

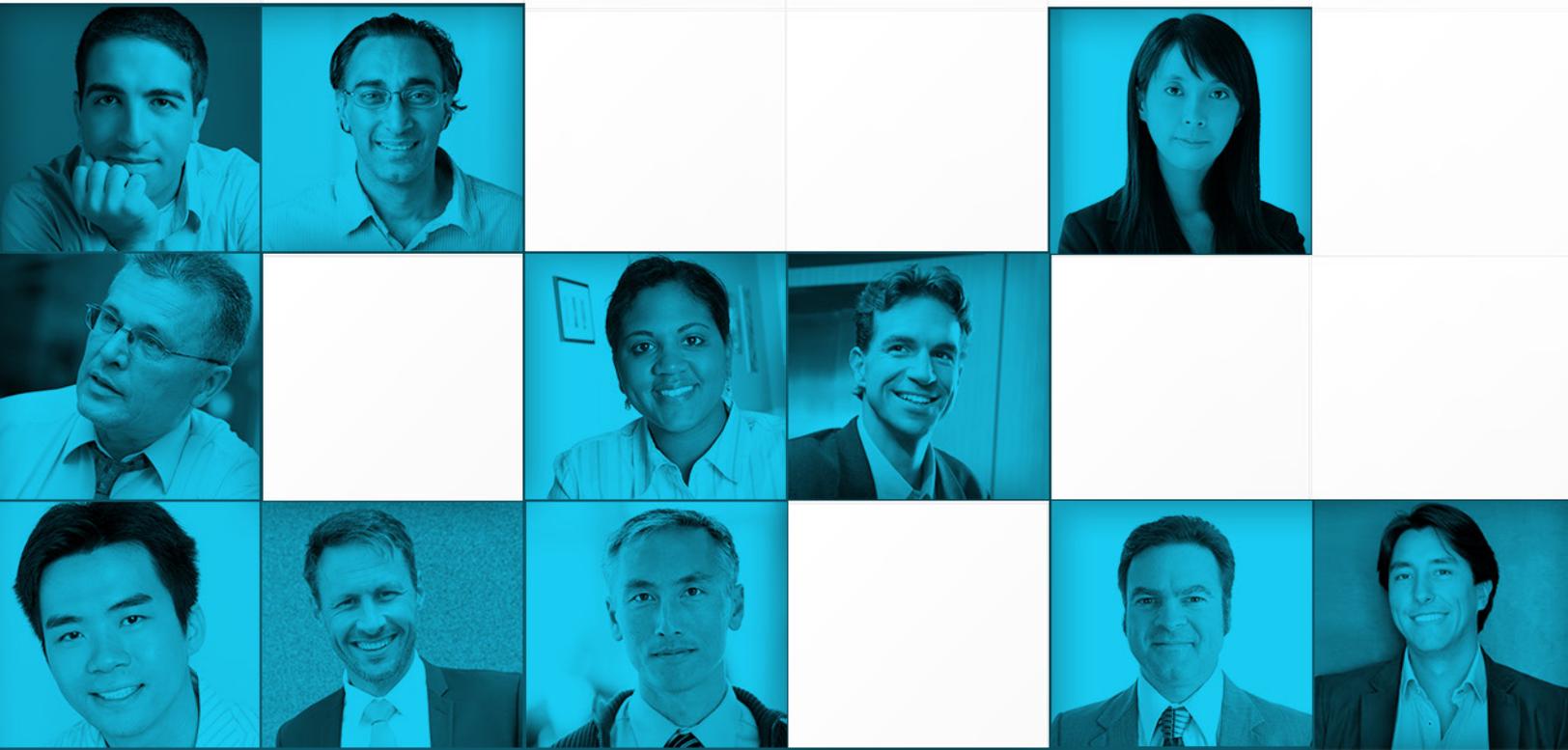
# The Buyer's Guide to Business Intelligence Software

Curated from End-User Reviews on:

**trustradius**

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# Introduction

## Why You Should Read This Guide - Vinay Bhagat, Founder & CEO, TrustRadius



TrustRadius is excited to publish our first Buyer's Guide to Business Intelligence (BI) Software. This guide provides practical guidance to help you find the best BI software solution for your use case. It offers pragmatic advice on how to approach the buying process based on thousands of insights from real software users. Our research team analyzed 532 reviews of business intelligence software by authenticated users on [trustradius.com](http://trustradius.com), the vast majority of reviewers sourced independently of vendors. We also interviewed many of the major vendors and talked to independent experts. This guide focuses on general-purpose BI tools but also mentions domain-specific tools for functions like sales, finance and corporate performance measurement. We focus here on reporting, visualization and discovery tools; predictive analytics will be covered in a future guide.

## About This Business Intelligence Guide – Alan Cooke, Research Director, TrustRadius



In this guide you will find:

- » A primer on BI software for those new to the field
- » Descriptions of various types of BI tools along with their advantages/disadvantages and best-fit scenarios to help you understand the best choice for your use case
- » Analyses (2x2 charts) we call TrustMaps™, showing the leading solutions by BI product category based upon “Likelihood to Recommend” ratings and product evaluation frequency
- » Product ratings across multiple factors from real user reviews
- » Advice on how to buy BI software to maximize your probability of success
- » A discussion of key market dynamics and trends including Big Data

Available separately on TrustRadius are detailed BI product reports which include:

- » Pros and cons for individual products, distilled from reviews on TrustRadius
- » Pricing and feature information
- » Management interviews regarding market positioning, competition and product roadmap
- » Company responses to their reviews on TrustRadius

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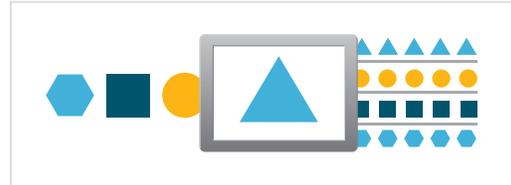
#### **About TrustRadius**

[TrustRadius](#) is the leading site for business software users to share real-world insights through in-depth reviews and networking. We help users make better product selection, implementation and usage decisions. Every reviewer is authenticated and every review vetted before publication. Unlike simple rating sites, TrustRadius reviews are structured and substantive, averaging more than 400 words each. Reviewers can also update their reviews to keep them current. Founded by successful entrepreneurs and backed by the Mayfield Fund, TrustRadius is bringing transparency and efficiency to the \$3.7 trillion business technology market.

# Business Intelligence Software Overview

## The Data Management Challenge

Companies collect large quantities of operations data as a by-product of doing business. Huge quantities of data are stored in finance, procurement, sales, marketing systems and multiple other data repositories. Being able to analyze and understand this data is extremely important to running the business. For example, Enterprise Resource Planning (ERP) systems typically contain data concerning the supply chain and inventory levels in addition to financial data. HR systems contain all employee records including demographic data, salary level, and performance reviews. Customer Relationship Management (CRM) systems contain customer, sales pipeline, forecasting and sometimes customer support case data. Many of these line-of-business data stores have their own reporting capabilities, and there are multiple third-party tools that provide sophisticated data analysis and related capabilities specifically for these line-of-business tools. For example, products like [InsightSquared](#) and [C9](#) provide dashboards and predictive pipeline analysis, respectively, for the Salesforce platform.



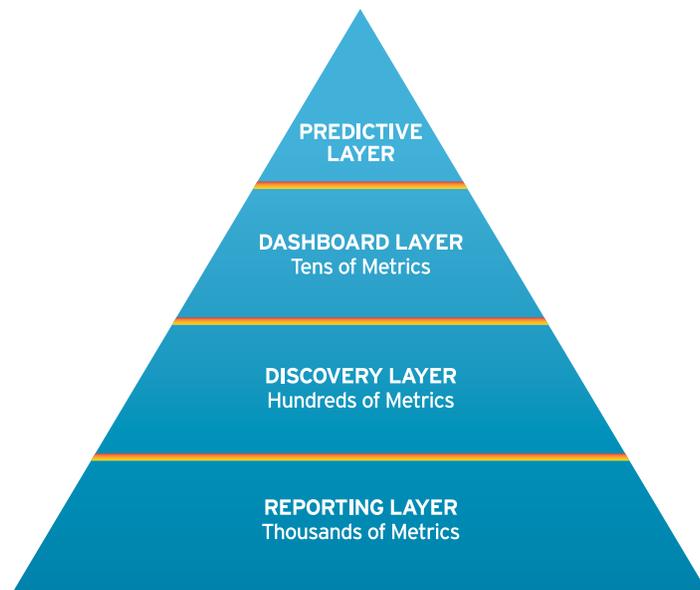
The problem is that all this operational data is typically not accessible in one place for analysis in order to make decisions and provide strategic guidance to the business as a whole. For example, inventory data from an ERP system could be combined with sales forecasting information to understand how to optimize inventories in response to demand. This is the problem that business intelligence systems were designed to solve.

