

# The Forrester Wave™: Native Hadoop BI Platforms, Q3 2016

The Six Providers That Matter Most And How They Stack Up

by Boris Evelson  
September 13, 2016

## Why Read This Report

In our 22-criteria evaluation of native Hadoop business intelligence (BI) platform providers, we identified the six most significant ones — Arcadia Data, Attivio, Datameer, Kyvos Insights, Oracle, and Zoomdata — and researched, analyzed, and scored them. This report shows how each provider measures up according to two business use cases (native Hadoop BI for strong user interface and for strong data preparation) and helps application development and delivery (AD&D) professionals make the right choice.

## Key Takeaways

### **Native Hadoop BI Is A New Market With Multiple Platform Gaps**

Forrester's research uncovered a market with no clear Leaders, as all vendors still lag behind earlier-generation BI platforms in terms of breadth of functionality.

### **AD&D Pros Are Looking For Data Preparation, Not Just Analysis Capabilities In BI Platforms**

Forrester finds a strong demand for user-driven data preparation capabilities in addition to data visualization, exploration, and analysis.

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September 13, 2016

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### Notes & Resources

Forrester conducted requests for information and demo-based product evaluations in June 2016 and interviewed six native Hadoop BI platform vendors and their references: Arcadia Data, Attivio, Datameer, Kyvos Insights, Oracle, and Zoomdata.

### Related Research Documents

- [How To Scale Business Intelligence With Hadoop-Based Platforms](#)
- [SQL-For-Hadoop: 14 Capable Solutions Reviewed](#)
- [Vendor Landscape: BI-On-Hadoop For Customer Insights](#)

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## Put Your BI Right Where Your Data Is

For the last two years, Forrester has observed an increasing interest from clients not only moving their data to Hadoop but also running analytical applications on Hadoop clusters. In our companion report, “How To Scale Business Intelligence With Hadoop-Based Platforms,” we identify the key business and technical benefits for such interest: lower cost of hardware and software, linear scalability, and performance improvement derived from keeping data and applications on the same nodes in a distributed environment.<sup>1</sup> Since currently such technology is mostly based on Hadoop, Forrester is calling this market subsegment “native Hadoop BI platforms” — platforms where all or most of the components run natively on Hadoop clusters. In researching this space, we uncovered a relatively small but highly dynamic market with only a handful of vendors that:<sup>2</sup>

- › **On the one hand, are struggling to survive as independent entities.** Most of the vendors in this space were founded five to seven years ago, but they are still struggling to break through the \$30 million revenue barrier. One of the key vendors, Platfora, was acquired by Workday on July 21, 2016. Workday plans to fully integrate Platfora into its suite of enterprise resource planning (ERP) applications and will no longer offer Platfora as a standalone product.<sup>3</sup>
- › **On the other hand, are moving more components to a Hadoop-based architecture.** Even though newcomers are struggling to make it on their own, more established vendors are nevertheless taking bets that the future of scalable enterprise software and applications is tightly bound with Hadoop. A late-stage startup (Attivio) and a mega software vendor (Oracle) have already taken the plunge. A majority of Attivio and Oracle Big Data Discovery (BDD) platform components already run natively in Hadoop. Both vendors plan to have 100% of components migrate to Hadoop by early 2017. Other BI vendors will surely follow this trend; it's a question of when, not if.<sup>4</sup>

### First, Consider The Platform's General-Purpose BI Capabilities

AD&D pros working on BI initiatives where business and technical requirements align with the need for a native Hadoop BI architecture should evaluate each vendor's business functionality by asking about the product's:

- › **Self-service features for business users.** Look for the product features that empower business users to author their own BI content, curate the data, create calculated measures, maintain a semantic layer, provision applications, and collaborate with AD&D pros and other business users.
- › **Data preparation features.** Evaluate the product's capabilities to access various HDFS file formats and declaratively program data preparation rules (via a GUI or scripts) as well as the product's out-of-the-box functions for data integration, transformation, profiling, and data quality.<sup>5</sup>
- › **Data visualization features.** You may not want to task expensive technology resources to program and integrate custom visualizations, so take a look at how many graphs and gauges come packaged with the platform. These should also include advanced features such as geospatial mapping, infographics, and storyboarding.

