

The Forrester Wave™: Enterprise BI Platforms (Vendor-Managed), Q3 2019

The 14 Providers That Matter Most And How They Stack Up

by Boris Evelson
July 29, 2019

Why Read This Report

In our 19-criterion evaluation of vendor-managed enterprise business intelligence (BI) platforms providers, we identified the 14 most significant ones — 1010data, Amazon Web Services, Birst, Domo, IBM, Information Builders, Looker, Microsoft, Oracle, Salesforce, SAP, Sisense, Tableau Software, and TIBCO Software — and researched, analyzed, and scored them. This report shows how each provider measures up and helps application development and delivery (AD&D) pros select the right one for their needs.

Additionally, Forrester recommends that AD&D pros consider the BI platforms evaluated in “The Forrester Wave™: Enterprise BI Platforms (Client-Managed), Q3 2019,” which uses the same evaluation criteria.

Key Takeaways

Microsoft, TIBCO Software, Salesforce, Oracle, Tableau, And Sisense Lead The Pack

Forrester’s research uncovered a market in which Microsoft, TIBCO Software, Salesforce, Oracle, Tableau Software, and Sisense are Leaders; Domo, Birst, Looker, SAP, and Information Builders are Strong Performers; and Amazon Web Services, IBM, and 1010data are Contenders.

Augmented BI And Extensibility Are Key Differentiators For All Enterprise BI Platforms

As mature BI technology becomes nondifferentiated, augmented BI and platform extensibility will dictate which providers lead the pack. Vendors that can provide these features position themselves to successfully deliver BI as a key systems of insight (SOI) capability to their customers.

Vendor-Managed Enterprise BI Platforms Require Additional Capabilities

Accessing data stored on-premises, cloud security, and industry regulation compliance are key differentiators for vendor-managed enterprise BI platforms.

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Related Research Documents

- [FAQ: How To Survive The Ongoing BI Vendor Market Consolidation](#)
- [The Forrester Tech Tide™: Enterprise Business Insights And Analytics, Q1 2019](#)
- [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#)
- [Now Tech: Enterprise BI Platforms, Q1 2019](#)



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Bring BI To Where Most Of Your Data Already Is: The Cloud

Moving your enterprise data, BI platforms, and applications to the cloud is no longer a matter of if, but when.¹ No wonder — almost half of all structured enterprise data is already stored in public clouds.² BI goes where the data is. Forty-seven percent of global data and analytics technology decision makers state that they either complement (27%) or have already replaced most or all (20%) of their on-premises BI applications with cloud options.³ Even though all of the vendors evaluated in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#) also offer cloud deployment options, the vendor-managed platforms evaluated in this report are natively architected for cloud-based software-as-a-service (SaaS).⁴

In this research, Forrester evaluated only the differentiated features of enterprise BI platforms: augmented BI, which includes machine learning and conversational UIs, such as natural language query (NLQ) and natural language generation (NLG); platform extensibility and customization capabilities; overall technical architecture; features necessary to work with big data; built-in data preparation; deployment options, including cloud, on-premises, and mobile; and multiple other features.⁵ But cloud-based software-as-a-service (SaaS) BI platforms — i.e., vendor-managed enterprise BI platforms — require additional capabilities. AD&D pros looking to select one of these platforms should specifically look for providers that offer:

- › **Fully managed platforms.** In a mature technology market like BI, clients can cede control of software installation, updates, backups, and disaster recovery (DR) to a SaaS provider and instead concentrate on building BI applications focused on a business domain/solution. A vendor-managed BI platform provider maintains a single software instance and partitions it for logical private instances for each client. All clients are on the same software version, and all get the same continuous upgrades. But there's a catch: AD&D pros must make a leap of faith and fully commit to using software deployed in a public cloud, as some of the platforms in this category do not run on-premises.
- › **Direct access to on-premises data.** While your organization may be ready for a vendor-managed BI platform hosted in a public cloud, you may still want to keep at least some of the data on-premises. The reason? Thirty-six percent of global software decision makers cited security and privacy as the top concern about cloud services.⁶ Whether it's a reverse proxy server, virtual private network (VPN), or other gateway option, cloud-based BI platforms must be able to connect to and query data stored inside your organization firewall. To minimize network traffic and take advantage of a big data RDBMS, cloud-hosted BI platforms must also be able to push query processing down to a DBMS.⁷
- › **Security optimized for public cloud without compromising control.** Tight data and application security in your own data center is essential, but in a public cloud, where many system components are out of your control, security is even more critical. In this evaluation, we looked at the BI platforms (not the public cloud platform-as-a-service they run on) and their compliance

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with various relevant regulations and standards — such as ISO for security, SOC for system controls, and various regional and industry vertical regulations like GDPR and HIPAA — verified by certifications and/or audits.⁸ Additionally, we evaluated the BI platforms' bring your own key (BYOK) capability, where an organization must control all encryption keys, not the vendor hosting the platform.

