Top BI Software
Data Visualization Tools

SelectHub

Report 2021

Table of Contents

Data Visualization Tools: What to Look for in 2021

In today's hyper-competitive business world, only decisions that are backed by data can be trusted to bring the desired results. But in order to gain valuable insights from their data, companies must first understand it, and that's very difficult if you aren't able to visualize the data in a way that makes it easy to understand. That's where business intelligence software and data visualization tools come in.

What to Look for in 2021

What are visualization tools? Smart decision makers put an emphasis on making data visualization a part of their decision-making process. Charts, infographics, heat maps, videos and even augmented reality presentations can all be incredibly effective at engaging viewers and making data easier to understand. This article will break down the basics of business intelligence tools and data visualization. Then it will explain why it's crucial in the modern business world and offer some of the best visualization tools to help you on your way.

Why is Data Visualization so Important?

The answer lies in the way that we process information. Our brains are wired in a way that requires visual triggers in order to truly immerse itself in what it's experiencing. In other words, it's much easier to understand something when looking at a graphic than it would be when sorting through never-ending spreadsheets, even though it contains the exact same information.

Data visualization helps transform data such as trends and insights in a visual manner, which can completely change the impact of the same information when presented numerically. The Encyclopedia of Human-Computer Interaction does a great job of explaining the reasoning behind this. Data visualization works so well because our brains are much quicker at processing perceptive information (sight) than cognitive information (thought).

When we see information in a format that's immediately clear to us, such as a pie chart, our brain doesn't have to waste energy trying to understand how the data is structured. Instead, it can focus solely on the actual information that is presented.

When big data visualization tools are combined with an understanding of the principles of human visual perception, companies can experiment with different ways to present the information in order to make it easier for viewers to detect structure and patterns in the data.

Making data easy to understand is the core of BI programs. While quickly analyzing data doesn't come naturally for many people, a data visualization tool can present it in a way that enables almost anyone to quickly absorb it, helping them make more informed decisions as a result.

Usually, data visualization software is a feature of BI tools, which come with extensive data visualization features that allow you to view the data in several different ways. No matter what needs to be displayed, there are always options to present it conveniently.

An added benefit of BI software data visualizations is they can help improve interactions with people outside of the company, such as partner companies, vendors, investors or prospective clients. Presenting vital information in an easy-to-digest manner makes your presentations more compelling.

BI Adoption

Data visualization software is used by a growing number of companies. According to a recent study by Forbes, only 30.6 percent of companies across industries have a BI adoption or penetration rate of 41 percent or greater.

However, this number is only set to increase. In a study by Zion, the global BI market will be worth $26.5 billion by 2021. To get ahead of the curve, check out our recommendations for increasing BI adoption in your company.

Key Features of Data Visualisation Tools

The main purpose of data visualization programs is to make the presented information easy to understand, even for people who aren't used to analyzing data or who are less tech-savvy in general.

Luckily, there are different types of BI software solutions that can turn raw data into easy-to-digest visuals. But in order to make the most out of the software tools available, you must first understand the key features behind them.

So here are some of the most important features of BI data visualization tools that can help your business the most:

Customizable Dashboards

In order to make the most out of graphical data, the dashboard of the software must be easy to customize to fit the needs of the situation or the individual that's using it.

While the decision makers of the company might need a dashboard that provides a bigger picture of the entire business in order to make quick and accurate decisions, the sales department might need a more specialized dashboard visualization that displays the key metrics that are relevant to them.

In most leading business intelligence software solutions, dashboard customization is a very intuitive and simple process that doesn't take up a lot of time. It's very easy to arrange the data in a way that's convenient,
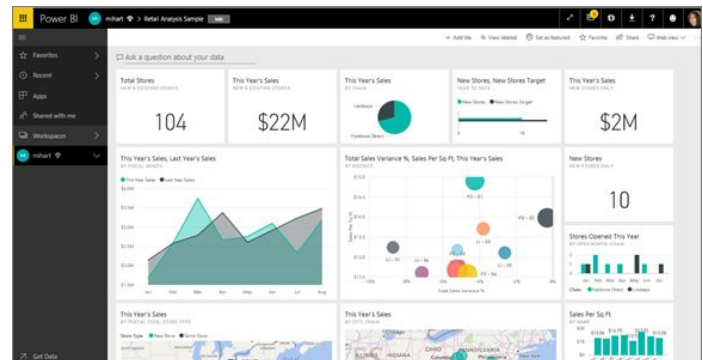
Microsoft Power BI offers interactive customizable dashboards

removing or adding metrics according to your real-time needs, providing the most relevant information instantly. This minimizes the time it takes to react to any internal or external issues that need a quick resolution.

