



## BARC Score Business Intelligence

### Enterprise BI Platforms

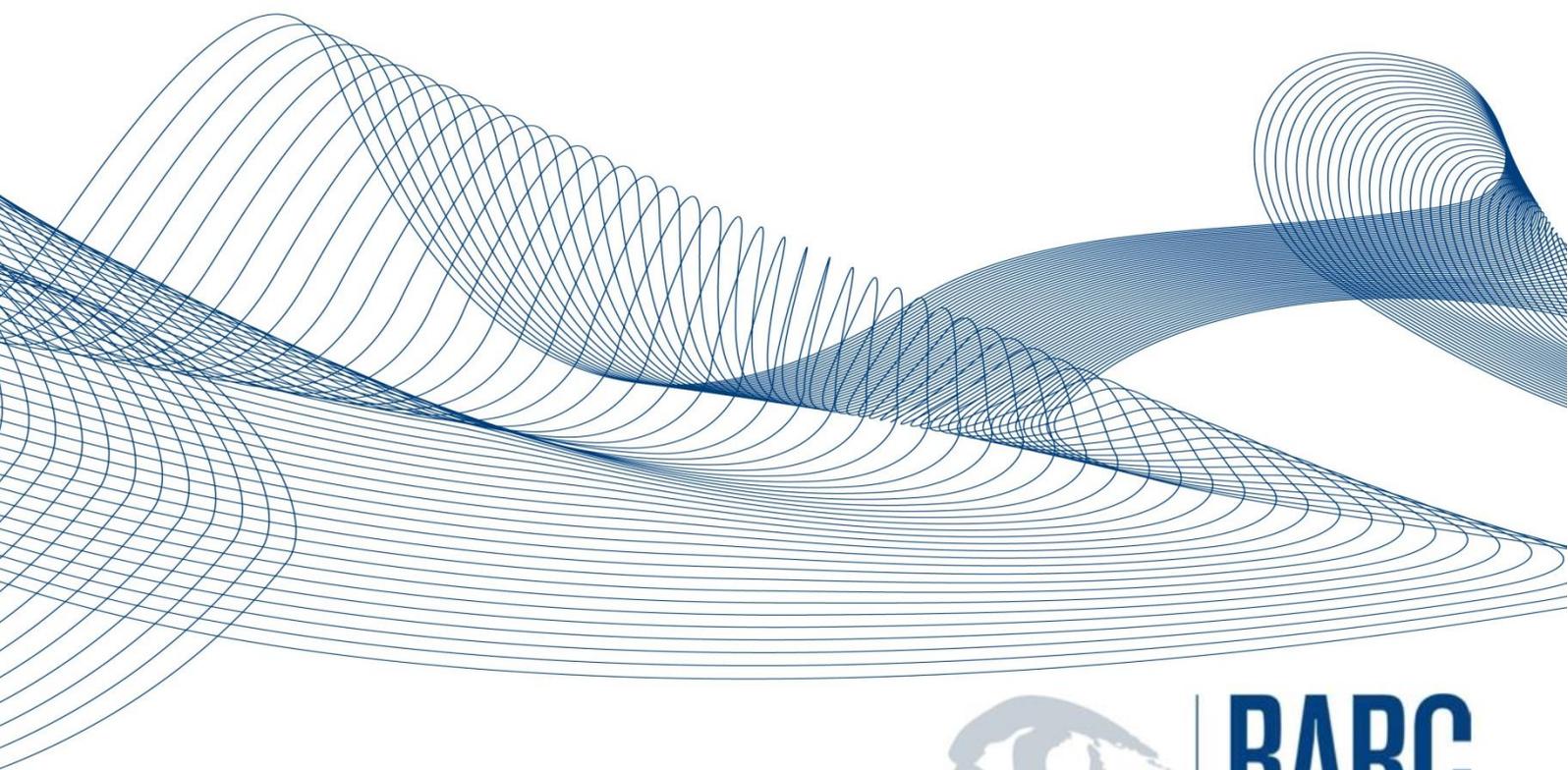
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#### Abstract

This BARC document is the second edition of our business intelligence vendor evaluation and ranking methodology, named Score. This Score evaluates Enterprise BI Platforms that are able to fulfill a broad set of BI requirements within the enterprise.

Based on countless data points from The BI Survey and many analyst interactions, vendors are rated on a variety of criteria, from product capabilities and architecture to sales and marketing strategy, financial performance and customer feedback.



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## Overview

The market for BI tools is highly competitive, with some large international incumbents, many successful vendors with a track record spanning decades, and countless smaller specialists that approach BI challenges from a niche perspective.

This report analyzes the strengths and challenges of the leading vendors that offer beneficial value to customers wanting to implement a 'modern' enterprise BI platform.

A modern enterprise BI platform is able to span traditional and explorative BI and analytics requirements both for standalone data and information applications but also when embedded in operational applications. With the increasing importance of data to not only support management decisions but also increase the efficiency and effectiveness of operational processes - as well as the growing number of products, services and business models being based on data - a modern enterprise BI platform is an indispensable backbone of any enterprise that wants to succeed in adapting to the digitalization of markets.

A modern enterprise BI platform has to support a broad range of use cases. Therefore it has to provide front-end tools for different types of users based on a suitable infrastructural foundation. The technical infrastructure includes data warehouses and data marts, data integration and data quality components, dictionaries, repositories and many other technologies.

Besides buying a modern enterprise BI platform, organizations should have a proper BI strategy that goes well beyond an architecture blueprint to include non-technical and emerging business user-oriented requirements, alignment with corporate strategy, organizational models, outcome-based priority settings and a proper roadmap.

Still, when it comes to kicking off or expanding a business intelligence program, the initial focus almost always lies on the required toolsets. While this may not be the ideal starting point, at some stage a platform or product decision has to be made. This document will help with the selection process by evaluating the most commonly used product sets from the major vendor community.

## Inclusion Criteria

There are two separate inclusion criteria for this BARC Score: the first is associated with a vendor's products and the other is linked to the financial results relating to those products. To be evaluated in this Score, a vendor has to have a strong focus on providing BI functionality and supply four out of six technologies from the following functional portfolio:

- Formatted and Ad Hoc Reporting
- Dashboards
- Analysis
- Data Mining
- Planning
- Self-Service BI and Data Discovery

In addition, the vendor has to generate a minimum of 15 million EUR in license revenue per year with the above product set, spread across at least two separate geographies. As individual geographies we consider:

- Europe, Middle East and Africa
- North America
- Latin America
- Asia/Pacific

Vendors with an open source business model are evaluated by their total revenue because those companies do not charge a license for their products, but an annual subscription fee.

## Evaluation Criteria

Every vendor is evaluated on two dimensions, Portfolio Capabilities and Market Execution, each representing one axis on the Score and taking into account the following sub-criteria.

### Portfolio Capabilities

In this Score, vendors' portfolio capabilities were scored on three major areas:

- Functionality
- Infrastructure
- Product-related evaluation criteria

Each consists of a number of different sub-criteria. On all levels of our portfolio capabilities evaluation, the corresponding weighting for each of the criteria was used (see Table 1).

| Category                    | Criteria   | Weighting |
|-----------------------------|--|-----------|
| <b>Functionality</b>        | Reporting (formatted and ad hoc)<br>Dashboards<br>Analysis<br>Data Mining<br>Planning<br>Self-Service BI and Data Discovery  | 45%       |
| <b>Infrastructure</b>       | Systems architecture and administration<br>Performance<br>Access to data sources<br>Metadata and semantics<br>Governance and security<br>Information delivery and deployment options | 35%       |
| <b>Portfolio Evaluation</b> | Portfolio integration<br>Portfolio maturity<br>Portfolio lifecycle   | 20%       |

**Table 1: Portfolio Capabilities - Criteria and Weighting**

## Functional evaluation

In our functional evaluation we included the following six functional sub-areas.

### Reporting

Formatted standard reports are usually page-oriented reports run on regular schedules. These include static reports - which usually appeal to the widest audience in a company because they are simple to use - and prompted reports, which enable users to filter reports based on predefined parameters. Aside from pixel-perfect displays which provide developers with precise control over how they place report objects and images on a screen, formatted reports also support rich printing options, dynamic page sizing and a WYSIWYG (i.e. what you see is what you get) development interface.

Virtually every BI product is able to provide some type of reports. The importance of page orientation, scheduling and other advanced reporting features, however, varies depending on the customer's requirements.

In many cases, users require more interactivity than they receive from formatted reports. Ad hoc reporting tools are geared to non-professional report developers and provide basic filtering and navigation features (e.g., drill down, ranking and conditional formatting).

### Dashboards

Dashboards are also referred to as cockpits, scorecards or BI applications. They provide graphical views of key performance indicators and the ability to drill down to details. Some dashboards offer self-service functions so that end users can create their own layouts without any outside help. Others (especially BI applications with guided navigation) require support from technically savvy business users or programmers. Scorecards often incorporate strategy maps and applications to manage improvement initiatives.

### Analysis

Data analysis solutions differ from basic reporting tools in that they are able to probe much more deeply into operational data and generate new information that can be understood and actioned upon by the business. Further analyses can be carried out using mathematical methods. Traditional online analytical processing (OLAP) tools provide dimensional (versus reporting) data views which make it easy for users to drill down, drill across and pivot dimensions as well as apply sophisticated calculations without scripting. Certain analysis tools also offer methods to support set-based, visual or discovery-oriented data analysis.