## How Business Intelligence Tools Work

Traditional business intelligence software solves this problem by putting data into a common store called a warehouse. The data is then normalized - removing redundancies and duplication - making it easier to run queries and retrieve data for reporting. Newer data discovery and visualization platforms solve the problem differently, by either connecting directly to the various data sources, or storing data in-memory for analysis and visualization. There are many different types of business intelligence technology, not all of which depend on the business warehouse paradigm. Many new approaches have emerged, and the following section describes the major classes of business intelligence technology.

## The BI Technology Stack

One way to understand the BI market is to think of it as different layers of capabilities with an ever-narrowing set of metrics as we move up the stack from reporting to predictive analytics (see fig. 1).



\*Source: Derived from a graphic by Wayne Eckerson, BI consultant and Expert

Fig 1 – BI Pyramid depicting layers of Business Intelligence capabilities.

- » The reporting layer represents a focus on providing both static and interactive reports to users across the enterprise. For example, an HR executive might want a regular report showing employee churn by department. This is the traditional domain of BI as it is widely understood.
- » The discovery layer represents the activities of skilled analysts who want to query and explore data, and create visualizations on an ad-hoc basis.
- » The dashboard layer is concerned with providing an easy way to visually comprehend key operational tracking data like KPIs and scorecards.
- » The predictive layer represents the highly specialized domain of using large data sets to understand what may happen next, so that organizations can build reliable forecasts.

Some business intelligence tools focus on one layer, whereas others encompass several or all. For example, full-stack platforms like [MicroStrategy](#), [IBM Cognos](#), or [SAP Business Objects](#) support all layers, while [SQL Server Reporting Services](#) and [Actuate](#) are examples of tools that support only the reporting layer. Discovery and visualization tools like [Tableau](#) and [QlikView](#) support only the discovery layer. There are also, of course, specialized dashboard tools like [Domo](#), and predictive analytics tools like [SPSS](#) and [Revolution Analytics R](#).

## Identifying the Right BI Software for Your Use Case

The following table summarizes the different classes of BI software products and their various advantages, disadvantages and best-fit use cases. More details along with ratings by key product in each category are available in the following sections.

TYPE OF TOOL	TRADITIONAL FULL-STACK	CLOUD FULL-STACK	DISCOVERY & VISUALIZATION	DASHBOARDS	PREDICTIVE ANALYTICS
Function	Cover most or all layers of the pyramid including the underlying infrastructure, which involves various kinds of data stores, and Extract, Transform and Load (ETL) technologies. Most vendors have added discovery and visualization capabilities, but not all include predictive capability. The focus of these tools is the provision of detailed, often operational reports, based on thousands of metrics, to users across the organization. These reports describe “what happened.”		Discovery and visualization tools are designed for ad-hoc analysis of multiple data sources and answer the question, “why did it happen?”	Dashboard tools keep your eye on KPIs and scorecards to answer the question, “what’s happening now?”	Predictive tools at the top of the pyramid are used by highly skilled data scientists to answer the question, “what is most likely to happen next?”
Technology	On-premise business warehouse/ ETL (emerging cloud and in-memory visualization models)	Multi-tenant SaaS deployments of full-stack solutions	In-memory, direct connect, some ETL	Presentation layer sitting on top of full-stack solutions	Becoming an integral part of the big data world; new tools being built on R open-source platform
Advantages	Consistent, single source of the truth; enterprise alignment	Relatively inexpensive, fully featured	Quick to build, low cost, powerful strategic insight	At-a-glance comprehension of key metrics. Alerts to exceptions	Accurate forecasting allows for better strategic planning
Disadvantages	Often expensive, very difficult to deploy, and non-intuitive user interface	Some companies not comfortable storing data in cloud.	Not suitable for cross-company reporting infrastructure	Easy to ignore red flags. Training required on appropriate responses	Requires advanced data science skill set
Best For	Enterprise reporting infrastructure deployments with IT governance and oversight	Fast deployments without upfront investments in hardware and infrastructure	Exploration of data sets and building ad-hoc visualizations to share with others	Display of operational metrics like KPIs, scorecards	Forecasting future probabilities based on deep data analysis
Example Products	IBM Cognos, SAP Business Objects, Microsoft BI, MicroStrategy Analytics, SAS Business Intelligence, Teradata	Birst, GoodData	QlikView, Tableau, Tibco Spotfire, EntriSik Informer	iDashboards, Yellowfin	Revolution Analytics R., SPSS, SAS

# The Best Full-Stack BI Software

## Introduction to Full-Stack BI Software

The full-stack BI software category comprises three different product flavors, which are nonetheless comparable to each other as they all endeavor to provide an end-to-end solution to the data challenges described at the beginning of the guide. The three subcategories are:

- » **On-Premise First Full-Stack BI Solutions:** These are products that were usually designed originally as on-premise solutions, although many now also offer cloud versions.
- » **Open Source Full-Stack BI Solutions:** Although these products are all derived from open source projects, many of them are commercial software based on that open source stack.
- » **Cloud Full-Stack BI Solutions:** These are products designed from the outset as cloud products, most of which offer true SaaS multi-tenant software rather than single-tenant cloud deployments on an individual customer basis.

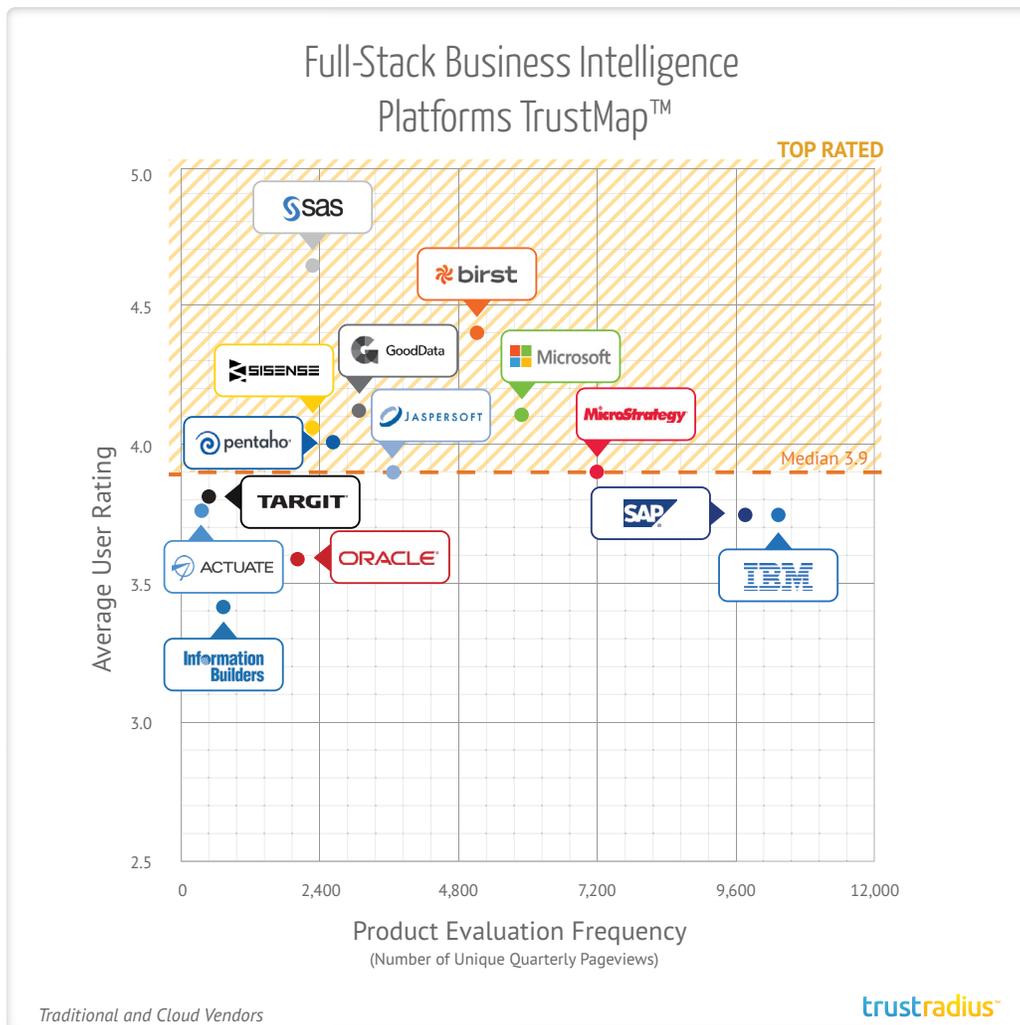
The following TrustMap™ is a graphical representation of the top rated full-stack software including products from all three of these subcategories.