Evaluation Summary

The Forrester Wave™ evaluation highlights Leaders, Strong Performers, Contenders, and Challengers. It's an assessment of the 14 top vendors in the market and does not represent the entire vendor landscape (which Forrester estimates to include close to a hundred vendors). You'll find more information about this market in our [The Forrester Tech Tide™: Enterprise Business Insights And Analytics, Q1 2019](#) and [Now Tech: Enterprise BI Platforms, Q1 2019](#) reports.

We intend this evaluation to be a starting point only and encourage clients to view product evaluations and adapt criteria weightings using the Excel-based vendor comparison tool (see Figure 1 and see Figure 2). Click the link at the beginning of this report on Forrester.com to download the tool.

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FIGURE 1 Forrester Wave™: Enterprise BI Platforms (Vendor-Managed), Q3 2019

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Enterprise BI Platforms (Vendor-Managed)

Q3 2019



The Forrester Wave™: Enterprise BI Platforms (Vendor-Managed), Q3 2019

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FIGURE 2 Forrester Wave™: Enterprise BI Platforms (Vendor-Managed) Scorecard, Q3 2019

	Forrester's weighting	1010data	Amazon Web Services	Birst	Domo	IBM	Information Builders	Looker
Current offering	50%	2.20	1.80	3.20	3.60	2.80	3.40	2.80
Augmented BI	10%	1.00	1.00	3.00	3.00	3.00	3.00	1.00
App building/customization	10%	3.00	1.00	5.00	5.00	1.00	3.00	3.00
Architecture	10%	3.00	1.00	3.00	3.00	3.00	3.00	3.00
Big data	10%	3.00	3.00	3.00	3.00	1.00	5.00	5.00
Data prep	10%	5.00	1.00	5.00	3.00	1.00	3.00	3.00
Deployment options	10%	3.00	3.00	5.00	3.00	3.00	3.00	5.00
GUI	10%	1.00	1.00	1.00	3.00	3.00	3.00	1.00
Mobile	10%	1.00	1.00	3.00	3.00	5.00	5.00	1.00
Security	10%	1.00	3.00	3.00	5.00	5.00	3.00	1.00
Systems of insight	10%	1.00	3.00	1.00	5.00	3.00	3.00	5.00
Strategy	50%	2.50	3.50	3.50	3.25	2.25	2.25	3.75
Commercial model	13%	1.00	5.00	3.00	3.00	3.00	3.00	3.00
Delivery model	13%	5.00	3.00	5.00	5.00	1.00	1.00	5.00
Execution road map	13%	3.00	3.00	3.00	3.00	1.00	1.00	5.00
Innovation road map	13%	3.00	3.00	3.00	3.00	1.00	3.00	3.00
Partner ecosystem	13%	1.00	3.00	3.00	3.00	3.00	1.00	3.00
Past performance	13%	3.00	3.00	3.00	5.00	1.00	1.00	5.00
Product vision	13%	3.00	3.00	3.00	3.00	3.00	5.00	5.00
Supporting products and services	13%	1.00	5.00	5.00	1.00	5.00	3.00	1.00
Market presence	0%	2.00	3.00	3.00	3.00	5.00	3.00	2.00
Revenue	100%	2.00	3.00	3.00	3.00	5.00	3.00	2.00

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

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FIGURE 2 Forrester Wave™: Enterprise BI Platforms (Vendor-Managed) Scorecard, Q3 2019 (Cont.)

	Forrester's weighting	Microsoft	Oracle	Salesforce	SAP	Sisense	Tableau Software	TIBCO Software
Current offering	50%	4.60	3.60	4.00	3.00	3.60	3.40	4.40
Augmented BI	10%	5.00	3.00	5.00	3.00	3.00	1.00	5.00
App building/customization	10%	5.00	5.00	5.00	3.00	5.00	1.00	5.00
Architecture	10%	5.00	3.00	3.00	3.00	5.00	3.00	3.00
Big data	10%	5.00	1.00	3.00	1.00	5.00	5.00	5.00
Data prep	10%	5.00	3.00	3.00	3.00	3.00	3.00	5.00
Deployment options	10%	5.00	5.00	3.00	3.00	3.00	5.00	5.00
GUI	10%	5.00	5.00	3.00	5.00	3.00	5.00	5.00
Mobile	10%	5.00	3.00	5.00	1.00	3.00	5.00	3.00
Security	10%	3.00	3.00	5.00	5.00	3.00	3.00	3.00
Systems of insight	10%	3.00	5.00	5.00	3.00	3.00	3.00	5.00
Strategy	50%	4.50	4.50	4.25	3.00	3.75	4.25	4.00
Commercial model	13%	5.00	5.00	3.00	3.00	3.00	5.00	5.00
Delivery model	13%	5.00	5.00	5.00	1.00	5.00	3.00	3.00
Execution road map	13%	5.00	5.00	5.00	3.00	3.00	5.00	3.00
Innovation road map	13%	3.00	3.00	3.00	3.00	5.00	5.00	5.00
Partner ecosystem	13%	5.00	3.00	5.00	5.00	3.00	5.00	3.00
Past performance	13%	5.00	5.00	3.00	1.00	5.00	5.00	3.00
Product vision	13%	3.00	5.00	5.00	3.00	5.00	5.00	5.00
Supporting products and services	13%	5.00	5.00	5.00	5.00	1.00	1.00	5.00
Market presence	0%	5.00	5.00	3.00	5.00	2.00	5.00	3.00
Revenue	100%	5.00	5.00	3.00	5.00	2.00	5.00	3.00

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

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Vendor Offerings

Forrester included 14 vendors in this assessment: 1010data, Amazon Web Services (AWS), Birst, Domo, IBM, Information Builders, Looker, Microsoft, Oracle, Salesforce, SAP, Sisense, Tableau Software, and TIBCO Software (see Figure 3).