### Data Mining

Data mining represents non-directed, hypothesis-free data analysis. Various algorithms scan the database searching for patterns used for a segmentation, classification or association of data. The methods cover statistical data analysis, neural networks, decision trees, time series and many other algorithms. Users have to be well trained in order to use these methods and to gain the expected insights. Data mining tools often contain data integration and analysis process support functionality.

### Planning

Planning describes the task of creating data with a future time reference. An essential software requirement here is to write back planning data from planning forms in the front end to a planning data model in a central database. The planning model consists of planning structures (master data), key figures and planning logic, and combines different operational and financial plans. Both the planning forms and planning model are created using a planning solution. The coordination of the various planning activities and planners involved is handled by process control functionality (workflow). Specific planning functionality (e.g., data allocation, simulation and comments) is provided for plan data entry.

## Self-Service BI and Data Discovery

Self-Service BI and Data Discovery are major trends in bringing business intelligence to users in companies. A major benefit of these trends is the way they increase flexibility for 'data workers' and provide them with analysis capabilities to gain information from different data sources. However, in many companies, individual data processing, definition of KPIs and publication of individually defined (and layouted) reports and applications has led to a situation where trust in data has been lost and the replication of efforts in individual creation of applications and reports is blatantly inefficient. Therefore we evaluate each product's ability to combine the virtues of a strong software platform for secure, repeatable and broad data services with the provision of self-service and data discovery possibilities for users.

## Infrastructure

This includes a broad range of technical criteria including architectural evaluation, openness and ability to integrate different data sources, as well as other technical features such as performance optimization techniques or security settings. A 'modern' enterprise BI platform should be designed as an open and adaptable architecture based on micro services that run in different environments and are open for third parties to use them or embed them into other applications. We assess connectivity to data sources including standard RDBMS, Hadoop, NoSQL databases but also file formats and possibilities for the customer to build their own adapters if needed. In addition, further technical features such as support for different platforms as well as overall solution performance and caching mechanisms are considered in this evaluation.

## Portfolio Evaluation

We also evaluate each vendor's overall portfolio from a customer perspective. A business intelligence platform should have consistent user interfaces for publishing, consuming and interacting with data and reports. Consistency should not only apply to user interfaces but also to objects used to present and interact with data (e.g., tables and graphs) on a report/output level and to data (e.g., common semantic layer, joint data access standards, reusable objects).

The product's lifecycle and maturity are also assessed. Customers often complain about reliability and stability in early product releases. Early versions are rarely as functionally rich as mature products so they usually do not meet all their customers' functional requirements. And sometimes vendors offer mature products that are no longer being enhanced with innovative, new features. As a consequence they may not fulfill new and emerging requirements.

## Criteria Weighting

We don't consider all categories and subcategories to be equally important in this Score. Our weightings are based on BARC's own view of current user focus and buying patterns.

## Market Execution

On the market execution axis, we rate the business intelligence vendors in this Score using the following criteria and their corresponding weighting (see Table 2).

| Criteria                | Weighting |
|-------------------------|-----------|
| Product Strategy        | High      |
| Customer Satisfaction   | High      |
| Sales Strategy          | Medium    |
| Financials              | Medium    |
| Ecosystem               | Medium    |
| Marketing Strategy      | Low       |
| Organizational Strength | Low       |
| Geographical Coverage   | Low       |

Table 2: Market Execution - Criteria and weighting

### Product Strategy

This is the most important of all the criteria. Vendors are rated on their product development track record, product roadmap and innovation, as well as the company portfolio's alignment with current market trends and demands.

### Sales Strategy

To rate a vendor's sales strategy, we look at the various channels through which the company goes to market: with both direct and indirect sales teams, through distributors, value-added resellers (VARs), online channels as well as OEM relationships. We also evaluate the vendor's product pricing and its various sales models, such as perpetual licensing, support subscription, open source and freemium.

### Marketing Strategy

A vendor's marketing strategy is evaluated by rating its corporate and product messaging, the company's presence in printed media, advertising and social networks, as well as its ability to run events, such as conferences, seminar roadshows and webinars.

### Organizational Strength

Vendors are rated on their organizational stability, which is influenced by consistency of corporate strategy, continuity of executive leadership, but also staff turnover, reorganization and layoffs.

### **Financial Strength**

This criterion covers the financial position of the vendor, from market capitalization, cash position and EBITDA to profitability, burn rate and investment rounds. For vendors that are private companies or don't break out the numbers for individual product lines, estimated figures are used.

### **Geographical Coverage**

Vendors are evaluated on their global presence. We look at the various geographic regions and major countries in which the company conducts business with both a sales and marketing presence as well as development and support functions.

### **Ecosystem**

In this category, we evaluate the extended ecosystem in which the vendor participates. This includes business partner networks, hardware or cloud infrastructure providers, consulting firms and systems integrators, and other technology alliances.

### **Customer Satisfaction**

In this year's Score we included the 'Customer Satisfaction' KPI from The BI Survey. This generally takes into account product satisfaction, vendor support and implementer support ratings reported by customers.

# Score

Calculating the individual ratings for all criteria and all vendors produces two scores per company: the portfolio capabilities score and the market execution score, each being plotted on the corresponding axis and thus resulting in the vendor's dot on the following BARC Score graphic (Figure 1).



Disclaimer: BARC Score is published by BARC GmbH (BARC). This chart is part of a larger research document, which contains explanations of the methodology and criteria behind the chart, and should be viewed in the context of the full document. BARC does not endorse any of the vendors featured in its research documents, and does not advise readers to select only those vendors with the highest ratings. Vendors appearing in the bottom left corner of this chart are market entrants or specialists and should not be interpreted as inferior. Those vendors in the top right area are not necessarily superior, but have strong portfolio capabilities and market execution.

**Figure 1: BARC Score Business Intelligence (Enterprise BI Platforms)**

## Score Regions

Vendors can be positioned in one of five regions, depending on their total score on each of the two axes.

### Dominators

Dominators are vendors that drive both technology and market adoption in a highly influential manner. They possess both a broad portfolio of market-leading and dominating products with a strong brand as well as a robust commercial prowess through best-in-class sales and marketing programs, an extensive ecosystem of business partners and alliances, and a rock-solid financial position. Dominators are considered a contender in virtually every planned implementation.

### Market Leaders

Market Leaders are well established vendors that drive strong market adoption, supported by technology innovation and strategic acquisitions and by leveraging robust account management and a solid track record. Their portfolio enjoys high brand awareness in the market, covers an extensive range of technologies and services with only few gaps. Market Leaders typically have a large market share, making them a viable contender in almost all implementation scenarios.

### Challengers

Challengers come in various shapes and sizes. They can be large vendors tapping into a new market by acquisition and pushing their way in with force, small innovative companies with a promising portfolio but limited sales and marketing resources, or vendors that attempt to disrupt a market with a new technology approach or different business model.

### Specialists

Specialists are smaller vendors with a portfolio focused on a specific market segment. Vendors can be either limited in their technical capabilities by concentrating on certain features and functions, or the company isn't a global enterprise and focuses on select geographic regions.

### Entrants

Entrants are usually startups that have limited reach and visibility in the market. Their product capabilities are incomplete when compared to competitors, and the vendor's long-term market potential is still unproven.

## Evaluated Products

The following products and versions are evaluated in this BARC Score.

| Vendor                         | Product(s)                       | Version/<br>test<br>period |
|--------------------------------|----------------------------------|----------------------------|
| <b>Birst</b>                   | BIRST                            | 5                          |
| <b>BOARD International</b>     | BOARD                            | 10                         |
| <b>Dimensional Insight</b>     | Diver Platform                   | 7.0                        |
| <b>IBM</b>                     | IBM Cognos Analytics             | 11                         |
|                                | IBM Cognos TM1                   | 10.2                       |
|                                | IBM Watson Analytics             | 2016                       |
|                                | IBM SPSS                         | 23                         |
| <b>Infor</b>                   | Infor BI (incl. Infor Analytics) | 11                         |
| <b>Information Builders</b>    | WebFOCUS                         | 8.2                        |
| <b>Logi Analytics</b>          | Logi Suite                       | 12.2                       |
| <b>Microsoft</b>               | SQL Server                       | 2016                       |
|                                | Office                           | 2016                       |
|                                | Power BI                         | 2016                       |
| <b>MicroStrategy</b>           | Analytics Platform               | 10.2                       |
| <b>OpenText</b>                | OpenText Information Hub (iHub)  | 3.1                        |
|                                | OpenText Big Data Analytics      | 5.2                        |
| <b>Oracle</b>                  | Oracle BI                        | 12c                        |
|                                | Oracle Hyperion Planning         | 11.1.2.4                   |
|                                | Oracle Analytics Cloud           | 2016                       |
|                                | Oracle Big Data Discovery        | 1.2.2                      |
| <b>Pentaho (Hitachi Group)</b> | Business Analytics               | 6.1                        |
| <b>Pyramid Analytics</b>       | BI Office                        | 6.2                        |
| <b>Qlik</b>                    | QlikView                         | 12.0                       |
|                                | Qlik Sense                       | 3.1                        |
|                                | Qlik NPrinting                   | 17.2                       |
|                                | Qlik Analytics Platform          | 3.1                        |
| <b>SAP</b>                     | SAP BusinessObjects BI Platform  | 4.2                        |
|                                | SAP Predictive Analytics         | 3.0                        |
|                                | SAP BusinessObjects Cloud        | 2016                       |
| <b>SAS</b>                     | SAS Enterprise BI Server         | 9.4                        |
|                                | SAS Visual Analytics             | 7.3                        |
|                                | SAS Visual Statistics            | 7.3                        |
| <b>Sisense</b>                 | Sisense                          | 2016                       |

| Vendor           | Product(s)                         | Version/<br>test<br>period |
|------------------|------------------------------------|----------------------------|
| <b>Tableau</b>   | Tableau Desktop and Tableau Server | 10                         |
| <b>TARGIT</b>    | TARGIT Decision Suite              | 2k15                       |
| <b>TIBCO</b>     | Jaspersoft                         | 6.3                        |
|                  | Spotfire Platform                  | 7.5                        |
| <b>Yellowfin</b> | Yellowfin BI                       | 7.2                        |

## Vendor Evaluations

In the following section, we discuss each vendor in the BARC Score and highlight their strengths and weaknesses based on customer surveys and market research by the authors.

