The Forrester Wave™: Enterprise Business Intelligence Platforms, Q4 2013

by Boris Evelson, December 18, 2013

KEY TAKEAWAYS

Best-Of-Breed Versus Suite Is No Longer A Major BI Platform Selection Criterion

Firms no longer have to make a choice between less expensive, ERP-embedded, but often inferior BI tools and a best-of-breed BI platform from an independent vendor -- a common conundrum in the past decade. In the modern world, BI platforms can be embedded into a broader enterprise software suite and still be open and best of breed.

Factors Other Than BI Functionality Often Lead BI Platform Selection Choices

As BI functionality becomes commoditized, buyers need to look for differentiation elsewhere in these platforms. It's not just about tool functionality; tight integration with enterprise ERP, ETL, portal, and desktop office applications can often break the tie when selecting a strategic enterprise BI platform.

A Single Enterprise BI Platform May Be A Vision But Is Seldom A Practical Reality

Having 10 different BI platforms may be overkill, but trying to standardize on a single platform brings diminishing returns. Large organizations will likely settle on at least three platforms: a broad, scalable enterprise suite; BI embedded in ERP, CRM, and financial software packages; and lightweight desktop self-service tools for business users.

The Forrester Wave™: Enterprise Business Intelligence Platforms, Q4 2013

The 11 Providers That Matter Most And How They Stack Up

by Boris Evelson
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WHY READ THIS REPORT

In Forrester's 72-criteria evaluation of enterprise business intelligence (BI) platform vendors, we identified the 11 most significant software providers — Actuate, IBM, Information Builders, Microsoft, MicroStrategy, Oracle, QlikTech, SAP, SAS, Tableau Software, and Tibco Software — in the category and researched, analyzed, and scored them. This report details our findings about how well each vendor fulfills our criteria and where they stand in relation to each other to help application development and delivery professionals select the right partner for their enterprise BI platforms.

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Notes & Resources

Forrester conducted product evaluations in September 2013, interviewed 10 vendors, and surveyed 94 user companies.

Related Research Documents

Market Overview: Mobile Business Intelligence
October 28, 2013

TechRadar™: BI Analytics, Q3 2013
July 11, 2013

Decide When To Buy, Build, Or Outsource BI
August 23, 2012

The Forrester Wave™: Advanced Data Visualization (ADV) Platforms, Q3 2012
July 17, 2012

The Forrester Wave™: Self-Service Business Intelligence Platforms, Q2 2012
June 12, 2012

INDUSTRY LEADERS COMPETE ON INFORMATION

The majority of large organizations have either already shifted away from using BI as just another back-office process and toward competing on BI-enabled information or are in the process of doing so. Businesses can no longer compete just on the cost, margins, or quality of their products and services in an increasingly commoditized global economy. Two kinds of companies will ultimately be more successful, prosperous, and profitable: 1) those with richer, more accurate information about their customers and products than their competitors and 2) those that have the same quality of information as their competitors but get it sooner. Forrester's Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012 survey showed that enterprises that invest more in BI have higher growth.