Interactive Data Visualization Reporting

Reports are another essential part of business intelligence that's made very easy using the visual analytics and BI visualization tools available as part of BI software. Decision makers of your company can pull together data from several different data sources and compile them into reports that are easy to digest quickly with the help of visual aids such as charts or graphs.

These reports can be arranged in countless different ways, such as highlighting essential parts, sorting the information in seconds or filtering it to display only the most relevant components. They can also be customized to report on industry-specific KPIs to offer detailed information for your organization. The best part about interactive visualizations

Key Features of Data Visualisation Tools

is the ability to instantly add and remove data and the way it's displayed, sorting through it until you find the answers you're looking for.

Location Intelligence

Location intelligence makes it easy to visualize and map out data that requires geographical formats. There are endless possibilities for displaying geospatial elements that allow companies to gain a deeper understanding of performance in a regional context via interactive maps.

Some of the most useful functionality of location intelligence is the option to layer sets of data spatially and chronologically, which enable businesses to draw insights about location-based metrics that would be difficult to obtain otherwise.One of the most notable benefits of location intelligence insights is the possibility to determine the most optimal locations for operating a business based on previous data. Advanced analytics strategies can also explore the general business

A geospatial visualization from Oracle BI

ecosystem in certain areas based on influences such as cost of living, crime, economic climate, culture, education levels and many other factors.
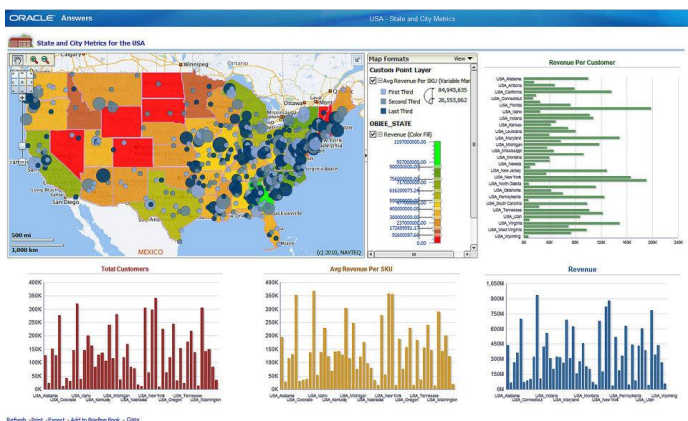
Data Mining

Data mining has completely changed the way businesses analyze information. If you're not familiar, data mining is the process of discovering patterns and trends in Big Data sets with the help of self-service BI technology. Before data mining, the sheer amount of data that larger companies had at their disposal made it impossible to analyze manually, which meant that it was basically unusable.

Today, with the help of data mining, companies can analyze large amounts of pre-existing data, extracting information quickly and efficiently. This allows you to make intelligent predictions about future trends that enable companies to understand the data behind their performance.

But as you can imagine, just analyzing the data with business intelligence tools isn't enough. It's just as important to be able to effectively summarize the data in an easy-to-understand format and identify the most important patterns that need to be understood in order to make the right adjustments.

This is where data visualizations can be helpful. They can distill all the findings of data mining into convenient chart- and

Key Features of Data Visualisation Tools

graph-based reports. These can then be quickly analyzed, enabling decision makers to make any necessary changes before problems arise.

Real-Time Access and Mobility

Today, BI visualisation tools must not only be able to provide convenient ways to present relevant time-series and real-time data, but also display that data on any device.

A big part of the decision-making process now happens on the go. Therefore, in order to be effective, BI software solutions must come with data visualization options that can easily be displayed and understood on any device.