### Birst

San Francisco, CA, USA

[www.birst.com](http://www.birst.com)

Birst, founded by several Siebel Analytics veterans, offers a cloud-based BI and analytics platform for formatted and ad hoc reporting, dashboards and analysis. BIRST aims to provide an enterprise-ready, business user-oriented and visually appealing BI platform.

A special focus of the vendor lies in its provision of a networked BI platform which is especially suited to supporting decentralized usage scenarios without data or model replication. For this purpose, Birst supports the connection of central data models with decentralized data, delivering local execution with global governance. It offers modeling capabilities to create an individual semantic layer which enables connection to analytics-ready data via Live Access. In addition, through its Automated Data Refinement (ADR) capability, the Birst platform allows data extraction, storage and alignment to analysis-ready structures. BIRST was built on a multi-tenant cloud architecture and supports a variety of on-premise and cloud-based data sources.

On the front-end layer, BIRST provides several modules to support different BI tasks. Designer is used by tech-savvy business users to create pixel-perfect formatted reports. Business users use the Dashboards module to create individual dashboards, and Visualizer is an interactive module for ad hoc reporting, data mashups, query and analysis, targeted at business users.

### Strengths

- Cloud-based BI platform for formatted and ad hoc reporting, dashboarding and analysis
- Use of semantic layer concept to provide governance and consistency with data discovery functionality to support agile development for business users (“networked model”)
- Supports access to a wide variety of on-premise and cloud-based data sources, such as relational databases, Salesforce.com, Marketo and Hadoop
- Support for both live data access and data integration into a cloud data store
- Embedding of EXASOL analytic database, support of SAP HANA Cloud Platform and cooperation with Tableau for data discovery

### Weaknesses

- The list of supported data sources for BIRST Visualizer (data discovery module) is currently being enhanced with further options
- Limited built-in capabilities for advanced analysis and data mining. Functionality provided only through the integration of open source analytics engine, Weka, or R integration
- Planning and performance management are not covered by the vendor; however Birst supports write-back

## BOARD International

Chiasso, Switzerland

[www.board.com](http://www.board.com)

BOARD, founded in 1994, today employs approximately 250 people worldwide. Headquartered in Switzerland, the company has 23 offices worldwide and a partner network in over 30 countries. By its own account, BOARD implements roughly 50 percent of its projects in planning and 50 percent in the BI area and is used by around 3,500 customers worldwide.

BOARD's product strategy is based on an "all-in-one" philosophy. The goal is to deliver an easy to use and technically homogeneous environment in support of BI and Corporate Performance Management. BOARD's vision is to enable business users to implement solutions without significant IT support, based on an easy-to-use toolkit.

BOARD provides an integrated product consisting of a front end with data stored in a proprietary multidimensional, hybrid in-memory database, which can be used in a MOLAP, ROLAP or HOLAP architecture. Cubes are also modeled and maintained in the proprietary BOARD database, which can be accessed by BOARD only, as it allows only limited access for third-party front ends. BOARD's graphical development environment enables users to create planning, dashboarding, reporting and analysis applications. Users can build and tailor a broad range of applications specifically to their own needs. Its BI features allow the creation of reporting and dashboards applications as well as analysis including an integrated module for predictive analytics called 'BEAM' (BOARD Enterprise Analytics Modeling). Its cloud offering, based on Microsoft Azure, and self-service capabilities (called Data Fast Track) were two of the key enhancements in version 10 (released in October 2015).

### Strengths

- Flexible, integrated BI solution for the development of planning, dashboarding, reporting and advanced analysis applications
- Closed and integrated systems architecture of multidimensional in-memory database and front ends
- Graphical, business user-oriented development environment for creating complex BI and planning applications without technical programming skills
- Integrated data mining algorithms as part of the solution, resulting from university cooperation
- Self-service dashboard creation for end users through assembly of predefined BI objects

### Weaknesses

- Limited access to proprietary BOARD database for third-party front ends
- Limited capabilities for formatted and print-oriented reporting, as the vendor focuses on on-screen application delivery
- Limited data mining methods; no integrated support of languages such as R or SAS yet

## Dimensional Insight

Burlington, MA, USA

[www.dimins.com](http://www.dimins.com)

Dimensional Insight is a privately held company based in Burlington, MA, that helped pioneer the modern BI industry with a high performance BI toolset, named Diver Platform (Diver), which provides fast, flexible information distribution. Diver focuses on providing two core benefits to its customers: 1) its ability to empower users with fast access to critical measures needed to meet operational performance and compliance requirements; and 2) its ability to allow users to “dive” deep into their organization’s data in any direction to get the answers to their business-critical questions.

Started in 1989 before the rise of open source components, Dimensional Insight set out to build an integrated platform with tools that address the various BI project roles. The company’s product, Diver Platform, includes ETL, administration, dashboard development, data modeling and report viewing, as well as a propriety file system for data storage. Users can navigate data in any direction with fast performance. While content, including industry-specific adapters and business rules, is rich, the product interfaces are designed not to distract users from the data so they appear somewhat outdated compared to those offered by competitors.

Staying focused on their divers’ (the name given to Diver users) needs, Dimensional Insight has evolved its product line to include solution accelerators and product optimizations that have positioned it to succeed in highly regulated industries, such as healthcare, goods and services, and manufacturing. With a capable solution, specialized industry expertise and a strong passion for customer success, Dimensional Insight is set to expand on its base of 2,700 customers and grow its product footprint in EMEA and APAC.

### Strengths

- Industry expertise and packaged solutions
- Fast, no-constraints visual data analysis
- Integrated, in-memory database and ETL
- High levels of customer support and success

### Weaknesses

- Interface and visualizations lack modern look and feel
- Limited visibility outside core markets
- Planning and performance management are not covered by the vendor

## IBM

Armonk, NY, USA

[www.ibm.com](http://www.ibm.com)

As one of the world's largest vendors of IT hardware, software and services, IBM offers a comprehensive portfolio of business intelligence and performance management solutions. For this BARC Score, we evaluated IBM Cognos Analytics, IBM Cognos TM1, IBM Watson Analytics and IBM SPSS Predictive Analytics.

IBM Cognos Analytics (formerly IBM Cognos BI) provides functionality for several categories of BI applications including dashboards, formatted reporting, ad hoc reporting and OLAP analysis in a Web-based, integrated user experience. The product is typically used in larger scenarios supporting the needs of many concurrent users as well as large data volumes. In December 2015, Cognos Analytics was introduced as a modernized release providing a new HTML5-based front end and offering new business user data modeling, dashboarding and reporting functionality. Cognos Analytics still supports the classical OLAP analysis capabilities in the interface of previous versions for those that want it. Functionality for advanced analytics is relatively weak compared to some products on the market. This is where IBM positions its SPSS Predictive Analytics offerings for data mining and advanced analysis, including SPSS Modeler and SPSS Statistics. SPSS offers good support for the creation, test and deployment of individual data mining models. However, the integration of the SPSS data mining solution into Cognos Analytics and Watson Analytics is still ongoing. IBM Cognos TM1, which has been on the market since the early 1980s, is essentially a high-performance, multidimensional in-memory database for planning and analysis. TM1 (now included with IBM Planning Analytics) is aimed at power users who build individual planning and analysis applications. The solution offers both Excel and Web front-ends and offers capabilities for publishing content on the Web. IBM Watson Analytics is a new cloud-based product focused on search-oriented visual, predictive data analysis. This solution is targeted towards business users and offers self-service data preparation and encapsulated cognitive capabilities.