## Full-Stack BI Software TrustMap™

The TrustMap™ is an objective visual depiction of full-stack BI vendors offering the leading solutions in each market segment. We have created the TrustMap™ for all full-stack BI software products on two dimensions:

1. **Average User Ratings:** The average “Likelihood to Recommend” rating - a representation of overall satisfaction - by customers who have written reviews on TrustRadius. All ratings and reviews come from authenticated end-users of the software and the vast majority of reviewers were sourced independently of vendors.
2. **Product Evaluation Frequency:** This metric indicates how often a product is searched, or subsequently evaluated once people land on TrustRadius. It is measured by unique page views on TrustRadius of pages associated with a given product - product descriptions, reviews and comparisons. Products with large installed bases or those experiencing significant growth momentum are evaluated more frequently.

The red dotted line depicts the median user rating. All products above the red line are classified as “Top Rated”. Products further to the right on the graphic are those products that are most frequently searched for on TrustRadius. High search volumes may indicate either positive or negative sentiment – people evaluating a product either to select or replace.



SAS BI is the most highly rated full-stack BI product although the average rating is based upon fewer user reviews than for most other products. Cloud-based products – Birst and GoodData – are also rated very highly, as is Microsoft BI, and relative newcomer Sisense. Microsoft BI’s strong showing is probably a reflection of its very broad range of functionality and relatively low cost.

The following section goes into more depth on the three classes of full-stack BI solutions, as well as individual BI products.

## On-Premise First, Full-Stack BI Software

### Overview

Full-stack BI software solutions take business data from a variety of sources within an organization, as well as external data, and put it into a common data store to make it available for analysis and reporting.

These solutions have a number of key components, although every solution does not necessarily have each component of the stack:

- » **Data warehouse:** A relational database, designed specifically for data analysis instead of standard transactional processing, acts as the conduit between operational data stores and the gaining of insight based on composite data. Slices of data from the warehouse—usually summary data for a single department like sales or finance—are stored in a “data mart” for quicker access. Data warehouses from full-stack vendors are often sold as standalone products that must be integrated with other tools.
- » **Extract, Transform, Load (ETL):** The first important task is to extract the data from the various data sources and load it into a data warehouse where it is normalized (organized into tables while cleaning the data and removing redundancy and inconsistencies). Once it has been appropriately structured it is then available for querying and analysis.
- » **OLAP or ad-hoc query tools:** OLAP (Online Analytical Processing) and its close cousin ROLAP (Relational Online Analytical Processing) allow users to query data across multiple dimensions for building standard reports or enabling users to ask specific business questions.
- » **Presentation layer:** Dashboards, scorecards and reports present all of this data to users in a visually appealing way that is easy to understand.

These BI tools are useful for organizations that wish to deliver relatively stable operational reports in a consistent format to front-line staff across the organization to help them monitor their progress or understand where performance is lagging. The advantage of this kind of enterprise reporting capability is the consistency of the data sets being used across the entire organization, which makes it easy to create alignment. It is notoriously difficult to achieve alignment if there is no common agreement about the accuracy of data, and stakeholders have different sets of data showing contradictory information. This is typically what people mean when they refer to a “single source of the truth.”

However, on-premise first, full-stack BI systems are expensive, difficult to build and implement and often challenging to learn and use. They also lack flexibility and are difficult to change once they have been built. It has been relatively common in recent years for publications and analysts to bemoan the high failure rates for BI projects, and full-stack deployments are often the culprits. Implementation times for these tools can be long, and when they are finally up and running, the ROI can sometimes be lower than expected because of usability problems. However, these tools can provide value to larger organizations with the resources to deploy and manage them, and the deep pockets required to invest in them.

Additionally, many products in this category have started to react to the extreme popularity of newer data discovery and visualization tools by releasing visualization tools of their own:

- » SAP was in a limited release ramp with SAP Lumira for some time and the product is now generally available.
- » MicroStrategy released a free discovery/visualization tool called Analytics Desktop in 2013.
- » IBM Cognos released Cognos Insight in 2012.
- » SAS released Visual Analytics in 2012.

Reviews on TrustRadius indicate that they still lag behind the pure-play visualization vendors in terms of richness of visualization and data blending and, in some cases, scalability.

On-premise first, full-stack BI solutions are best fit for:

- » Organizations whose primary need is for alignment and consistency of data across a very large organization, and the provision of accurate reports to line-of-business managers and operational employees. These tools provide “a single version of the truth” as a basis for decision making across an entire enterprise.
- » Organizations with access to a highly skilled IT division, which includes ETL developers, report developers, data architects, data administrators and –very importantly– corporate trainers (though some newer products that attempt to radically simplify both deployment and usage need far less IT oversight).

**Top Rated On-Premise First, Full-Stack BI Software**

	TOP RATED								
	SAS BI	MICROSOFT BI	SISENSE	MICROSTRATEGY	TARGET	SAP BUSINESS OBJECTS	IBM COGNOS	ORACLE BI	INFORMATION BUILDERS
Likelihood to recommend	9.3	8.1	8.1	7.8	7.7	7.5	7.5	7.3	7.2
Likelihood to renew	9.7	8.5	8.1	7.9	7.7	8.2	8.3	8.4	8.6
Product usability	NA	8.5	9.5	7.5	8.0	8.5	8.0	NA	8.0
Product availability	NA	9.5	NA	NA	NA	8.0	8.8	NA	NA
Product performance	NA	7.0	NA	NA	NA	8.0	8.3	NA	NA
Support rating	10.0	7.5	8.0	10.0	10.0	7.0	7.0	9.0	NA
In-person training	NA	7.0	NA	NA	NA	9.5	8.5	9.0	NA
Online training	NA	8.5	NA	NA	NA	8.0	8.3	NA	NA
Implementation	NA	8.7	10.0	10.0	5.0	7.3	8.3	10.0	8.0
Data sharing/ collaboration	9.0	5.8	8.0	7.0	NA	7.0	4.8	9.0	8.0
Data sources	10.0	5.6	8.5	10.0	NA	8.4	5.3	5.3	8.5
Data visualization	8.0	3.8	9.0	10.0	NA	7.4	2.5	8.0	6.0

Three on-premise first, full-stack solutions are rated above the median for all full-stack BI products - [SAS BI](#), [Microsoft BI](#), and [Sisense](#). Sisense is somewhat different from the other tools; it might best be considered a full-stack ‘big data’ product since it has been designed to handle large volumes of data efficiently and quickly. The following section describes each product in more detail. Products are ordered by their “Likelihood to Recommend” rating.

**SAS BI**

SAS has a multiplicity of offerings and is best known for its high-end statistical analytics product offerings. Analytics is a core component of the BI platform along with the BI server, a data mining tool and a data discovery tool called SAS Visual Analytics. While this is a full-featured platform, reviews indicate that it is difficult to deploy without significant IT assistance and very expensive (common among full-stack BI solutions). It is particularly



effective at combining millions of rows of data from disparate sources into a single interactive report. The inclusion of the SAS statistical analysis software as part of the suite is another plus.

### Microsoft BI

Microsoft BI benefits from the ubiquity of SQL server and the set of tools built around the database, including an ETL layer, master data management, data cleansing, report capabilities and visualization capabilities. This combination of tools is an attractive proposition—particularly given the relatively low price point. The low score for data visualization reflects the fact that SQL Server Reporting Services does not have anything approaching the visualization capabilities of a visualization tool like [Tableau](#). The decision to leverage Excel as the visualization tool is a limiting factor. However, [Power BI for Office 365](#) has done much to improve the discovery and visualization capabilities of Excel.



### Sisense

Sisense attempts to bridge the gap between traditional full-stack BI tools and more modern visualization tools designed to help data analysts create powerful visualizations based on data in order to tell a story. This is very much a full-stack product with a columnar data store, an ETL layer and a set of front-end tools for constructing dashboards and visualizations. Extracted data is stored in a columnar database called an “elasticube.” Sisense has also developed a more advanced form of in-memory technology common to visualization tools, which it refers to as “in-chip technology”—a solution which uses the full capacities of commodity computers’ chipsets, in addition to RAM and disk storage. This removes some of the speed limitations of traditional disk storage and has none of the size limitations of in-memory RAM solutions. One of the big advantages of this platform is that it can process very large volumes of data in the columnar database, and the in-chip memory innovation is fast and efficient. Fast processing can be done on relatively modest hardware.