FIGURE 3 Evaluated Vendors And Product Information

Vendor name	Product name	Product version
1010data	1010edge	v13.53
Amazon Web Services	Amazon QuickSight	
Birst	Birst Enterprise	5.33
Domo	Domo	Branch 3/12/2019
IBM	Cognos Analytics	11.1.12
Information Builders	WebFOCUS	8.2.05
Looker	Looker	6.8
Microsoft	Power BI	
Oracle	Oracle Analytics Cloud	105.2
Salesforce	Salesforce Einstein Discovery	
SAP	SAP Analytics Cloud	Release 7
Sisense	Sisense	v7.4
Tableau Software	Tableau	2019.1
TIBCO Software	TIBCO Cloud Spotfire	10.2

Vendor Profiles

Our analysis uncovered the following strengths and weaknesses of individual vendors.

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Leaders

- › **You no longer need to be shy about using Microsoft Power BI; it's a killer BI platform.** The days of Microsoft BI as a second-class citizen among large enterprise BI platforms have come and gone. Power BI leapfrogged the competition since Forrester's last evaluation and addressed most of the functionality modern enterprise BI platforms must have. It includes all of the hundreds of capabilities evaluated here — augmented BI (AutoML and conversational UI), including text and image analytics; platform extensibility and customization; architecture; big data features; GUI (with NLQ, NLG, and Q&A, a chatbot-like feature); mobile delivery; and multiple deployment options.⁹ Microsoft even invested in a Power BI enterprise reporting feature — a modern alternative to the legacy SQL Server Reporting Services (SSRS).

Organizations should consider Power BI as their main enterprise BI platform before looking elsewhere, especially those that use Office 365. The only exception to our recommendation would be an enterprise that standardized on other productivity tools and cloud platforms. One gap that Microsoft will close soon is bring-your-own-key (BYOK).¹⁰ Reference customers ranked Power BI just under “exceeds expectations” overall and “exceeds expectations” for augmented BI, extensibility and customization, technical architecture, data preparation, GUI, and stability. A few expressed concerns about the scalability of the mobile platform and large enterprise deployment. The client-managed version of Power BI (for on-premises deployments) is quite different, with fewer capabilities. We reviewed the client-managed version in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#).

- › **With TIBCO Cloud Spotfire, get insights in seconds, not minutes.** TIBCO Cloud Spotfire has already been a leader in the market with its mature in-memory architecture, comprehensive GUI, and stellar augmented BI (AutoML and conversational UI). But that's not where its strengths end. In the age of customer, empowered consumers with smart mobile devices have constant access to competitor products and services. As a result, getting instantaneous actionable insights is now more crucial than ever. This is where Cloud Spotfire truly differentiates from competitors: out-of-the-box streaming analytics capabilities. TIBCO Software also sells another BI product — Jaspersoft (not evaluated here) — which it mostly positions for embedded BI use cases.

Even though Cloud Spotfire can create and distribute PDF reports, it is not a report bursting platform — for that use case, TIBCO also positions Jaspersoft.¹¹ It also lacks a BYOK capability, a highly requested feature. The vendor-managed product reviewed here is virtually indistinguishable from the client-managed version, reviewed in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#), giving customers broad deployment options. One key difference: Spotfire Data Streams (a key requirement for streaming analytics) is a separately sold product from Cloud Spotfire. Reference customers ranked the overall product as “exceeds expectations” across most capabilities — one of the top reference customer feedback across all vendors evaluated in both Forrester Wave reports. Some customers especially praised Cloud Spotfire for its ease of use and search UI/data discovery and exploration.

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- › **Base BI on the SaaS platform you already use — Salesforce Einstein Analytics.** Salesforce Einstein Analytics Plus is Salesforce's flagship enterprise BI platform, which includes Einstein Discovery and Einstein Predictions.¹² Its augmented BI (AutoML and conversational UI) capabilities, mostly surfaced in Einstein Discovery, are top-notch. Many competitors only recently introduced cognitive conversational computer interface functionality — NLQ and NLG — and most offer these features via partnerships or OEM relationships. But Einstein Discovery has been honing and improving its NLQ and NLG capabilities since 2006, including via technology Salesforce acquired from BeyondCore in 2016. Beyond augmented BI based on structured data, Einstein Analytics Plus users also get comprehensive text and image analytics via Einstein Language and Einstein Vision, freely available add-ons. These free add-ons just keep on coming — another example is Einstein Bot, which can integrate with Einstein Analytics Plus.