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- › **Advanced analytics features.** Don't have a data scientist in your team? See if the product supports advanced analytics features such as artificial intelligence (AI)/cognitive, predictive, streaming, and text mining via a simple point-and-click GUI.

**Next, Determine Hadoop Requirements, Which Differ From Proprietary Architectures**

While the platform capabilities described in the previous section are applicable to any BI tool, AD&D pros should next ask questions about Hadoop-specific features, such as:

- › **Standard query engines.** Your requirements may call for schema-on-write applications using relational and/or multidimensional data structures. While ANSI SQL and MDX protocols are table stakes in the world of commercial proprietary software, it's still a Wild West in the Hadoop realm. Ask whether the product is compatible with ANSI SQL and MDX query languages, can handle normalized and denormalized data sets, is aggregate aware, and can support multipass SQL.
- › **Data discovery and exploration capabilities.** If your use cases call for schema-on-read, look at the product's capabilities for generating NoSQL MapReduce, Tez, and Spark jobs for queries, in-memory architecture, dynamic data profiling, faceted navigation, and natural language processing (NLP) as user interface (UI).<sup>6</sup>
- › **Reliance on specific Hadoop projects.** You'll need to understand what raw file storage the vendor supports in addition to HDFS. Also, take a look at whether the derived/curated storage is based on relational, multidimensional, or other architecture. Make sure the BI platform is based on the same Hadoop cluster manager that your Hadoop environment uses. See if the computational/query processing framework (MapReduce, Tez, Spark) aligns with your requirements based on data latency, volumes, and throughput. Consider how well the platform integrates with native Hadoop metadata frameworks, such as Hive and HCatalog, and with native Hadoop security frameworks like Sentry and Ranger.
- › **Commercial Hadoop distribution integration.** If you've already committed to a particular commercial Hadoop distribution, make sure the vendor supports it via certified integration. If you are in the unlikely scenario of a large, global federated business where lines of business may standardize on different Hadoop distributions, see if the product has different versions for each Hadoop distribution or if the same version will work on all distributions.<sup>7</sup>
- › **Integration between components.** If you are looking for a single platform, examine whether the product's data preparation, data modeling, semantic modeling, and reporting/analysis components are seamlessly integrated. You may also prefer a product with its own visualization UI, or you may want to leverage your existing investment in other leading BI platforms.
- › **Deployment options.** Make sure that the product deployment options align with your current policy to deploy data and applications via on-premises, cloud, hybrid, and mobile.

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- › **Large-enterprise deployment needs.** If you are a midsize or a large enterprise, you'll need to evaluate product features such as security, manageability, scalability, administration, and governance.

## Native Hadoop BI Platforms Evaluation Overview

To assess the state of the native Hadoop BI market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of BI vendors whose architectures are mostly based on Apache Hadoop. After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of 22 evaluation criteria, which we grouped into three high-level buckets:<sup>8</sup>

- › **Current offering.** Forrester evaluated and scored vendors' business functionality such as data preparation, features that empower business users to be self-sufficient and generate most of their own BI content, data visualization, and advanced analytics. Forrester also evaluated and scored vendors' technical features such as storage options for raw and derived/curated data, support for various query engines, Hadoop architecture, and deployment options.
- › **Strategy.** Forrester scored vendor strategy based on our evaluation of whether the vendor's current capabilities and near-term plans address all relevant market trends. We also scored strategy based on the vendor's intellectual property (IP), partnership ecosystem, and costs (entry price, average deal price, and cost elasticity).
- › **Market presence.** Forrester scored each vendor's market presence based on the installed base of customers, revenues, and global presence. We also adjusted scores for current offering, strategy, and market presence section based on customer survey results.