### Strengths

- Extensive product portfolio includes Cognos Analytics for formatted and ad hoc reporting, OLAP, visual and advanced analysis, and dashboard creation; and Cognos TM1 for planning and performance management
- Multiple deployment options – cloud, on-premises and hybrid
- Broad capabilities for data mining and advanced analysis with SPSS as well as visual business user-oriented data discovery and cognitive BI with IBM Watson Analytics
- Commitment to continued investment and innovation in BI, advanced analytics and data management evidenced by recent announcements regarding the Data Science Experience and the Watson Data Platform
- Well established and expansive partner community with worldwide product support and knowledge

### Weaknesses

- Limited integration between the Cognos Analytics, Cognos TM1, SPSS Predictive Analytics and Watson Analytics products
- Potential client confusion around product branding/naming, e.g., IBM Cognos BI and Cognos Analytics, IBM Planning Analytics and Cognos TM1
- Limited geospatial analysis and location intelligence capabilities across the portfolio, although this is expected to change with the embedding of new functionality through partnerships with Mapbox and Pitney Bowes

## Infor

New York, NY, USA

[www.infor.com](http://www.infor.com)

Infor is a global provider of ERP, CRM, BI, SCM and other business software solutions, which has now begun to focus strongly on providing cloud-based solutions. The company was founded in 2002, has 153 offices in 41 countries and supports over 73,000 customers in around 200 countries.

Infor BI is an integrated application suite for dashboards, reporting, analysis, planning and forecasting with proprietary multidimensional data storage. The suite contains the components Infor BI Application Studio (for building Web-based BI applications), Infor BI Office Plus (an add-in for Excel, Word and PowerPoint), Infor BI Dashboards (for building and administering dashboards for the Web and mobile devices), Infor BI OLAP Server and Infor BI Designer (for modeling OLAP cubes). Infor BI Application Studio is a flexible application development tool, enabling users to create a wide range of BI applications. Predefined BI and performance management applications (Infor Analytics) are also available for various business functions and industries with Infor Dynamic Enterprise Performance Management (d/EPM), including strategy management, budgeting, planning and financial consolidation.

All components use the Infor BI OLAP Server, which stores data in multidimensional structures. Infor requires a relational database, most often Microsoft SQL Server or Oracle, for storing the repository (users, roles and reports from Application Studio and Office Plus). Both Application Studio and Office Plus can also access Microsoft SQL Server Analysis Services as well as relational databases via ODBC. Through a meta layer named DataLinks, Infor has improved access to other relational databases and the platform also supports access to Amazon Redshift.

OEM partnerships have been struck with Cubeware, Bissantz and IBM to provide additional functions such as data integration, advanced analytics and print-oriented production reporting.

### Strengths

- Integrated application suite for dashboards, reporting, analysis, planning and forecasting with proprietary multidimensional data storage
- Flexible, Web-based BI applications that can be built by tech-savvy business power users
- Strong functional capabilities for ad hoc analysis and planning integrated in Microsoft Excel
- Good mobile BI offering including dashboard creation capabilities
- Predefined analytical, BI and performance management applications with Infor d/EPM

### Weaknesses

- Limited integration of Infor BI Application Studio with Office Plus; however both use OLAP Server as the underlying platform
- Limited capabilities and only passive positioning of Infor BI's capabilities in trending areas such as data discovery and visual analysis
- Limited functionality for data mining and advanced analysis; R integration is provided

## Information Builders

New York, NY, USA

[www.informationbuilders.com](http://www.informationbuilders.com)

Information Builders is a privately held company, founded in 1975 and with more than 60 offices worldwide. The vendor's flagship BI offering, WebFOCUS, was introduced in 1997. Information Builders also provides the iWay product line, which is often used alongside WebFOCUS for data integration and data quality functionality.

Information Builders introduced three editions of its software in 2016 to meet the requirements of different types of enterprises and users. Business User Edition is targeted at business analysts and small groups of about 20 users, Application Edition targets scenarios with up to 1,000 users and Enterprise Edition is for large-scale usage scenarios. Generally speaking, all have the same architecture based on the WebFOCUS platform. However the editions differ in terms of the modules provided.

The WebFOCUS Suite is a Web-based BI environment with front ends and decision support tools for formatted reporting, ad hoc reporting, dashboards and analysis, and a custom application development environment. With WebFOCUS, BI applications can be centrally administered and published to a large group of internal and external recipients. While customers cite the relative complexity of WebFOCUS, an enterprise-centric system, the vendor has been concentrating on developing interfaces that are easier to use and configure for business decision-makers. The solution now incorporates Web-based tools, such as InfoAssist+ for ad hoc analysis and self-service data discovery; BI portal designer for designing and managing group portals, dashboards and content management; as well as interactive InfoApps for the mass user (operational employees, partners, suppliers and customers).

Another strength of WebFOCUS is its inherent support for operational BI – in which insights are derived from data coming directly out of production systems. The company's original FOCUS products were designed to capture and provide analysis of data coming directly out of mainframe and AS/400-class systems. These capabilities have been extended across enterprises to enable analysis across any and all new systems that are engaged, including today's cloud-based infrastructures.

### Strengths

- Very flexible and scalable solution for formatted reporting for large user groups and highly-formatted documents, ad hoc reporting, dashboarding, analysis and creating individual BI applications for operational BI
- Uniquely wide range of data sources
- InfoAssist+, focused on ad hoc reporting, query and data discovery for business users, provides good capabilities for content export in different formats
- InfoApps and capabilities for the development of predefined interactive applications for business users (operational and strategic/tactical BI)

### Weaknesses

- Technically-oriented development environment, not suitable for casual business users
- Recent and still unproven changes to the data discovery solution InfoAssist+
- Limited performance management and no planning solutions. However, write-back functionality - especially for operational use cases - is provided

## Logi Analytics

McLean, VA, USA

[www.logianalytics.com](http://www.logianalytics.com)

Logi Analytics is a business intelligence company founded in 2000. The company is strongly focused on offering BI solutions that are easily embeddable into other operational systems. Today, the company offers a suite of products called Logi Suite. The suite consists of Logi Info - a business intelligence platform that also offers self-service analytics for ad hoc reporting - and Logi Vision - a visual analytics tool.

Logi Info is the core component for dashboarding, reporting and analysis, and can be embedded in other host applications and operational systems. Logi Info has two distinct user roles (developer and end-user), whereby developers configure dashboards and reports while users consume, interact with and to some extent customize the developers' work. Visualization objects are populated with data that can be sourced from multiple sources and joins. The tool supports the development of Web-based and mobile applications to support various reporting and analysis use cases. Logi Info also provides governed self-service capabilities, which allow users to create ad hoc queries from managed data sources, analyze data and build visualizations, as well as create and share dashboards and reports.

For non-technical business users, Logi Vision, released in January 2014, is a visual analytics application designed for workgroup collaboration to fulfill the increasing demand for self-service BI. Vision connects to a range of data sources and prepares the data for analysis. Users can collaborate and share their visualizations and dashboards using a range of social tools.

### Strengths

- Capabilities to embed the software in operational systems
- Building Web and mobile applications across multiple operational systems
- Support for formatted and ad hoc reporting, dashboards and analysis
- New visual product for ad hoc analysis and self-service BI

### Weaknesses

- Only initial integration between Logi Info and Logi Vision
- Limited advanced analysis and data mining features
- Direct geographical presence outside the US, UK and Sweden is limited to business partners

## Microsoft

Redmond, WA, USA

[www.microsoft.com](http://www.microsoft.com)

Microsoft, the world's largest software company, was founded in 1975 and has become a household name primarily due to its Windows operating system and Office suite. The vendor also offers its own database management system, collaboration tools, servers and the Dynamics ERP and CRM solutions.

In the past few years Microsoft has spread its BI capabilities across the Office, SharePoint and SQL Server product lines, providing tools for formatted reporting, ad hoc reporting, analysis and dashboards. Microsoft SQL Server consists of multiple products including a relational database management system, data integration and data quality components, Analysis Services as a multidimensional database, and Reporting Services as a solution for formatted reporting. However in July 2015 Microsoft launched a new generation of its Power BI product line (which was first introduced in 2013 as a different tool set). It is a cloud-based BI product consisting of Microsoft Power BI Designer (a full client for ad hoc reporting, dashboards and analysis) and Power BI Service (a Web client for content publishing and sharing). Power BI is included in the 2015-launched Cortana Intelligence Suite, which contains several Microsoft solutions and is positioned as a fully managed big data and advanced analytics offering. With this tool set Microsoft provides dedicated products focused on analytical scenarios to supplement its longer standing solutions. Using Power BI with other products from Cortana Intelligence Suite such as Azure ML is an option worth considering.

One unique advantage of Microsoft BI is that customers can leverage the vast knowledge of Microsoft technologies present in most enterprises throughout the world. However, customer satisfaction with the current product offering, as well as with vendor and implementer support, is low.

### Strengths

- Solid product portfolio for formatted reporting, ad hoc reporting, analysis and dashboards
- SQL Server is a well-known database management system consisting of relational data storage, OLAP modeling, spatial support and integrated data mining
- Excel, the central self-service BI and analysis tool, is well known and widely used
- Business user oriented ad hoc reporting and dashboard solution (Power BI)
- Extensive business partner network, providing Microsoft competencies around the world

### Weaknesses

- Microsoft BI products are integrated on a data level only and lack a central metadata repository
- Some tools have overlapping functionality. This could confuse those who want to evaluate products based on their use cases
- Planning and corporate performance management topics are covered by partner solutions

## MicroStrategy

McLean, VA, USA

[www.microstrategy.com](http://www.microstrategy.com)

MicroStrategy, founded in 1989, is one of the best-known vendors in the business intelligence market worldwide. In 2003, MicroStrategy became the first vendor to release a fully integrated product that provides formatted reports, dashboards and interactive analysis in a single solution using the same infrastructure. With its library of statistical and advanced data mining functions, the vendor offers comprehensive analytic capabilities for a wide variety of use cases.

