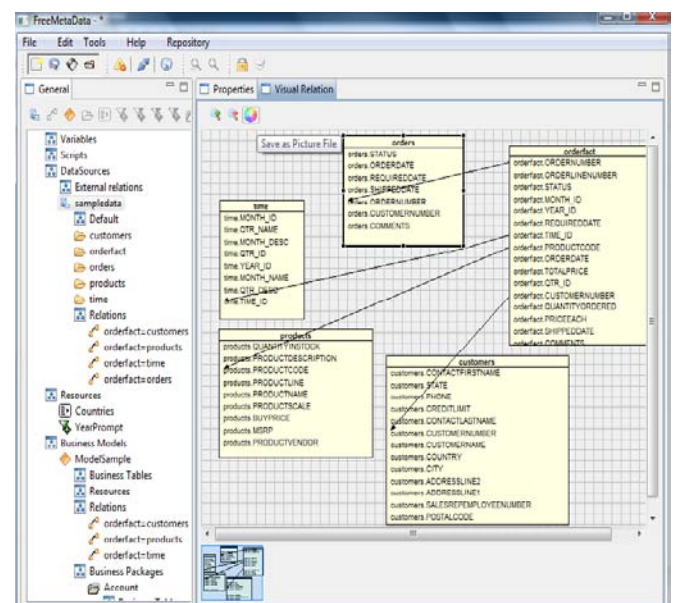

Figure 4 BI Metadata Designer Implementation.

b) **BI Workflow Designer:** BI Workflow Designer [4][5] is used to automate any business processes of the company. It organizes task flow and creates the processes. It also supervises individuals work or team work
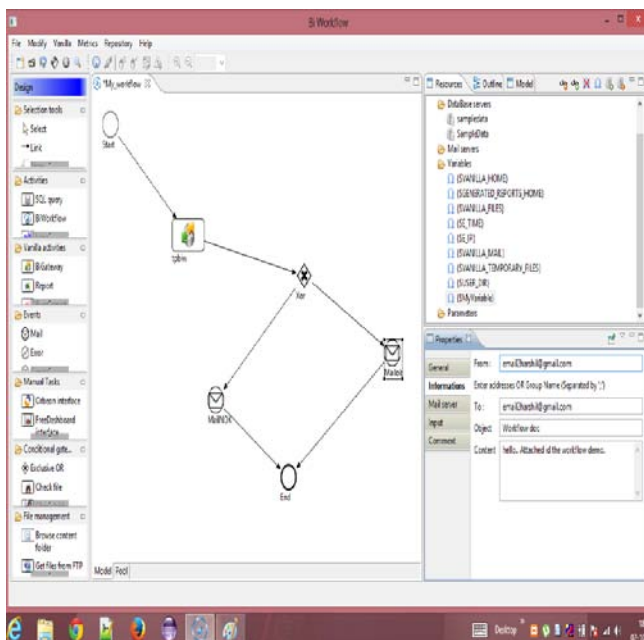
Figure 5 BI Workflow Designer Implementation.

c) ***BI Dashboard Designer:*** BI Dashboard designer [4] enables users to create Dashboards using the Vanilla platform documents such as metadata, KPIs, reports, charts.

III. CONCLUSION

After studying and doing research on Business Intelligence Tools like JasperSoft and Vanilla, I come across the following comparative study.

Table 1. Comparative study

Attribute	Jaspersoft	Vanilla
Programming Language Support		
Java	Yes	No
PHP	No	Yes
Other Attributes		
Reports	Yes	Yes
Dashboards	Yes	Yes
Data Mining	No	Yes
Operating System Support		
Windows	Yes	Yes
Linux	Yes	Yes
UNIX	No	Yes

IV. REFERENCES

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