### MicroStrategy

Like SAS, MicroStrategy is dedicated to this technology space and is still an independent company. The platform differs somewhat from competing platforms in that there is no data warehouse. The platform integrates with a wide range of third-party data warehouses. MicroStrategy also built a free discovery/visualization tool called MicroStrategy Analytics Desktop, which is not completely integrated with the rest of the platform. MicroStrategy has strong mobile and cloud capabilities which are differentiators for the platform. MicroStrategy’s cloud offerings are somewhat different to the pure-play cloud vendors discussed below; they host the software in their own data centers and allow customers to keep their data on-premise to alleviate security concerns.



### Target Decision Suite

Target is an SMB-oriented product and is primarily aimed at Microsoft Dynamics users with many pre-packaged cubes built specifically for the Microsoft Dynamics environment. Most customers use the product for operational reporting - frequently sales and inventory. The platform includes dashboards for KPI tracking, with built-in alerts to notify users when targets are met. The product is relatively simple to use, and is also quite easy to customize. Reviews on TrustRadius indicate that Target provides an adequate reporting platform, but overall satisfaction levels are modest. In particular, charting and graphing capabilities are reportedly lacking.

## **SAP Business Objects**

SAP's Business Objects is one of the dominant full-stack BI software products, and recent acquisitions and internal development have done much to modernize the platform. SAP is finally making major strides in the direction of becoming a cloud company, and has made acquisitions in the cloud application arena with the HR suite Success Factors and business expense tracking product Concur. Business Objects can now also be deployed in the SAP private cloud and is also available on the AWS marketplace. The company has integrated Lumira—their cloud visualization platform—with the core Business Objects suite and also with the predictive analytics capabilities that came with the acquisition of KXEN in 2013. SAP has also seen success with the HANA in-memory, columnar appliance designed to meet the needs of organizations with very large data volumes. The company has expended some effort to make sure that its technology is compatible with the emerging big data platforms like Hadoop and Hive. SAP's Business Objects has an overall "Likelihood to Recommend" score of 7.5 on TrustRadius, and this relatively low score probably does not reflect some recent developments and usability improvements. But this remains a complex system and requires significant IT assistance for successful deployment.

## **IBM Cognos**

IBM Cognos is an established product with a large user base. It is a full-featured platform comprising Query Studio, Reporting Studio, Analysis Studio and Event Studio, along with some newer tools for Microsoft Office integration, full-text search and dashboards. While this technology is effective and very reliable, especially for very large enterprise deployments, TrustRadius reviews indicate that the platform is very expensive and requires a large technical staff to deploy and maintain. However, in September of 2014, IBM launched a limited release of its Watson Analytics platform. Watson Analytics makes a strong entry in the data discovery space by combining the power of Watson's cognitive computing technology with existing predictive analytics capabilities to produce a natural language query engine providing very powerful analytics to ordinary business users without requiring any specialized skills. This technology is still in limited beta so there is little information on how it performs in customer environments, but this is certainly a major new initiative. The importance of the initiative is evidenced by the fact that IBM has built a new business unit around the Watson technology with significant investment behind it.

## **Oracle Business Foundation Suite**

Oracle's Business Intelligence Foundation Suite is also a very complete platform and has a large customer base. It is an attractive technology for Oracle shops already using other Oracle products like the E-Business Suite for which there are a number of pre-built analytics applications. Reviews indicate that its primary use case is the provision of standardized reporting and dashboards, but that there are some usability challenges. This is a very complex platform requiring a strong technical support within the organization to make it all work. The platform includes the Endeca data discovery & search engine technology which provides powerful faceted search capabilities (a combination of navigational and direct search). There are also some CPM capabilities provided through the Essbase technology that Oracle acquired from Hyperion in 2007.

## **Information Builders**

Information Builders is a reporting and dashboard platform that is particularly strong in the area of data integration. The WebFOCUS platform provides dashboards and scorecards, ad-hoc data exploration and strong parameterized report building capabilities with triggered automatic distribution. WebFOCUS is integrated with iWay data quality and master data management tools, which is a unique differentiator. TrustRadius reviews comment on the ease of data ingestion from other systems like SAP and Salesforce.

# Open Source Full-Stack BI Software

## Overview

A primary reason for choosing open source BI software is often perceived cost. Commercial BI tools are still largely seen as having superior technology, while open source tools are viewed as offering “good enough” technology at a fraction of the price. But although download of the software can be completely free, large-scale open source deployments can still turn out to be a significant investment when factoring development costs. Also, there are often commercial versions of the products offering capabilities that the core free product does not. These typically include enterprise-level features like integrated security, connectivity to multiple data sources, administration tools, etc.

It is also important to bear in mind that these are developer-led tools designed with a developer mindset, which often means that significant development resources will be required to deploy and integrate them into an existing corporate environment.

There has been some renewed interest in open source BI tools, partly fueled by the extraordinary success of products like Hadoop and Revolution Analytics R, which has raised awareness of the open source approach.

## Top Rated Open Source Based Full-stack BI Software

	TOP RATED		
	PENTAHO	JASPERSOFT	ACTUATE
Likelihood to recommend	8.0	7.8	7.6
Likelihood to renew	8.9	8.3	6.9
Product usability	5.0	NA	NA
Product availability	NA	NA	NA
Product performance	NA	NA	NA
Support rating	8.0	7.0	10.0
In-person training	NA	9.0	NA
Online training	NA	NA	NA
Implementation	5.0	9.0	NA
Data sharing/collaboration	6.7	NA	4.3
Data sources	9.3	NA	7.3
Data visualization	6.3	NA	5.2

### Pentaho

Pentaho is an open source solution with very strong ETL and data integration capabilities. In addition, it provides OLAP processing, visualization, advanced predictive capabilities, and also allows for integration with Hadoop. All of these capabilities are based on the open source community edition, but the enterprise version is commercial software. Reviews on TrustRadius indicate that the product has very strong ETL and data integration capabilities, but support can be haphazard and there are inconsistencies in the look and feel across different modules. It can be difficult to find developer resources with Pentaho expertise.



## Jaspersoft

Jaspersoft was acquired by Tibco in April 2014 and complements Tibco Spotfire's data discovery and visualization capabilities by offering a pixel-perfect reporting engine and embeddable analytics. While Jaspersoft's core offering is the reporting engine, the platform also includes a server product which functions as the data repository and ETL and data integration capabilities through an OEM arrangement with Talend. Like other open source products, Jaspersoft requires technical resources to properly deploy and maintain. Jaspersoft reviews on TrustRadius indicate high levels of satisfaction with the ad-hoc reporting capabilities and the ease of creating pixel-perfect reports. The ETL capabilities also work well. As is typical of open source systems, complaints are focused on the quality of support and the difficulty of installing and managing the software.



## Actuate

Actuate founded and leads the BIRT open source BI project. Although the Actuate platform is built on the free open source Eclipse technology, most of the product offerings are actually commercial products. For example, BIRT Designer has a basic free version and a more sophisticated paid version; iDashboards, an ad-hoc dashboard tool, and a predictive analytics tool called BIRT Analytics are both commercial products. The platform provides a columnar database, algorithms allowing data to be visualized graphically and a reporting engine for pixel-perfect report creation and distribution. Reviews on TrustRadius indicate that while the platform is very powerful, allowing users to create their own procedures and methods, this is an IT-centric platform that requires significant development support.

## Cloud Full-Stack BI Software

### Overview

Cloud full-stack BI products are a subset of full-stack BI software. They tend to include a data store, an ETL and semantic layer, and a range of front-end presentation tools sitting on top. The difference is largely in the deployment model (cloud versus on-premise). However, it makes sense to consider these solutions independently since they have some unique characteristics. For example, they are far easier to deploy and do not require nearly as much IT oversight as traditional full-stack BI products.

Increasingly, traditional full-stack BI providers are offering cloud versions, but most are single tenant, i.e., a single instance of the software supporting a single customer. Cloud-only, full-stack BI products like Birst and GoodData are true multi-tenant SaaS products deployed on public clouds, and offer all the advantages of true SaaS products - lower cost, frequent updates and no data center infrastructure required.

Cloud BI has been talked up as the next big thing in the BI world for some time now, but adoption has been slower than expectations. Pure-play cloud products control less than 3% of the BI market by revenue<sup>1</sup> and approximately 7% of BI product evaluations on TrustRadius (as measured by unique page views). One of the major obstacles has been concern over data security—corporations have been reluctant to store sensitive data in the cloud. However, as more operational data is located in the cloud, as cloud-based operational systems like [Salesforce](#), [NetSuite](#), [Zendesk](#), [SuccessFactors](#) and a multitude of others become ubiquitous, we expect adoption rates to increase.