### Evaluated Vendors And Inclusion Criteria

Forrester included six vendors in the assessment: Arcadia Data, Attivio, Datameer, Kyvos Insights, Oracle, and Zoomdata.<sup>9</sup> Each of these vendors has (see Figure 1):

- › **Business functionality that includes at least three components.** Forrester required that each product be a self-encompassing integrated suite with data preparation, curated/derived data storage, and UI features.<sup>10</sup>
- › **A technical architecture that is mostly based on Hadoop.** For this evaluation, Hadoop-based architecture is a requirement, not an option. Forrester also required that the platform can't use ODBC/JDBC connectors as an interface between the UI and the database. All query execution must be done using native Hadoop frameworks such as MapReduce, Spark, or Tez. The platform has to use HDFS (or other Hadoop-compliant data storage) as the primary storage mechanism and provide integration with Apache Hive and HCatalog as well as with Apache Sentry or Ranger.

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**FIGURE 1** Evaluated Vendors: Product Information And Selection Criteria

Vendor	Product evaluated	Product version evaluated
Arcadia Data	Arcadia Enterprise	3.1
Attivio	Attivio	5.2
Datameer	Datameer	6
Kyvos Insights	Kyvos	2.0
Oracle	Oracle Big Data Discovery Cloud Service	N/A
Zoomdata	Zoomdata	2.3

**Vendor selection criteria**

Vendors included in this Forrester Wave™ evaluation offer:

- **Business functionality that includes at least three components.** We required that each product be a self-encompassing integrated suite with data preparation, curated/derived data storage, and user interface (UI) features.
- **A technical architecture that is mostly based on Hadoop.** Hadoop-based architecture is a requirement, not an option. The platform can't use ODBC/JDBC connectors as an interface between the UI and the database. All query execution uses native Hadoop frameworks such as MapReduce, Spark, or Tez. The platform must use HDFS (or other Hadoop-compliant data storage) as the primary storage mechanism and provide integration with Apache Hive and HCatalog, as well as with Apache Sentry or Ranger.

## Vendor Profiles

This evaluation of the native Hadoop BI platforms market is intended to be a starting point only. We encourage clients to view detailed product evaluations and adapt criteria weightings to fit their individual needs through the downloadable Forrester Wave Excel-based vendor comparison tool (see Figure 2 and see Figure 3).

### Native Hadoop BI Platforms For Strong User Interface

AD&D pros working on BI initiatives often face two relatively distinct business scenarios. In the first scenario, some other process is responsible for data curation, which means that core BI processes such as data extraction, cleansing, integration, denormalization (flattening out highly normalized transactional data), and aggregation rely on an outside mechanism to execute these steps. In this case,

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the BI platform is primarily used for reporting, analysis, and visualization. To evaluate and rank vendors for this specific scenario, Forrester put the most weight (60%) on the platforms’ business user self-service, data visualization, and data discovery and exploration features.

**Native Hadoop BI Platforms For Strong Data Preparation Capabilities**

In the second scenario, the BI platform is responsible for both data curation and analysis. As a result, this use case calls for the BI platform to have features that natively support data extraction, cleansing, integration, denormalization, aggregation, and modeling. Some users benefit from the UI built into the platform for reporting, analysis, and visualization, while others prefer to leverage their existing leading BI platform for such functionality. To evaluate and rank vendors for this specific scenario, Forrester put the most weight (50%) on the platforms’ data preparation features.

**FIGURE 2** Forrester Wave™: Native Hadoop BI Platforms For Strong User Interface, Q3 '16



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**FIGURE 2** Forrester Wave™: Native Hadoop BI Platforms For Strong User Interface, Q3 '16 (Cont.)

