BARC Score

Enterprise BI & Analytics Platforms

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Abstract

This BARC document is the sixth edition of our BARC Score business intelligence and analytics vendor evaluation and ranking. This BARC Score evaluates enterprise BI and analytics platforms that are able to fulfill a broad set of BI and analytics 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 portfolio capabilities and architecture to sales and marketing strategy, financial performance and customer feedback.

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Overview

The market for business intelligence (BI) and analytics platforms is still evolving rapidly. On the one hand, there is a massive push towards business user empowerment by all relevant market players. Even established BI suite vendors with standardization and governance as the sweet-spots of their IT-oriented suites have invested heavily in modernization and business user orientation in recent years. On the other hand, BI and analytics specialists focused on business users have entered the market targeting buyers from line of business who were frustrated by IT-controlled and central BI environments.

However, the increasing complexity of data analysis, growing data volume and diversity of data have made data management and governance indispensable for the modern analytics landscape. As a consequence, all vendors – including former so-called self-service BI players – have started to provide more data management and governance features while enabling business users as primary content creators and consumers.

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

A modern enterprise BI and analytics 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 and analytics platform is the indispensable backbone of any enterprise wanting to succeed in adapting to the digitalization of markets.

A modern enterprise BI and analytics platform supports a broad range of use cases. Therefore, it should provide front-end tools or modules for different types of users based on a suitable infrastructure. The technical infrastructure includes the abilities to set up a central, governed and open semantic layer for all analytics modules and third-party tools, integrate the required data and offer additional functionality such as data lineage, impact analysis and data catalogs.

Besides buying a modern enterprise BI and analytics platform, organizations should have a BI and analytics 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.

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

Inclusion criteria

There are two separate inclusion criteria categories 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 BARC Score, a vendor has to have a strong focus on providing BI and analytics functionality and supply five out of six technologies from the following functional portfolio:

- Formatted reporting
- Dashboards
- Analysis and data discovery
- Advanced analytics
- Planning
- Self-service BI and ad hoc reporting

In addition, the vendor has to generate a minimum of 15 million Euros in license revenue per year with the above product set, spread across at least two separate geographical regions. Furthermore, the product set must have a significant number of implementations and license revenues across different geographical regions to be considered as global.

We consider the following as individual geographical regions:

- 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 they do not charge a license fee for their products, but an annual subscription fee.

Evaluation criteria

Every vendor is evaluated on two dimensions, Portfolio Capabilities and Market Execution, each of which represents an axis on the Score chart and considers sub-criteria which are described in detail below.

Portfolio capabilities

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

- Functionality
- Infrastructure
- Portfolio

The weightings for each of the categories and sub-categories are shown in Table 1. Each of the sub-categories also have detailed weightings and criteria.

Please note: Only vendor-distinct functionality is included in our vendor portfolio ratings. We do not consider OEM products or partner solutions.

Table 1: Portfolio capabilities - Criteria and Weighting

Category	Criteria	Weighting
Functional evaluation	Dashboards and BI applications (high weighting) Analysis and data discovery (high weighting) Self-service BI and ad hoc reporting (high weighting) Reporting – print-oriented, formatted (medium weighting) Advanced analytics (low weighting) Planning (low weighting)	48%
Infrastructure evaluation	Systems architecture and administration, deployment Performance Access to data sources Metadata and semantics Governance and security Information delivery Data catalogs Automation	37%
Portfolio evaluation	Portfolio integration Portfolio maturity Portfolio lifecycle	15%

Functional evaluation

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

Dashboards and BI applications

Dashboards are also referred to as cockpits or BI applications. They provide graphical views of key performance indicators combined with the ability to intuitively drill down to details. Some dashboards offer self-service functions so that end users can create their own layouts without help. Sophisticated BI applications with guided navigation are still typically built by developers or technically savvy business users.

More and more vendors offer additional presentation formats for data such as stories or representations of the most important key performance indicators (KPIs) without the need to build a specific dashboard. With the increased use of mobile devices, modern enterprise BI and analytics platforms also offer better support for creating mobile applications (preview for different device types, etc.) and displaying information by, for example, supporting responsive design layouts.

Analysis and data discovery

Data discovery is one of the major trends in bringing analytics and BI to a greater number of users. A major benefit of this trend is the increased flexibility for power users from business departments and the analysis capabilities to gain information from different data sources. However, in many companies ungoverned data preparation, definition of KPIs and publication of reports and applications has led to declining trust in data and extra effort expended on creating redundant content. Therefore, we evaluate each product's ability to combine the virtues of a strong platform for secure, repeatable and broad data services with the provision of analysis and data discovery for business users.

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 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 analysis.

Augmentation and guidance are evaluated as key criteria to support non-technical users from business departments in report creation and analysis tasks. Therefore, most of the vendors are currently working to provide users with more guidance. Many products already deliver suggestions for possible visualizations based on selected data. Some already make use of machine learning (ML) to highlight the most important insights in data and, in turn, guide users through possible analysis steps. ML is also increasingly used in data preparation by suggesting data transformation steps or highlighting data quality issues.

Self-service BI and ad hoc reporting

In many cases, users require more interactivity than they can get from predefined reports and dashboards. Ad hoc reporting is geared to non-professional report developers from business departments and provides basic filtering and navigation features (e.g., drill down, ranking and conditional formatting).

Non-technical users are increasingly supported with natural language query (NLQ) capabilities so they can type their questions into a search bar in a more business-oriented way instead of using languages such as SQL or creating wizard-based data queries via drag-and-drop.

Reporting

Formatted standard reports are usually page-oriented reports run on regular schedules or triggered by alerts. These include static reports – which normally appeal to the widest audience in a company – and dynamic 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 (what you see is what you get) development interface.

Virtually every analytics and BI product can provide some type of reports. The importance of page orientation, scheduling and other advanced reporting features, however, varies depending on the customer's requirements. Functions such as natural language generation (NLG) help users with suggested narratives for report data.

Advanced analytics

Advanced analytics 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 machine learning, statistical data analysis, neural networks, decision trees, time series and many other algorithms. Users must be well trained in order to use these methods and to gain the expected insights. Advanced analytics tools often contain data integration and analysis process support functionality.

Besides data scientists and statisticians, power users from business departments are also demanding more statistical algorithms for data analysis. In contrast to data scientists, these users do not typically design/code the algorithms but use predefined algorithms instead. Therefore, many modern enterprise BI & analytics platforms vendors provide not only an offering for data scientists but also incorporate advanced analytics functions into their analysis solutions. A few vendors have now begun to work on concepts to improve collaboration between data scientists and business analysts.

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 forms to a central planning model. The planning model consists of structures (master data), key figures and planning logic and combines different operational and financial plans. Both the planning forms and model are created using a planning solution. The co-

ordination 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.

Ideally, planning functionality or solutions are tightly integrated with the BI offering or functionality. In this way, customers can plan their business and control the results in shorter time frames and therefore react more quickly to changes.

Infrastructure evaluation

A modern enterprise BI and analytics platform must serve multiple usage scenarios and expanding user numbers as well as growing data sources and amounts. Therefore, it 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 or embed into other applications. In terms of infrastructure, we evaluate a broad range of technical criteria including architectural evaluation, openness and the ability to integrate different data sources, as well as other technical features such as performance optimization techniques and security settings. To evaluate the openness of a solution, we analyze the vendor's API offering and support for third-party products to interact with the system.

A modern BI and analytics platform must also be able to serve users with personalized information. A recent study shows that customers ask for diverse content distribution formats served over a vast number of different channels (source: The Future of Reporting, BARC, 2019). Therefore, we carefully assess the information delivery capabilities of each platform.

Moreover, we look at connectivity to data sources – including relational databases, NoSQL databases and business applications – as well as supported file formats and options for customers to build their own adapters if needed.

The effort needed to maintain the system is considered as well. Therefore, we rate the use of machine learning to enhance user guidance and automation to reduce administrative effort or time spent searching within a product or using specific functions which can be automated.

Portfolio evaluation

We evaluate each vendor's overall portfolio from a customer perspective. A state-of-the-art business intelligence and analytics platform must 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 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 do not usually meet all their customers' functional requirements. Sometimes vendors offer mature products that are no longer being enhanced with innovative, new features. As a consequence, they may fail to fulfill new and emerging requirements.

Criteria weighting

We do not consider all categories and sub-categories to be equally important in this BARC 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 BARC Score using the following criteria and their corresponding weighting (see Table 2).

Table 2: Market execution - Criteria and Weighting

Criteria	Weighting
Product strategy	High
Customer satisfaction	High
Financials	Medium
Geographical coverage	Medium
Ecosystem	Medium
Sales strategy	Medium
Organizational strength	Low
Marketing strategy	Low

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.

Customer satisfaction

In this year's BARC Score, we have included the 'Customer Satisfaction' KPI from The BI & Analytics Survey. This generally considers product satisfaction, vendor support and implementer support ratings reported by customers.

Financials

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 do not break out the numbers for individual product lines, estimated figures are used. This year we have given additional weighting to our estimation of BI and analytics revenues for each vendor and scaled the rating accordingly.

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. We also evaluate whether each vendor has a dedicated team looking after and searching for partners.

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.