Salesforce Einstein Analytics Plus is not an enterprise report bursting platform — to generate and burst pixel-perfect reports at scale, clients will need to look elsewhere. Reference customers ranked the overall product as “exceeds expectations” across most capabilities — the top reference customer feedback across all vendors evaluated in both Forrester Wave reports. Some customers especially praised the product's ease of use but expressed concerns about the lack of an on-premises version.¹³

- › **Trust OAC like you've been trusting Oracle's database and applications for decades.** Oracle Analytics Cloud (OAC) is Oracle's strategic BI product, architected natively as a vendor-managed, multitenant cloud SaaS platform. It is not a cloud deployment of the client-managed Oracle Business Intelligence Enterprise Edition (OBIEE), which isn't evaluated here.¹⁴ In addition to typical modern augmented BI functionality (AutoML and conversational UI), OAC Enterprise Edition comes with BI Publisher, an enterprise reporting tool for distributing pixel-perfect reports at scale, and Essbase, a popular budgeting/planning application/DBMS with write-back capabilities.¹⁵ While OAC is a top choice for any enterprise BI environment, as a bonus for Oracle SaaS customers, OAC comes with prebuilt content and connectors to Oracle SaaS applications — CRM, CX, ERP, EPM, SCM, and HCM.

OAC provides most of the features required by a modern, scalable enterprise BI platform. It even supports conversational GUI pervasively in the platform, in Oracle Day by Day (its mobile solution), and via integration with Oracle Digital Assistant and Slack. Reference customers ranked the overall product as “exceeds expectations” across most capabilities. Some references praised OAC's data prep functionality but expressed concerns about Oracle's technical support. One significant gap in the cloud SaaS platform is that Oracle doesn't support BYOK, a highly requested feature.

- › **Go with Tableau Online as a gold standard of enterprise BI.** Tableau is no longer just a highly popular and pretty data visualization tool; it's now a formidable enterprise BI platform.¹⁶ What took Tableau to that level? Recent acquisitions and new organically built features. Tableau Software acquired technologies that it uses for its in-memory database and Ask Data NLQ. Organically, Tableau beefed up its BI governance, data preparation functionality of Tableau Prep (also built on

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the same acquired in-memory database), security, and administration capabilities, positioning itself as a highly competitive large enterprise BI platform. Tableau Online (its vendor-managed SaaS offering reviewed in this evaluation) is virtually indistinguishable from Tableau Server (the client-managed version reviewed in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#)), giving the clients broad deployment capabilities.

Tableau is not an enterprise report bursting platform for distributing pixel-perfect reports at scale — for that capability, clients will have to look elsewhere. Reference customers ranked Tableau between “meets expectations” and “exceeds expectations” for its overall product capabilities but gave an “exceeds expectations” ranking to its augmented BI (AutoML and conversational UI), extensibility and customization, overall technical architecture, GUI, and platform stability. Some reference customers specifically praised Tableau for its ease of use, deployment, and administration.

- › **Bring BI to your enterprise data with Sisense.** Legacy BI platforms based on RDBMS are not optimized for analytics and “bring data to BI” — that is, they denormalize (flatten) data, build aggregates, star schemas, and cubes. In the process, you lose time and insights hidden in raw data. Big data DBMS addresses that challenge by allowing BI platforms to query data as is — they “bring BI to data.” But many enterprises lack the time or resources to migrate to a big data DBMS, and that’s where Sisense comes in. Like all other BI platforms, Sisense can work with live DBMS queries. But its real differentiator is an on-CPU (in-chip) in-memory database — Sisense Elastic Cube — which is fast, allowing queries and analysis on raw data without any transformations. Sisense recently acquired Periscope Data to address more use cases and user roles, such as data engineers and data scientists.¹⁷

Sisense’s conversational UI is top-notch, including NLQ, NLG, and a chatbot (Sisense Boto). But it needs to close a few gaps, such as integrating Insight Miner, its augmented BI (AutoML and conversational UI) tool, sold as an add-on, into the base product, and supporting BYOK, a highly requested feature. It is also not an enterprise report bursting platform for distributing pixel-perfect reports at scale. Reference customers ranked the product “meets expectations” overall and “exceeds expectations” for its big data capabilities. Some called out Sisense for its ease of use and quick deployment. The client-managed, on-premises version of Sisense is virtually indistinguishable from the vendor-managed platform, giving customers broad deployment options. We evaluated the client-managed version in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#).

Strong Performers

- › **Deploy Domo when you want ready to use BI applications within minutes.** Click on your favorite business application connector — Salesforce for sales, Marketo for marketing, or SurveyMonkey for voice of the customer — and all of the key metrics, KPIs, and dashboards instantaneously materialize. Out of over 1,000 data source connectors in its arsenal, Domo comes with approximately 700 connectors to popular business applications. Even more impressively, over

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30 of these connectors come with “actions,” allowing users to write back to source applications, such as updating customer contact info or kicking off a new marketing campaign. That native write-back capability enables and drives Domo’s user community to use the Domo platform to build translytical (read and write) applications, which not only include analytics but also allow users to enter data.¹⁸ Basically, Domo is also a low-code application development platform.