	Forrester's Weighting	Arcadia Data	Attivio	Datameer	Kyvos Insights	Oracle	Zoomdata
<b>CURRENT OFFERING</b>	50%	3.10	1.85	3.05	2.15	3.40	2.35
Data preparation	5%	2.00	3.00	3.00	1.00	4.00	1.00
Large enterprise features	5%	3.00	3.00	3.00	3.00	1.00	3.00
Self-service	20%	3.00	1.00	3.00	2.00	4.00	1.00
Data visualization	20%	3.00	1.00	3.00	3.00	4.00	3.00
SQL/OLAP	5%	4.00	1.00	1.00	3.00	3.00	3.00
Data discovery and exploration	20%	3.00	3.00	3.00	1.00	4.00	3.00
Advanced analytics	5%	2.00	1.00	3.00	1.00	4.00	1.00
Hadoop/Spark architecture	5%	5.00	1.00	4.00	3.00	2.00	2.00
Integration	5%	3.00	3.00	4.00	2.00	1.00	1.00
Delivery/deployment options	5%	3.00	2.00	3.00	3.00	2.00	4.00
Customer satisfaction	5%	4.00	3.00	4.00	3.00	3.00	4.00
<b>STRATEGY</b>	50%	3.00	2.96	2.57	2.20	3.46	2.70
Key vendor/product differentiators and gaps	50%	3.00	2.00	3.00	2.00	3.00	2.00
Intellectual property	25%	3.00	5.00	1.00	3.00	4.00	3.00
Partnership ecosystem	15%	3.00	3.00	3.00	1.00	5.00	3.00
Cost	10%	3.00	2.60	3.70	3.00	2.10	5.00
Customer satisfaction	0%	4.00	4.00	4.00	4.00	4.00	4.00
<b>MARKET PRESENCE</b>	0%	3.60	2.00	4.60	2.60	4.00	2.00
Installed base	50%	5.00	1.00	5.00	3.00	5.00	3.00
Revenue	30%	3.00	3.00	5.00	3.00	3.00	1.00
Global presence	20%	1.00	3.00	3.00	1.00	3.00	1.00
Customer satisfaction	0%	4.00	4.00	4.00	4.00	4.00	4.00

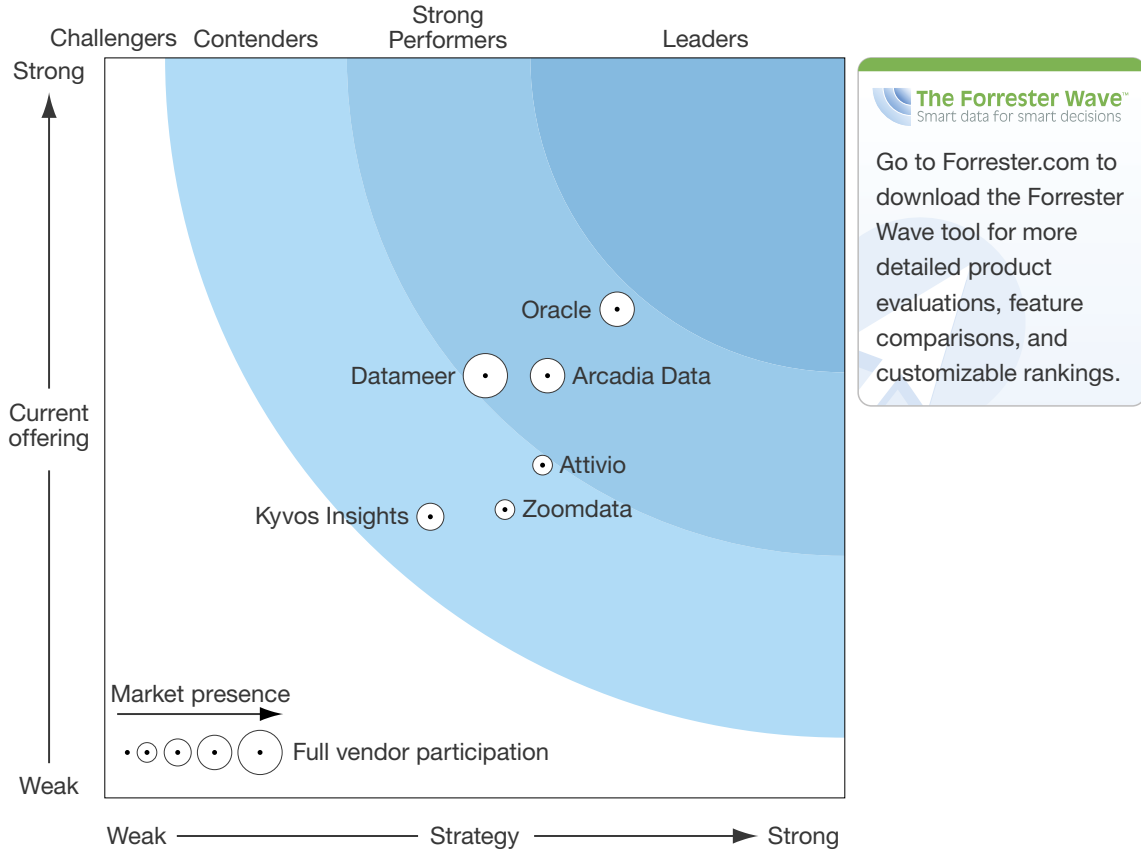
All scores are based on a scale of 0 (weak) to 5 (strong).