Organizational strength

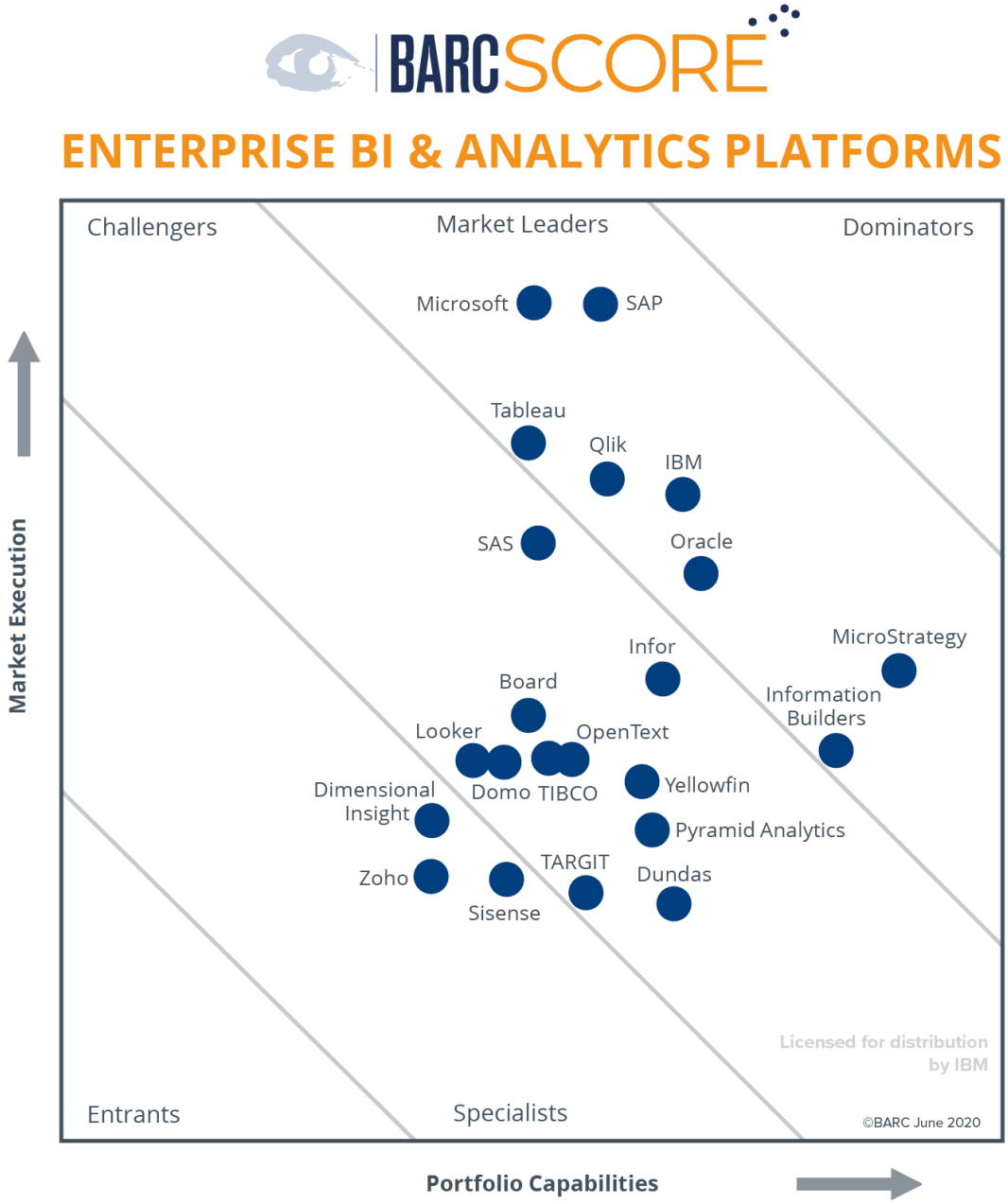
Vendors are rated on their organizational stability, which is influenced by consistency of corporate strategy, continuity of executive leadership, but also staff turnover, reorganization and layoffs.

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, seminars, roadshows and webinars.

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, 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 Enterprise BI and Analytics Platforms, June 2020

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 and 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 often smaller vendors with a portfolio focused on a specific market segment. They can be either limited in their technical capabilities by concentrating on certain features and functions, or they may only focus on select geographic regions rather than the global marketplace.

Entrants

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

Evaluated vendors and products

The latest versions of the following products are evaluated in this BARC Score:

Vendor	Product(s)
Board International	Board
Dimensional Insight	Diver Platform DiveTab
Domo	Domo Business Cloud
Dundas Data Visualization	Dundas BI
IBM	IBM Cognos Analytics IBM Planning Analytics powered by TM1 IBM Watson Studio IBM SPSS
Infor	Infor Birst Infor d/EPM
Information Builders	WebFOCUS
Looker	Looker Analytics-related Google Cloud Platform Services
Microsoft	Power BI SQL Server Reporting Services Office Analytics-related Azure Services such as Data Explorer and ML
MicroStrategy	Analytics Platform
OpenText	OpenText Analytics Suite OpenText Magellan
Oracle	Oracle Analytics Cloud Oracle Analytics Server Oracle EPM Cloud Oracle Hyperion Planning OCI Data Science
Pyramid Analytics	Pyramid 2020
Qlik	Qlik Sense Qlik Catalog Qlik NPrinting Qlik GeoAnalytics Qlik Insight Bot Qlik Connectors Qlik Alerting

Vendor	Product(s)
SAP	SAP Analytics Cloud SAP BusinessObjects BI Platform SAP Business Planning and Consolidation SAP Data Intelligence
SAS	SAS Visual Analytics SAS Visual Statistics SAS Visual Data Mining and Machine Learning SAS Data Preparation SAS Visual Forecasting SAS Visual Text Analytics
Sisense	Sisense
Tableau	Tableau Desktop Tableau Server Tableau Prep Tableau Data Management Tableau Server Management Tableau Mobile
TARGIT	TARGIT Decision Suite
TIBCO	Spotfire Data Science Jaspersoft
Yellowfin	Yellowfin BI
Zoho	Zoho Analytics

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.

Each vendor description includes vendor-related information, products covered in the BARC Score, and strengths and challenges.

Board International

Chiasso, Switzerland

www.board.com

Board was founded in 1994 and employs more than 420 people worldwide. Both its European head office and software development headquarters are located in Chiasso, Switzerland. A second regional US headquarters is located in Boston, Massachusetts. Board has 27 offices around the world and a global partner network. More than 3,000 customers use Board to implement analytics and CPM projects. The company currently has a strong focus on internationalization, particularly by building up its presence in the United States. The ownership of the company changed in 2019 when Nordic Capital finalized the acquisition of a majority stake in the share capital of Board International SA.

Board aims to provide the #1 decision-making platform on the market which unifies analysis, planning, simulation and advanced analytics. The vendor focuses on providing end-to-end support to key decision-making processes by combining self-service capabilities with enterprise scalability and governance. The goal is to deliver an easy-to-use and technically homogeneous environment in support of analytics and CPM. Board's vision is to enable business users to implement tailored solutions without significant IT support, based on an easy-to-use toolkit.

Board offers a combined product consisting of a front end and a proprietary multidimensional in-memory database called WAVE, which also allows for business-user-friendly data modeling. It is a web-based flexible development environment for creating dashboarding, reporting, analysis, planning and predictive analytics applications and can also be used for financial consolidation and strategy management. Users can create and tailor a broad range of applications specifically to their own needs. Due to its tightly integrated front and back ends, the proprietary Board database allows only limited access for third-party front ends.

Over the past few years, Board has strongly enhanced its innovative capacity, focusing on trending topics and providing new functionality. Besides BEAM (the vendor's analytical engine for advanced analytics), Board has introduced a cloud offering based on Microsoft Azure, self-service data preparation (called Data Fast Track), storytelling, collaboration and cognitive capabilities incorporated into the system (including cognitive search by natural language query (NLQ)).

Strengths

- Flexible, fully web-based analytics and CPM product with tightly integrated system architecture of multidimensional in-memory database and front ends
- Graphical, business-user-oriented development environment for creating complex and flexible analytics and CPM applications without technical programming skills
- Integrated advanced analytics algorithms as part of the solution, resulting from university cooperation
- Self-service dashboard creation for end users through assembly of predefined BI objects
- Company is strongly focused on growth, internationalization and innovation

Challenges

- Limited access to the proprietary Board database for third-party front ends
- Limited advanced analytics methods; no integrated support of languages such as R, Python and SAS yet. However, Board plans to release an API engine to integrate with R and Python models.
- Relatively new but improved capabilities for formatted and print-oriented reporting

Dimensional Insight

Burlington, MA, USA

www.dimins.com

Dimensional Insight is a privately held company based in Burlington, MA. Started in 1989, Dimensional Insight set out to build an integrated platform with tools that address the various BI project roles. Its product line has evolved to include solution accelerators and product optimizations that have positioned it to succeed in industries such as healthcare, goods and services, and manufacturing in the United States, as well as higher education, government, transportation and insurance in international markets.

Dimensional Insight aims to provide trusted analytics, KPIs and the industry expertise people need to make informed business decisions. The company's product, Diver Platform, includes ETL, administration, dashboard development, data modeling, analysis and report viewing, as well as columnar database technology for data storage. Users can navigate data in any direction with performance boosted by a proprietary columnar in-memory engine. Based on its Diver Platform, Dimensional Insight offers rich content such as industry-specific adapters and business rules. The company also offers Measure Factory, a business rules automation engine designed to give users governed access to measures.