MicroStrategy was among the first to present solutions for mobile devices and in 2014 released PRIME (Parallel Relational In-Memory Engine) as part of its own cloud service. The product is designed to provide high performance to very large numbers of users on very large data sets. PRIME has been the core in-memory engine of the Analytics Platform since version 10.

MicroStrategy has one of the best architectures on the market, and its integration of Flash into the system is particularly impressive. However, MicroStrategy has switched to HTML5 in its latest suite release although Flash output is still supported.

MicroStrategy centrally integrates all BI functions in its suite but also provides a new standalone self-service BI client called MicroStrategy Desktop. Visual Insight (VI) is a relatively new Web-based data discovery solution, which is integrated with MicroStrategy Web and MicroStrategy Desktop to support “governed” self-service. VI also uses HTML5 technology and offers capabilities for visual and explorative data analysis. It addresses current requirements in the self-service BI area supporting the integration of data from sources as diverse as local spread Planning functions s and Hadoop.

### Strengths

- Single integrated platform for formatted and ad hoc reporting, dashboarding, analysis and BI application-building with good performance in large and complex environments
- Visual analysis solution for self-service BI scenarios included in the platform
- Cloud platform with incorporated data integration capabilities (Informatica OEM)
- Web-based clients for ad hoc reporting, query creation and analysis
- Comprehensive library of statistical functions for use by developers

### Weaknesses

- No dedicated solution for predictive analysis and data mining; only predefined models are available. However, import and export of PMML and R integration are supported
- Recent staff layoffs and extensive executive level reorganization
- Limited performance management and no planning solutions; however write-back functionality, especially for operational use cases, is provided

## OpenText

Waterloo, Canada

[www.opentext.com](http://www.opentext.com)

Actuate was one of the earliest providers of business intelligence software. The company was founded in 1993 and is based in San Mateo, California, with about 600 employees worldwide. In January 2015, Actuate was acquired by OpenText, a global provider of enterprise information management (EIM), especially known for its enterprise content management (ECM) and business process management (BPM) solutions.

Actuate launched the open source BIRT (Business Intelligence and Reporting Tool) project in 2004. Today OpenText offers a business intelligence platform called OpenText Information Hub (iHub), which is available as an open source and a commercial version. iHub includes both developer and different user-oriented interfaces. In 2012, Actuate acquired Quitar for its business user-oriented predictive analytics solution. Today the product is offered as OpenText Big Data Analytics.

iHub is a front end that connects to different data sources and consists of modules for formatted reporting, ad hoc reporting, dashboarding and analysis. Development of applications and reports as well as access to data sources takes place in OpenText Analytics Designer. End users work with the Web-based modules for ad hoc reporting, simple data navigation, OLAP analysis and dashboarding.

OpenText Big Data Analytics is a combination of in-memory and columnar-based data storage with a Web-based front end for visual data mining and predictive analysis. Data required for data mining and analysis is integrated using a built-in ETL module. The solution is focused on data scientists from business departments and offers predefined data mining algorithms and analysis methods such as forecasting, clustering, venn diagrams, pivot tables, bubble charts and so on. It is offered as an on-premises or cloud-based version.

### Strengths

- Good capabilities for developing pixel-perfect reports in both open source and commercial versions
- Ad hoc reporting and data navigation suitable for business users
- OpenText Big Data Analytics as a business user-oriented solution for data mining and predictive analysis
- Set of APIs for individual development and product integration/embedding

### Weaknesses

- OpenText Big Data Analytics is not fully integrated into the rest of the portfolio
- Open Text Big Data Analytics is limited to predefined analysis and data mining methods; no integration of programming languages for data mining such as R or SAS
- A tech-savvy user is required to predefine report structures and data using OpenText Analytics Designer. Once defined, these can be used by business users in Analytics Studio

## Oracle

Redwood Shores, CA, USA

[www.oracle.com](http://www.oracle.com)

Oracle is one of the world's largest software companies, with offices in 145 countries. It has long been the largest RDBMS vendor and, through a series of acquisitions, is now the second largest applications vendor. With its purchase of Sun in 2010, Oracle has entered the hardware market as well. In the BI area, Oracle offers various products such as Oracle BI, Oracle Analytics Cloud, Oracle Big Data Discovery and Oracle Hyperion Planning.

In 2014, the vendor changed its release strategy to "Cloud First" and introduced Oracle BI Cloud Service as part of the Oracle Analytics Cloud, which extends the Oracle BI suite in the area of data loading and modeling. Oracle BI is a platform with modules for developing and deploying dashboards, formatted reporting, ad hoc reporting and analysis. Oracle continues to deliver expanded capabilities such as more advanced visualizations and self-service with Visual Analyzer. Visual Analyzer is a business user-oriented solution focused on explorative data analysis (data discovery). It allows users to integrate different data sources and create individual data models for analysis purposes. For transformation and analysis of Hadoop-based data, Oracle also has a new visualization and analysis solution called Oracle Big Data Discovery. Oracle Transactional BI, part of Oracle's Analytics Cloud, provides operational and deeper cross-functional analysis for Oracle SaaS applications.

Oracle Advanced Analytics is an extension to Oracle's RDBMS for data mining. It consists of Oracle R Enterprise, an R extension to its DBMS, and Oracle Data Mining, a development client for data mining algorithms to be executed within the DBMS.

### Strengths

- Web-based tool portfolio for formatted and ad hoc reporting, analysis, dashboarding and scorecarding in one suite
- Powerful ROLAP engine including the capability to generate multiple SQL statements to answer a single user query
- Action framework for triggering external events and navigation within dashboards
- Usage of Oracle RDBMS to provide data mining and advanced analysis as well as spatial capabilities
- Oracle Hyperion Planning as a strong planning solution suitable for large planning scenarios

### Weaknesses

- No seamless integration between product packages, such as Oracle BI and Oracle Hyperion Planning
- Weak collaboration and annotation features in Oracle BI
- Big Data Discovery and advanced analysis solutions are separate from the suite

## Pentaho (A Hitachi Group Company)

Orlando, FL, USA

[www.pentaho.com](http://www.pentaho.com)

Pentaho was founded in 2004 to “revolutionize BI” through an open source business model. The company currently employs over 400 staff worldwide, including 80 in Europe. The vendor is headquartered in Orlando and is present in more than 185 countries via subsidiaries and partners. Pentaho was acquired by Hitachi Data Systems (HDS) in 2015.

Pentaho Business Analytics is an embeddable BI platform with a commercial open source business model that comes with data integration and front-end tools for dashboarding, reporting, OLAP analysis and data mining. It also features a graphical, business user-oriented environment for creating complex reports. The product also supports big data use cases – such as native connectivity to Hadoop clusters, NoSQL data stores and unstructured data sources. Pentaho offers a free, bare-bones open source Community Edition. However, most of its revenue comes from subscriptions to the Pentaho Enterprise edition, which includes technical support, extensive Q&A, bug fixes, security and performance enhancements, as well as analytic tools unavailable in the Community Edition. Pentaho also has a strong SaaS offering, as the company invested heavily in cloud BI to be early to market with its own solution.

Pentaho’s product strategy is focused on big data integration and analytics, as well as analytics embedded in third-party software applications. Although the company expects business users to run the Pentaho BI solution without significant IT support, customer references indicate that this is not necessarily always possible.

### Strengths

- Flexible, integrated platform including data integration and front-end tools for dashboarding, reporting, analysis and data mining
- Graphical, business user-oriented environment for creating complex reports
- Large open source community that tests and improves the software
- Access to big data sources such as Hadoop, NoSQL and other analytical databases
- Data mining and predictive analysis are provided through the open source project Weka

### Weaknesses

- Platform customization requires IT skills
- No planning capabilities
- No collaboration tool to share report comments between business users

## Pyramid Analytics

Amsterdam, Netherlands

[www.pyramidanalytics.com](http://www.pyramidanalytics.com)

Founded in Israel in 2009, Pyramid Analytics is a privately held software company with more than 175 employees. BI Office was launched in 2012. The company is now headquartered in the Netherlands and has offices in the United States and United Kingdom. With backing from Viola Group and Sequoia Capital, the company continues to grow quickly and now boasts more than 750 customers.

BI Office offers an integrated BI platform for dashboarding, data discovery, reporting and integration support for traditional and API data sources. The vendor wants to bridge the gap between self-service and IT-driven BI with a product that provides agility for end users while IT retains centralized control and fosters greater collaboration through sharing of business logic, content and commentary. Addressing Silverlight dependencies, the company also released an HTML5 client allowing users to interact with reports and dashboards on any desktop or mobile device.

Pyramid Analytics strongly supports Microsoft SQL Server as its underlying platform. Relying on this database technology, cube-based analysis is one of BI Office's strengths. The product can generate MDX queries that developers tune and run against SQL Server Analysis Services (multidimensional and in-memory models). In addition, BI Office also offers an integrated data mashup module called Data Modeler, which is designed for power users from business departments. Business users can access different data sources and create a data model for analysis purposes. This data model is internally stored as a tabular in-memory cube on the SQL Server. For managing complex analytics, Pyramid Analytics supplements SQL Server Analysis Services with an in-memory cache Large Query Engine (LQE).