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**FIGURE 3** Forrester Wave™: Native Hadoop BI Platforms For Strong Data Preparation Capabilities, Q3 '16



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**FIGURE 3** Forrester Wave™: Native Hadoop BI Platforms For Strong Data Preparation Capabilities, Q3 '16 (Cont.)

	Forrester's Weighting	Arcadia Data	Attivio	Datameer	Kyvos Insights	Oracle	Zoomdata
<b>CURRENT OFFERING</b>	50%	2.85	2.25	2.85	1.90	3.30	1.95
Data preparation	40%	2.00	3.00	3.00	1.00	4.00	1.00
Large enterprise features	5%	3.00	3.00	3.00	3.00	1.00	3.00
Self-service	5%	3.00	1.00	3.00	2.00	4.00	1.00
Data visualization	5%	3.00	1.00	3.00	3.00	4.00	3.00
SQL/OLAP	15%	4.00	1.00	1.00	3.00	3.00	3.00
Data discovery and exploration	5%	3.00	3.00	3.00	1.00	4.00	3.00
Advanced analytics	5%	2.00	1.00	3.00	1.00	4.00	1.00
Hadoop/Spark architecture	5%	5.00	1.00	4.00	3.00	2.00	2.00
Integration	5%	3.00	3.00	4.00	2.00	1.00	1.00
Delivery/deployment options	5%	3.00	2.00	3.00	3.00	2.00	4.00
Customer satisfaction	5%	4.00	3.00	4.00	3.00	3.00	4.00
<b>STRATEGY</b>	50%	3.00	2.96	2.57	2.20	3.46	2.70
Key vendor/product differentiators and gaps	50%	3.00	2.00	3.00	2.00	3.00	2.00
Intellectual property	25%	3.00	5.00	1.00	3.00	4.00	3.00
Partnership ecosystem	15%	3.00	3.00	3.00	1.00	5.00	3.00
Cost	10%	3.00	2.60	3.70	3.00	2.10	5.00
Customer satisfaction	0%	4.00	4.00	4.00	4.00	4.00	4.00
<b>MARKET PRESENCE</b>	0%	3.60	2.00	4.60	2.60	4.00	2.00
Installed base	50%	5.00	1.00	5.00	3.00	5.00	3.00
Revenue	30%	3.00	3.00	5.00	3.00	3.00	1.00
Global presence	20%	1.00	3.00	3.00	1.00	3.00	1.00
Customer satisfaction	0%	4.00	4.00	4.00	4.00	4.00	4.00

All scores are based on a scale of 0 (weak) to 5 (strong).

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**Strong Performers For Both Native Hadoop BI Platforms Use Cases**