Dimensional Insight is very customer-centric and provides three 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; (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; and (3) its ability to provide users with access to commonly understood, trusted measures through business rules management.

Dimensional Insight also has a mobile BI information delivery platform called DiveTab. This is designed to be run on different devices (mobile, PC) and support the creation of individual (if needed, offline) operational applications. DiveTab applications support operational staff with information and analysis/navigation capabilities in data.

Strengths

- Industry expertise and packaged solutions
- In delivering content, ETL, in-memory data storage and front ends, Dimensional Insight focuses on providing an end-to-end solution to its customers
- Strong customer orientation reflected by high levels of customer satisfaction
- Self-service creation of dashboards by assembling predefined content/measures incorporated into the solution
- Measure Factory offers predefined governed content for selected industries based on common business rules and logic, which can be customized based on customers' needs

Challenges

- Front ends for data integration and analysis require rather technical, well-trained users
- Limited visibility and brand awareness outside core markets
- No predefined functionality for planning; only when used as an analysis and dashboarding product in performance management and planning processes

Domo

American Fork, UT, USA

www.domo.com

Founded in 2010 in American Fork, Utah, Domo launched its first BI product in 2012, but operated in stealth mode until 2015, approaching customers on a one-on-one basis and asking them to sign a non-disclosure agreement.

After 2015, Domo quickly garnered attention through mass marketing campaigns. Josh James, serial entrepreneur and founder of Omniture, is CEO and raised nearly $700 million in venture capital funding from 48 investors. Domo went public in June 2018 raising an additional $200 million in capital. The company has over 700 employees.

Domo believes that business technology must be as easy-to-use and intuitive as mobile consumer applications, while providing enterprise-grade scalability and security features. Domo's Business Cloud platform aims to foster collaboration, efficient decision-making, increased organizational productivity, and generate improved business results through faster and better leverage of data at scale. The platform was also designed to help IT leaders deliver value rapidly to the business by complementing their existing systems and infrastructure and unlocking value from their fragmented data and systems.

Domo is designed first for cloud and mobile. Customers use a browser to access all functionality, although it does have a Windows desktop tool called Workbench, which is used to transform and load on-premises data into the Domo cloud. Domo also has federated capabilities to allow data to be queried at source. Mobile users can access Domo through its iOS or Android apps.

From the beginning, one of Domo's primary goals was to simplify data acquisition by enabling customers to connect to their data as quickly and easily as possible. To meet this goal, Domo offers around 1,000 connectors. Domo customers can also get data via file uploads, OLAP & ODBC, on-premises databases, spreadsheets and other sources.

Strengths

- Focused on enabling all employees and business decision-makers with self-service capabilities and a consumer-friendly user experience
- Connectors for more than 1,000 data sources and 'Magic ETL'
- Modern, cloud-based architecture for scale with appealing look and feel
- Emphasis on using the solution on mobile devices
- Ability to create intelligent apps that leverage the governance and security features of the platform, along with write-back capabilities and AI/ML to guide decision-making

Challenges

- Although write-back functionality has recently been added, there is no predefined functionality for planning and budgeting; only when used as an analysis and dashboarding product in performance management and planning processes
- Limited capabilities in the area of print-oriented reporting
- Local presence very limited outside the United States, the United Kingdom, Japan and Australia

Dundas Data Visualization

Toronto, ON, Canada

www.dundas.com

Founded in 1992, Dundas began building its reputation as an innovator in visualization software with its Chart product based on Microsoft technology. In 2007, Dundas sold the Chart franchise to Microsoft. Further expanding its mission, Dundas released Dundas BI in 2014, a full-featured and modern BI platform that launched the vendor into the market for all-in-one BI platforms. With this flagship product Dundas focuses on two main usage scenarios: as an enterprise BI and analytics platform and for embedding. Dundas is a privately held company with approximately 100 employees headquartered in the company's only office in Ontario, Canada.

Dundas BI was built using .NET and is shipped on-premises or in the cloud. Dundas BI supports Microsoft and Linux as operating systems. Besides the ability to store data in an SQL Server or PostgreSQL data warehouse, the product supports live data access to different data sources as well as data acquisition into a proprietary in-memory engine. Dundas makes use of modern standards such as HTML5 and has equipped Dundas BI with REST, .NET and JavaScript APIs to support scenarios such as embedding and advanced customizations. The solution's two modules allow users – including those from business departments – to create dashboards and, for more advanced users, pixel-perfect print-oriented reports. Further presentation options include a dedicated scorecard editor and small multiples for producing a series of visualizations for comparison. These components all offer rich functionality for building individual applications with custom triggers and actions as well as plenty of property panes for the customization of these applications.

Dundas BI was conceived with an emphasis on ease of use. To protect business users from the complexity of the dashboard creation environment, customers can individually control the functional features it offers. Dundas BI offers interesting support for data discovery scenarios. The steps for data preparation and visualization are tightly integrated, making it feasible to iteratively analyze and enhance data to gain as much insight as possible. Visualizations are automatically created upon adding data to the canvas and there is an option to automatically change visualization types as more data is added. Calculations can be created quickly and directly from within visualizations. Although some improvements have been made, advanced analytics with guidance as well as user advisory for analysts remains one of the few functional areas in which Dundas BI scores lower in terms of functionality than competing vendors.

Strengths

- Dashboard development environment that provides a high level of control over the look, feel and functionality of user applications
- Ability to support operational dashboards through direct connection to source applications
- Clean, modern, responsive graphical interfaces
- Robust administrative capabilities for managing multi-tenant user communities
- Good capabilities for data discovery, especially for data preparation and visual analysis

Challenges

- Dundas BI is not a planning application; however, it can be used for reporting, analysis and dashboarding to support planning processes
- Improved but, compared to some competitors, it still has limited advanced analytics functions, which are mostly available through selected integrated statistical functions and external libraries
- Dundas is a rather small vendor with limited geographical presence and a partner network with scope for expansion

IBM

Armonk, NY, USA

www.ibm.com

IBM® is one of the world's largest vendors of IT hardware, software and services. The company has a global workforce of approximately 380,000 employees and is active in over 170 countries. In 2007, IBM purchased the Canadian software vendor Cognos (including IBM TM1®) to become the center of its future analytics product portfolio.

IBM offers a comprehensive portfolio of on-premises and cloud analytics, performance management and advanced analytics solutions. The core offerings consist of IBM Cognos Analytics, IBM Planning Analytics powered by TM1, IBM Watson Studio and IBM SPSS.

IBM's enterprise business intelligence and analytics solution – Cognos Analytics (formerly Cognos BI) – provides functionality for dashboards, reporting, data modeling and 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. More recently, IBM has added on-demand cloud options which can be used by individuals or smaller groups of users. The solution offers search-oriented analysis with encapsulated cognitive capabilities aimed at business users. IBM is continuing to invest in AI capabilities across data modeling, dashboards, data exploration and AI-learning of user preferences. Moreover, IBM has extended Cognos Analytics in the area of advanced analytics. For instance, Jupyter Notebooks has been incorporated in the user interface to provide more flexibility in data preparation and statistical analysis.

IBM Planning Analytics powered by TM1 – the vendor's strategic planning product – is a core element in IBM's performance management portfolio. Planning Analytics is a high-performance, multidimensional in-memory database for planning and analysis with Excel and web front ends.

For advanced analytics and data mining, IBM positions Watson Studio as its primary platform. Besides the widely known SPSS capabilities, Watson Studio also includes new data science modules based on Jupyter Notebooks for development in R and Python, AutoAI, and embedded decision management.

Strengths

- IBM Cognos Analytics is a well-integrated product for reporting; analysis and dashboards
- Web-based suite with multiple deployment options – cloud, on-premises and hybrid
- IBM Planning Analytics offers comprehensive flexibility for business power users to create planning and analytics applications based on a high performance in-memory database
- Broad capabilities for data mining and advanced analysis with IBM Watson Studio as well as visual business-user-oriented data discovery and cognitive BI with IBM Cognos Analytics
- Well established and expansive partner community with global product support and knowledge

Challenges

- The integration between the Cognos Analytics, Planning Analytics and Watson Studio products has improved but is incomplete. However, Watson Studio includes embedded Cognos Analytics dashboarding.
- Apart from the embedded Jupyter Notebooks capability, there is limited functionality for advanced analysis directly in Cognos Analytics. However, Watson Studio and SPSS are available as dedicated product offerings.
- Comparatively expensive analytics and planning products, although the cloud versions of Cognos Analytics and Planning Analytics offer alternatives for cost savings

Infor

New York, NY, USA

www.infor.com

Infor is a global US-based vendor of industry-focused business software solutions. The company was founded in 2002, has 170 locations worldwide and supports over 68,000 customers in around 200 countries. Infor is privately held by Koch Industries.