Domo still needs to catch up to its competitors with more augmented BI and geolocation analytics, as well as some advanced charts and graphs. It is also not an enterprise report bursting platform for distributing pixel-perfect reports at scale — for that capability, clients will have to look elsewhere. Reference customers ranked the overall product as “exceeds expectations” across most capabilities — one of the top reference customer feedback across all vendors evaluated in both Forrester Wave reports. Some reference customers especially called out Domo’s ease of use and mobile application.

- › **Rely on Birst to automate and optimize the end-to-end BI process.** Most BI platforms rely on third-party data integration and data modeling tools to create and optimize their cloud-based data warehouse/data mart schemas. Birst, however, has capabilities to not only automate but also optimize data warehouse schema creation by instantiating multiple best practices in its data warehouse automation software (a differentiator called out by reference customers). Birst generates data warehouse schema in an open model, and clients may use third-party BI tools to connect to it — giving Birst a solid position in the BI fabric space.¹⁹ It has been two years since Infor — a global ERP/CRM vendor with significant market presence — acquired Birst. So far, it has been good news for both Infor and non-Infor Birst clients: Birst is enjoying an influx of resources from a much bigger parent company, while Infor is running Birst as an independent business unit. Additionally, Infor ERP/CRM customers benefit from Birst’s BI functionality finding its way into all other Infor products.

Birst is yet to introduce modern UI capabilities such as NLQ and NLG. It also needs to introduce a BYOK capability — a highly requested feature. Reference customers ranked the platform as “meets expectations” overall but “exceeds expectations” specifically for its data preparation. A few voiced concerns about the product tech support and documentation. The client-managed version of Birst (for on-premises deployments) is virtually identical, giving clients broad deployment options. We reviewed the client-managed version in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#).

- › **Put Looker on top of your modern, scalable big data database.** Looker’s sweet spot is an environment in which clients have already made the migration to the big data cloud databases (AWS Redshift, Google Big Query, or Snowflake, for example).²⁰ Looker’s architecture was built on the premise that the databases it will integrate with are already highly scalable and optimized. As a result, Looker’s architecture does not have to concern itself with a heavy-footprint middle tier for query optimization, which burdens many legacy BI platforms. Instead Looker’s middle tier — LookML — concentrates on logical data modeling and optimized connectivity to big data databases with nonstandard RDBMS features, such as nested tables and multivalued fields.

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With all of the “simple elegance” of its architecture, Looker still has quite a way to go to catch up to the formidable competition. The product needs to address gaps in augmented BI (AutoML and conversational UI), deliver native mobile platforms, and introduce NLQ/NLG UI capabilities (a gap Looker currently addresses with Slack integration). It is also not an enterprise report bursting platform for distributing pixel-perfect reports at scale — for that capability, clients will have to look elsewhere. Reliance on modern DBMSes can also be a concern — for certain geolocation analytics functions, like geosearch and spatial joins, Looker depends on the capabilities of the underlying DBMS. Reference customers ranked the platform as “exceeds expectations” across most capabilities. Some reference customers praised LookML and Looker’s data governance capabilities but wished for more advanced visualization features.

- › **Leverage the scalability of SAP HANA with SAP Analytics Cloud.** SAP Analytics Cloud (SAC) is the culmination of a long, bumpy SAP BI road: migrating clients from SAP NetWeaver BI to the SAP BusinessObjects platform, acquired in 2007, and then rationalizing and integrating multiple overlapping SAP BusinessObjects products. But with SAC, SAP is finally getting it almost right. SAC is a modern cloud SaaS platform based on the SAP Public Cloud infrastructure and highly scalable SAP HANA in-memory columnar DBMS. SAC is the only platform evaluated in this research that holds a prestigious certification from the International Business Communications Standards (IBCS) body, which endorsed SAC’s well-designed GUI. SAP continues to support and evolve SAP BusinessObjects, but most modern features, such as augmented BI (AutoML and conversational UI), are going into SAC only.

While SAC is designed and can be used for most BI use cases, it is the most natural choice for clients who are already committed to using SAP’s popular business applications, SAP Public Cloud, SAP HANA Cloud Service, or SAC for planning and budgeting. The product still has gaps that SAP is addressing, such as pixel-perfect report bursting and distribution at scale (this functionality is available in Crystal Reports but not yet in SAC). Additionally, SAC has no on-premises, client-managed version; instead SAP’s strategy is to provide integration between SAC and SAP BusinessObjects for hybrid deployments. Reference customers ranked SAC as “meets expectations” overall. A few praised the product’s ease of use but expressed concerns about its fewer features compared to the competition, as well as its incomplete backward compatibility with SAP BusinessObjects.