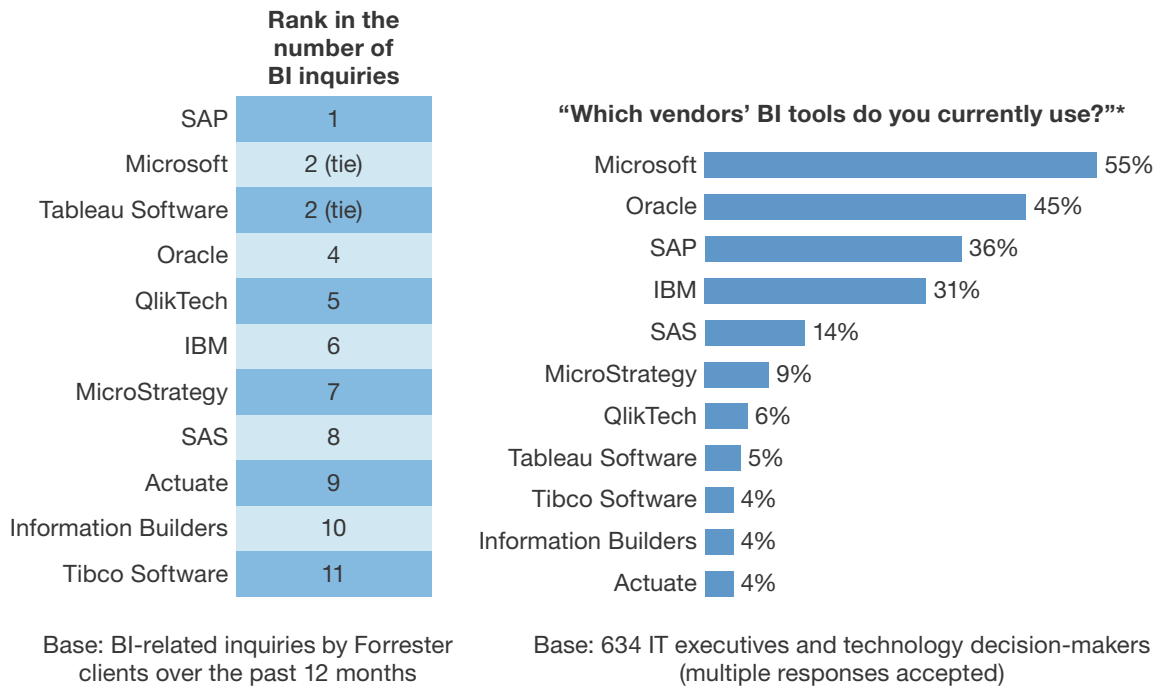### The BI Software Market Is Becoming More Crowded Every Year

The software industry recognized this trend decades ago, resulting in a market swarming with startups that appeared and (very often) found success faster than large vendors could acquire them. The market is still jam-packed and includes multiple dynamics:

- **All ERP and software stack vendors offer leading BI platforms . . .** Stack or suite versus best of breed is no longer a consideration. All large software stack and enterprise resource planning (ERP) vendors have either built or acquired market-leading BI platforms. The pace of acquisition has not slowed: In the past few years, Oracle has acquired Endeca, SAP acquired KXEN, and IBM acquired i2, The Now Factory, Star Analytics, and StoredIQ. Forrsights data indicates that these three stack vendors, along with Microsoft, are currently the most popular BI choices for companies.

- **. . . but there's also plenty of room for independent BI vendors.** If your sourcing and vendor management policy calls for diversification and less dependence on a single vendor, rest easy — you have abundant options. SAS and Information Builders deliver one-stop BI shopping and offer not just BI, but also most of the data management platforms and tools. Actuate and MicroStrategy offer reporting and analytics platforms that can scale to the needs of large enterprises. Panorama Software, QlikTech, Tableau Software, and Tibco Software provide differentiated, highly visual, intuitive analytics oriented toward business users. Forrester clients are taking notice: Tableau and QlikTech rank among the top five vendors mentioned in the BI-related inquiries that we've fielded in the past 12 months (see Figure 1).

- **Departmental desktop BI tools aimed at business users are scaling up.** Panorama Software, QlikTech, Tableau Software, and Tibco Software started out by offering departmental desktop-based technologies that appealed to business users due to their ease of use and lesser reliance on enterprise IT support. While that appeal is still there, these vendors are now going after large enterprises with features that challenge larger vendors in terms of scalability, security, rich metadata, internationalization, application programming interfaces (APIs), and other industrial-strength enterprise features.

■ **Enterprise BI platform vendors are going after self-service use cases.** Large enterprise BI platform vendors aren't sitting on their laurels; they're prioritizing investments in self-service, in-memory, desktop, and cloud products that appeal to business users. Because these tools are part of larger, more complete enterprise BI platforms, vendors often give them away for free; for example, you get IBM Cognos Insight if you have Cognos 10 enterprise licenses, SAP Lumira if you buy the BusinessObjects BI suite, or the self-service BI features in Microsoft Excel 2013 like Power Pivot, Power View, Power Map, and Power Query if you have Microsoft Office 2013 or SharePoint 2010. These vendors have an additional advantage: IT can migrate self-provisioned BI applications to their more scalable platform. This puts a lot of pressure on the vendors in the departmental category.