### Strengths

- Well-integrated product for reporting, dashboards and analysis
- Self-service data discovery targeted at business users
- Well thought-out capabilities for dynamic texts for storytelling
- Content lifecycle tracking and sharing
- Provision of governance and security in combination with native usage of Microsoft SQL Server as a platform

### Weaknesses

- Dependency on Microsoft SQL Server technologies
- BI Office is not a planning application; however it can be used for reporting, analysis and dashboarding to support planning processes

## Qlik

Radnor, PA, USA

[www.qlik.com](http://www.qlik.com)

Qlik, originally founded in 1993 in Lund, Sweden, moved its headquarters to the United States in 2005 after raising funds from several venture capital firms. QlikView, the company's virtually unknown product, was very aggressively marketed after the VC investment. This created enormous attention and traction, and in 2010 Qlik went public on NASDAQ.

Until the general availability of Qlik Sense in 2014, Qlik was a one-product company. Today, the vendor provides a portfolio of visual analytics offerings: Qlik Sense Enterprise and Qlik Sense Cloud, as well as the Qlik Analytics Platform for developers, QlikView and Qlik NPrinting, acquired with Vizubi in 2015 for enhanced printing and page-based layout. Shortly afterwards, Qlik DataMarket was introduced as a market providing external data for analyses such as weather or currency information.

QlikView is a dashboard and analysis product based on in-memory technology, and was the first product in the "data discovery tools" product category. The solution is positioned as a self-service platform targeted at business users, enabling them to analyze data without going to an expert for a new report or dashboard. However, while QlikView addresses the common challenges that business users see in IT-run BI systems, the potentially high amount of scripting in more complex QlikView installations requires trained development staff to produce scalable and high-performance solutions.

The new Qlik Sense product is positioned as a self-service data visualization solution providing immediate analysis results instead of building applications, and has been supplied with enterprise features such as a central library for common metadata. Qlik NPrinting is a report generation, distribution and scheduling application. It enables organizations to create reports in a variety of popular formats including Office and pixel-perfect PDF files.

### Strengths

- Business-oriented platform for reporting, dashboarding, analysis and creation of individual applications, and also for embedded scenarios using Qlik Sense APIs
- Good 'associative'/set-based navigation in data
- Good formatting and charting features
- Responsive in-memory processing
- Fast implementation and application modification

### Weaknesses

- No planning capabilities as part of the solution portfolio
- Limited integration between Qlik Sense and QlikView; however both use the underlying QIX engine
- Complex QlikView and Qlik Sense implementations and data integration demands require heavy scripting

## SAP

Walldorf, Germany

[www.sap.com](http://www.sap.com)

SAP was founded in 1972 as a business applications company, and it prominently entered the business intelligence market with the large acquisition of Business Objects in 2007.

The portfolio of BI and analytics solutions from SAP, now called SAP BusinessObjects Analytics, encompasses solutions in the following categories: business intelligence, predictive analytics, and planning capabilities on-premise and in the cloud.

BI capabilities in the SAP BusinessObjects Analytics portfolio are available via the SAP BusinessObjects Cloud package for cloud solutions and SAP BusinessObjects Enterprise for on-premise deployments. SAP BusinessObjects Cloud is designed specifically for the cloud and combines the traditionally separate processes of data modeling, planning, reporting, visualization and predictive analytics into one solution aimed at business users. In addition, SAP Digital Boardroom is a corporate management cockpit solution that aims to transform boardroom and steering meetings into a real-time digital enterprise experience. Both SAP BusinessObjects Cloud and SAP Digital Boardroom are built on the SAP BusinessObjects Cloud platform. SAP BusinessObjects Roambi is another key component of SAP's cloud business analytics portfolio. It is based on the recently acquired Roambi technology and delivers native visualizations on different mobile devices.

The SAP BusinessObjects Enterprise Suite is the on-premise BI offering from SAP which incorporates various end-user tools with a moderate level of integration. The suite contains strong individual products as well as several clients for various types of analysis and capabilities for building custom guided BI applications that can be published to the Web or mobile devices. The suite currently consists of the following products: SAP Crystal Reports, SAP BusinessObjects Web Intelligence, SAP BusinessObjects Design Studio, SAP BusinessObjects Analysis and SAP BusinessObjects Lumira. Some products leverage the central Universe semantic layer to access data sources, while others access data sources directly.

SAP Predictive Analytics, based on a self-developed and acquired KXEN product portfolio, is a new combined on-premise solution for data mining and statistical analysis.

### Strengths

- Extensive BI platform for formatted and ad hoc reporting, analysis, dashboarding and custom application development, suitable for large deployments
- Business-user-friendly experience for ad hoc reporting, analysis and visual analysis
- Strong data mining and predictive analytics capabilities
- Strong publishing and distribution features built into the platform
- Content distribution through versatile mobile application

### Weaknesses

- Portfolio integration remains a work in progress with a strategy to converge user experiences
- Analysis for Office not leveraging the BusinessObjects Universe as a semantic layer. However, SAP's BI statement of direction indicates development in this area
- Strong focus on products such as BusinessObjects Cloud and Digital Boardroom products is leading to less innovation and fewer updates for the rest of the BI product portfolio

## SAS

Cary, NC, USA

[www.sas.com](http://www.sas.com)

SAS, founded in 1976, is privately held, one of the earliest software companies and a well-known brand in the business intelligence and analytics market. The vendor has specialized in business intelligence, statistics, industry-specific analytic applications, data mining and data management for decades.

SAS's traditional BI offering, SAS Enterprise BI Server, covers dashboarding, OLAP and reporting, and provides clients such as Web Report Studio, BI Dashboard and Windows clients including SAS Enterprise Guide. SAS also offers a variety of analytic applications that address different industries and application domains such as fraud detection for financial services, market basket analysis for retail, and churn analysis for telecommunications providers. Currently, the bulk of these applications are still based on the SAS 9 architecture.

Increasingly targeting skilled business users, SAS is well positioned to ride the big data trend that is sweeping most enterprises. Still, its greatest strength lies in advanced analytics, predictive modeling and statistics, and this strategy dovetails well with its focus on industry-specific applications.

In 2012, SAS released SAS Visual Analytics, complemented in 2014 by SAS Visual Statistics. This new product line provides an integrated platform for visual data exploration, dashboarding, ad hoc reporting and analysis, and gives customers a wide range of deployment options including public cloud, as well as the flexibility to use a variety of data sources, including relational databases and Hadoop.

In 2016, SAS introduced its new open and cloud-ready platform for analytics called SAS Viya. Viya will not only support SAS code but also other languages like Python, Java and Lua for analytics purposes. SAS Visual Data Mining and Machine Learning and SAS Visual Investigator are already available on SAS Viya, and products such as SAS Visual Statistics and SAS Visual Analytics are set to follow soon.

### Strengths

- Strong analytics and data mining capabilities
- Solid data management abilities with metadata support in the platform
- SAS includes a flexible and powerful programming language
- SAS Visual Analytics as a business user-oriented ad hoc analysis, reporting, visual data exploration and dashboarding solution
- Technical support and worldwide implementation partner network

### Weaknesses

- Limited integration in the BI portfolio (SAS VA and SAS Enterprise BI Server)
- Despite the modernized user experience of SAS Visual Analytics, the traditional SAS BI portfolio requires technical expertise
- SAS Visual Analytics includes interactive and self-service style reporting and dashboards. It does not focus on traditional formatted reporting scenarios – therefore it has limited functionality in this area compared to many competitors

## Sisense

New York, NY, USA

[www.sisense.com](http://www.sisense.com)

Headquartered in New York City, Sisense is a growing BI vendor offering an internal and embedded analytics product with an API-first design. The company sells to medium and large enterprises across the globe. Its product addresses the needs of modern Web developers who prefer APIs for implementing customized functionality and navigation experiences.

Marketed as a “single-stack” product that tries to simplify business analytics for complex data, Sisense provides predefined dashboards, data modeling and integration tools for querying disparate data sources. Sisense can consume data from spreadsheets, Hadoop, Web applications and relational databases and loads it into multidimensional ElastiCube data stores without pre-aggregation or pre-calculation. Query performance is enhanced by Sisense’s proprietary In-Chip technology, which uses CPU-based memory banks to store data and further scale performance.

Sisense is a BI solution that includes all the necessary tools required to build, embed and run multi-terabyte analytics solutions on-premises or in the cloud. Designed with application program interface (API) access as a top priority, Sisense offers developers the ability to invoke integration, discovery and dashboard functions through JavaScript and REST methods. Sisense customers have the option of offering out-of-the-box BI tools or designing a custom analytics experience to suit the needs of specific user groups.