- › **Trust Information Builders WebFOCUS for BI at scale, even in legacy environments.** Many leading BI platforms can scale to thousands of users concurrently querying multiple-terabyte-sized data sets, but only when there’s a highly scalable, modern big data RDBMS under the covers. That’s not always the case; many enterprises depend on legacy databases that are poorly optimized for the scale required by modern analytics. For WebFOCUS that’s a sweet spot — its architecture is based on decades of experience with such legacy databases, tuning and optimizing queries and concurrent access in its application server. Although WebFOCUS is 100% web based,

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it has a cool feature called Active Reports, where result sets are cached in a browser and can be used offline with full OLAP functionality — a handy free feature for road warriors while on an airplane with no or poor Wi-Fi connectivity.

Information Builders still needs to build up the product's augmented BI (AutoML) functionality (RStat), especially its modern UI, as the current one is a better fit for data scientists than for casual users. Also, WebFOCUS does not come with key modern BI functionality, such as NLQ, which is available only as a separately sold product. Reference customers ranked the platform as “meets expectations” overall but “exceeds expectations” for platform extensibility and big data capabilities. The client-managed version of WebFOCUS (for on-premises deployments) is virtually identical, giving clients multiple deployment options. The only difference is that the vendor-managed version includes WebFOCUS RStat bundled with the base product. We reviewed the client-managed version in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#).

Contenders

- › **Consider Amazon QuickSight for insights from data within the AWS cloud.** More than half (54%) of global infrastructure decision makers use public cloud, and according to surveyed global data and analytics technology decision makers, 45% of all structured data is already stored in the cloud.²¹ No wonder that BI platforms natively built on public cloud and colocated with enterprises' data, like Amazon QuickSight Enterprise Edition, are becoming increasingly popular. In addition to most enterprise BI features, Amazon QuickSight brings native AWS capabilities, such as serverless architecture, pay per use, and tight integration with popular AWS SaaS products such as Amazon Redshift, Amazon S3, Amazon Athena, Amazon Relational Database Service (RDS), and AWS CloudTrail. The product comes with an in-memory engine for query acceleration, called SPICE.²² The most important feature that Amazon QuickSight introduced since our last evaluation is augmented BI (AutoML and conversational UI), including anomaly detection (ML Insights), contribution analysis, forecasting, and NLG.

Amazon QuickSight is a relatively new product compared to the competition. It still lags in its data preparation, NLQ UI, geolocation analytics, and some of the advanced chart types. AWS also plans to introduce a BYOK capability, a highly requested feature, later in 2019. The product is not an enterprise report bursting platform for distributing pixel-perfect reports at scale — for that capability, clients will have to look elsewhere. Reference customers ranked the platform as “meets expectations” overall. Some praised the product's ease of use and deployment but expressed concerns about the lack of a mobile app and advanced visualizations.

- › **Leverage IBM Cognos Analytics for both enterprise BI and augmented intelligence.** Good news for IBM BI and analytics customers: Over the last year IBM has merged most of the augmented BI (AutoML and conversational UI) and data management features of its Watson Analytics product — such as NLQ, NLG, augmented modeling, and in-tool preparation — into Cognos Analytics. This is especially great news for the clients using Cognos Analytics on-premises,

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since Watson Analytics used to be an exclusively cloud-based product. Customers will also benefit from Cognos' tight integration with other relevant IBM products, such as IBM Planning Analytics and IBM Cloud Pak For Data. The client-managed version of Cognos Analytics (for on-premises deployments) is virtually identical, other than a few minute differences, giving clients multiple deployment options. We reviewed the client-managed version in [The Forrester Wave™: Enterprise BI Platforms \(Client-Managed\), Q3 2019](#).

The vendor-managed version lacks integration with Jupyter Notebooks, a popular data science tool. It also does not integrate with Theia or other tools that would allow Cognos Analytics to integrate with third-party BI platforms — a key BI fabric capability. Finally, the vendor-managed version also lacks a BYOK capability, a highly requested feature. Customer references ranked Cognos Analytics as “meets expectations” overall, but a few specifically praised the product for its enterprise reporting capability — Cognos' strength since the product inception.

- › **Use 1010data for your one-stop big data shopping list.** Under the covers of 1010data's BI platform is a scalable, columnar RDBMS natively architected for big data analytics. The BI platform is made up of four components: 1010edge — enterprise analytics and data preparation, evaluated here; 1010reveal and 1010connect — a customer analytics application and inter-enterprise data sharing/data monetization portal, not evaluated here; and DSCVR, a self-service analytics workbench that was launched outside of the evaluation period of this Forrester Wave. Forrester also considers 1010edge a BI fabric platform — clients can use their preferred BI tool for reporting and analytics leveraging 1010edge's data preparation outputs and 1010data's RDBMS as their data warehouse/data mart.

While 1010edge offers robust augmented BI (AutoML and conversational UI) capabilities, it is best suited for data professionals, not end users — 1010data is addressing this gap with the newly rolled-out DSCVR module. 1010edge is also yet to catch up to the competition and introduce conversational UI like NLQ and NLG. 1010edge does not offer native mobile BI platforms for popular smartphones. It also needs to introduce a BYOK capability, a highly requested feature. 1010edge is not an enterprise report bursting platform for distributing pixel-perfect reports at scale — for that capability, clients will have to look elsewhere. Reference customers ranked 1010data as “meets expectations” overall but as “exceeds expectations” for its extensibility and customization, overall technical architecture, big data, GUI, and platform stability. Some specifically called out its scalability, but they wished for more advanced visualization features.