■ **Cloud offers options to organizations that would rather not deal with BI stack complexity.** Got data, want information, but don't want to deal with installation, configuration, integration, tuning, optimization, maintenance, and support? Large vendors such as Actuate, Microsoft, MicroStrategy, SAP, Tableau Software, and Tibco Software and native cloud BI vendors like Birst, Bime, and GoodData offer very attractive choices for such use cases.

■ **Hadoop is breathing new life into open source BI.** Open source BI tools have been around for years, but big data and Hadoop are now re-energizing these products. If you have limited budget, want to reduce your dependence on commercial software vendors, and want to leverage the expertise of millions of software developers around the world, look to Actuate BIRT, Jaspersoft, Pentaho, and SpagoBI. Large BI systems integrators (SIs) are also responding to clients' demands to reduce their dependence on commercial code and vendors and have recently started building open source BI solutions for clients — such as Luxoft's Horizon data visualization platform.

■ **Self-service BI takes on a new meaning.** Business users are no longer satisfied with just discovering and analyzing data; they're also asking for the ability to perform basic data manipulation tasks like integration, matching, and deduplication without having to wait for enterprise batch extract-transform-load (ETL) and data cleansing cycles. SAP built these features into Lumira; Actuate acquired functionality from Quiterian that it now offers as BIRT Analytics; and Tableau Software and QlikTech partner with Paxata. Alteryx, Microsoft (via the BI features in Excel 2013), and Prognoz also support this use case out of the box.

■ **The line between BI software and services is blurring.** Leading consultants and SIs are riding the BI wave, getting into BI outsourcing deals where they take on the burden of managing a client's data and providing information-as-a-service, often hiding architecture and software complexities from the client.[1]

The BI use cases and vendors cited above don't even come close to comprising a complete list. Other use cases include lightweight BI platforms that lend themselves to embedding into other applications, prebuilt components that can be quickly assembled into use case-specific BI apps, and extracting data from exotic data sources such as mainframe reports. Other vendors in the space include arcplan, Bitam, Board International, Datawatch, Dimensional Insight, InetSoft Technology, JackBe (Software AG), Jinfonet Software, Logi Analytics, Looker, Rocket Software, Salient Management, SiSense, Targit, Treasure Data, and Yellowfin.

Figure 1 How Organizations Use And Inquire About Leading BI Vendors

Rank in the number of BI inquiries

SAP	1
Microsoft	2 (tie)
Tableau Software	2 (tie)
Oracle	4
QlikTech	5
IBM	6
MicroStrategy	7
SAS	8
Actuate	9
Information Builders	10
Tibco Software	11

Base: BI-related inquiries by Forrester clients over the past 12 months

"Which vendors' BI tools do you currently use?"*

Microsoft	55%
Oracle	45%
SAP	36%
IBM	31%
SAS	14%
MicroStrategy	9%
QlikTech	6%
Tableau Software	5%
Tibco Software	4%
Information Builders	4%
Actuate	4%

Base: 634 IT executives and technology decision-makers (multiple responses accepted)

*Source: Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012

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Source: Forrester Research, Inc.

True Vendor Differentiation Lies In The Details

Evaluating, categorizing, and ranking 30 or more BI vendors is a daunting task. As a result, in this Forrester Wave we concentrated on evaluating core BI capabilities such as:[2]

- **Advanced data visualization.** ADV supports a wide range of new, interactive graphical data representations beyond traditional bar charts, pie charts, and scorecards. It differs from static charts via capabilities such as the autosuggestion of the best chart type based on data and metadata; visual querying; dynamically changing content; multiple dynamically linked visualization panels; custom-built chart types; and personalization. When evaluating BI vendor ADV capabilities, look for features like animations, geospatial integration, the ability to handle multiple dimensions, exploration and data discovery, storyboarding, and visual querying.[3]

- **Analysis or OLAP.** Otherwise known as "slicing and dicing" analysis, online analytical processing (OLAP) tools allow a user to almost instantaneously regroup, reaggregate, and re-sort facts — typically additive numbers like transaction amounts and account balances — by any dimension (usually a descriptive element like time, region, organizational unit, or product line). When evaluating BI vendor OLAP capabilities, look for features like limits on dimensions and hierarchies; cube sizes; the ability to drill up, down, across, and through the data; and autogeneration of time series data.