<sup>1</sup> SAP and GoodData vendor interviews



*“Once companies move their operational applications to the cloud, analytical applications soon follow.”*

Wayne Eckerson, BI consultant and expert

The two largest and best known cloud BI tools are [Birst](#) and [GoodData](#). Both products can be thought of as full-stack solutions with a SaaS cloud deployment model.

Additionally, the big two cloud vendors - just like their full-stack brethren – have been scrambling to build discovery and visualization functionality to meet the formidable threat posed by Tableau and Qlik. Birst is investing heavily in its new Visualizer tool, and GoodData has also built a visualization engine called Scatter Explorer.

Cloud full-stack BI solutions are best fit for:

- » Organizations that have come from the Internet world and have been using SaaS applications like Salesforce and SuccessFactors to run their businesses. These organizations are likely to have fewer security concerns around storing their data in the cloud.
- » Organizations of all sizes that want an agile, easier to deploy, less IT-centric version of the full-stack products allowing “single version of the truth” reporting across a department or a whole company.
- » Smaller organizations with a limited budget that want a fully-featured system at far lower cost due to the absence of any capital outlay for on-premise infrastructure.

#### UNDERSTANDING CLOUD DEPLOYMENT MODELS

The fact that cloud BI is an alternative to on-premise solutions that are run in a company's data center on their own hardware is readily understood.

However, there is often some confusion about the three different cloud deployment models. Public cloud BI usually means the classic multi-tenant Software-as-a-Service model where many customers share a vendor's infrastructure to access and use the software. Private cloud is where the services and infrastructure are maintained on a private network. Essentially, the customer utilizes its own software on its own premises, but deploys it to a cloud, which they manage. The predominant model in BI is a hybrid solution where, for example, CRM data deployed in the public cloud is combined with on-premise data and the combined data is analyzed in a private cloud.

Another important development is the emergence of Platform-as-a-Service (PaaS) solutions like Amazon Web Services. The recent launch of a massively parallel processing cloud data warehouse system called Redshift provides a highly scalable platform at a very affordable price. This technology has already proved very attractive to some vendors like MicroStrategy and Yellowfin BI, which host their software on this platform. Birst also offers options to host in AWS or their Public Cloud and to embed Redshift as an integrated data warehouse.

## Top Rated Cloud Full-stack BI Software

	TOP RATED	
	BIRST	GOODDATA
Likelihood to recommend	8.8	8.2
Likelihood to renew	8.9	8.8
Product usability	8.3	9.5
Product availability	9.3	8.5
Product performance	8.0	9.0
Support rating	8.3	9.0
In-person training	9.3	9.0
Online training	8.0	8.0
Implementation	8.0	9.0
Data sharing/collaboration	NA	7.3
Data sources	NA	8.5
Data visualization	NA	8.5

Both of the leading products in this subcategory are highly rated and compete more actively with the visualization vendors like Tableau than they do with each other, as evidenced by [frequency of comparison on TrustRadius](#). Birst, for example, is compared to Tableau 46% of the time, and to GoodData only 14% of the time.

### Birst

Birst provides a cloud-based platform for business intelligence with a range of functionality matching more traditional on-premise vendors and includes a user-ready columnar data tier that plugs into enterprise data warehouses and other data stores, or allows users to query the data directly on premise. The BI layer comprises enterprise reporting, predictive analytics, dashboards, and mobile analytics. Birst can be deployed in a public Cloud, AWS, or on-premise through the Birst appliance. The company also announced a partnership with SAP in September, which will allow Birst customers to use the cloud version of SAP's HANA in-memory, columnar database, and will also allow SAP customers to leverage the Birst platform for data analysis. Birst also offers a range of pre-built accelerators to SFDC, Marketo, Google Analytics, Marketo, NetSuite, and others.

Additionally, 30% of Birst's business is what they call "embedded". In other words, other cloud software vendors like Autodesk, OpenText and CBS Interactive are embedding Birst in their own applications. These vendors have a customer base that has already long bought into the cloud concept, and which is quite comfortable with the idea of an additional BI product as a component of the core offering.



## GoodData

GoodData operates completely in the cloud, and does not provide support for an on-premise appliance solution. This means that data for every customer lives on the platform, which makes provisioning of new features and optimization tuning easier. It is built on a familiar platform including the Vertica columnar database capable of handling both structured and unstructured data, and an ETL layer. Downstream, there are both reporting and visualization capabilities. GoodData, although it does not deploy its software on an appliance like Birst, has adopted an embedded strategy, with a full 50% of its business falling into this category. The company has several hundred OEM customers including, most notably, Zendesk and other well-known names like Service Channel, AutoPilot and GetSatisfaction.



GoodData is particularly strong in the sales and marketing areas with integrations to a variety of business applications. The product has strong capabilities for analyzing social data including Twitter, Facebook, Pinterest and Google+. GoodData customers most often integrate the product with a web analytics platform (usually Google Analytics), a CRM (usually Salesforce.com) and a marketing automation system.

### Other cloud vendors to watch:

- » [Domo](#) is a relative newcomer founded in 2010, and is a hot company generating lots of press and industry attention. So far though, the company itself has kept fairly low key. Details of their technology are kept secret and customers sign a non-disclosure agreement, so little is known about the product itself.
- » [Tidemark](#) is also a new company founded in 2010 with a corporate performance management-oriented product that can pull structured and unstructured data into a SaaS environment and generates apps and infographics to tell a story using a company's financial data.
- » [BIME](#) was founded in 2009 in France and is a lower-cost cloud option. The company boasts some larger clients like Greenpeace and Shell Oil.
- » Salesforce announced Salesforce Wave at Dreamforce in October 2014. Wave is essentially a visualization tool for displaying Salesforce data in engaging ways and is the first iteration of an Analytics Cloud. The technology is based on a product called EdgeSpring that Salesforce acquired in 2013. The company is partnering with companies like Lattice Engines and [C9](#) for predictive capabilities.

# The Best Data Discovery & Visualization Software

## Overview

Data discovery and visualization tools like [Tableau](#), [QlikView](#) and [Tibco Spotfire](#) are designed for data analysts and more technical business users. The focus of these tools is not primarily reporting and monitoring, but rather ad-hoc analysis of multiple data sources. They provide data analysts with an intuitive way to sift through large volumes of disparate data to expose patterns and outliers hidden in the data. They replace the traditional rows and columns of traditional data presentations with graphical pictures and charts.

These tools have taken the BI world by storm, largely because of the low cost of implementation and because they don't require IT support; ease of use is another key feature encouraging rapid adoption. They allow end users with some comfort level in data analysis to access multiple data sources, perform data mashups and display the results in visually compelling ways. For example, a company might produce a visualization of expenses by department across a large enterprise to help hone in on outliers and figure out possible reasons for the disparity.

The huge success that these tools have seen in the marketplace has not gone unnoticed. Almost all of the traditional, full-stack vendors have responded with data discovery and visualization tools of their own.

The question of whether pure-play data visualization tools like [QlikView](#) and [Tableau](#) can replace more enterprise full-stack solutions across the enterprise is a frequent topic of discussion. BI experts like Wayne Eckerson argue that while these newer technologies don't do everything, their biggest customers are pulling them in the direction of offering comprehensive suites. They will inevitably be compelled to move from being used primarily by individual analysts to departments and eventually to enterprises, and they will change and become less agile in the process. Some evidence of this inevitable drift can be seen in Tableau's recent Tableau Drive initiative, which is a series of best practices designed to help IT staff manage data architecture and governance issues as the product is used across an organization. Today though, companies

## IN-MEMORY COMPUTING

An important technology that has fueled the growth of data discovery and visualization is "in-memory computing". In a traditional data warehouse/ETL model, data is stored on disk and has to be retrieved by the BI system when a query is run. But retrieving data from disk storage is the slowest part of data processing. Data cubes and aggregate tables speed things up by making it possible to retrieve subsets of the data. But in-memory data does away with the retrieval step completely. All the relevant data is loaded into RAM and does not have to be accessed from disk. The speed improvement can be dramatic - around three orders of magnitude faster. This allows analysts to see and explore the data in detail rather than having to interact with high-level aggregated views of the data. One disadvantage, of course, is that with increasing numbers of users and data volumes, the amount of RAM needed also increases along with cost.

However, it would be a mistake to think that these data discovery tools are the only ones leveraging in-memory technology. Traditional full-stack vendors like [MicroStrategy](#) and [SAP](#) use versions of this technology in conjunction with more traditional OLAP architectures—so-called hybrid models—to speed up reporting. [SAP](#), for example, has had great success with the HANA in-memory computing platform.

tend to use multiple tools and are unlikely to standardize on a single product. Large companies might use a full-stack solution like SAP Business Objects to provide operational reporting across the enterprise, while individual departments frustrated with the corporate solution might bring in a cloud system like Birst. And virtually every organization has some number of analysts using a completely separate data discovery and visualization tool like Tableau or QlikView.