Infor has two main solutions in the BI and performance management area: Infor Birst and Infor Dynamic Enterprise Performance Management (d/EPM). Birst is Infor's cloud-based flagship BI and analytics platform and plays a significant role in Infor's unified cloud strategy. Birst connects to Infor's business applications such as ERP and CRM, to Infor d/EPM's underlying OLAP database, as well as to non-Infor systems. For selected Infor applications (e.g., CloudSuite Analytics, Lawson Analytics), Infor provides an analytic-ready data warehouse with semantic layer, predefined KPIs, reports and dashboards. In addition to providing formatted and ad hoc reporting, dashboarding, self-service data discovery and advanced analysis, Birst offers a full-stack solution that includes ETL and data preparation, data warehousing, mobile access and machine learning integration.

Since the acquisition, Infor has changed its go-to-market and product positioning strategy significantly, splitting its portfolio into analytics and CPM products, which are integrated with each other. Birst is now positioned to serve analytics usage scenarios and Infor d/EPM to serve CPM usage scenarios. Infor d/EPM and Birst are marketed to mid-sized companies and large corporations in all industry sectors. Both products can be used with Infor's existing ERP, CRM and SCM applications via predefined connectors but also standalone with third-party data sources (e.g., SAP, Salesforce, etc.). Infor d/EPM and Birst are sold by Infor directly as well as by more than 1,750 partners (resellers and OEMs) worldwide.

Infor d/EPM is a flexible development environment for tech-savvy business power users to build custom CPM and analytics applications. Predefined CPM applications are available for various business functions and industries. Recently, the vendor introduced a new version of Infor d/EPM with modernization improvements such as business-user-friendly, web-based modeling and administration, scalability and performance, as well as redesigned user interfaces.

Strengths

- Cloud-based BI platform for formatted and ad hoc reporting, dashboarding and analysis (Birst)
- Modern semantic layer concept to provide both governance and consistency as well as data discovery to support agile development for business users (Birst)
- Predefined analytical, BI and analytics applications for Infor CloudSuite products (Birst)
- Integrated flexible application suite for planning, dashboards, reporting, analysis and forecasting with proprietary multidimensional data storage (Infor d/EPM)
- Strong capabilities for ad hoc analysis and planning integrated in Microsoft Excel (Infor d/EPM)

Challenges

- Like some of its competitors, Infor splits its portfolio into analytics (Birst) and CPM products (Infor d/EPM). Integration between these products takes place at data level with the capability to display visualizations from both systems into a single view dashboard in either system or on the Infor Ming.le collaboration platform.
- Although data preparation in particular is much improved, Birst still has weaker visual analysis and augmented capabilities for business analysts compared to some of its competitors
- Infor d/EPM lacks market visibility in the CPM space (outside Infor accounts)

Information Builders

New York, NY, USA

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 and Omni product lines, which are often used alongside WebFOCUS for data integration and data quality functionality.

To summarize its core competencies and products, Information Builders uses the tagline 3i Data and Analytics Platform, representing integration, integrity and intelligence. This refers to the entire cycle of integrating, managing and analyzing data. Integration and integrity refer to Omni-Gen, a packaged platform for data management, especially for data integration and data quality. Omni-Gen offers more than 300 predefined connectors to different data sources (iWay). Intelligence stands for the BI front end, WebFOCUS. Although Information Builders strongly focuses on data processing, it does not provide self-developed data storage components, incorporating OEM in-memory technology instead.

The WebFOCUS data and analytics platform 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. In recent years, the vendor has been concentrating on developing interfaces that are easier to use and configure for business decision-makers. One of the solution's main clients for business users is the WebFOCUS Designer. This tool can be used for data preparation and to build interactive web applications as well as interactive InfoApps for non-technical consumers (especially in operational scenarios). Supporting operational analytics is actually a key strength of WebFOCUS. The solution delivers insights from data coming directly out of production 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. The suite also incorporates more advanced content creation tools such as AppStudio and BI Portal, which are used by tech-savvy users.

Strengths

- Very flexible and scalable solution for formatted reporting for large user groups and highly-formatted documents, infographics, ad hoc reporting, dashboarding, analysis and creating individual BI applications for operational BI
- WebFOCUS Designer, a relatively new front end targeted at business users
- Support for a wide range of data sources
- InfoApps and capabilities for the development of predefined interactive applications for business users (operational and strategic/tactical BI)
- AI-driven features such as automated insights as well as pre-built ML functions targeted at skilled business users

Challenges

- WebFOCUS is a relatively young front end which needs to broaden its functional set to support business users in the analysis and data discovery process
- Information Builders has to improve awareness of its modernized data and analytics platform. Many prospects do not know about its current functional scope and improved look and feel.
- Limited performance management and no planning solutions. However, write-back functionality – especially for operational use cases – is provided.

Looker

Santa Cruz, CA, USA

www.looker.com

Looker was founded in 2012 in Santa Cruz, CA, and has grown quite quickly since then. In 2015, the vendor had about 200 employees and started to grow its business in Europe, with the opening of an office in the UK. Today, 2,000 leading and innovative companies such as Sony, Amazon, The Economist, IBM, Etsy, Lyft and Kickstarter have trusted Looker to power their data-driven cultures. Looker joined Google Cloud in February 2020.

Looker pursues a direct approach to analytics as it is convinced that traditional BI approaches restrict the use of analytics within companies. With classical BI, Looker claims that only a limited group of users (i.e., analysts) have access to data and the ability to perform ad hoc analysis. Another disadvantage it sees in current BI platforms is the aggregation and lack of availability of row-level detail. As a result, Looker has designed a product which relies strongly on a central and virtual metadata layer created using LookML, its proprietary data description language (abstraction layer on top of SQL). Business users connect to data via this virtual layer, allowing them to do ad hoc analysis via a point-and-click interface. To underline its core strength and the emphasis on data, the vendor has started to position its product as a unified platform that powers data experiences and delivers actionable business insights to employees at the point of decision.

Looker is a web-based platform focused on providing a governed, standardized and trusted view of business data. It is particularly strong in embedding scenarios and for creating interactive visualizations and dashboard applications. Looker integrates data into the daily workflows of users to allow organizations to extract value from data at web-scale. In addition, the product offers business-user-oriented features to query different data sources ad hoc using the LookML metadata layer.

Looker has worked with a number of technology and consulting partners. In general, the company is quite serious about its partner strategy. It has grown its network strongly and improved its partner strategy. Most of its consulting partners are based in the United States but work is being done to identify partners in Europe in order to boost growth in this region. Looker does not target any specific customer profile. The product was designed to support scalable scenarios with the ambition to grow in those.

Strengths

- Modern solution with good functionality for ad hoc query and embedding/white-labeling scenarios
- Central metadata layer concept to support governance
- Versioning for metadata layer through Git
- Independence towards and support of many data sources – does not use its own storage
- Integration of additional visualization libraries

Challenges

- Limited breadth of the solution: limitations in formatted reporting, BI application creation and no focus on planning/budgeting scenarios
- Metadata layer is script-based and has to be created by a tech-savvy user
- No focus on support of data preparation and upload of data by business power users, for instance

Microsoft

Redmond, WA, USA

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 has a broad enterprise offering too, ranging from cloud to database to its ERP offering.

Like several competitors, Microsoft focuses heavily on providing cloud-based solutions. Microsoft Azure is already used by many customers as a cloud computing platform and infrastructure. The vendor offers a host of services and applications based on Azure. It can also be seen as a central hub for providing the company's own software in the cloud. The platform is available through a global network of data centers managed by Microsoft and hosted by its partners. Microsoft and a number of other BI and business software vendors rely on Azure for their cloud infrastructure.

Microsoft mainly offers its BI and analytics products as part of its Azure infrastructure. Among other things, the suite offers Azure ML as a framework for machine learning. Through an integrated development environment called ML Studio, users can build data models using drag-and-drop gestures and simple data flow diagrams.

Besides some tools for specific usage scenarios such as Azure Data Explorer and Azure ML, the vendor concentrates its core BI and analytics capabilities in Power BI. Power BI is a cloud-based BI product consisting of Microsoft Power BI Desktop (a full client for ad hoc reporting, dashboards and analysis) and Power BI Service (a web client for content publishing and sharing). It is marketed as an interactive tool for data visualization geared at enabling business users to analyze data and share insights predominantly via dashboards. The vendor has also incorporated formatted reporting functionality from its on-premises SQL Server Reporting Services portfolio as paginated reports into Power BI to provide a broader feature set to customers. Power BI's pricing and the dominance of Microsoft products on computers with Office installed give Power BI huge traction in the market.

Strengths

- Power BI, the business-user-oriented data discovery solution, is attractively priced, which makes it easy for organizations and individual users to get started with it
- Solid product portfolio for formatted reporting, ad hoc reporting, analysis and dashboards. Integration of paginated reports into Power BI.
- Azure platform with different data management and analytics services, which extend the core functionality of Power BI
- Excel is a well-known and widely used self-service BI and analysis tool
- Extensive business partner network, providing Microsoft competencies around the world

Challenges

- Microsoft BI products are integrated at 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

MicroStrategy is one of the best-known vendors in the business intelligence market worldwide. It was the first vendor to release a fully integrated product that provides formatted reports, dashboards and interactive data discovery in a single solution using the same infrastructure, both on-premises and in the cloud. With its library of statistical and advanced analytics functions, the vendor offers comprehensive analytic capabilities for a wide variety of use cases.