Checking your data on a laptop, tablet or even a phone should be just as easy as pressing a few buttons, ensuring that the decision makers of the company have all the necessary information, no matter where they are at that moment. Luckily, most of the leading solutions available today offer mobile-friendly business intelligence data visualization tools that can be quickly accessed at any time from popular mobile devices.
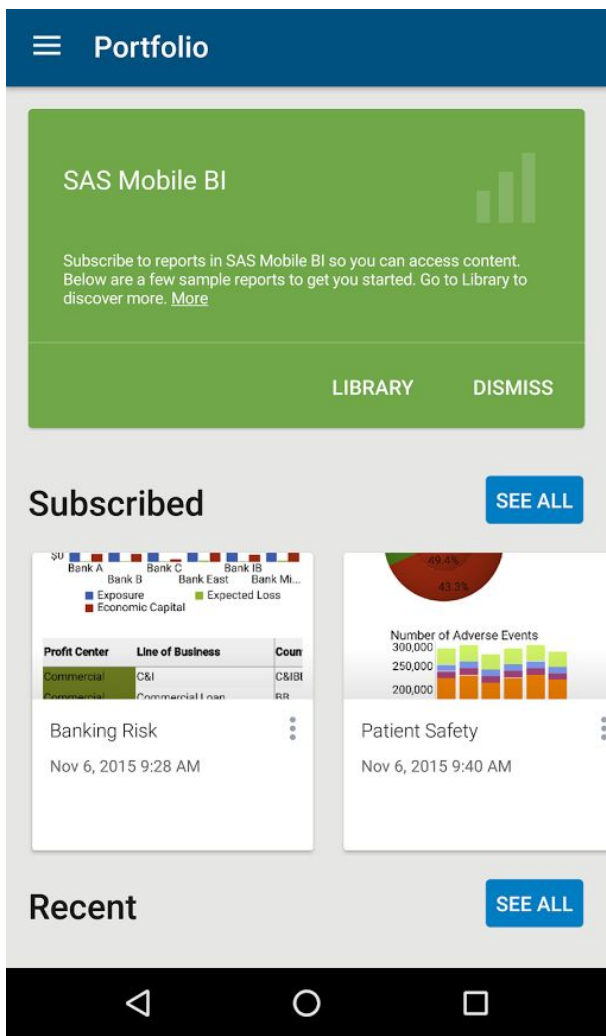
Sisense offers an intuitive native app

Free, Customizable BI Software Requirements Template
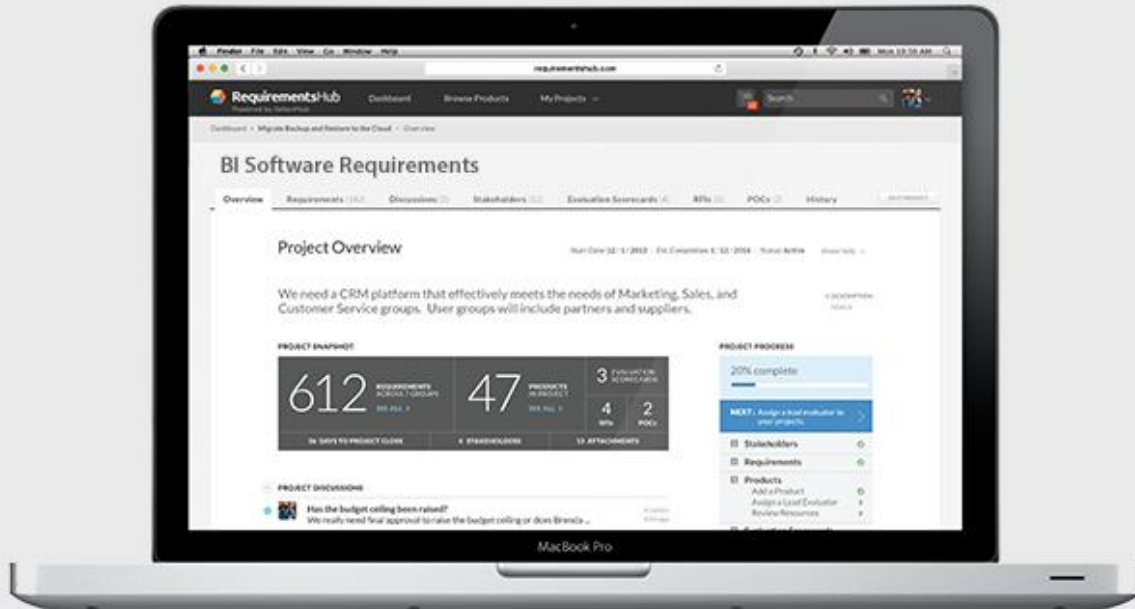
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Access Free Template

Best Data Visualization Tools

Top executives put an emphasis on data visualization as part of their decision-making process.
Charts, infographics, heat maps, videos and even augmented reality presentations can all be incredibly effective at engaging viewers and making data easier to understand. The following pages will breakdown some of the best visualization tools to help you on your way.

