COMPARATIVE STUDY OF BUSINESS INTELLIGENCE TOOLS

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Abstract

Big Data, as the name suggests means large collections of data sets containing information. Due to its huge and complex data sets, processing on traditional data processing applications is difficult. This challenge makes it necessary to produce various tools in big data. Over a period of time, a lot of efforts have been taken in growing competent tools for performing various tasks in big data. In today's business situation, it is important for an organization to make better business decisions. With the changing variations, the need for updated and corrected information is mandatory for efficient decision making to survive in the competition. BI is a broad category of applications and technologies for collecting, storing, analyzing and accessing data. BI tools provide robust reporting, data analysis and data integration for various organisations to make faster and better decisions and to gain new insights about business and markets. This can be used for developing services, products and achieving good operational efficiency. For this purpose, we have presented a comparative analysis of existing capabilities in various BI tools, which is meant to help in the selection of the best BI platform to each organisation. In this paper, we study and compare Qlikview, spotfire, tableau.

Keywords: Business Intelligence (BI), Tools, Data Visualisation, Qlikview, Spotfire, Tableau

1. Introduction

BI is a broad category of technologies, applications, activities, practices for the collection, integration, analyzing and presentation of data which support organizations to make better business decisions. BI tools are tools that provide reporting and data analysis for faster and better decision making. There are various types of BI tools available like spreadsheet, reporting and querying software, online analytical processing, data mining, and data warehousing dashboards. BI tools can be commercial, open source and proprietary free products. Its value and need is increasing as any organization needs to plan their future strategy by analyzing and visualizing information available to them. The information gained or delivered by the BI Tools can be easily accessed and presented in the form of dashboards.

BI tools need to have these minimum features:

- BI tools should be capable of handling large volumes of data.
- Allows us to work with dynamic real time data and should offer a wide range of data

visualisation options.

- They ought to have basic programming facilities such as SQL functions and commands to support generation of reports.

- Should create a backup of information in case data links are lost to data sources.

Challenges in BI are: Lack of business strategies when developing a BI project, poor collection of relevant data, cost and operation of BI tool are some challenges faced by the organization.

There are various advantages of BI tools. These advantages are: Improve efficiency, Correct and accurate planning analysis and decision making, effectively measure the key performance indicator. Simplify the process of tracking the business activities. Easier and quicker access to information.

Some popular BI tools are:

Qlikview- Qlikview is one of the products offered by qlik. QlikView provides extremely fast integration of data collected from various sources into a single powerful application. With QlikView, you simply have to work with one dashboard that will provide you with all the information that you need.

Tableau- Tableau is an interactive data visualization tools that enables you to create interactive and apt visualizations in form of dashboards, worksheets to gain business insights for the better development of your company. It allows non-technical users to easily create customized dashboards that provide insight to a broad spectrum of information.

Spotfire- TIBCO Spotfire is a data analytics tool which lets you create various analysis using its robust visualization and predictive analysis feature. Used to derive basic analytical insights into data from various sources and gain deeper insights into trends using the power of big data. Some users find it helpful because of its smart visual analytics tool coupled with artificial intelligence and data discovery toolset.

Characteristics	Qlik view	Spot fire	Tableau
Data Sources	Good, MDX connectivity is a challenge	Excellent-Native connectivity	Excellent (Native connectivity to Standard Sources, DWH, Appliances, Big Data, MDX)

Deployment	Medium Complex	Easy	Easy
Usability	Excellent	Very Good	Excellent
Device Independence	Yes	Yes to some extent	Yes
Connectivity	It integrates with a very broad range of data sources like Amazon Vector wise, EC2, and Red shift, Cloudera Hadoop and Impala, Horton works Hadoop, HP Vertica, IBM Netezza, Micro Strategy, MS SQL Server, My SQL, ODBC, Par Accel, Sales force, SAP, SAP Hana, Tera data, and many more. It can also connect with R using API integration and with Big Data	Similar to tableau	It can integrate with spreadsheets, CSV, SQL databases, Cloudera Hadoop, Firebird, Google Analytics, Google Big Query, Horton works Hadoop, HP Vertica, MS SQL Server, My SQL, Sales force, Tera data etc. It can connect with R that powers the analytical capabilities of the tool.
Data Transformation functions	Script based Modeling and ETL capabilities data transformation available. No ETL capabilities for complicated use cases like what is present in Alteryx, Data Meer, Palantir	Limited data transformation functions like data blending, Pivoting, meta layer building. No ETL capabilities for complicated use cases	Limited data transformation functions. No ETL capabilities for complicated use cases
Multiple user configurable reports/charts	Various visualization types and ability to change it on fly. Parameter based driven too	Similar	Similar

			Excellent (Drill Up/Down, Filters (multiple/range), Marking, Mouse hover, bookmarks etc). Good collaboration features.
Ease of use(interactivity)	Excellent (Drill Up/Down, Filters (multiple/range), Marking, Mouse hover, bookmarks etc). Good collaboration features.	Excellent (Drill Up/Down, Filters (multiple/range), Marking, Mouse hover, bookmarks etc). Good collaboration features.	
Adhoc reporting capability	Adhoc reporting capability using Desktop as well as Web Version	Similar	Similar

Conclusion: Many open source business intelligence tools have been expanding in terms of quality and visual appeal features. After studying and doing research on Business Intelligence Tools like Qlik view, Spot fire, Tableau we come across the above comparative study.

References

[1] Dr. Sailesh .S. Iyer, Dr. Kamaljit Lakhtaria "Practical Evaluation and Comparative Study of Big Data Analytical Tools", IJIRCCE, Vol.5, Special Issue 2, April 2017

[2] Harshil T. Kanakia, "Report Generation using Business Intelligence Tools: A comparative Study", IJARC, Volume 5, No. 5, May-June 2014

[3] S. Vidhya, S. Sarumathi, N. Shanthi "Comparative Analysis of Diverse Collection of Big Data Analytics Tools", International Journal of Computer and Information Engineering Vol: 8, No: 9, 2014

[4] Emmanuel Ahishakiye , Elisha Opiyo Omulo , Danison Taremwa ,Ruth Wario "Comparitive Analysis of Open source Business Intelligence tools for Crime Data Analytics", International Journal of Latest Research in Engineering and Technology (IJLRET), Volume 03 - Issue 04 , April 2017 , PP. 60-65

[5] Divyani Shrivastava, Dr. Sanjay Silakari, Prof. Raju Baraskar "Comparitive study of BI tools", International Journal of Computer Technology & Applications, Vol 9(3), 165-168

[6] Victor M. Parra, Azeem Mohammad, Ali Syed, Malka N. Halgamuge "Pentaho and Jaspersoft: A Comparative Study of Business Intelligence Open Source Tools Processing Big Data to Evaluate Performances", (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 7, No. 10, 2016

[7] Dr. Venkatesh Naganathan "Comparative Analysis of Big Data, Big Data Analytics: Challenges and Trends", International Research Journal of Engineering and Technology (IRJET) Volume: 05 Issue: 05, May-2018

[8] https://blog.capterra.com/business-intelligence-features-list/