MicroStrategy has one of the best integrated architectures on the market, built from the ground up without acquisitions. The vendor focuses on providing the solutions a customer needs to become an "Intelligent Enterprise". The analytics and mobility suite offers different clients, which connect a proprietary enterprise semantic graph to deliver a common and governed business logic layer across multiple data sources. The vendor has invested much over the years in supporting 200+ connectors to data sources, as well as offering native support for Hadoop systems. Besides direct connectivity to source systems, MicroStrategy offers an integrated in-memory engine with parallel processing and partitioning capabilities to drive faster performance on large data sets.

In general, MicroStrategy has always taken market trends seriously. The vendor provides a no-code development framework to build native mobile apps for iOS and Android devices. Offline capabilities and write-back data entry for transactions and operational use cases are available as built-in capabilities. Increasingly, MicroStrategy has taken an open approach by allowing third-party tools such as Tableau, Qlik, Power BI, Jupyter and RStudio to access its governed datasets. To provide modernized ways to visualize data, the vendor introduced "MicroStrategy Dossier®". Dossiers are interactive applications that organize dashboards or reports in a familiar book-oriented chapter and page format. In 2019, MicroStrategy introduced HyperIntelligence, a new category of analytics that provides contextual information directly in web applications and in selected productivity applications from enterprise systems with zero clicks. This allows businesses to inject real-time, contextual insights and recommendations into users' browser-based or mobile workflows.

Strengths

- Single integrated platform for formatted and ad hoc reporting, dashboarding, analysis and BI application building with high performance in large and complex environments
- HyperIntelligence overlays and dynamically surfaces enterprise data on web apps or websites, mobile devices and Microsoft Outlook email clients
- Visual analysis solution for self-service BI scenarios included in the platform, with web and desktop-based clients for ad hoc reporting, query creation and analysis
- Connectors to other BI tools including Tableau, Qlik and Power BI to access its semantic graph
- Comprehensive library of statistical functions for advanced and predictive analytics for use by developers and data scientists

Challenges

- Limited performance management and no planning solutions. However, write-back functionality, especially for operational use cases, is provided.
- No dedicated solution/platform for advanced and predictive analytics. However, a broad statistical library and R/Python are offered.
- Collaboration on content has improved. However, collaboration on content creation, especially for integrating sandbox data into governed environments (e.g., via workflows) could be better.

OpenText

Waterloo, ON, Canada

www.opentext.com

OpenText, is a global provider of enterprise information management (EIM), especially known for its enterprise content management (ECM) and business process management (BPM) solutions. In January 2015, OpenText acquired Actuate, one of the earliest providers of business intelligence software. Actuate launched the open source Eclipse BIRT (Business Intelligence and Reporting Tools) project in 2004. To complement its portfolio with a solution for predictive analysis, Actuate acquired Quiterian in 2012. The former Quiterian product is now known as OpenText Data Discovery.

After the acquisition, Actuate's portfolio was renamed to OpenText Analytics Suite and integrated in OpenText Magellan, an artificial intelligence (AI) and analytics platform. Magellan now combines machine learning, text mining, advanced analytics and business intelligence with the ability to acquire, merge, manage and analyze structured and unstructured big data. The product plays a central role in the OpenText portfolio as it is used to provision analytics services across different OpenText products and therefore to provide integrated analytics in business solutions from OpenText.

OpenText Analytics Suite consists of OpenText BI and Reporting and OpenText Data Discovery. OpenText BI and Reporting is a server-based application that connects to various 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 both the web-based designer and the OpenText Analytics Designer. End users work with web-based modules for ad hoc reporting, simple data navigation, OLAP analysis and dashboarding. Due to the fact that OpenText BI and Reporting is equipped with open APIs, the solution is well known in open source and embedding scenarios. OpenText Data Discovery 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 aimed at data scientists and analysts 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.

Strengths

- Good capabilities for developing pixel-perfect reports
- Ad hoc reporting and data navigation suitable for business users
- OpenText Data Discovery as a business-user-oriented solution for predictive analysis
- Strong orientation towards product integration/embedding and provision of a good set of APIs for implementation of individual needs
- Joined the AI and machine learning market with Magellan, which uses open source components

Challenges

- OpenText Data Discovery is limited to predefined analysis and data mining methods; there is no integration of programming languages for data mining such as R or SAS. However, other products such as OpenText Magellan and OpenText Analytics Suite can integrate with other libraries such as R and MLlib.
- Limited reporting features for business users: Studio (OpenText's ad hoc reporting component) has less functionality than some competitors
- No predefined functionality for planning; only when used as an analysis and dashboarding product in performance management and planning processes

Oracle

Redwood Shores, CA, USA

www.oracle.com

Oracle is a global provider of enterprise cloud computing, offering software as a service, platform as a service, infrastructure as a service and data as a service capabilities. The company employs more than 138,000 people worldwide.

In 2014, Oracle changed its general release strategy to “Cloud First” and now has a major strategic focus on enhancing its cloud-based portfolio. However, the company continues to develop its on-premises solutions for enterprise BI as well. The cloud portfolio is packaged as Oracle Analytics Cloud (OAC) – Oracle’s flagship product for BI and analytics – and Oracle EPM Cloud.

Oracle Analytics Cloud incorporates business-user-oriented capabilities for data preparation, data visualization, enterprise business intelligence and scenario management. It offers modules for developing and deploying dashboards, formatted reporting, ad hoc reporting and self-service discovery/analysis. Oracle Analytics Server, the on-premises version of Oracle Analytics Cloud, brings all the capabilities of the cloud platform to organizations requiring on-premises deployment options.

Complementing the portfolio, machine learning algorithms are embedded out of the box with Oracle Analytics Cloud. R and Python scripts can be embedded in Oracle Analytics Cloud for custom advanced analytic capabilities. Additionally, machine learning algorithms embedded in the Oracle database can also be used for ML applications. In 2018, Oracle acquired the machine learning platform datascience.com, relaunched in CY1Q20 as OCI Data Science, which can be leveraged for ML-related use cases.

Oracle’s EPM portfolio includes applications for planning and budgeting, financial consolidation and close, performance reporting and analysis, financial strategy management, profitability and cost management, account reconciliation and tax reporting. Oracle’s entire EPM portfolio is available in the cloud. For on-premises deployments, Oracle’s Hyperion EPM portfolio is still available.

Strengths

- Cloud and web-based tool portfolio for formatted and ad hoc reporting, analysis, visualization, data preparation, dashboarding and scorecards in one suite
- ML-driven capabilities to power the analytics experience with natural language query and generation, personalized mobile and predefined advanced analytics functions
- 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
- Comprehensive portfolio of EPM applications in the cloud and on-premises covering financial and operational planning, financial consolidation and reporting

Challenges

- The integration between product lines such as Oracle Analytics Cloud and Oracle EPM Cloud is at data level leveraging data models and structures but not at report/visualization level
- Limited collaboration and annotation features in some of the OAC components (especially Answers) compared to some competitors
- The integration between some components (e.g., Publisher and Visualize) in OAC is at data level only

Pyramid Analytics

Amsterdam, Netherlands

www.pyramidanalytics.com

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

The Pyramid platform combines data wrangling, data discovery, dashboards, machine learning, advanced analysis, and reporting into a single enterprise analytics platform. It was designed from inception to bridge the gap between self-service and IT-driven BI, providing agility for end users while IT retains centralized control. This fosters enterprise-wide collaboration through the sharing of business logic, content and commentary. Pyramid v2020, released in late 2019, added over 150 new enterprise-grade features and capabilities, including adaptive user experiences that accommodate all skill levels, enhanced data wrangling, an augmented analytics server and certified SAP integrations.

Pyramid is a server-based platform built in Java with a pure HTML5/JavaScript front end that is accessible from a browser without desktop or installed components. The platform is OS and device agnostic with full gesture support on touchscreen and mobile devices. Furthermore, it offers and supports REST APIs to cater for additional scenarios such as embedding and automation. Pyramid's analytics engine, 'PYRANA', drives both querying and analytic calculations across different data sources using ANSI SQL or MDX—which enables in-place analytics. This extends direct analysis to numerous relational, in-memory, big data and unstructured data sources natively – including its own proprietary in-memory engine. Pyramid now extends certified support to SAP data technologies as well.

Pyramid offers improved data preparation and modeling features to support data integration and processing. Its open architecture means the software can be deployed in different environments: cloud, hybrid or on-premises. For AI and machine learning, the vendor offers R, Python, MLib, Weka and TensorFlow integrations.

Strengths

- Well-integrated product for reporting, dashboards, data preparation and analysis
- Self-service data discovery targeted at business users
- Well thought-out capabilities for dynamic text for storytelling
- Open architecture and provision of APIs suitable for different use cases, not only for traditional BI
- Provision of platform features such as governance, security, lineage, impact analysis and versioning

Challenges

- No predefined functionality for planning; only when used as an analysis and dashboarding product in performance management and planning processes
- Visual analysis and guidance capabilities for business analysts still weak compared to competing solutions
- Pyramid needs to gain greater visibility in the market and expand its partner network

Qlik

King of Prussia, PA, USA

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. In 2010 Qlik went public on NASDAQ. In 2016, Qlik was acquired by the private equity company Thoma Bravo and delisted from the stock exchange.