- **Exploration and discovery.** This is analysis with a twist. Analysis typically only provides answers to questions that have been modeled and prebuilt in an underlying relational or multidimensional data model. With data exploration, no data modeling is required; all entities and attributes are instantly cross-referenced and correlated with each other. No relational or multidimensional model is built; every attribute can be used as a fact or as a dimension; and a micromodel is built at the time of querying. When evaluating BI vendor exploration and discovery capabilities, look for features like the ability to reuse any element as a fact or dimension; the ability to search for any value or text anywhere in the model; and faceted navigation.[4]

- **Dashboards.** Dashboards are interactive visualizations that mash up different historical, current, and/or predictive information into one efficient graphical user interface (GUI). Typically, dashboards display key performance indicators (KPIs) and use visual cues to focus user attention on important conditions, trends, and exceptions.

- **Performance management.** Strategy and performance management address goals, objectives, and accountability. Performance analytics typically use a variety of KPIs that might include strategic scorecards; relevant comparisons against plans, budgets, forecasts, prior performance, and industry benchmark data; and the ability to drill down to root-cause details. When evaluating BI vendor performance management capabilities, look for embedded functionality and tight integration with other performance management platforms.

- **Predictive analytics.** Predictive analytics represent any solution that supports the identification of meaningful patterns and correlations among variables in complex, structured, unstructured, historical, and potential future data sets for the purposes of predicting events and assessing the attractiveness of various courses of action. When evaluating BI vendor predictive analytics capabilities, look for aspects like how many routines come out of the box, how tightly they're integrated with the rest of the BI platform, and whether the vendor integrates open source R.[5]

- **Reporting and querying.** This includes analytical reporting based on a data warehouse (DW) or data mart and operational reporting based on an operational database management system. Reporting tools often include pixel-perfect positioning of data and graphics, a scripting language equal in power to a full programming language, and the ability to handle complex headers, footers, nested subtotals, and multiple report bands on a single page. Ad hoc query tools provide quick answers to business questions. When evaluating BI platform reporting capabilities, look for features like report formatting (including conditional formatting), profile-based customization, grouping, ranking, sorting, filtering, and expanding and collapsing reports.

We also looked at the information delivery capabilities of these tools, such as:

- **Embedded BI.** Embedded reporting, analytics, and dashboards are purpose-built analytics capabilities that are embedded into other business applications, such as ERP, CRM, and supply chain management (SCM), either natively, via a software development kit or API, or via service-oriented architecture (SOA) or web services.

- **Integration with Microsoft Office applications.** While all leading BI platforms integrate with Microsoft Word, PowerPoint (for documents and presentations that use "live" data), and Excel (for viewing secure and trusted corporate data), very few provide tight integration with email beyond emailing reports or report URLs. Organizations can embed BI dashboards into an email application — for example, by creating another panel in Outlook similar to its existing mail, calendar, and task panels. Further customizations make the data more actionable; for example, an email from a certain customer could proactively expose a dashboard about that customer.

- **Portal integration.** Portals may serve as a single access point to catalog and index, classify, and search for BI objects such as dashboards and reports. Most BI platforms come with their own portals, but organizing multiple BI applications based on different platforms under one portal umbrella requires legwork. Organizations can apply enterprise portal standards to all BI applications and expose all BI metadata to the portal search engine to allow users to search for all BI content from a single point.

- **Thick and thin clients.** These include native desktop and mobile device client applications, applications accessible via any Internet browser, and rich Internet applications that use standards like HTML5.

- **Other report and dashboard dissemination capabilities.** Even though interactive desktop and mobile BI applications are becoming more popular, many organizations still need to schedule batch reports and deliver them automatically to multiple devices via email, electronic data interchange, and other electronic formats.

And we didn't forget to evaluate the integration of BI tools with foundational, supporting components such as:

- **Applications.** Look for the number of "hooks" (APIs) into various programming languages that you can use to customize or execute platform functions. This is key for embedded BI, white-labeled BI applications, and the integration of BI with any other platforms.

- **Data.** Most BI platforms come with basic data integration (ETL) functionality. Beyond that, look for certified integration with leading data integration platforms.[6]

- **Contextual services.** BI output is only as good as the source data. Look for certified integration with data quality (DQ) and master data management (MDM) platforms.

