

Study on Data Visualization Using Tableau and SAP Analytics

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ABSTRACT

Recognizing A graphical depiction of information and data is known as data visualization. Data visualization tools, which include visual aids such as charts, graphs, and maps, give an easy method to observe and analyse data styles, outliers, and trends. The goal of this thesis was to study different visualization methods, understand the various tools, and compare Tableau and SAP tools. The data given contains information about daily historical stock prices. Using this historical data, Financial Data, and other database this study found out the returns based on calculations in Excel sheet and then using these returns, it showed the results with different visualisation methods in Tableau.

Keywords: Systems Applications and Products in Data Processing, Tableau, Data Visualization, Cloud Data, Tools, Business intelligence

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I. INTRODUCTION

As the "Big Data Age" begins in high gear, the collection of data has become simple and cost-effective, and visualization and related tools have become increasingly important for making sense of the billions of lines of data generated on a daily basis. Data visualization helps to tell stories by presenting data in an easy-to-understand way, highlighting trends and other important properties. Good visualization tells a story, removes noise from data, and highlights useful details. Data visualization is a graphical representation of information and data. By using visual aids such as charts, graphs, and maps, data visualization tools provide an accessible way to see and understand styles, outliers, and patterns in data.

In the Big Data world, data viewing tools and technologies are essential for analysing large amounts of information and making data-driven decisions. A simple graph can be very tedious to capture any notification or make a strong point and excellent vision can completely fail to convey the right message or can say too much. Data and visuals require interaction, and the art is to combine good analysis with a story. When one thinks about data visualization, one may first think just simple graphs or charts.

While this can be an important part of visualizing data and a common basis for many data drawings, good visualization should be paired with the right set of information. Simple graphs are simply the tip of the iceberg. There is a complete selection of ways to visualize and present data in an effective and attractive way. Common types of data visualization are charts, tables, graphs, maps, info graphics, and dashboards.

II. PROPERTIES OF SAP AND TABLEAU

Tableau is a data visualization and analytics solution that assists enterprises in making data-driven business decisions. It blends information from a wide range of sources to deliver actionable, real-time insights. It allows exploration of data via intuitive means such as drag-and-drop filtering and natural language queries, irrespective of skill levels. With ample customization and security options, it offers control over data visualization, enabling creation of dashboards and stories that effectively convey business narratives.

SAP Analytics Cloud is an augmented analytics solution that uses machine learning technology to generate data

visualizations and simulate predictive scenarios. It provides every member of an organization with access to automatic, interactive insights via natural language processing. Powered by artificial intelligence, it helps businesses make decisions with confidence by exploring what-if possibilities based on historical data.

Key elements in the standard business analytics dashboard include:

Data aggregation: prior to analysis, data must first be collected, organized, and sorted.

Data mining: digging data for business statistics using big data sets, statistics, and machine learning to identify trends and build relationships.

Association and Sequence Identification: identification of unexpected actions performed in conjunction with other actions or sequences.

Text Mining: scans and organizes large, informal data sets for quality and quantity analysis.

Forecasting: analyzes historical data from time to time to make informed predictable estimates of future events or behaviour.

Optimization: once trends have been identified and forecasts have been created, businesses can engage in simulation strategies to test the best conditions.

Data Visualization: provides visual presentations such as charts and graphs for easy and fast data analysis.

III. OBJECTIVE OF SAP AND TABLEAU

SAP Objective:

The growing line of SAP Business Objects applications is classified by two categories. The first category is broken out by industry, such as financial services, manufacturing, consumer products, retail and utilities. Second, by line of business, which include: supply chain, finance, HR, IT, and service, sales and marketing.

Tableau Objective:

The main aim of the thesis is to identify an effective visualization method for representing the unstructured data into meaningful information.

- The study is conducted to know about different visualization methods.
- To understand the various tools used for data visualization.

- To assess the proposed visualization tool & provide recommendations.
- Do a comparison of Tableau and MS Excel.