Until the general availability of Qlik Sense in 2014, Qlik was a one-product company with its first-generation product QlikView. Today, Qlik offers a portfolio of platform-based solutions made up of analytics, data management and developer products, as well as a number of value-added offerings that provide enhanced capabilities. With this stack, Qlik focuses on helping customers to bridge the gaps between their data, insights and actions to better inform decisions, drive actions and propel their business forward.

Qlik Sense is the company's next-generation platform for self-service oriented analytics, supporting a broad spectrum of BI use cases across an organization. It is powered by Qlik's associative engine, and gives flexible access to data sets stored in-memory. Qlik focuses on business users as its target audience for all product features starting from data preparation to the creation of interactive applications. In case customers require complex transformations, the product supports scripting for data preparation.

Qlik Catalog (formerly Qlik Data Catalyst), together with recently-acquired Attunity's real-time data replication and data warehouse automation offerings, make up Qlik's enterprise data management solution.

Qlik's offering is supplemented by a number of value-added products. These include Qlik NPrinting, for centralized reporting; Qlik Insight Bot for Conversational Analytics; Qlik GeoAnalytics for advanced mapping and geospatial analysis; and Qlik Connectors, a package of connectivity options for on-premises and cloud-based data sources. Recently, the vendor added an alerting product called Qlik Alerting.

Strengths

- Business-oriented platform for reporting, dashboarding, analysis and the creation of individual applications, and also for embedded scenarios using Qlik Sense APIs
- Good 'associative' and set-based navigation in data with search in content available
- Responsive in-memory processing
- Data market to augment analysis with curated and ready-to-use external data
- Broader data management capabilities with the acquisition of Podium Data and Attunity

Challenges

- No predefined functionality for planning; only when used as an analysis and dashboarding product in performance management and planning processes
- Limited built-in functionality for data governance to align the definitions of KPIs across distinct applications in Qlik Sense and QlikView
- Although some integration has been done, recent acquisitions need to be more deeply integrated with the existing stack

SAP

Walldorf, Germany

www.sap.com

SAP was founded in 1972 as a business applications company. The vendor now employs more than 101,150 people worldwide and has a turnover of €27.63 bn. SAP is one of the largest business software vendors in the world.

The vendor's analytics portfolio encompasses cloud-based and on-premises solutions for business intelligence, advanced analytics and planning. Like some other vendors, SAP is investing heavily in innovation in its cloud portfolio while still supporting and developing its on-premises solutions. SAP's analytics solutions are spread across different product lines. For BI and analytics, SAP Analytics Cloud (SAC) and SAP BusinessObjects BI (on-premises) are the core offerings. SAC also plays a central role in the EPM area and is complemented by further on-premises solutions such as SAP Business Planning and Consolidation (BPC). Advanced analytics functionality is partly available in SAC but mainly covered by the SAP Data Intelligence and SAP HANA offerings.

SAP Analytics Cloud is SAP's strategic cloud and web-based analytics platform, which brings together analytics capabilities such as data discovery and visualization, planning and augmented analytics for different user roles into one integrated product and user experience. With a large and growing development team, SAP Analytics Cloud is becoming richer in features such as application design, planning and predictive functionality. In addition to using it with its own data models, the product can also be used as a front end for other SAP data sources in hybrid cloud scenarios (e.g., with SAP HANA, SAP BW/4HANA, etc.) without moving, caching or persisting the data into the cloud.

Complementing the portfolio, organizations can access and manage both on-premises and cloud content from SAP and third parties with SAP Analytics Hub, which is an add-on to SAP Analytics Cloud.

Strengths

- SAP Analytics Cloud is an integrated business-user-oriented solution for analytics and planning with embedded functionality for augmented analytics and application design
- On-premises platform for formatted and ad hoc reporting, analysis, dashboarding and custom application design, suitable for medium and large deployments (SAP BusinessObjects BI)
- Exclusive connectivity to (e.g., live access and direct write-back) and pre-built content available for SAP's own data sources and applications (e.g., SAP Analytics Cloud with SAP S/4HANA, SAP BPC with SAP BW/4HANA)
- Well established and expansive partner community with worldwide support and expertise
- SAP Analytics Hub as a single access point for analytics (cloud/on-premises, SAP / non-SAP)

Challenges

- Strong focus on products such as SAP Analytics Cloud is leading to less innovation and fewer updates for the rest of the analytics and planning product portfolio. However, SAP is continuing to invest in SAP BusinessObjects BI and SAP BPC. At the time of writing, the vendor has announced plans to deliver a new version 4.3 for SAP BusinessObjects BI in Q2 2020.
- SAP's BusinessObjects Enterprise Suite integration is not as strong as some competitors
- The built-in AI features such as Smart Predict and Smart Discovery are targeted at business users. Therefore, the use of R or Python for data preparation is not intended in SAC. SAP Data Intelligence provides support for the use of Python and R scripts for data preparation and this data can be consumed in SAC.

SAS

Cary, NC, USA

www.sas.com

SAS, founded in 1976, is a privately held company and a well-known brand in the business intelligence and analytics market. The vendor has been a specialist in analytics software and solutions for decades.

SAS's traditional BI offering, also known as SAS Enterprise BI Server, is marketed as part of SAS Platform. It covers dashboarding, OLAP and reporting through clients such as SAS Web Report Studio and SAS Enterprise Guide.

In 2016 the vendor introduced Viya, an open and cloud-ready platform for analytics, which extends the SAS Platform to serve all types of customers' analytical needs. SAS Viya was designed as a massively parallel, distributed multi-OS environment which connects to various data sources and can be run on-premises or in different cloud infrastructures. In addition, SAS has made a point of creating an open architecture which not only supports SAS code but also languages such as R, Python, Java and Lua directly or through APIs. Technically, SAS Viya consists of a set of micro services and a new in-memory engine called SAS Cloud Analytics Services (CAS) for execution in a single-machine or distributed mode.

SAS Viya houses a number of different products and solutions. Business analysts typically use SAS Visual Analytics. This product line focuses on visual data exploration, dashboarding, ad hoc reporting and analysis. SAS Data Preparation is also aimed at business users and was designed to load data into the internal Viya in-memory engine for fast and scalable analysis. Add-on products for more advanced business users and data scientists such as SAS Visual Statistics and SAS Visual Data Mining and Machine Learning are also available on SAS Viya.

The vendor offers a variety of analytic applications to address different industries and application domains. SAS has provided the content for its SAS Platform for years and has started to extend it to the new Viya platform.

Strengths

- SAS Visual Analytics as a business-user-oriented ad hoc analysis, reporting, visual data exploration and dashboarding solution
- Strong analytics and data mining capabilities and leading advanced analytics capabilities for data discovery through seamless integration with SAS Visual Statistics and SAS Visual Data Mining and Machine Learning
- Solid data management abilities with metadata support in the platform
- SAS includes a flexible and powerful programming language
- Viya's in-memory engine CAS was designed as a scalable architecture for substantial amounts of data and large numbers of concurrent users

Challenges

- Integration between the software stacks SAS 9.4 and SAS Viya at data level; integration at report level is not available due to different technologies
- The concentration of investment in SAS Viya leads to less innovation in the SAS Platform portfolio
- SAS Visual Analytics includes interactive and self-service style analysis and dashboards. It has limited functionality in the area of formatted reporting compared to most competitors.

Sisense

New York, NY, USA

www.sisense.com

Established in 2004, Sisense is a BI and analytics vendor headquartered in New York City. The company currently has more than 800 employees and customers in 170 countries. In 2019 Sisense acquired Periscope Data, a company founded in 2012 and strongly focused on advanced analytics and the creation of data pipelines.

Sisense helps its customers to simplify complex data projects with data preparation, analytics and visual exploration capabilities that can be deployed on-premises or in cloud environments, white labeled or embedded in external applications. The hybrid-cloud platform was designed to leverage all of customers' data by either extracting data into its own columnar database or connecting to high performance databases directly. Therefore, Sisense sees 'builders' as its primary users: data engineers in charge of preparing data for analysis, analysts building insights and developers who embed and integrate analytics into purpose-built analytic apps. Data engineers mostly work with Sisense for Cloud Data Teams (former Periscope Data) to transform and integrate raw data using data pipelines and materialized views on (cloud) data warehouses.

Sisense is an easy-to-use dashboard and application creation environment in which users have the option to start with predefined dashboards for selected data sources or data modeling and integration tools for querying disparate data sources.

Sisense typically takes market trends seriously and adapts its software to market developments. For instance, the vendor was early to rearchitect its platform in a modern containerized microservices architecture running on Linux OS. Moreover, it has integrated a natural language query capability to lower the entry barrier for users. With the acquisition of Periscope Data, the vendor enhanced its data pipelining and advanced analytics capabilities.

Strengths

- Integrated product for data discovery and dashboarding use cases on an integrated stack with business-user-oriented data modeling and app creation capabilities
- Internal columnar data store is mature and fast, combined with proprietary In-Chip technology for performance acceleration
- APIs and JavaScript library for embedding purposes
- HTML5-based dashboards and interactive visualizations targeted at business users
- Sisense for Cloud Data Teams as modern cloud-based solution for creating data pipelines and advanced analytics

Challenges

- 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 outside the United States and Israel, although the vendor is currently expanding into other territories

Tableau

Seattle, WA, USA

www.tableau.com

Tableau Software emerged from scientific research at Stanford University and was founded in 2003. Over the past years Tableau has grown strongly and was recently acquired by Salesforce.