SAP BusinessObjects

The BI solution from SAP allows users to make structured query language (SQL) queries of your relational database, which is then translated into raw data. Using ad-hoc reporting — reports created by hand in real time by analysts rather than software — users can request very specific data from their databases or data warehouse.

SAP BusinessObjects also offers storyboarding capabilities. This allows users to outline their presentations of data visualizations in the same interface where the visualization was created. In addition to supporting filters for organizing visualizations, SAP's storyboard interface allows users to add images and text boxes for titles and paragraphs. Users can create infographics by adding pictograms or shapes to their storyboards.

Data visualization features from SAP offer charting suggestions and different types of animations for peak data representation. This BI software also supports geospatial integration with GIS sources like Esri GIS.

Benefits and Insights

- Real-time Analytics: SAP BusinessObjects connects with many SAP applications like SAP Business Warehouse and SAP HANA to power real-time analytics.

- Native apps for iOS and Android: The product offers native apps for iOS and Android with features like charts, visualizations and reports.

- Efficient and High-volume Content Delivery: SAP BusinessObjects can distribute content throughout a large organization to make sure its business users have access to real-time business intelligence anytime, anywhere.

- 25+ Prebuilt Data Connectors: SAP BusinessObjects offers over 25 data connectors to data sources such as SAP HANA, Apache Hadoop Hive, Cloudera Impala, Amazon EMR Hive, Apache Spark, IBM IDS and more.

- MS Office Integration: SAP BusinessObjects integrates with Microsoft Office products such as Excel for large-scale data analysis and Powerpoint to share visualizations.

SAP BusinessObjects

- SAP Ecosystem: The product's capabilities can be extended by using APIs and tools from SAP ecosystem to build sample applications, extensions, and open integration with SAP products.

Product Limitations

- Requires large amount of hardware resources

- Recovery is not easy in case of failure

- Less flexible with new format of MS Office

- Requires a lot of internal IT support and maintenance

- Not flexible with data input methods or formats

- Limited data visualization capabilities

Competitors

- SAS Visual Analytics: $1,365 per month for mentioned user capacity

- Microsoft Power BI: Starting at $9.99 per user per month

- Dundas: Starting at $6 per month per user

QlikView BI supports data querying from a wide range of Big Data databases and repositories, which it caches for quick recall. Users of this solution can make unlimited ad-hoc queries, even if they aren't data scientists with in-depth knowledge of data hierarchies.

This BI software allows users to create storyboards to plan data presentations. QlikView visualizes the major steps it takes when users analyze the data so you can always find out what's happening and why during data analysis.

With QlikView, users can choose from a variety of pre-defined chart types for data visualization, as well as advanced animations. This solution also offers geospatial integration with GeoQlik, Qlik's proprietary GIS system.

Benefits and Insights

- Control over data: The major reason for this product's popularity is that it enables users to create personalized, data-driven discoveries with guided paths and analysis. All discoveries are tightly governed and highly customizable. User can create business-driven data discoveries with guided analysis paths that are highly customizable and tightly governed. QlikView provides guided analytics, a controlled analytic experiences which guide employees toward discovering insights and making meaningful decisions.

- Secured: QlikView is secured. It comes with top-down control of analytics applications, permissions and data management. The product ensures total control of data access, management, and permissions as its customers have sensitive corporate data. QlikView provides centralized applications. It has a granular control of dashboards, layouts and design.

- Flexibility, Customizable & Combinable: QlikView facilitates users to build the exact tools they need for their organization and teams. QlikView lets develop custom application with its own scripting and extend development with QlikView Workbench. QlikView allows itself to Integrate into users business applications and system management software with extensive APIs.

- Consistency and Global Search: QlikView provides one set of data and apps for use across users entire organization. QlikView provides the usage of natural search to navigate complex information to accelerate discovery.

- Data integration and Advanced reporting: QlikView unify data sources for a complete view of information, centrally managed data and applications make it easier to discover insights. With the help of QlikView one can create and distribute consistent reports and templates, plus embed them in Microsoft Office documents with Qlik NPrinting.

- Enterprise scalability and Collaboration: The advantages of guided analytics with secure, enterprise-level governance of data and analytics. The product has the ability to uncover data pattern/trend and its allowance for real-time collaboration. It also allows users to search for the type of data results that they want and it immediately shows the relationships of the data.