- › **Arcadia Data offers a one-stop-shop native Hadoop BI platform.** From offering inline data preparation (where data preparation and analysis/visualization are part of the same process) and building data cubes to visualizing exploring and analyzing data, Arcadia Data provides a seamlessly integrated native BI Hadoop platform. By running on-cluster Hadoop, Arcadia Data does not require data movement outside of the Hadoop system, unlike other vendors in this market segment, and it integrates the data (HDFS), security, and compute (YARN) tiers of the Hadoop ecosystem. However, such all-encompassing functionality still has some limitations, especially with advanced analytics. Arcadia Data only offers linear regression and exponential smoothing predictive models, and it does not currently provide out-of-the-box integration with popular advanced analytics packages like RStat. Forrester recommends Arcadia Data to clients looking for a seamlessly integrated BI suite and compatibility with a wide variety of popular Hadoop SQL engines.
- › **Datameer delivers an enterprise-ready Native Hadoop BI platform.** Clients often need to make an educated guess to choose MapReduce, Tez, or Spark execution engines that best fit their use cases. Datameer makes such guessing obsolete. Depending on the job type (e.g., data prep, large complex query, or small simple query), Datameer's Smart Execution engine acts as a cost-based optimizer and automatically selects the most appropriate execution engine. Datameer has a strong focus on data preparation and analysis. While its visualizations are not interactive, they can be regenerated rather quickly and support drill-down, mimicking basic interactivity. Forrester recommends Datameer to clients whose main challenge is data curation, analysis, or discovery, less so data visualization. If your use case calls for the latter, leverage Datameer's rich network of certified BI partners (the richest among the Forrester Wave participants).
- › **Oracle Big Data Discovery provides a potent data exploration platform.** Just knowing the data profile (min/max, most frequent values, and outliers) can provide instant insights. Oracle BDD emphasizes inline dynamic data profiling (AKA data discovery) — next to each measure or an attribute, there's a data profiling window. BDD's faceted navigation GUI and an index (versus cubes or a star schema) DBMS are great enablers for data exploration versus SQL-based analysis.<sup>11</sup> Hence, a limitation: Oracle BDD lacks an SQL interface — a popular requirement for clients looking to leverage their investments in leading BI technologies. Forrester recommends Oracle BDD to clients who want to combine advanced data prep and data visualization in a single seamlessly integrated platform. Clients who already use OBI 12c but need to look beyond schema-on-write-based analytics, or who need more advanced data prep capabilities than the Oracle Data Visualization tool provides, have another choice: They should consider BDD as a powerful data exploration tool.

**Contenders For Both Native Hadoop BI Platforms Use Cases**

- › **Attivio empowers users to leverage all enterprise data, structured and unstructured.** In the age of the customer, deriving insights from all of the customer data at your disposal — structured and unstructured — is a key to success. Attivio is uniquely positioned to deliver on this, as it

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combines search (finding the information), BI (analysis of structured data), and text mining (analysis of unstructured data) under one roof. An important byproduct of Attivio's architecture is a semantic catalog, which indexes (and semantically enriches) all of the targeted data sources during the data ingestion process. Once the data is catalogued, Attivio offers its own lightweight data visualization for basic exploration and connectors to popular leading BI platforms for a more comprehensive analysis. This kind of power and integration comes at a cost — Attivio is the most expensive product in this evaluation. Forrester recommends Attivio for clients who want to unify and analyze all types of enterprise data rather than dealing with and integrating separate search, BI, and text-mining tools.

- › **Kyvos Insights breathes new life into OLAP by porting it to Hadoop.** For years, the BI industry tried to predict an end to OLAP. Many experts claimed — incorrectly — that new technologies like in-memory analytics would eliminate the need for OLAP cubes. But there are still use cases where analysis based on OLAP schemas, aggregations, and predefined drill-down paths is preferable for delivering low-latency interactive performance and where a single version of the truth is not negotiable. Since Kyvos precalculates all aggregates at every level of dimensional hierarchies, it can provide faster response times for queries than SQL-on-Hadoop platforms like Hive or Spark SQL. Kyvos plans to fill some gaps in its portfolio, such as data exploration, profiling, and support for SQL, later in 2016. Forrester recommends Kyvos Insights to clients looking to migrate existing OLAP-based apps from proprietary platforms or build new OLAP-based apps on Hadoop for interactive analysis. Clients can analyze data by using Kyvos' own visualization UI or leveraging existing investments in leading BI platforms.
- › **Zoomdata enables operational analytics based on streaming technologies.** Rather than moving data to Hadoop and then analyzing it by building cubes, Zoomdata streams data directly from the data sources. This is not a unique capability by itself if the data source has streaming capabilities (like social media feeds), but what about static data sources, which include most databases? Zoomdata solves this problem by splitting each query into “micro queries.” The user can see the initial “fuzzy” results as soon as the first micro query comes back. Then the visualization progressively “sharpens” with data updates as the rest of the micro queries complete and a fuller result set becomes available. Forrester recommends Zoomdata to clients whose use cases call for streaming data analytics or correlating historical data with operational data. However, Zoomdata offers few data curation capabilities and relies on other tools to prepare the data. And while its open architecture can be extended, Zoomdata does not offer prepackaged integration with third-party BI platforms.