Tableau offers an analytics platform which aims to help customers harnessing the power of their data and unleashing the potential of the people. Tableau's primary products for content creators are Tableau Desktop and Tableau Prep. These are complemented by further tools such as Tableau Server, Tableau Online, Tableau Data Management, Tableau Server Management and Tableau Mobile.

Tableau has always concentrated to develop software that requires little training and allows business users to interpret their own data, mostly by means of interactive visualization. Tableau is a user-friendly visual analysis and data discovery platform that provides a lean architecture consisting of a desktop and web client used for development and authoring and a server for central deployment, sharing and collaboration. The intuitive user interface, built-in intelligence and memory utilization to optimize performance contribute to the popularity of this solution for visual analysis, dashboarding and data discovery.

Tableau's openness to a variety of data sources is one of its strengths. The solution allows users to combine and analyze data from different data sources. Data preparation in Tableau Desktop can be quick as many manipulations can be made directly while analyzing data, enabling a truly iterative approach to data discovery. With the release of Tableau Prep, data preparation has been enhanced with deeper functionality and a more visual approach with recommendations for data shaping, profiling and enhanced traceability. Tableau Prep Conductor was released in 2019 to schedule and manage self-service data preparation at scale. It is integrated with the Tableau platform and is currently available as part of the Tableau Data Management Add-on.

Tableau also continues to focus on improving and growing its self-service analytics platform into a modern enterprise BI platform. Functions such as data source certification, data source recommendation and a feature called Tableau Bridge have been added. Tableau Bridge aims to connect from Tableau Online to on-premises data sources in order to support hybrid cloud scenarios. Moreover, the vendor has begun to broaden its analytical spectrum by integrating Python and MATLAB next to R. In 2019, Tableau expanded its platform with AI-driven explanations for your data through a feature called Explain Data and the ability to analyze your data using natural language with a new feature called Ask Data.

Strengths

- Easy-to-use user interface and therefore potentially high user acceptance
- Visual analysis with built-in intelligence and good interactivity suitable for business users
- Data preparation and analysis capabilities for users with access to different data sources including capabilities for cross-database joins and ML-based join recommendations
- Several interactive visualization options with visualization recommendations
- Offline reporting and analysis capabilities (desktop client)

Challenges

- Predefined functions for planning and budgeting are not available. 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
- Tableau Prep as a distinct client for data preparation requires users to switch tools during iterative discovery

TARGIT

Aalborg, Denmark

www.targit.com

TARGIT is a privately-owned software provider founded in 1986 with headquarters based in Aalborg, Denmark. The company has more than 6,800 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 companies of all sizes requiring an all-integrated BI platform with vertical content. TARGIT Decision Suite offers integrated data discovery/self-service analysis, ad hoc reporting and dashboards with capabilities for batch reporting, mobility, slideshows and data mashups. The most recent 2019 release supports a range of trending features including speech recognition for natural language queries, alerts and notifications, an intelligent wizard that finds relevant content as the user types, an in-memory data mashup tool and support for creating custom visualizations. Through a no-footprint web-client, TARGIT has added to its capabilities for embedding into other applications and web portals. TARGIT's recently introduced document model is intended to reduce the effort required to design content and make it available across all devices and output types.

TARGIT has made significant inroads, particularly among Microsoft Dynamics customers. The company offers a multitude of vertical solutions. The most prominent are those for manufacturing and retail, while niche solutions for heavy machinery, waste management, fleet management, medical billing, fashion design and apparel are showing traction as well. Providing not only a BI solution but also knowledge in the software remains a strong focus of TARGIT. The vendor continues to add verticals and predefined content to its portfolio.

For several years, TARGIT has invested heavily in modernizing its solution. First, it began to reduce the solution's Microsoft dependency by enabling customers to access data sources other than Microsoft SQL Server. Now an option to use its own in-memory database, as well as a number of different data sources has been introduced. TARGIT continues to work on enhancing its enterprise features by improving the deployment process and optimizing the UI/UX experience to enable designers to create dashboards, analyses and reports that are ready for easy consumption on large enterprise portals with better support for an improved cross-platform experience.

Strengths

- Business-user-oriented BI platform for data discovery/self-service analysis, ad hoc reporting and dashboards
- Enterprise functionality for data governance, reporting, distribution, deployment and logging
- Self-service BI capabilities which complement the governed experience
- Agents for monitoring data and alerting
- Accelerators and predefined content for Microsoft Dynamics NAV, AX, CRM and GP and a growing list of CRM, ERP and DMS systems

Challenges

- No predefined functionality for planning; only when used as an analysis and dashboarding product in performance management and planning processes
- Lack of marketing and limited overall visibility in BI market
- Microsoft-centric approach with Windows dependencies, which makes TARGIT less interesting for organizations with a Linux platform focus

TIBCO

Palo Alto, CA, USA

www.tibco.com

TIBCO is a software vendor best known for its analytics and infrastructure offerings. From APIs and systems to devices and people, TIBCO aims to help companies to become a digital enterprise through a data-centric view of the business built on three foundational pillars: connect, unify and predict. The first stands for connection of data sources, devices and applications, and is reflected in the TIBCO Cloud Integration and TIBCO Cloud Mashery products. 'Unify' represents the intelligent data management available in products such as TIBCO Data Virtualization and TIBCO EBX Software. The third pillar focuses on analytics and contains products such as TIBCO Spotfire, TIBCO Data Science and TIBCO Streaming.

TIBCO's analytics portfolio provides comprehensive capabilities to support a wide range of analytical scenarios. The vendor began its analytics journey back in 2007 with the acquisition of Spotfire, a Swedish software vendor specializing in interactive visual analysis. TIBCO Spotfire is a comprehensive business intelligence solution strongly focused on visual and advanced statistical analysis, the design of interactive dashboard applications, and streaming. By embedding complex statistical methods and models, data scientists can perform predictive analyses, leveraging capabilities offered by the S+ and R programming languages.

In 2014, the open source vendor Jaspersoft was purchased. TIBCO Jaspersoft offers embedded reporting, dashboarding and data integration and targets customers looking for embedded BI tools.

In 2017, TIBCO acquired the data science vendors Statistica and AlpineData, a project management and collaboration platform for data science projects, to further augment its analytics portfolio. Its current advanced analytics offering is packaged as TIBCO Data Science.

In 2018, TIBCO Spotfire got a major upgrade with the release of Spotfire 10, which included built-in data preparation, natural language search, tight integration with TIBCO Data Science and native streaming BI capabilities. TIBCO positions Spotfire as "single pane of glass" for surfacing data, insights, ML model outputs combining visual analytics, data science and streaming analytics approaches.

Strengths

- Spotfire is designed to support business users with different types of analysis: visual, geo, streaming and advanced statistical analytics
- 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 reporting in Jaspersoft
- Coverage of embedding scenarios through a JavaScript API and visualize.js, which allows for seamless integration of analytics into web applications (Jaspersoft)

Challenges

- Rich but complex portfolio for analytics based on acquisitions with integration at data level only (not sharing visualizations)
- Due to the number of available solutions for analytics, customers should carefully review their requirements and choose the most suitable tool
- No focus on planning and budgeting

Yellowfin

Melbourne, Vic, Australia

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 more complicated and expensive than it needed to be. Yellowfin sells its solutions directly or via its network of more than 600 partners worldwide.

Yellowfin believes that organizations are more successful when all their employees engage with data. Therefore, the vendor has always put an emphasis on business users as the target audience for its software. Yellowfin is a mature, user-friendly BI and analytics platform that has evolved from a successful reporting and dashboard product to support an emerging style of analytics characterized by governed data discovery and collaboration. Besides engaging visualization, the company still focuses on making BI content consumption as easy as possible. To transfer insights to its audience, the platform offers interactive formats such as data stories and dashboards. To speed up time to insight, Yellowfin includes "Smart Analysis" and "Auto Analyze" to compare metrics and analyze data sets behind the scenes and provide users with ranked and commented (NLG) insight. Yellowfin continues to invest in artificial intelligence and machine learning following the introduction of Signals in 2018. This is an automated data discovery feature designed to show users the critical changes in data that they are interested in. In contrast to threshold-based alerts, Signals uses different statistical methods to discover outliers and patterns in data. This feature is included in the new mobile app, which aims to provide relevant data and insights instead of predefined dashboards. Yellowfin also has extensive collaboration features. The extent of features offered in this area is a major differentiator as collaboration is vital to enabling the quick distribution of insight to relevant recipients.

For advanced analytics use cases, the vendor integrates with libraries/products such as R, PMML, Python, TensorFlow, SPSS, H2O and SAS.

Strengths

- A broad range of innovative features such as collaboration and storyboarding. The recently introduced Signals is a good example of using AI and ML to provide value through automation.
- Support of embedded BI usage scenarios
- Ease of use for business users, and also for report designers
- Broad data preparation functionality with good guidance and profiling features
- Investment in AI-based automated data discovery features to provide users with relevant insights

Challenges

- Highly formatted (pixel-perfect) reporting is not supported. However, Yellowfin does support the integration of BIRT and Jaspersoft reports, which are pixel-perfect.
- No planning functionality (i.e., write-back, data allocation and planning functions). However, the solution can be used to support performance management or planning tasks with its dashboarding, analysis and reporting functionality.
- Yellowfin does not have a dedicated solution targeted at data scientists in its portfolio. However, it has improved and broadened its advanced analytics capabilities and integration with market-leading data science platforms and languages.