- Data connectivity: The product offers custom connectors along with its default connectors which can be installed whenever needed. A user can import data from Salesforce, Hive, Teradata, and other popular systems.

Product Limitations

- Does not support online analytical processing (OLAP)

- Users cannot predict the profitability of projects or departments using QlikView

- The solution does not help users identify patterns within data

- Lacks ad hoc reporting functionality

- Does not allow users to schedule receiving BI reports at specific times in a particular format

Competitors

- Tableau Server: Starting at $35 per user per month

- Microsoft Power BI: Starting at $9.99 per user per month

- Sisense: Starting at $21,000 per annum for 5 users

Tableau offers a feature-rich solution that lets users create visually appealing dashboards and stories with ease using a drag-and-drop interface. Users can customize their dashboards to be interactive and highlight certain metrics. Additionally, Tableau enables adding geographic information to turn location data into maps that make sense.

Tableau has many built-in capabilities that make it even more user-friendly:

- **Show Me:** This feature recommends visualization types to users based on the type of data selected for analysis.
- **Explain Data:** Machine learning explains the "why" behind specific data points.
- **Ask Data:** Users can make queries in natural language and automatically receive a response in the form of a data visualization.

  With real-time access, Tableau automatically updates its visualizations with every refresh and allows users to access insights on the go with sharing capabilities and mobile apps.

Benefits and Insights

- **Powerful Visualizations:** The quality of Tableau's data visualizations is world-renowned. Convert unstructured data into comprehensive logical results and display it in interactive and visually appealing dashboards.
- **Ease of Use:** Analyze data through a user-friendly UI with intuitive drag-and-drop functionalities and natural language processing — no need for prior technical knowledge or skills.
- **Faster Analytics:** Connect to, extract and visualize data in minutes. Its Prep Builder tool leverages machine learning to give recommendations for smarter, more time-efficient data cleaning.
- **Explores Any and All Data:** Pull and blend information from an unlimited number of data sources, from text, Excel and PDF files to an extensive list of database servers.
- **Find the "Why":** Dig deeper when making data-informed decisions. Go beyond trends and acquire AI-driven explanations behind specific data points with a single click.

- **Low Cost:** Its pricing is relatively low in comparison to other competitors in the business intelligence industry.
- **Innovative Updates:** The vendor updates the platform regularly, always seeking to add new features and improve existing ones.
- **Multi-Layered Security:** Offers row-level security to restrict access to specific rows of data in a workbook, as well as additional permissions management features. Compliant with SOC 2 and SOC 3 security protocols and a certified participant in the EU-U.S. Privacy Shield Framework.
- **Ready for Mobile:** Available as a native mobile application on both iOS and Android platforms, offering freedom and flexibility in an increasingly mobile digital world.
- **Customer Resources:** Access an ample variety of support options, including a large library of learning materials, how-to guides, videos and more. Engage with a thriving insight community and forums to answer questions quickly. Avail training to maximize the value of the business' investment.
- **Free Trial:** Sign up for a 14-day free trial of its fully functional program.

Industry Expertise

Tableau is implemented in a wide range of industries. These include communications, healthcare, financial services, staffing and recruiting, retail, government, higher education and many more.

Product Limitations

Some of the product limitations include:

- Tableau Server does not support data encryption
- Does not provide multi-location support
- The solution is not user-friendly, especially the report-builder
- Does not allow users to share datasets, and requires a separate subscription package
- Requires IT support for integrations and other high-end tasks. Users cannot do this using tutorials or self-help videos on their own

IBM Cognos

With IBM Cognos, users can run visual queries through the Dynamic Query Analyzer. It presents data in interactive visual formats that allow users to run queries on them in real time. It supports geospatial integration with Esri Maps.

Cognos offers storyboarding features that integrate interactive charts, graphs, live videos and more into visualization presentations. This function also provides a "pinning" option that lets users select widgets and pin them into the demand toolbar while exploring other data visualization dashboards.

Once data has been analyzed, this solution suggests different charts and animations for ideal data representation.

Benefits and Insights

- Stay in Control: IBM Cognos is built around data management and data governance features, meaning you have oversight over your data.

- Flexible Deployment: Cloud-based or on-premise, where you deploy is up to you.

- Mobile Sharing: Cognos offers a mobile portal for sharing data reports, as well as monitoring analytics.

- Out-of-the-Box Capabilities: The software comes with numerous preconfigured settings, allowing users to start analyzing almost instantly.