- **Technical architecture.** Last but not least, consider technical architecture features such as 64-bit architectures, client and server platforms, application server support, SOA certification, and features needed to scale up and out.

The detailed list of BI platform capabilities and features is much, much longer. As part of the research conducted for this Forrester Wave, Forrester collected more than 300 data points from each vendor and consolidated them into 72 criteria. We used those criteria to evaluate, score, and rank the vendors.

ENTERPRISE BI PLATFORM EVALUATION OVERVIEW

To assess the state of the market for enterprise business intelligence platforms and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top BI vendors.

Evaluation Criteria: Current Product Offering, Strategy, And Market Presence

After examining past research, user needs assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We evaluated vendors against 72 criteria, which we grouped into three high-level buckets:

- **Current offering.** We assessed each vendor's current offering by considering all of the features and capabilities reviewed above. We also evaluated a short demonstration by each vendor of its key capabilities and surveyed a total of 94 of the vendors' customers.

■ **Strategy.** We reviewed each vendor's strategy and considered how well each vendor's plans for product enhancement position it to meet future customer demands. We also looked at the financial and human resources the company has available to support its strategy and each vendor's go-to-market pricing and licensing strategy.

■ **Market presence.** To establish a product's market presence, we combined information about each vendor's financial performance, installed customer base, and number of employees across major geographical regions with information about its partnership ecosystem and its horizontal and vertical industry applications.

Evaluated Vendors Have What It Takes To Support BI In Complex Organizations

Forrester included 11 vendors in the assessment: Actuate, IBM, Information Builders, Microsoft, MicroStrategy, Oracle, QlikTech, SAP, SAS, Tableau Software, and Tibco Software. Oracle was included as a nonparticipating vendor. Each of these vendors has (see Figure 2):

■ **A complete, self-contained, fully functional BI platform development environment.** We focused on BI tools not technologically or functionally tied or limited to particular functional or horizontal applications like ERP or SCM. These tools must be complete, self-contained BI environments or platforms that do not necessarily have to be embedded into other applications.

■ **The ability to query databases using SQL and MDX.** While other querying technologies, such as XQuery and DMX, are available and NoSQL data architecture is on the rise for certain BI use cases, SQL and MDX are the database query technologies most widely used in large enterprises.

■ **Sufficient market presence and interest from Forrester clients.** We included the top 11 vendors by BI revenue that also had at least 100 in-production customers and were present in more than one major geographical region. We also focused on vendors that Forrester clients frequently mentioned or asked about in the context of BI (measured as more than 25 inquiries over the past 12 months).

Figure 2 Evaluated Vendors: Product Information And Selection Criteria

Vendor	Product	Version
Actuate	BIRT iHub BIRT Analytics	3
IBM	Cognos BI Cognos Insight	10.2.1
Information Builders	WebFocus	8.0
Microsoft	SQL Server SharePoint Excel Office	2012 2013 2013 365
MicroStrategy	MicroStrategy Analytics Platform	9.4
Oracle	Oracle Business Intelligence Enterprise Edition	11
QlikTech	QlikView	11
SAP	BusinessObjects BI Suite Lumira	4.1
SAS	Enterprise BI Server Visual Analytics Office Analytics	4.4 6.2 5.1
Tableau Software	Desktop Server Public	8.1
Tibco Software	Spotfire Platform Spotfire Cloud Spotfire Event Analytics	6.0

Source: Forrester Research, Inc.

Figure 2 Evaluated Vendors: Product Information And Selection Criteria (Cont.)

Vendor selection criteria

At least three of the four major functional BI components that Forrester believes are critical for large enterprise BI environments: production and operational reporting, ad hoc querying, OLAP, and dashboards.

The ability to query databases using SQL and MDX. While other querying technologies such as XQuery and DMX are available, SQL and MDX are used most widely in large enterprises.

A complete, self-contained, fully functioning BI environment that is not technologically or functionally tied or limited to particular functional or horizontal applications like ERP or SCM. To be considered, a tool must be a complete, self-contained BI environment or platform that does not have to be embedded in other applications.

Significant market presence: at least 100 in-production customers present in more than one major geographical region and more than 10% of which are enterprise-grade installations that cross lines of business and have more than 100 users.