Data Discovery & Visualization tools are best fit for:

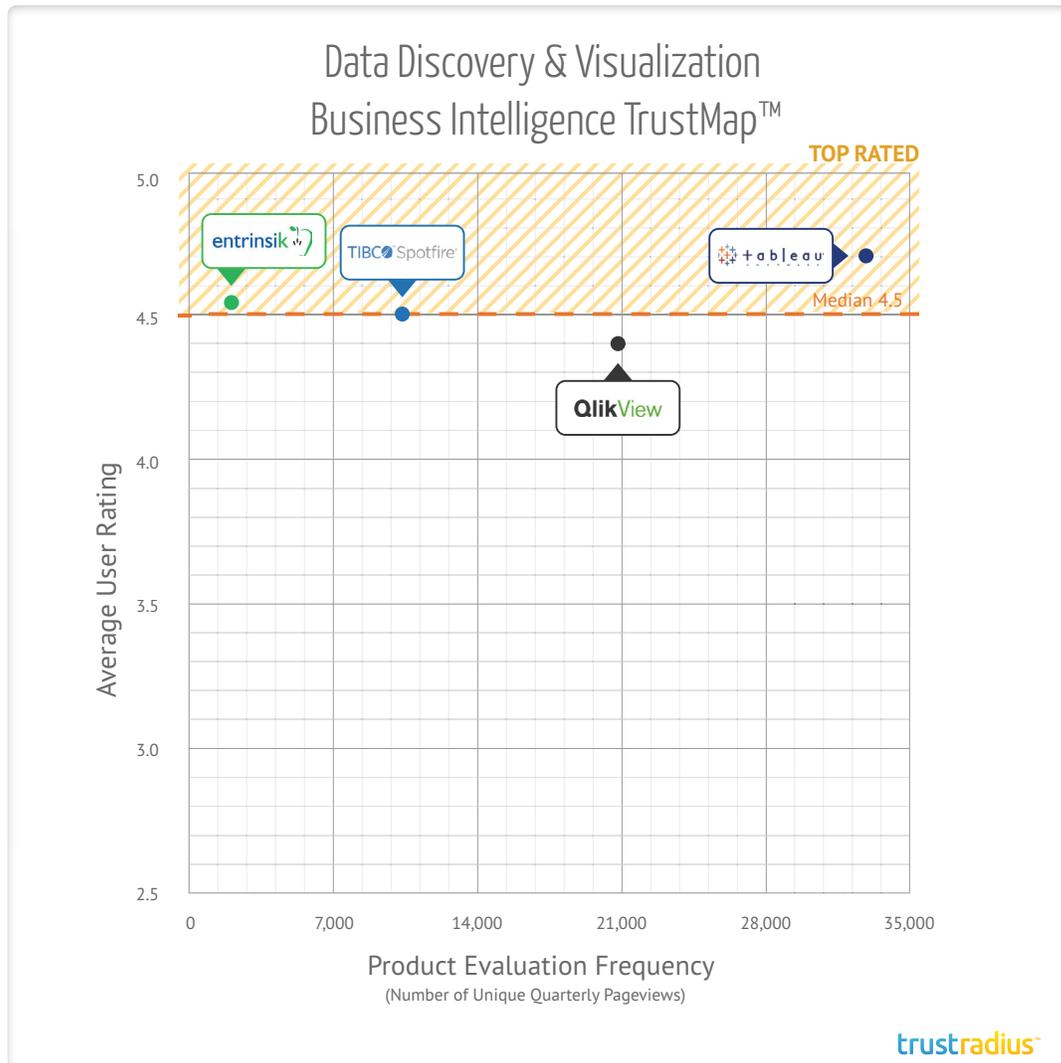
- » Business analysts requiring access to data from disparate systems, and the ability to blend the data with no required IT assistance, and produce visually compelling images to understand the data and tell a story.
- » These are *not* the right tools for providing a reporting infrastructure across an entire company and very few companies use these tools as their corporate BI standard, but it is also rare for at least one of these tools not be used at an individual or departmental level.

## Data Discovery and Visualization Software TrustMap™

The TrustMap™ is an objective visual depiction of the leading solutions in a market segment. We have created the TrustMap™ on two dimensions:

1. **Average User Ratings:** The average “Likelihood to Recommend” rating - a representation of overall satisfaction - from customers who have written reviews on TrustRadius. All ratings and reviews come from authenticated end-users of the software, the vast majority of whom were sourced independently of vendors.
2. **Product Evaluation Frequency:** Measured by unique page views on TrustRadius. This metric is associated with how often a product is searched, or subsequently compared once people land on TrustRadius. Companies with large installed bases, or companies that are experiencing significant growth momentum tend to be more frequently evaluated.

The red dotted line is the median average user rating. Products above this line are classified as “Top Rated”. Products further to the right on the TrustMap™ are most frequently searched for on TrustRadius. High search volumes may indicate positive or negative sentiment - in consideration for selection or replacement.



## Top Rated Data Discovery & Visualization Software

	TOP RATED				
	TABLEAU DESKTOP	TABLEAU SERVER	ENTRINSIK INFORMER	TIBCO SPOTFIRE	QLIKVIEW
Likelihood to recommend	9.4	9.2	9.1	9.0	8.8
Likelihood to renew	9.6	9.6	9.3	8.8	8.7
Product usability	9.4	8.9	9.0	8.3	9.0
Product availability	9.9	9.3	NA	9.1	10.0
Product performance	8.9	8.3	NA	8.7	10.0
Support rating	9.4	8.8	8.8	7.7	7.3
In-person training	9.0	8.3	NA	8.3	NA
Online training	9.7	9.3	NA	7.6	9.0
Implementation	9.2	8.7	9.5	8.5	9.0
Data sharing/collaboration	6.8	NA	8.5	10.0	5.7
Data sources	8.8	NA	8.5	10.0	9.3
Data visualization	9.5	8.7	4.0	9.0	8.7

Tableau stands out as the highest rated product in this category, but all of these products are very highly rated and the differences between the user ratings are nominal. Since these products have been designed to do a smaller number of things very well, they tend to get significantly higher ratings than full-stack products. Additionally, even within this category, all products are not the same. QlikView and Spotfire are more specialized products with higher technical skill levels required by users. Entrinsik Informer is highly differentiated in terms of both technology and vertical focus.

### Tableau

The most frequently made comment about Tableau is how radically easy the product is to learn and use. Tableau allows analysts to connect to a wide variety of data sources at the click of a button and build attractive and useful visualizations. Tableau allows for direct connect or “live” connection to specific data sources as well as in-memory technology. Indeed, Tableau originally only offered direct connect. Connecting directly to the database can be very effective if the database is a very fast one like Vertica or Teradata. However, downloading the data and using the local machine’s RAM for processing (in-memory) is essential for slower databases, or if you want to work offline. There are two main product offerings - Tableau Desktop and Tableau Server. Tableau Desktop is the core product providing the tools to build visualizations. Once they are published to Server, they can be shared across the organization. Ratings for Tableau Server are similar but slightly lower with a “Likelihood to recommend” score of 9.2.



### Entrinsik Informer

Entrinsik's Informer is used by customers in a variety of industries where there is a strong need to manage large volumes of operational data. Typical customers have limited IT support and a relatively non-technical user base. The product initially focused on MultiValue databases and became the principal vendor in this space but now supports SQL as well. Informer is particularly pervasive in community colleges and universities, and is very highly rated on TrustRadius.



### Tibco Spotfire

Tibco's Spotfire has taken a different approach to Tableau in terms of target audience. The tool is capable of processing very large data volumes and includes a predictive analytics component, so it tends to be used by data scientists in data-intensive industries like life science research and financial organizations.



### QlikView

QlikView competes directly with Tableau, particularly with the recent release of its new product Qlik Sense, which is designed specifically with the business manager in mind. QlikView is a more technical product with a full ETL layer, and it requires some development effort to create the data model and layout before the visualization can be shared with business. The new product is designed to work more like Tableau; the user is free to create layouts and visualizations without input from a developer.

### Other Data Discovery & Visualization vendors to watch:

The following tools are not included in the TrustMaps™ because they don't have enough reviews on TrustRadius.

- » [Chartio](#) is a data visualization tool aimed at startups and small organizations that want an easy and inexpensive way to visualize their data.
- » [Looker](#) was launched in 2012 and is based on a newer technology set. Unlike Tableau, it is designed to run SQL queries against ultra-fast columnar databases. The product is less a visualization tool like Tableau, and is more focused on tabular data. The metaphor is closer to a spreadsheet.