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## Supplemental Material

### Online Resource

The online versions of Figure 2 and Figure 3 are Excel-based vendor comparison tools that provide detailed product evaluations and customizable rankings.

### Data Sources Used In This Forrester Wave

Forrester used a combination of three data sources to assess the strengths and weaknesses of each solution. We evaluated the vendors participating in this Forrester Wave, in part, using materials that they provided to us by August 26, 2016, or earlier.

- › **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.

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- › **Product demos.** We asked vendors to conduct demonstrations of their products' functionality. We used findings from these product demos to validate details of each vendor's product capabilities.
- › **Customer surveys.** To validate product and vendor qualifications, Forrester also conducted a short online survey with four of each vendor's current customers.

**The Forrester Wave Methodology**

We conduct primary research to develop a list of vendors that meet our criteria to be evaluated in this market. From that initial pool of vendors, we then narrow our final list. We choose these vendors based on 1) product fit, 2) customer success, and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave evaluation — and then score the vendors based on a clearly defined scale. We intend these default weightings to serve only as a starting point and encourage readers to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve. For more information on the methodology that every Forrester Wave follows, go to <http://www.forrester.com/marketing/policies/forrester-wave-methodology.html>.

**Integrity Policy**

We conduct all our research, including Forrester Wave evaluations, in accordance with our Integrity Policy. For more information, go to <http://www.forrester.com/marketing/policies/integrity-policy.html>.

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## Endnotes

- <sup>1</sup> For more information, see the “[How To Scale Business Intelligence With Hadoop-Based Platforms](#)” Forrester report.
- <sup>2</sup> Native Hadoop BI platform vendors’ combined revenues are under \$200 million, which is 1.3% of the \$15 billion enterprise BI software platforms market. See the “[Forrester Research World Business Intelligence And Analytics Software Forecast, 2015 To 2020 \(Global\)](#)” Forrester report.
- <sup>3</sup> Source: Ben Werther, “We’re excited to announce Platfora is joining Workday!” Platfora blog, July 21, 2016 (<https://www.platfora.com/blog-post/platfora-joins-workday/>).
- <sup>4</sup> Several other BI vendors — including Alteryx, Jaspersoft, and Pentaho — have also moved data preparation components of their BI platforms to Hadoop.
- <sup>5</sup> Popular HDFS file formats include Sequence files, AVRO, JSON, Parquet, RC/ORC, and others. GUI = graphical user interface.
- <sup>6</sup> Although Spark is its own Apache project, separate and independent from Hadoop, most of the commercial Hadoop distribution now bundle Spark with Hadoop.
- <sup>7</sup> On-premises Hadoop deployments just got easier. General-purpose hardware infrastructure requires considerable time and effort to install, configure, tune, upgrade, and monitor Hadoop platforms. Hadoop-optimized systems help overcome these issues by optimizing the infrastructure with automation, balanced system resources, and integrated testing. Enterprise architects can find the best solution for their needs with Forrester’s 26-criteria evaluation of seven leading vendors: Cisco Systems, Cray, Dell, IBM, NetApp, Oracle, and Teradata. See the “[The Forrester Wave™: Big Data Hadoop-Optimized Systems, Q2 2016](#)” Forrester report.
- <sup>8</sup> The 11 current offering criteria are an aggregate of 234 detailed evaluation criteria developed in the course of Forrester’s in-depth coverage of the BI market. Clients can engage with Forrester directly for more details on these criteria.
- <sup>9</sup> Forrester also evaluated Platfora but dropped the vendor from the final analysis based on its July 21, 2016 acquisition by Workday. It is Forrester’s estimate that Workday does not plan to provide any future enhancements to Platfora and will not support the product beyond current customer-support contracts (one to three years). Workday plans to integrate Platfora’s components into its ERP platform. Source: Ben Werther, “We’re excited to announce Platfora is joining Workday!” Platfora blog, July 21, 2016 (<https://www.platfora.com/blog-post/platfora-joins-workday/>).
- <sup>10</sup> We eliminated AtScale from this evaluation because it natively supports the first two features but only offers UI via integration with third-party BI platforms.
- <sup>11</sup> DBMS = database management system.

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