Frequent interest from Forrester clients in the form of questions about or mentions of a vendor in the context of inquiries about BI.

One of the top 11 vendors by BI revenues.

All products needed to be generally available by December 2013.

Source: Forrester Research, Inc.

## BI IS A BUYERS' MARKET THAT OFFERS PLENTY OF CHOICES

The evaluation uncovered a continuously evolving market in which (see Figure 3):

- **SAP, IBM, SAS, Microsoft, Oracle, Information Builders, MicroStrategy, and Actuate lead the pack.** While many BI platform features are becoming commoditized, it's not the individual capabilities that differentiate the Leaders, but rather the completeness, comprehensiveness, and integration of the entire BI architectural stack. In addition to increasingly popular features like analytics, data visualization, dashboards, and data exploration, the Leaders also provide the pixel-perfect, industrial-strength report writers that companies still need.[7] While many of the Leaders appear to be closely grouped, each of them differentiates itself in terms of specific individual capabilities, such as high scalability and tight integration with ETL, MDM, business performance solutions, portals, and other highly relevant data management and information delivery components. If one of our Leaders is already your enterprise's preferred BI platform provider, there may be little or no reason to look elsewhere for another specialized BI tool.

■ **Tibco Software, QlikTech, and Tableau Software offer highly competitive and differentiated options.** Vendors in the Leaders category can by no means rest easy: the Strong Performers are hot on their heels, especially where the main use case calls for business user self-service and highly visual and intuitive analytics. In many specialized situations, these vendors can even outshine and outperform the Leaders. Tibco Spotfire leads the market in highly visual streaming analytics and business activity monitoring, tightly integrating it with process workflows, rules, and advanced analytics to help enable the modern real-time enterprise. QlikView is hard to beat in intuitive and spontaneous data exploration and discovery, providing a unique solution to the age-old BI challenge "You don't know what you don't know." Tableau Software's differentiation goes well beyond technology: Its platform embeds most of the best practices that address the human psychology of visual perception to produce the most intuitive visualizations.

This evaluation of the enterprise BI platform 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 Forrester Wave Excel-based vendor comparison tool.

Figure 3 Forrester Wave™: Enterprise Business Intelligence Platforms, Q4 '13
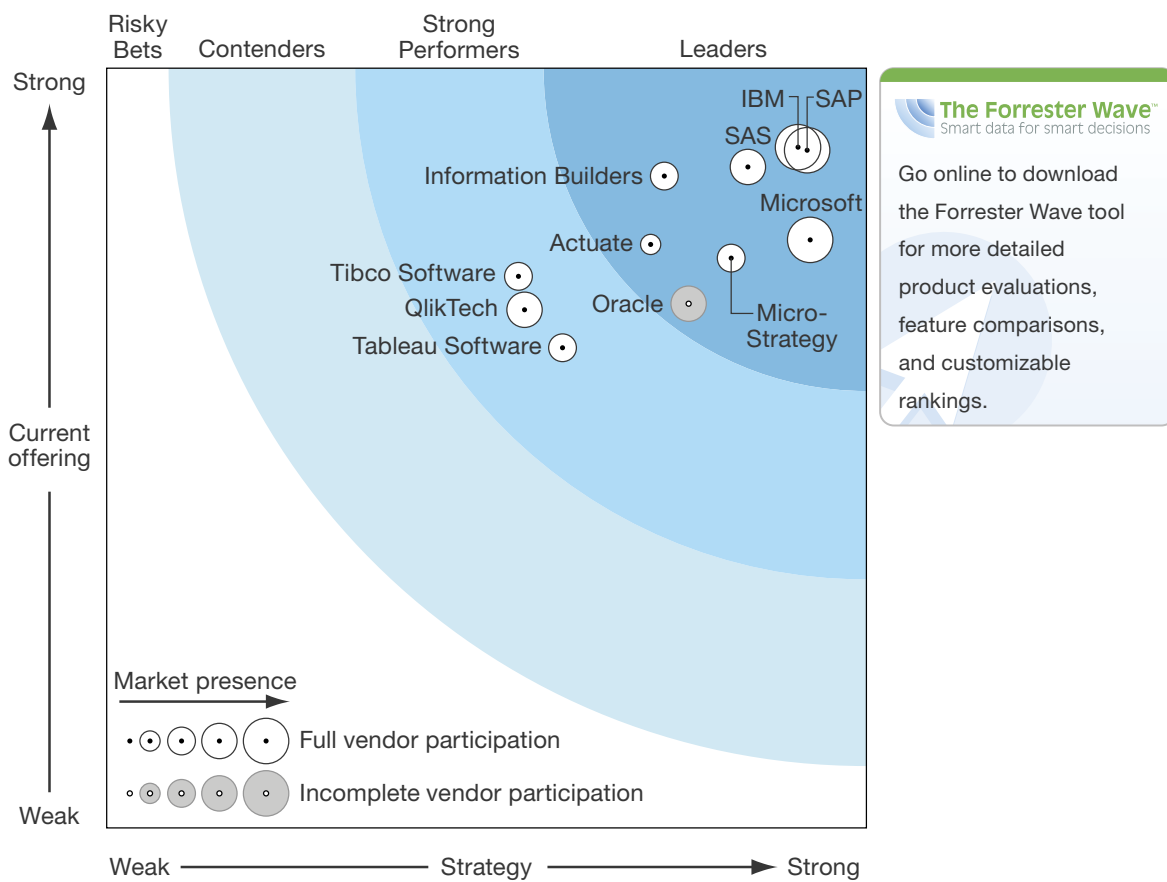
Source: Forrester Research, Inc.