# Other BI Software Categories

## Dashboards

### Overview

Dashboards are similar to visualization tools, in that they provide easy-to-understand graphical presentations of data. But their purpose and user base are different. The primary goal of visualization tools like Tableau and QlikView is to allow data analysts to explore large data sets to discover patterns through visual analysis. Dashboards are designed to allow monitoring of a number of key metrics to ensure that everything is going to plan. They are really Corporate Performance Management tools that measure progress towards key performance metrics and overall organizational performance. Dashboards are all about measuring performance and providing real-time data to managers to ensure that KPIs are met. Related to this are scorecards, which monitor overall progress for executive staff. Most full-stack BI tools allow companies to build their own dashboards, but a number of pure-play dashboard tools exist, some of which are surprisingly sophisticated in their range of capabilities.



### Dashboard Software

Reviews of [iDashboards](#) on TrustRadius indicate that the product has excellent graphic elements and chart types, but requires technical assistance to set up and does not easily connect to application data sources like CRMs.

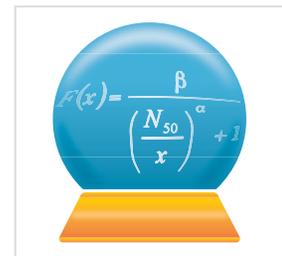
Other significant vendors in this category include:

- » [Dundas](#) has been selling its Dashboard product since 2010, and it unifies data visualization with dashboard design. It is based on Microsoft Silverlight technology and integrates particularly well with the Microsoft BI stack.
- » [Yellowfin](#) is an emerging dashboard vendor that is particularly focused on creating mobile dashboards.

## Predictive Analytics

### Overview

The distinction between Business Intelligence and Predictive Analytics is that BI is usually considered descriptive, i.e., looking at what happened in the past to understand business drivers, while predictive analysis is about finding hidden patterns in data using complex mathematical models to predict future outcomes. The emergence of big data platforms like Hadoop—used for processing enormous quantities of data to find patterns—and very fast in-memory analytics products has resulted in some blurring of the lines between big data and predictive analytics.



Increasingly, BI vendors are entering the predictive analytics space either through development or acquisition. For example, IBM acquired SPSS in 2009 and has integrated this technology with the Cognos BI product suite. Information Builders has built its own predictive product based on Revolution Analytics R, and Netezza is building predictive capabilities directly into its data warehouse. SAS has gone in the opposite direction and has built BI capabilities into its predictive analytics suite. SAP's 2013 acquisition of KXEN, a predictive analytics tool, and its subsequent integration with the SAP visualization tool Lumira and the rest of the Business Objects Suite, is the most recent example of this phenomenon.

The major issue with predictive analytics software is that, although very powerful, these products are extremely complex and require people with a very advanced skill set to use them. The talent pool of data scientists with the requisite skill set is very small, which means that customers often struggle to use them fully. This dearth of data science talent has resulted in a major push to make these tools usable by less skilled staff – perhaps someone with a degree in computer science rather than a PhD in computational and data sciences.

### Predictive Analytics Software

Mindshare in the predictive analytics space used to be owned by SAS and SPSS (which was acquired by IBM in 2009). Other well-known platforms are KXEN (now part of SAP), Tibco Analytics and StatSoft, which was acquired by Dell in March 2014.

Lattice Engines, founded in 2006, focuses on predictive sales and marketing analytics and very recently announced a partnership with the new Salesforce Wave platform.

The company that has grabbed all the mindshare of late though is Revolution Analytics and their open source software, R. This product has become so central to the new BI/Big Data landscape that more than two million people now use R, and it is the highest paid IT skill, and the most used data science language after SQL.<sup>2</sup> Why all this frenetic interest in R? The answer is that R is a free analytics engine that can be easily embedded in big data platforms. Instead of bringing the data to the analytics platform, it's the other way around. The predictive engine is embedded in the data store or other BI technology component. It's very easy to build on, with over 5,000 packages to extend functionality, and it has very strong data visualization capabilities built-in.

## Corporate Performance Management

### Overview

Corporate Performance Management (CPM) is a discipline closely related to Business Intelligence. BI is focused on gathering and processing disparate data and presenting it in an easy to digest form like a report, visualization or a dashboard. However, just reporting and displaying data is not linked to an organization's strategy. It does not include any mechanisms for planning, controlling or managing towards



<sup>2</sup> <http://blog.revolutionanalytics.com/r-is-hot/>

business objectives or KPIs. CPM is all about leveraging the data provided by BI to guide the organization towards its objectives. The KPIs and scorecards that are the end point of BI systems are the starting point of CPM, which links those metrics to the strategic goals of the organization. This is a process-oriented set of tasks that involves financial activities like budgeting, planning and forecasting. Other key capabilities of CPM products are profitability modeling, financial consolidation, and statutory and financial reporting.

### Corporate Performance Management/BI Software

These domains are highly complementary and there are already a number of hybrid tools with combined BI and CPM functionality, such as:

- » Arcplan
- » Board International
- » Prognoz
- » Bitam
- » Host Analytics

Pure-play CPM tools really fall into a separate category and are not covered in this guide. The major enterprise software vendors such as Oracle, SAP, SAS and IBM all sell CPM suites, many of which, notably IBM's TM1, are integrated into their existing BI offerings.

[Adaptive Insights](#) and [Anaplan](#) are two powerhouse pure-play multi-tenant SaaS CPM vendors, but Adaptive has now broadened its scope by adding business intelligence capabilities with the acquisition of BI vendor MyDials in 2012. MyDials is a cloud-based data visualization tool, and this acquisition allows Adaptive to provide self-service data discovery and visualization tools to their customers, who are usually finance executives and analysts. The company changed its name from Adaptive Planning to Adaptive Insights to reflect this broader range of offerings, and their BI tool has been re-named Adaptive Discovery.

Adaptive Planning is highly rated on TrustRadius with 19 reviews and a high "Likelihood to Recommend" rating of 9.4.

Anaplan is a true cloud-based CPM platform for large enterprises and competes directly with IBM, SAP and other enterprise CPM platforms.

## Big Data

### Overview

The topic of Big Data has produced much ink and discussion over the last couple of years, but it's not all talk and hype. The big data explosion has resulted in some impressive new technology from emerging companies, and also from the established BI vendors determined not to be eclipsed. It's still in its early days, but many major organizations like UPS, Morgan Stanley and Amazon have invested heavily in this new technology and have achieved excellent results already.



We now routinely collect huge volumes of data as a direct result of Internet and information technologies that have emerged over the last few years. The problem that Big Data technology vendors are trying to solve is how to actually use this data to improve business outcomes. Terabytes of digital information are collected from actual physical devices like sensors and machines, along with human-sourced communications like text, images and videos. Most existing BI systems cannot easily comprehend this kind of data, as they have been designed to make sense of highly structured data organized in tables and stored in a data warehouse. That leaves a vast quantity of potentially very useful data out in the cold. This is the driver behind the rapid ascension of the Hadoop and noSQL data stores like MongoDB and Cassandra, and the constellation of products that have developed around them.

### What is Hadoop?

Hadoop is a very unusual kind of open-source data store from Apache. The whole idea of Hadoop is that data is spread across many commodity, inexpensive servers, although there are several commercial distributions of Hadoop from Cloudera and Hortonworks who wrap services around the technology.

Unlike a traditional database, Hadoop can handle huge volumes of both structured and unstructured data including log files, streaming data, images, audio and video files. All of this data can be put into the Hadoop cluster and accessed, modified and processed in place, eliminating the need to duplicate and structure data in a traditional warehouse.

Once this huge volume of structured and unstructured data has been stored, how do you extract any value from it? Since Hadoop is not a structured database, structured query languages like SQL do not work. But Hadoop has its own data processing and query framework called MapReduce. Developers can use MapReduce to write programs that can retrieve whatever data is needed. However, MapReduce has several constraints affecting performance and a newer product like Apache Spark provides an alternative distributed computing framework, which is significantly more efficient. Similarly, products like Hive and Cloudera Impala provide a SQL-like query language, which is much easier for data analysts to learn and use.

### How is it being used?

Big data has moved far beyond the theoretical, and is now a reality within many major corporations. For example, UPS spends more than \$1 billion a year gathering massive volumes of data from its truck fleet to discover the best delivery routes. Morgan Stanley no longer does portfolio analysis on traditional SQL databases, but instead uses Hadoop to analyze investments on a larger scale and with better results. Amazon uses a very large number of Hadoop clusters to run their business, including supporting their affiliate network, risk management efforts and website updates.