- Visualization: Automatic recommendation of the best visualizations for particular data templates and styles let you format reports quickly.

Product Limitations

- Lacks features such as budgeting and forecasting, profit analysis, strategic planning

- Data reports take much longer to compile

IBM Cognos

- Expensive for start-ups and small organizations

- Does not support offline mode as it is entirely a web-based system

- Difficult to deploy, set-up and maintain

Competitors

- SAS Visual Analytics: $1,365 per month for mentioned user capacity

- Microsoft Power BI: Starting at $9.99 per user per month

- Dundas: Starting at $6 per month per user

Oracle BI

Oracle BI offers enterprise-level visualization functionalities. Users can select "recommended visualizations" and the system will provide custom guidance based on the nature of the data and the intent of the analysis. This way even the least data-savvy employee can create stunning data visualizations.

This solution helps users glean data-driven insights through interactive data visualizations tailored to their specific needs and requirements. Oracle offers a customizable platform that can be made industry-specific, as well as other customizations for your individual needs.

Benefits and Insights

- Modern analytics platform: The product offers modern analytics platform where one can simplify their analytics strategy by standardizing on one integrated platform. One can centralize their data models and metrics for a complete demonstration of the business. The product also makes sure that user can connect directly to more Oracle sources and Big Data for broader and richer analysis.

- Advanced analytics: The product offers advanced analytics by enabling analysts to create mash-up data sets by running R scripts in batch mode which gives new and unique insights With the help of this advanced analytics feature analysts can choose from hundreds of pre-built functions to speed analysis or extend existing analytics easily with R scripts.

- Data visualization: The product offers data visualization where one can craft a story around their business with visually stunning analytics. An analyst can choose from a rich library of visual components to uncover hidden data patterns.

- Mobile: The product enables users to view and analyze data in the cloud or on-premises. It helps to create mobile analytical applications with rich, interactive visualizations without coding and programming.

- In-memory enhancements: The product provides In-memory enhancements to which helps in improving deployment efficiency and increase in memory storage.

Oracle BI

- Self Service: The product enables the use of self-service BI in a secure environment facilitating the capability to access, visualize, and share data without IT assistance.

Product Limitations

- Oracle BI requires intensive metadata modeling and therefore is not user-friendly

- The solution does not provide an automated data dictionary to store volumes of data

- Not well suited for running complex queries such as unions

- Does not provide an intuitive UI for easy navigation

- Requires extensive support by internal IT teams for installation, support and maintenance

Competitors

- Tableau Server: Starting at $35 per user per month

- Microsoft Power BI: Starting at $9.99 per user per month

- Sisense: Starting at $21,000 per annum for 5 users

Sisense

Sisense is a robust platform that offers interactive BI reports with customizable dashboards. It provides customizable interfaces to meet individual user's needs. Sisense also offers automatic geocoding based on address data.

Sisense BI automatically recommends charts or graphs that intuitively represent a specific data set. It also offers a unique feature that enables the same data points to be presented in multiple graphics for better understanding.

Benefits and Insights

- In-Chip Analytics: An alternative to in-memory processing, this feature combines a columnar database and smart algorithms in an in-chip cache and a combination of either disk or RAM, rather than solely disk or RAM. The benefit of this is that it frees up your processing power for other tasks, improves the speed of the processing and reduces downtime caused by an overworked RAM or disk.

- Accessible Business Intelligence: This solution brings the power of data analysis and prediction to average employees and advanced data analysts alike.

- Actionable Insights: By analyzing data trends and identifying patterns, users can make predictions and make business decisions based on facts. This can improve business practices, reduce oversight errors, boost ROI and streamline general business efficiency.

- Collaboration: Users can share reports and make comments on them to collaborate on insights, KPIs and goals. All this happens through a secure network, ensuring data security compliance.

- Customizable: An open API framework lets users customize the platform to meet their needs so they're only paying for features they'll use and getting exactly what they want out of a BI tool.

Sisense

Product Limitations

- Does not support predictive modeling and analysis

- Dashboards do not support advanced visualizations such as 3-D graphics

- UI of the mobile app is not user friendly

- Does not work well with complex and huge data sets

- Does not offer scheduled reports that can be sent via email so that users can consume reports outside of the online dashboard

Competitors

- SAS Visual Analytics: $1,365 per month for mentioned user capacity

- Microsoft Power BI: Starting at $9.99 per user per month

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