### Strengths

- One integrated product primarily focused on analysis and dashboarding, and targeted at business users
- Proprietary In-Chip technology for performance acceleration
- APIs and JavaScript library for embedding purposes
- Business user oriented data integration and modeling capabilities
- HTML5-based dashboards and interactive visualizations targeted at business users

### Weaknesses

- No predefined functionality for planning; only when used as an analysis and dashboarding product in performance management and planning processes
- Limited capabilities in the area of print-oriented reporting and report distribution compared to some competitors in this area
- Local presence limited to USA and Israel, although the vendor is currently expanding into other territories

## Tableau

Seattle, WA, USA

[www.tableau.com](http://www.tableau.com)

Tableau Software (Tableau) emerged from scientific research at Stanford University, where its three founders pursued a mission of helping people see and understand their data. Since its inception in 2003, Tableau has enjoyed remarkable growth, with offices in locations such as Vancouver, London and Singapore. Tableau follows a strategy of delivering software that requires as little training as possible, and allows business users to better interpret their own data by means of visualization without having to rely on the assistance of an analyst. At the same time, the tool offers additional, predefined statistical functions and analysis capabilities specifically geared to analysts.

Today, Tableau offers four core products: Tableau Desktop, Tableau Server, Tableau Online and Tableau Public, which are based on one common technology.

Tableau is a user-friendly visual analysis tool. Its core comprises a full client with connectors to a wide variety of data sources, including local data. The structured intuitive user interface, built-in intelligence and main memory utilization - geared to optimizing performance - contribute to the popularity of this solution in self-service BI (SSBI) scenarios. Tableau's architecture is relatively simple: A desktop client is used for central development and authoring. Creation of simple analyses and consumption of workbooks can be done on the Web and on mobile devices.

Tableau's openness to different data sources is one of vendor's focus areas. The solution allows users to combine and analyze data from over 40 different data sources. Among others, there are native connectors to numerous relational databases, local files, special data sources and multidimensional databases as well as cross-database join capabilities since version 10.

Like other self-service BI providers, the company pursues a "land and expand" strategy with a focus on business users. Today the solution is promoted well by the vendor and can be seen as a "shooting star" on the BI market.

### Strengths

- Easy-to-use user interface and therefore potentially high user acceptance
- Visual analysis with some built-in intelligence suitable for business users
- Self-service data modeling and analysis capabilities for users with access to different data sources including capabilities for cross-database joins
- Several interactive visualization options with visualization recommendations
- Offline reporting and analysis capabilities (desktop client)

### Weaknesses

- Predefined functions for planning and budgeting are not offered; however Tableau can be used as an analysis and dashboarding solution to support planning processes
- Risk of report "explosion" when using the solution without proper governance concepts
- Data integration and modeling take place in the desktop client

## TARGIT

Hjørring, Denmark

[www.targit.com](http://www.targit.com)

TARGIT was founded in 1986 and is a privately owned software provider based in Denmark. The company has about 5,400 customers, most of whom are located in Europe and North America, while one-third are distributed across the rest of the world.

TARGIT is positioned well for mid-size companies that require an all-integrated BI platform. TARGIT has made significant inroads particularly among Microsoft Dynamics customers. The company offers a number of vertical solutions, with manufacturing and retail being the more significant verticals, while niche solutions for heavy machinery, waste management, fleet management, medical billing, fashion design and apparel are showing traction as well. In recent releases, the vendor has invested heavily in enabling customers to access additional data sources other than Microsoft SQL Server.

The TARGIT Decision Suite offers integrated data discovery/self-service analysis, ad hoc reporting and dashboards with capabilities for batch reporting, mobility, storyboards and data mashups. Recent releases support a range of innovative features including speech recognition for natural-language queries, alerting and notification, an intelligent wizard that finds relevant content as the user types, an in-memory data mashup tool, support for creating custom gauges, and a Java-based client for embedding the Decision Suite on any device.

### Strengths

- Integrated BI platform for data discovery/self-service analysis, ad hoc reporting and dashboards
- New self-service BI capabilities that complement the governed experience
- Business user oriented ad hoc reporting and analysis module
- Agents for monitoring data and alerting
- Accelerators and predefined content for Microsoft Dynamics NAV, AX, CRM and GP

### Weaknesses

- Lack of marketing and limited overall visibility in BI markets
- Microsoft-centric approach with Windows dependencies, which makes TARGIT less interesting for organizations with a Linux platform focus
- Lack of a comprehensive ecosystem outside the Nordic region

## TIBCO

Palo Alto, CA, USA

[www.tibco.com](http://www.tibco.com)

TIBCO is a software vendor best known for its infrastructure offerings. However, in 2007, it decided to enter the business intelligence market with the acquisition of Spotfire, a Swedish software vendor specializing in interactive visual analysis. In 2014 TIBCO invested again and purchased the open source vendor Jaspersoft with its solution for formatted and ad hoc reporting, dashboarding and OLAP analysis.

The Spotfire Analytics Platform is a comprehensive business intelligence solution strongly focused on visual and advanced statistical analysis as well as the design of interactive dashboard applications. Spotfire applications are optimized to deliver good performance through integrated in-memory data storage or by using in-database options in combination with third-party storage technologies.

Aside from a full-featured desktop client primarily targeted at trained analysts and statisticians, TIBCO also offers Web and mobile clients for Spotfire content consumers. By embedding complex statistical methods and models, data scientists can perform predictive analyses, leveraging capabilities offered by the S+ and R programming languages. Spotfire is also well designed for building interactive dashboards and custom BI applications with guided navigation. Users can drag and drop chart objects to the desired position on the screen. They can also effectively visualize data and intuitively navigate through datasets using the wide range of chart types.

TIBCO Spotfire offers a wide range of capabilities to support collaboration through Tibbr, a separately licensed collaboration and social networking platform.

TIBCO's Jaspersoft solutions round out the vendor's BI portfolio with reporting, dashboarding and analysis as well as data integration functionality. The Jaspersoft suite primarily targets product managers and developers who want to embed BI into their commercial applications. End-users of Jaspersoft include non-technical business users who work within the applications that Jaspersoft is embedded into. Jaspersoft is a popular option amongst the developer community due to its open source heritage and embedding flexibility.

### Strengths

- In-memory solution Spotfire designed to support business users with different types of analysis: visual, geo, streaming and advanced statistical analytics (including execution of S+, R, SAS and Matlab models)
- Comprehensive capabilities for visualizing data and support for unrestricted, visual data navigation in Spotfire
- Flexible environment for developing interactive on-screen dashboards and applications for reporting and analysis in Spotfire
- Highly formatted and ad hoc reporting as well as analysis of big data sources in Jaspersoft
- Coverage of embedding scenarios through a JavaScript API and visualize.js which allows for seamless integration of analytics into Web applications

### Weaknesses

- Basic data integration capabilities in TIBCO Spotfire Business Analyst; specialized data integration platform for complex requirements available (OEM)
- Limited integration within TIBCO's portfolio, particularly between Spotfire and Jaspersoft
- Overlapping features in both product lines (Spotfire and Jaspersoft)

## Yellowfin

Melbourne, Vic, Australia

[www.yellowfinbi.com](http://www.yellowfinbi.com)

Yellowfin, founded in Melbourne in 2003, is a BI software company that set out to change the general BI approach because the founders felt that traditional BI had become too complex and too expensive. Yellowfin's strength lies in selling its software to OEM organizations, where its BI functionality is integrated into other vendors' products and applications. The vendor boasts more than 600 partners today, which is a large number for a mid-sized company. Yellowfin also sells directly to end-user organizations and while the company only has a small direct sales force, it has been able to sign up some impressive names as customers through its extensive reseller network.

Yellowfin is a mature, user-friendly BI platform that has evolved from a successful reporting and dashboard product to support an emerging style of BI characterized by governed data discovery and collaboration. Besides engaging visualization, and the company's focus on making BI content consumption as easy as possible, the vendor has put particular emphasis on providing collaboration features. Its breadth of features in this area is a major differentiator. Besides storyboards, which many vendors provide today, Yellowfin has added features such as Timeline, to track content and collaboration in a social networking manner, as well as workflow functionality to support content creation and collaboration between different user types – such as IT and business.

The vendor's "author once, consume anywhere" approach enables users to deploy dashboard content easily on mobile devices. Yellowfin has enhanced its mobile experience with collaboration features to support annotations, discussions and content sharing.

### Strengths

- Innovative features such as collaboration and storyboarding
- Embedded BI into other host applications
- Ease of use for business users
- Simple pricing model
- Geo-visualization capabilities

### Weaknesses

- Highly formatted (pixel-perfect) reporting is not available with the solution
- Yellowfin does not provide planning functionality (i.e., write-back, data allocation, planning functions). The solution, however, can be used to support performance management or planning tasks with its dashboarding, analysis and reporting functionality
- Yellowfin offers some predefined predictive analysis capabilities, but no advanced data mining capabilities and limited predictive functionality compared to some competitors

## Other Vendors

There are many other established vendors in the business intelligence market that provide mature and very useful technology, which may be ideal for organizations looking for a BI solution. However, due to the inclusion criteria applied in this report, those vendors are not evaluated in detail. To provide a broader market overview, we list some of those providers here.

### **Adaptive Insights**

Palo Alto, CA, USA

[www.adaptiveinsights.com](http://www.adaptiveinsights.com)

Adaptive Insights offers a cloud-based business intelligence and corporate performance management suite called Adaptive Suite for planning, consolidation, analytics and reporting.