### Big Data-related tools on TrustRadius

Today many of the products listed in this guide are scrambling to achieve interoperability with the Hadoop environment. An entire set of big data tools has emerged to simplify access to data stored in Hadoop or make it more SQL-friendly. [Datameer](#) and [Alteryx](#) are two products reviewed on TrustRadius that fit into this category.

### **Datameer**

Datameer is a product that provides user-friendly, Excel-like analytics on top of Hadoop and masks some of the complexity of the MapReduce paradigm from users. The value proposition of this product is that you don't have to be a data scientist to use it, as it overcomes Hadoop's complexity by providing a GUI interface with around 200 pre-built functions for analytics and data visualization. This product has mixed reviews on TrustRadius with a "Likelihood to Recommend" score of 7.1.

### **Alteryx**

Alteryx is designed to make it easy to blend data from Hadoop and noSQL big data stores with more traditional, structured data in SQL-based data warehouses and spreadsheets. It is a self-service product designed for business users but—unusually—focuses on back-end data blending and data modeling; it looks much like an ETL layer except that it does not require any programming. Alteryx uses a drag-and-drop metaphor allowing business users to blend data from multiple sources before staging it for visualization in another tool like Tableau or QlikView. In fact, Alteryx has partnerships with both companies. The platform is actually built on top of the R statistical programming language and offers powerful predictive capability as an additional component. [Alteryx](#) is rated very highly on TrustRadius, with 14 reviews and "Likelihood to Recommend" score of 9.1.

# How to Buy Business Intelligence Software

There are a number of steps to completing a successful BI purchase and implementation:

- 1. Don't get hung-up on the technology too early. It's about understanding the business problem and having the right people and processes.**

Buying a BI solution is a complex undertaking, not just because of the large number of options available, but also because there are many different kinds of products designed to do very different things. But the technology is not the most important thing. All of the experts we interviewed for this guide were unanimous: Don't start with the technology!



*"Successful BI implementations are not just about tools, but are about people and processes. Focusing too soon on tool selection is not going to provide the best result. A BI project is not a one-shot thing, but is a journey that takes time and patience."*

Wayne Eckerson, BI consultant and Expert



*"It's rarely about the technology. It's more around people and processes and scoping and managing projects properly. It's very important to start with the business and work backwards."*

John Onder, Principal CBIG Consulting



*"The important thing to remember is that it's usually not about tools, and is more likely to be about organizational maturity and the ability to get decisions made and get things done. Many organizations I encounter are somewhat internally dysfunctional and this ability to get things done is weak or even non-existent."*

Barry Devlin, BI Consultant, Author, Speaker



*"It's about more than just the technology. You can implement a solution but if people can't take action or use the product to make progress in their job, then they don't use it and the project fails due to lack of adoption."*

Lyndsay Wise, BI Industry Analyst, President Wise Analytics

If people and processes are more important than the technology, what kind of people and processes should be put in place? The following sections discuss the important of nominating an executive-level project sponsor and functional business leaders and the role of IT. However, there are some key success factors that are common to all successful BI projects. For example:

- » Create a business plan outlining the business problems to be solved and the expected benefits
- » Derived from the business plan, build a simple step action plan and outline each step clearly
- » Build a project team with all the appropriate stakeholders from business and IT
- » Establish clear success criteria

## 2. Find an executive sponsor

Perhaps the most important first step is to secure executive sponsorship with enough clout in the organization to telegraph the seriousness with which the organization is approaching the project. This is the most important overall factor.



*“Very often, organizations don’t invest in the right people with the right knowledge and experience to know how to fit everything together. You need a very strong program manager, but also people who understand how to work cross-functionally. Having the right sponsorship from the business side is essential.”*

Wayne Eckerson, BI consultant and Expert



*“To succeed, BI projects need a strong leader who is knowledgeable about both technology and business and can straddle both worlds, translating between the two. Since the ultimate goal is to achieve significant business value, it’s usually better to have a technically-oriented business executive lead the team.”*

John Onder, Principal CBIG Consulting

## 3. Business should lead; IT should play a consultative role

Procuring a BI solution is a business decision. Only the business really understands the problems to be solved and the value that new technology can bring to the organization. Buying BI technology should never be an IT-only decision and this is something that needs to be made very clear from the start.



*"I draw a distinction between who should drive and who is usually driving when I get there! There is no question that a major project should always be driven by a high level executive on the business side; Either a CEO, or some direct report, who can take a cross-enterprise view. The reality is that IT is often reluctantly in the driving seat, and trying to get out of it as fast as they can. I try to transition leadership from IT and get the business people to step up to their responsibilities. IT is a co-owner in a process like this, but should not drive."*

Barry Devlin, BI consultant, author and speaker



*"BI projects should be driven by business. If they are driven by IT, there will be significant struggles. Speed of delivery is critically important. Often things will go on for far too long. A good idea is a hybrid agile approach where you mock things up and show the businesses how data can solve their problems... it's really very important to do this kind of rapid prototyping. The applications side of things is owned by business. The IT group is the curator and keeper of the data."*

John Onder, Principal CBIG Consulting



*"Business users might want something not realizing that it will take six to nine months to implement rather than if they had chosen something else. IT usually prefers to choose something that fits into the already existing technology stack, and tends to be less interested in business requirements."*

Lyndsay Wise, BI industry analyst and President, Wise Analytics

#### 4. Focus on ease-of-use

BI tools can be notoriously difficult to use and it's important to understand the range of user types that will be using the software. The largest number of users are likely to be relatively non-technical executives, operations staff or salespeople who need the ability to monitor metrics, analyze anomalies and drill down to see details. A far smaller number will be technical users like data analysts or even highly-trained data scientists and modelers who really want to be able to explore large data sets. It's important to understand the abilities of your users and to not overestimate the abilities of the largest part of the user population.



*"[Organizations struggle and fail] because the technology is often hard to use, and they have not done proper due diligence around the products they have invested in. But also organizations struggle because they are so tied to the technology investments they have already made. They don't want to rip and replace what they already have. They are trying to upgrade what they are already using and get the performance that they need. Sometimes they need something newer which is more flexible."*

Lyndsay Wise, BI industry analyst and President, Wise Analytics

## 5. Start small and get a quick win

It's critically important not to try to boil the ocean, but tackle a small bounded product and show some quick results. For example, if executives from different departments cannot agree on sales numbers because they have different definitions of "product" and are working from different spreadsheets, agree to track a couple of metrics to help solve that problem. Early success of this kind is the best way to build confidence in the program and ensure continued buy-in.



*"It's critical to get a quick win. Find a project of significant value to the business and deliver it quickly. Once the business gains confidence in the technical team, it will eagerly invest in additional projects. With momentum, the technical team can then lay the foundation for an enterprise-wide program."*

Wayne Eckerson, BI consultant and expert

# BI Software Market Dynamics and Trends

Business Intelligence software is a large and rapidly evolving marketplace. This guide has focused on the shift that has been underway for a number of years as spending moves away from report-centric, IT-led deployments to discovery-centric purchases by business units. The emergence of data discovery and visualization tools that enable business units to solve specific business problems, as well as the emergence of cloud BI, have started to contest the position of the enterprise BI platform vendors—who are now fast followers of these trends. The major enterprise vendors like Cognos and SAP are releasing their own cloud and discovery products in response to this shift.

But just as important is the embryonic field of big data, which is poised to disrupt the BI market a great deal more in the coming years. Much of the excitement around big data has been futuristic and speculative, and there is no shortage of discussions about “the internet of things” and the massive proliferation of data as more and more physical devices are connected to the Internet. But it would be a mistake to dismiss this as hype. The open-source Hadoop database, designed for storing unstructured data, has already created a technology ecosystem around it, which has developed largely independently of the traditional vendors who are now rushing to integrate this technology. IDC predicts that the big data market will grow at 26.2% compound annual growth through 2018 to reach \$41.52 billion.<sup>3</sup>

One of the most obvious indications of renewed interest in the BI arena is the sheer quantity of new entrants challenging the incumbents with newer, often more user-friendly technology, and also with the amount of capital being raised by these new entrants:

- » Domo, founded by the ex-CEO of Omniture, raised \$125m in February of 2014.
- » New entrant ThoughtSpot raised \$30m in a series B in June 2014. The product is not generally available yet.
- » New entrant Looker raised a \$16m Series A round in August 2014.
- » Another newcomer, Tidemark, raised an additional \$13m in August 2014.

The two big cloud vendors have also been raising money:

- » GoodData raised \$25.7m in October 2014, bringing the total raised to \$101.2m, with an eye toward a potential IPO in 2016.
- » Birst raised \$38m in August 2013, bringing the total they have raised to \$84m.

This is undoubtedly a very hot market in the midst of upheaval and change.

<sup>3</sup><http://www.idc.com/getdoc.jsp?containerId=250458>