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Evaluation Overview

We evaluated vendors against 19 criteria, which we grouped into three high-level categories:

- › **Current offering.** Each vendor's position on the vertical axis of the Forrester Wave graphic indicates the strength of its current offering. Key criteria for these solutions are augmented BI, app building/customization, architecture, big data, data prep, deployment options, GUI, mobile, security, and systems of insight.
- › **Strategy.** Placement on the horizontal axis indicates the strength of the vendors' strategies. We evaluated commercial model, delivery model, execution road map, innovation road map, partner ecosystem, past performance, product vision, and supporting products and services.
- › **Market presence.** Represented by the size of the markers on the graphic, our market presence scores reflect each vendor's revenue from BI products and services.

Vendor Inclusion Criteria

Forrester included 14 vendors in the assessment: 1010data, Amazon Web Services, Birst, Domo, IBM, Information Builders, Looker, Microsoft, Oracle, Salesforce, SAP, Sisense, Tableau Software, and TIBCO Software. Each of these vendors has:

- › **Key foundational BI components.** Vendors must have a BI platform that is sold as separate product, not embedded within a particular industry- or a business-domain-specific application. The BI platform must be able to ingest, process, and analyze data from any data source. The platform must have all of the following components: querying, reporting, data visualization, dashboards, scorecards, data exploration and discovery, and descriptive analytics. Predictive and prescriptive analytics, as well as data preparation — all increasingly popular features of BI leading platforms — are evaluation, not inclusion, criteria.
- › **Vendor-managed enterprise BI platforms.** For the purpose of this evaluation, we define vendor-managed as a platform that clients do not deploy on their own, but rather only subscribe to SaaS in this category. A vendor maintains a single software instance and partitions it for logical private instances for each client. All clients are always on the same software version, and all get the same continuous upgrades. Clients have no control over upgrades or other software management decisions.
- › **Market presence.** For the purpose of this evaluation, we define market presence as a combination of BI revenues and sufficient interest from Forrester clients via inquiries and other client interactions mentioning the vendor.

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Supplemental Material

Online Resource

We publish all our Forrester Wave scores and weightings in an Excel file that provides detailed product evaluations and customizable rankings; download this tool by clicking the link at the beginning of this report on Forrester.com. We intend these scores and default weightings to serve only as a starting point and encourage readers to adapt the weightings to fit their individual needs.

The Forrester Wave Methodology

A Forrester Wave is a guide for buyers considering their purchasing options in a technology marketplace. To offer an equitable process for all participants, Forrester follows [The Forrester Wave™ Methodology Guide](#) to evaluate participating vendors.

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In our review, we conduct primary research to develop a list of vendors to consider for the evaluation. From that initial pool of vendors, we narrow our final list based on the inclusion criteria. We then gather details of product and strategy through a detailed questionnaire, demos/briefings, and customer reference surveys/interviews. We use those inputs, along with the analyst's experience and expertise in the marketplace, to score vendors, using a relative rating system that compares each vendor against the others in the evaluation.

We include the Forrester Wave publishing date (quarter and year) clearly in the title of each Forrester Wave report. We evaluated the vendors participating in this Forrester Wave using materials they provided to us by April 24, 2019 and did not allow additional information after that point. We encourage readers to evaluate how the market and vendor offerings change over time.

In accordance with [The Forrester Wave™ Vendor Review Policy](#), Forrester asks vendors to review our findings prior to publishing to check for accuracy. Vendors marked as nonparticipating vendors in the Forrester Wave graphic met our defined inclusion criteria but declined to participate in or contributed only partially to the evaluation. We score these vendors in accordance with [The Forrester Wave™ And The Forrester New Wave™ Nonparticipating And Incomplete Participation Vendor Policy](#) and publish their positioning along with those of the participating vendors.

Integrity Policy

We conduct all our research, including Forrester Wave evaluations, in accordance with the [Integrity Policy](#) posted on our website.

Survey Methodology

The Forrester Analytics Global Business Technographics® Data And Analytics Survey, 2019, was fielded in March and April 2019. This online survey included 3,417 respondents in Australia, Canada, China, France, Germany, India, the UK, and the US from companies with 100 or more employees.

Forrester Analytics' Business Technographics ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of business and technology products and services. Dynata fielded this survey on behalf of Forrester. Survey respondent incentives include points redeemable for gift certificates.

Please note that the brand questions included in this survey should not be used to measure market share. The purpose of Forrester Analytics' Business Technographics brand questions is to show usage of a brand by a specific target audience at one point in time.