### **ADVIZOR Solutions**

Downers Grove, IL, USA

[www.advizorsolutions.com](http://www.advizorsolutions.com)

ADVIZOR offers interactive analysis with lots of different chart types for visual discovery as well as predictive analytics based on a patented in-memory data model.

### **Alteryx**

Irvine, CA, USA

[www.alteryx.com](http://www.alteryx.com)

Alteryx Analytics provides analysts with a workflow-based approach to data integration, modeling and advanced analytics that leads to deeper insights into data. Alteryx is especially geared to supporting users in the area of data preparation as one of the important steps in a data discovery process.

### **Anaplan**

San Francisco, CA, USA

[www.anaplan.com](http://www.anaplan.com)

Flexible, cloud-based planning product with additional functionality for reporting and analysis. Planning applications for miscellaneous topics available.

### **Antivia**

Leeds, UK

[www.antivia.com](http://www.antivia.com)

Antivia DecisionPoint is a tool for creating interactive dashboards, reports and BI applications for mobile devices and the desktop.

### **Bilander**

West Chester, PA, USA

[www.bilandergroup.com](http://www.bilandergroup.com)

Integrated BI tool for ad hoc reporting, (advanced) analysis, planning, dashboarding and balanced scorecarding with comprehensive chart functionality.

### **Bissantz**

Nuremberg, Germany

[www.bissantz.de](http://www.bissantz.de)

Bissantz's DeltaMaster software enables users to create custom solutions for analysis, planning and reporting, featuring patented visualization capabilities.

### **Bitam**

Roswell, GA, USA

[www.bitam.com](http://www.bitam.com)

Bitam is a global provider of business intelligence and enterprise performance management software solutions.

### **Chartio**

San Francisco, CA, USA

[www.chartio.com](http://www.chartio.com)

Interactive charts and dashboards created through an intuitive drag-and-drop interface. Customers can connect their databases directly to Chartio to visualize their data in real-time.

### **ClearStory Data**

Menlo Park, CA, USA

[www.clearstorydata.com](http://www.clearstorydata.com)

Fast data access, iterative analysis and active collaboration based on an integrated Spark-based data processing platform.

### **Cubeware**

Rosenheim, Germany

[www.cubeware.de](http://www.cubeware.de)

BI front end for reporting, analysis, dashboarding and planning with a data integration offering for various multidimensional databases.

### **Connexica**

Stafford, UK

[www.connexica.com](http://www.connexica.com)

Connexica's CXAIR is a search-based analytics tool for querying structured and unstructured data.

### **Cyberscience**

Centennial, CO, USA

[www.cyberscience.com](http://www.cyberscience.com)

An ad hoc query and production reporting system that allows users to create simple queries, business graphics and crosstab reports as well as production reports.

### **Datameer**

San Francisco, CA, USA

[www.datameer.com](http://www.datameer.com)

A big data analytics environment on top of Hadoop. Datameer combines self-service data integration, analytics and visualization functionality.

### **Datawatch**

Chelmsford, MA, USA

[www.datawatch.com](http://www.datawatch.com)

Datawatch offers data preparation and visual analysis products for accessing structured and unstructured data and exploring it with visual analytics to identify trends, spot outliers and identify opportunities.

### **Decisyon**

Stamford, CT, USA

[www.decisyon.com](http://www.decisyon.com)

A collaborative business intelligence and performance management software solution that integrates analysis, planning and execution.

### **Domo**

American Fork, UT, USA

[www.domo.com](http://www.domo.com)

Fast-growing American business intelligence vendor focused on data visualization, dashboards and reporting while offering the ability to discover, mash up, visualize and present data.

### **Dundas**

Toronto, ON, Canada

[www.dundas.com](http://www.dundas.com)

Dundas BI is a highly extensible, dashboard development environment that runs on Microsoft SQL Server and enables decision-makers to digest data at a glance.

### **Entrinsik**

Raleigh, NC, USA

[www.entrinsik.com](http://www.entrinsik.com)

Entrinsik Informer includes a browser-based drag-and-drop, point-and-click interface that is designed to encourage self-service BI, and is heavily used by mid-sized companies in specific industries.

### **GoodData**

San Francisco, CA, USA

[www.gooddata.com](http://www.gooddata.com)

GoodData offers a cloud analytics platform to help organizations creating and distributing data products. The product offers analytics functionality such as dashboards, data discovery and visualization.

### **iDashboards**

Troy, MI, USA

[www.idashboards.com](http://www.idashboards.com)

Interactive dashboarding software that displays data from databases, data warehouses, spreadsheets, XML and other data sources in real time.

### **InetSoft**

Piscataway, NJ, USA

[www.inetsoft.com](http://www.inetsoft.com)

InetSoft offers various applications that focus on operational BI, enterprise reporting, data visualization and embeddable reporting.

### **Jedox**

Freiburg, Germany

[www.jedox.de](http://www.jedox.de)

A flexible BI solution for planning, reporting and analysis that runs on the company's own multidimensional database. The underlying philosophy of Jedox Suite is to extend the familiar Excel environment with specific BI functionality.

### **Jinfont Software**

Rockville, MD, USA

[www.jinfont.com](http://www.jinfont.com)

JReport provides interactive data visualization with customizable ad hoc reporting and dashboards that empower end users through the Web and mobile devices.

### **Lavastorm Analytics**

Boston, MA, USA

[www.lavastorm.com](http://www.lavastorm.com)

Agile analytic environment that combines ETL and data integration, data analysis and data visualization capabilities based on the Lavastorm Analytics Engine.

### **Longview (including arcplan)**

Longview Solutions is a Canadian CPM and tax solution specialist that merged with arcplan, a German BI specialist, in 2015. The Longview portfolio now offers the following products: Longview 7, Longview Tax, Longview CPM and Longview Analytics (formerly arcplan).

### **Looker**

Santa Cruz, CA, USA

[www.looker.com](http://www.looker.com)

Web-based data discovery platform accessible on any browser as well as on mobile devices. Looker operates inside underlying databases, such as Amazon Redshift, Greenplum and Teradata Aster.

### **Palantir Technologies**

Palo Alto, CA, USA

[www.palantir.com](http://www.palantir.com)

Palantir offers solutions for integrating, visualizing and analyzing massive amounts of information. Palantir's software is deployed at public institutions, private enterprises, and also in the non-profit sector, for example, in defense, anti-fraud and disease response.

### **Panorama Software**

Toronto, ON, Canada

[www.panorama.com](http://www.panorama.com)

Collaborative business intelligence tool focused on dashboarding and analysis and based on visual infographics.

### **Phocas**

Coventry, UK

[www.phocassoftware.com](http://www.phocassoftware.com)

Phocas offers a mature self-service tool that enables users to perform their own analysis and reporting with IT support needed only for data provisioning. Phocas offers a good range of functionality to support ad hoc querying, standard reporting, dashboarding and data discovery.

### **Platfora**

San Mateo, CA, USA

[www.platfora.com](http://www.platfora.com)

An interactive big data analytics platform for multistructured data operating natively on Hadoop and Spark.

### **Prevero (Unit4)**

Munich, Germany

[www.prevero.com](http://www.prevero.com)

Prevero offers a flexible development environment for building individual BI applications for planning, reporting and analysis with the help of wizards targeted at business users.

### **Prognoz**

Perm, Russia

[www.prognoz.com](http://www.prognoz.com)

Prognoz is a Russian specialist offering a platform containing several components for formatted and ad hoc reporting, dashboarding and analysis.

### **Salesforce**

San Francisco, CA, USA

[www.salesforce.com](http://www.salesforce.com)

Salesforce, already well known for its CRM solution, has entered the BI market with an internally developed product called Wave Analytics. In 2016, Salesforce also acquired BeyondCore, a data discovery solution targeted at business users.

### **Salient**

Vancouver, BC, Canada

[www.salientbi.com](http://www.salientbi.com)

Salient's Collaborative Intelligence Suite offers analytics, interactive dashboards and collaborative knowledge management all within one integrated business intelligence/performance management tool.

### **SpagoBI**

Padua, Italy

[www.spagobi.org](http://www.spagobi.org)

An open source business intelligence suite for ad hoc reporting, interactive cockpits, multidimensional (OLAP) analysis and data mining.

### **Zoomdata**

Reston, VA, USA

[www.zoomdata.com](http://www.zoomdata.com)

A big data exploration, visualization and analytics platform for stream processing data including cloud, Hadoop/HDFS, social media and proprietary databases to create real-time visualizations.

## Related Research Documents

The following BARC and CXP Group documents complement BARC Score Business Intelligence:

- **The BI Survey**

The world's largest vendor-independent survey of BI end-users analyzes the latest trends and reveals how real-world end-users currently rate their BI vendors and products.

<http://www.bi-survey.com/>

- **Vendor Performance Summaries**

Product reviews with detailed insights into more than 30 business intelligence solutions, covering all the major players in the BI space.

<http://www.barc-research.com/bi-survey-16/the-bi-survey-16-vendor-performance-summaries/>

- **BI Trend Monitor 2017**

Examines the trends currently shaping the business intelligence and data management market.

<http://www.barc-research.com/research/bi-trend-monitor/>

- **The PAC SITS Research Platform**

Market and vendor analyses for analytics and many other topics.

<https://www.pac-online.com/sitsi>

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