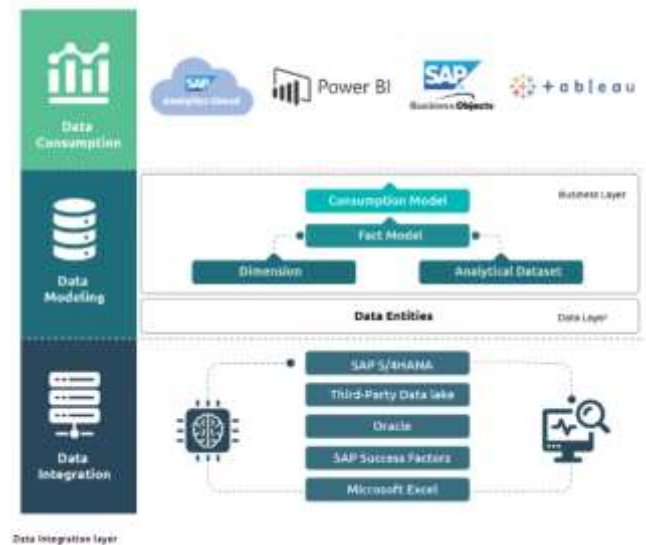


Fig 1. System Design

following diagram is a high-level illustration of Tableau's internal deployment of Tableau Cloud:

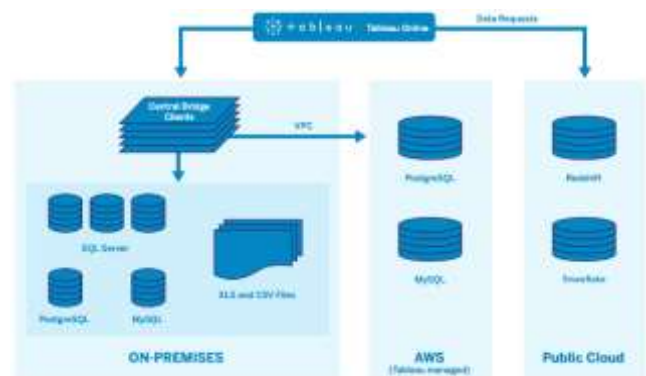


Fig 2. high-level illustration of Tableau's internal deployment of Tableau Cloud

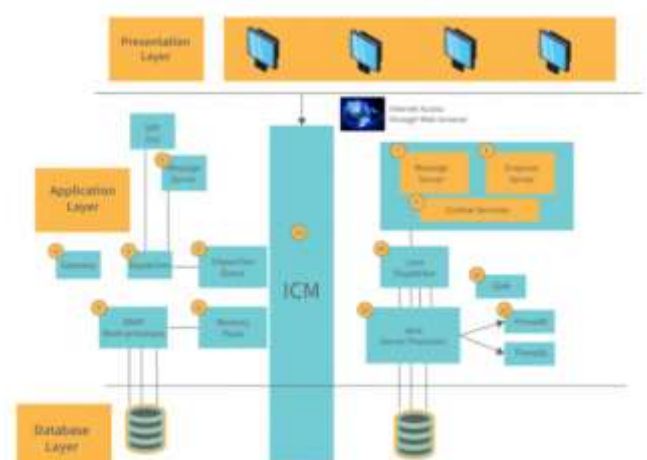


Fig 3. SAP Architecture Components

IV. TABLEAU VS SAP

	Tableau	SAP
Product Description	Tableau is a data visualization and analytics solution that assists enterprises in making data-driven business decisions.	SAP Analytics Cloud is an augmented analytics solution that uses machine learning technology to generate data visualizations and simulate predictive scenarios.
Platforms Supported	Windows Mac Linux	Windows Mac Linux
Deployment Supported	Cloud On-Premise	Cloud
Product Insights	Powerful Visualizations Ease of Use Faster Analytics Explores Any and All Data: Low Cost Innovative Updates Multi-Layered Security Ready for Mobile Free Trial	Increase Efficiency Smarter Analytics No IT Training Needed Anticipate Problems More Informed Decisions Visualize Impact Work Better Together Free Trial
Product Rating	#1 among all Business Intelligence Tools	#78 among all Business Intelligence Tools
Strengths	Availability & Scalability Dashboarding and Data Visualization Deployment Options Geospatial Visualizations and Analysis Data Querying	Availability & Scalability Deployment Options Dashboarding and Data Visualization Reporting Advanced Analytics

V. CONCLUSION

The analysis of the thesis indicates that it is possible to convert raw data into meaningful information based on the analysis of the case study. From the analysis, it was observed that applications such as Tableau provided a good result in terms of creation of a dashboard. Microsoft Excel has less distinct benefits as compared to Tableau.

Overall, SAP Analytics Cloud is a planning tool with strong BI capabilities that brings the power of cloud computing to self-service data analysis for gaining actionable insights into business metrics.

Overall, Tableau is a feature-rich BI solution that helps companies harness the power of visual analytics with relative ease of use, but may not suit all users' needs.

VI. REFERENCES

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