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Endnotes

- ¹ See the Forrester report "[Move BI To The Cloud To Achieve Greater Agility, Part 3.](#)"
- ² Forty-five percent is the average percentage stated by global data and analytics decision makers, and 46% by the survey respondents from companies with 1,000 or more employees. Base: 735 global data and analytics technology decision makers who use or have purchase influence over data and analytics in the public cloud (481 enterprise respondents). Source: Forrester Analytics Global Business Technographics Data And Analytics Survey, 2019.
- ³ Source: Forrester Analytics Global Business Technographics Data And Analytics Survey, 2019.
- ⁴ Vendor-managed enterprise BI platforms: In this segment, clients do not deploy but subscribe to software. A vendor maintains a single software instance and partitions it for logical private instances for each client. All clients are on the same software version, and all get the same continuous upgrades. Clients have no control over upgrades or other decisions. Organizations that are ready to completely shift software management responsibilities to the vendor should consider this category. Organizations must also be willing to use software deployed in a public cloud, as software in this category does not run on-premises. See the Forrester report "[Now Tech: Enterprise BI Platforms, Q1 2019.](#)"
- ⁵ Forrester no longer evaluates most of the core capabilities of enterprise BI platforms such as database connectivity, query optimization, data visualization, slice/dice capabilities of GUI, and many others as we consider these table stakes and non-differentiated among top vendors. See the Forrester report "[FAQ: How To Survive The Ongoing BI Vendor Market Consolidation.](#)"
- ⁶ Base: 3,344 global software decision makers who consumed cloud services from a public cloud provider. Source: Forrester Analytics Global Business Technographics Software Survey, 2018.
- ⁷ RDBMS: relational database management system.
- ⁸ See the Forrester report "[Forrester's Global Map Of Privacy Rights And Regulations, 2019.](#)"
ISO: International Organization for Standardization; SOC: System and Organization Controls; GDPR: General Data Protection Regulation; HIPAA: Health Insurance Portability and Accountability Act.
- ⁹ AutoML: automated machine learning.
- ¹⁰ Microsoft's BYOK capability is currently in private previews.
- ¹¹ Report bursting generates a single report for multiple recipients where each recipient can view only one page or one section of the report. This is a preferred architecture to scale delivery of interactive reports to millions of users — the alternative would be creating millions of individual personalized reports/dashboards, which would be very challenging to manage. Typical use cases are interactive online bills and statements used by financial services institutions and telcos with millions of consumer customers.
- ¹² On June 10, 2019, Salesforce announced its intention to acquire Tableau. Source: Adam Selipsky, "Salesforce Signs Definitive Agreement to Acquire Tableau," Tableau blog, June 10, 2019 (<https://www.tableau.com/about/blog/2019/6/blog-1-110508>).

In the near term, Forrester expects business as usual for both products — Salesforce Einstein Discovery is a competing product evaluated in the vendor-managed Forrester Wave. However, in the longer term, Salesforce will have to reconcile and rationalize multiple overlapping features and capabilities. Users of both products should expect changes based on Salesforce's acquisition of Tableau Software in the next 12 to 18 months.
- ¹³ Salesforce plans to address this gap via its intent to acquire, and eventually integrate, Tableau Software.
- ¹⁴ On June 25, 2019, Oracle announced the new Oracle Analytics Server, the on-premises version of OAC, which replaces OBIEE as the strategic on-premises product. Forrester did not evaluate Oracle Analytics Server in this Forrester Wave. Source: "Oracle Ushers in New Era of Analytics," Oracle press release, June 25, 2019 (<https://www.oracle.com/corporate/pressrelease/oracle-ushers-in-new-era-of-analytics-062519.html>).

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¹⁵ On June 25, 2019, Oracle announced that Essbase, while still fully integrated with OAC, is no longer a part of the OAC package.

¹⁶ On June 10, 2019, Salesforce announced its intention to acquire Tableau. Source: Adam Selipsky, “Salesforce Signs Definitive Agreement to Acquire Tableau,” Tableau blog, June 10, 2019 (<https://www.tableau.com/about/blog/2019/6/blog-1-110508>).

¹⁷ Source: Amir Orad, “Sisense & Periscope Data: A Merger Made in Data Heaven,” Sisense blog, May 14, 2019 (<https://www.sisense.com/blog/sisense-and-periscope-data-merge-2/>).

¹⁸ See the Forrester report “[The Forrester Wave™: Translytical Data Platforms, Q4 2017.](#)”

¹⁹ See the Forrester report “[Data Warehouse Automation Platforms Help Close The Data-To-Insight Gap.](#)”

²⁰ On June 6, 2019, Google announced its intention to acquired Looker, positioning Google as another leading large enterprise BI platform. Source: Frank Bien, “Looker to Join Google Cloud,” Looker blog, June 6, 2019 (<https://looker.com/blog/looker-to-join-google-cloud>).

²¹ Base: 3,391 global infrastructure decision makers. Source: Forrester Analytics Global Business Technographics Infrastructure Survey, 2018.

Base: 735 global data and analytics technology decision makers who use or have purchase influence over data and analytics in the public cloud. Source: Forrester Analytics Global Business Technographics Data And Analytics Survey, 2019.

²² SPICE stands for Super-fast, Parallel, In-memory Calculation Engine.

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