Zoho

Chennai, India

www.zoho.com

Zoho Corporation began life in 1996 as a software company called Adventnet, Inc., which focused on building network management products. The company was renamed in 2009 and now operates three distinct divisions including Zoho, which develops and sells a suite of business applications. Zoho Corporation has never accepted venture capital investment, remains privately held and is led by co-founder and CEO Sridhar Vembu.

Headquartered in Chennai, India, Zoho currently has two other offices in India as well as sites in the United States (two offices), China, Mexico, Australia, Netherlands, United Arab Emirates, Japan and Singapore. The company employs around 8,000 people.

Across its suite of over 45 business applications – which includes solutions for CRM, project management, book keeping, human resource management, analytics, marketing and support – Zoho claims to have 50 million users worldwide, representing a 100 percent increase within the last 2 years.

Zoho Analytics is the BI component of the Zoho business suite, and was first released in 2009. With Zoho Analytics, the vendor aims to provide unified business analytics to its customers. Zoho Analytics supplies a number of different connectors to data sources which can be integrated in a central data model designed for use by business users. Zoho Analytics is available in a variety of different packages. It is a relatively straightforward, low-cost, cloud-based reporting and analysis solution aimed at business users. Ease of use is a key selling point of the product, which employs an intuitive drag-and-drop interface so users can easier adapt to it. Besides providing self-service features – and therefore focusing on traditional BI and analytics use cases – Zoho Analytics can also be deployed in embedding scenarios. The product can be embedded using iframes. The software can also be branded to customer needs.

For existing customers of Zoho business suite solutions, Zoho is able to auto-identify and auto-map the table relationships and create sample dashboards to speed up implementations for analytics.

Strengths

- Easy-to-use drag-and-drop interface targeted at business users
- SQL querying of relational data sources
- Pre-packaged applications for different data sources with predefined content
- Open and relatively low pricing strategy
- Interactive D3 charts

Challenges

- Limited data preparation and visual analysis capabilities
- Limited advanced analysis capabilities
- Data modeling has to be done by IT savvy users

Other vendors

There are many other established vendors in the business intelligence and analytics 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 have listed some of them here.

ADVIZOR Solutions, a Pursuant Group Company

Downers Grove, IL, USA

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. In addition to supporting nonprofit organizations, higher education and healthcare, Advizor Solutions serves the IT, cybersecurity and manufacturing industries.

Altair

Troy, MI, USA

www.altair.com

SmartSight is a business intelligence solution focused on data discovery and data visualization. The acquired Datawatch portfolio extends functionality for streaming analytics (Panopticon) and data preparation (Monarch). Altair SmartSight is part of the Altair SmartWorks™ suite, which is an open-architecture solution enabling advanced edge-to-cloud IoT applications and augmented data analytics powered by machine learning to drive innovation.

Alteryx

Irvine, CA, USA

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. It is especially geared to supporting users in the area of data preparation: one of the important steps in the data discovery process.

Anaplan

San Francisco, CA, USA

www.anaplan.com

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

Arcadia Data

San Mateo, CA, USA

www.arcadiadata.com

Cloud-based BI and analytics software strongly focused on support of cloud and Hadoop-based data lakes. Arcadia Data was recently acquired by Cloudera.

Bilander

Gdynia, Poland

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

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

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

Chartio

San Francisco, CA, USA

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 data in real time.

Cubeware

Rosenheim, Germany

www.cubeware.de

BI offering consisting of a front end for reporting, analysis, dashboarding and planning with a data integration tool to create various multidimensional models.

Comma Soft

Bonn, Germany

www.comma-soft.com

In-memory based BI solution targeted at business users. Includes advanced analytics and data science functionality as well as capabilities for dashboading, ad hoc analysis, reporting, set-oriented analysis and visual navigation in data.

Connexica

Stafford, UK

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

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

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

Decisyon

Stamford, CT, USA

www.decisyon.com

A collaborative business intelligence and performance management platform focused on development of industrial IoT apps.

Entrinsik

Raleigh, NC, USA

www.entrinsik.com

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

GoodData

San Francisco, CA, USA

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.

Halo Business Intelligence, a division of Logility, Inc.

San Diego, CA, USA

Browser-based BI and supply chain planning platform with data management, data visualization and predictive analytics components.

iDashboards

Troy, MI, USA

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

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

Knowage

Rome, Italy

www.knowage-suite.com

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

Infogix

Naperville, IL, USA

www.infogix.com

Infogix provides its data governance, data quality and data preparation solutions integrated into an all-inclusive enterprise data intelligence platform – Data360®.

Logi Analytics & Zoomdata

McLean, VA, USA

www.logianalytics.com

Logi Suite is a tool set primarily focused on embedded BI and operational BI scenarios needing dashboarding, reporting and analysis capabilities. The recently acquired Jinfonet Software with JReport provides interactive data visualization with customizable ad hoc reporting and dashboards that empower end users through the web and mobile devices.

Zoomdata is 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. Zoomdata was recently acquired by Logi Analytics.

Insightsoftware

Raleigh, NC, USA

www.insightsoftware.com

Insightsoftware provides financial reporting for ERP and EPM software. Its portfolio encompasses a number of brands including Longview, Jet and CXO.

Palantir Technologies

Palo Alto, CA, USA

www.palantir.com

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

Panorama Software

Toronto, ON, Canada

www.panorama.com

Data analytics platform focused on communications and media service providers. Necto integrates AI and machine learning technologies to provide self-service analytics with out-of-the-box reports, dashboards, predictive and prescriptive insights.

Phocas

Coventry, UK

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. It has a good range of functionality to support ad hoc querying, reporting and dashboarding.

Salesforce

San Francisco, CA, USA

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. Salesforce acquired Tableau in 2019 (see vendor profiles).

Salient

Vancouver, BC, Canada

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.

ThoughtSpot

Palo Alto, CA, USA

www.thoughtspot.com

A search-based BI solution for visual exploration and data discovery with integrated machine learning algorithms.

Workday (Adaptive Insights)

Palo Alto, CA, USA

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. In August 2018, Adaptive Insights was acquired by Workday, a cloud-based ERP vendor with a particular focus on human capital management and financial management.

Related research documents

The following BARC documents complement this BARC Score report:

- **BARC Access**: Access to BARC's complete research portfolio, including product reviews with detailed insights into more than 40 BI and analytics solutions, covering all the major players in the market. Link: http://barc-research.com/research/business-intelligence/
- **BARC Scores**:
    - **BARC Score Financial Performance Management DACH**: This BARC Score focuses on the market for financial performance management products and portfolios in the DACH region (Germany, Austria and Switzerland). Link: http://barc-research.com/barc-score/barc-score-financial-performance-management-dach/
    - **BARC Score Integrated Planning & Analytics DACH**: A clear overview of the BI and analytics products in Germany, Austria and Switzerland based on a combination of detailed end-user feedback and thorough analysis of products and vendors. Link: https://barc.de/score-planning-dach
    - **BARC Score Integrated Planning & Analytics**: A clear overview of the international BI and analytics products market based on a combination of detailed end-user feedback and thorough analysis of products and vendors. Link: https://barc.de/score-planning-dach
- **Product-related surveys**: https://bi-survey.com/
    - **The BI Survey**: BARC's major annual report on the global business intelligence (BI) software market. It is based on the world's largest survey of BI users, with a sample of over 3,000 survey responses – that is why so many companies trust the results of The BI Survey and base their software purchasing decisions upon it.
    - **The Planning Survey**: The Planning Survey offers an in-depth comparison of up-to-date planning solutions to decision-makers who are looking for new planning software. Based on feedback from more than 1,400 users, the latest edition evaluates over twenty leading planning products.
    - **The Data Management Survey**: The voice of the data management community: The Data Management Survey is BARC's new annual report on the data management software market. This BARC survey examines data management products in terms of their functionality, application areas and usability.
- **Other research**:
    - **BARC BI Trend Monitor**: BARC's BI Trend Monitor study gives BI practitioners a platform to have their say on the trends currently shaping the BI and data management market, supplemented by additional commentary and analysis from BARC analysts. Free to download at: http://barc-research.com/research/bi-trend-monitor/

BARC Score consulting services

BARC has many years of experience in helping organizations to choose the right business intelligence software to meet their business requirements. Hire us to support your BI tool selection project and guide you through each step of the process.

What's included	BARC Score Inquiry	BARC Score Workshop	BARC Score Shortlist
	990 EUR	4,900 EUR	11,900 EUR

• BARC Score Paper
  ○ Score methodology
  ○ Score graphic
  ○ Vendor and product summary with
  ▪ Vendor and product description
  ▪ Strengths and challenges
	✓	✓	✓

• Analyst inquiry time (connect directly with BARC analysts)	One hour	During the workshop	During the workshop
• Explanation of the BARC Score concept		✓	✓
• Overviews of the software vendors rated in BARC Score as well as other interesting players		✓	✓
• Requirements discussion and weighting		During the workshop	Dedicated requirements analysis workshop
• Verbal tool recommendation		✓	✓
• Presentation of shortlist (including filters, exclusion criteria and explanation per excluded vendor)			✓

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