SISENSE

Whitepaper

Sisense vs. Visualization Tools

Full-Stack vs. Front End BI Software

A complete BI solution is comprised of several components to *first prepare data and then to analyze it*. Certain vendors offer only a partial solution but still label it as "Business Intelligence". Such differences may be hard to spot at first, but can have a potentially huge impact on the long-term success or failure of the selected solution within your organization.

For this reason, one needs to distinguish between *full-stack solutions* such as Sisense, and software that is merely a *front-end solution* – i.e., data visualization tools:

- **Full-stack solutions** consist of a back-end, which handles data preparation, creating a central data repository for anayltics and single version of the truth; as well as a front-end for visualizing data and dashboard reporting.
- **Data visualizations** are, just as their name implies, tools used to visualize data. This means they do *not* handle all the preliminary stages of joining and preparing the data – meaning, *users need to work to make the data fit the software, rather than the software works for them to make the data useable.*

This overview will explore important differences between the two tools by highlighting challenges in performing common BI tasks:

- **Preparing data**
- **Joining data sources**
- **Analyzing data**
- **Scaling**
- **Collaboration**

Prepare

Automate Data Preparation in a Single Location

Issues with data quality means work must be done to prepare data in order to create an accurate, complete and central version of the organization's truth.

Data preparation can actually take up to 80% of the time devoted to analytics projects, so shortening data preparation can obviously be a major time and resource-saver. Although the business side of the company isn't always aware of this, it impacts them dramatically – if the business needs to wait for IT to prepare the data, business is stalled and decisions aren't being made.

Visualization Tools: No Data Preparation

Visualization tools *lack data preparation capabilities*, especially for complex tasks and when the data is coming from disparate and often disorganized sources. This means either having to *repeat* the same preparation work every time you add new data or *investing in 3rd party software for professional DBAs*. As a result, a huge amount of time and resources are devoted to data preparation before you can even start to analyze it, or parts of the use cases are compromised.

Sisense: Automated Data Preparation

Sisense provides an *intuitive and comprehensive tool to automate data preparation*. No coding or advanced skills are required, and many data management tasks are handled by built-in components of the software which requires little to no work to setup.

Join

Work with Data on a Detailed and Summary Level

Working with different data sources requires connecting data together, preferably by using a join. As most organizations don't collect their data from one single source and instead use a variety of sources (Excel, Salesforce, Google Analytics, etc.), joining data is a crucial element of any modern BI solution.

Visualization Tools: Blend

Visualization software relies on blending data in order to join data sources. The problem is this method aggregates data and *reduces the level of detail*, thereby *limiting the ability to explore and perform calculations* on a granular level. This means some data stays 'out of the picture' and prevents posing ad-hoc questions when analyzing different data sources.

Sisense: Intelligent Joins

Sisense connects all data sources on a row level join – retaining all details stored within each cell, as well as the logical connections between them, and allowing unlimited calculations and data exploration on the fly for both a summary or detailed level. In other words: no data is left behind.

Analyze

Perform Complex Calculations

For analysis purposes, users often need to create formulas that perform several calculations simultaneously and output results on a granular or summary level of detail. For example, to use data of each day's sales in order to calculate the average daily sales per month requires first calculating the total sum for each day and secondly an average of daily sales for the month.

Visualization Tools: Pre-Aggregated Data

Visualization tools, which are focused on reporting, use a restrictive engine that limits the number of aggregations per formula, often to a single aggregation. Hence if more than one aggregation is performed in a calculation manual work needs to be done to aggregate data beforehand. In our above mentioned example, the total sales per day would have to be calculated first and stored separately before the average daily sales per month could be calculated.

Sisense: Create Formulas On the Fly

Sisense enables users to perform multiple aggregation in a formula without any pre-aggregation. Aggregation is done by the software itself while generating the view, thus allowing you to skip straight to the information you were after in the first place.

Scale

Grow to Many Users, Data Sources & Dashboards

Under the safe assumption that your data is going to grow much larger over time, BI software needs to be scalable, i.e. to be able to query a larger number of records and many fields simultaneously, as well as handle a larger amount of concurrent queries without compromising performance.

This is also an issue in larger organizations where successful implementation of a BI project might garner further interest by additional departments and users.

Visualization Tools: Problematic Scaling

Visualization tools have limited data processing capabilities, as their design is focused on presenting existing data in graphical dashboards. Instead, they often combine and load all data into the memory of the local machine to achieve reasonable performance. This demands lots of RAM, which is expensive and quickly leads to a degradation in speed, additional software and hardware costs or complex performance tuning.

Sisense: Scale to Terabytes Easily

Sisense uses its unique proprietary technology which allows it to scale to hundreds of millions of rows, hundreds of fields and queries and return results instantly. This is achieved by storing data on disk and only using RAM when a query is run - improving performance while reducing hardware requirements and thereby costs.

Collaborate

Share a Single Version of the Truth

Data must be updated to account for changes. If these updates are left to one single factor within the organization (such as the IT department), a bottleneck soon forms. BI software should allow different elements within the organization to change existing datasets according to developments in their respective departments.

Visualization Tools: Segmented Collaboration

Visualization tools rely on updating de-centralized, separate data extracts which easily fall out of sync when collaborating. Editing extracts is done locally on the user machine, *requiring sufficient computing power* and creating a confusing environment where each users has to understand and manage countless extracts. Data stored in de-centralized data silos limits your ability to see a broader view of the organization. And this segmentation means that the more users accessing the data, the more error-prone the system becomes.

Sisense: Centralized Collaboration

Sisense allows users to work with the same data repository (the ElastiCube) rather than separate extracts, but still combine data anyway they need. It's centralized so users only have a single version of truth and queries always run on the server, liberating end user devices and scaling for many different use cases.