Figure 3 Forrester Wave™: Enterprise Business Intelligence Platforms, Q4 '13 (Cont.)

	Forrester's Weighting	Actuate	IBM	Information Builders	Microsoft	MicroStrategy	QlikTech	SAP	SAS	Tableau Software	Tibco Software
CURRENT OFFERING	50%	3.84	4.48	4.29	3.87	3.75	3.41	4.46	4.35	3.16	3.63
Architecture	20%	3.95	4.33	4.16	3.80	3.88	3.11	4.42	3.86	3.30	3.63
Development environment	10%	4.45	4.00	4.55	4.00	2.65	4.45	4.45	4.90	2.20	3.00
Functions	60%	3.64	4.53	4.34	3.91	3.85	3.36	4.47	4.50	3.27	3.78
Operational	10%	4.20	5.00	4.00	3.60	4.00	3.30	4.50	3.90	3.20	3.40
STRATEGY	50%	3.58	4.55	3.67	4.63	4.11	2.75	4.61	4.22	3.00	2.71
Commitment	75%	3.40	4.70	3.40	4.70	4.10	2.30	4.70	4.20	2.60	2.30
Pricing	0%	3.50	3.80	3.60	3.60	2.60	4.00	2.70	1.80	3.50	3.60
Transparency	5%	3.00	2.00	4.00	4.00	3.00	4.00	2.00	3.00	3.00	2.00
Product direction	20%	4.40	4.60	4.60	4.50	4.40	4.10	4.90	4.60	4.50	4.40
MARKET PRESENCE	0%	1.99	4.43	2.44	4.39	2.88	3.24	4.52	3.61	2.81	2.69
Company financials	40%	1.00	3.80	2.00	4.20	2.20	2.80	3.80	3.40	2.60	1.40
Global presence and install base	45%	3.20	4.80	3.20	4.80	4.10	3.70	5.00	4.00	3.60	4.40
Partnership ecosystem	10%	1.00	5.00	1.00	5.00	1.00	3.00	5.00	2.00	1.00	1.00
Functional applications	5%	1.00	5.00	2.00	1.00	1.00	3.00	5.00	5.00	1.00	1.00

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

Source: Forrester Research, Inc.

VENDOR PROFILES

Leaders

- **SAP leads the market with broad BI innovations.** Whether it's SAP HANA for low latency, agile, and in-memory analytics; Lumira for business user self-service; or Crystal for scalable, mission-critical reports, SAP's philosophy and strategy of "the best tool for each job" delivers on its promise. Firms engage with SAP on BI to benefit from one-stop shopping for data management (ETL, MDM, DW, and DQ), BI products including the HANA appliance, and SAP's expertise with business domain and industry vertical applications based on its ERP experience. Forrester found that SAP BusinessObjects had excellent capabilities in analytics, BI customization via a rich set of APIs, data integration, information delivery, MDM, performance management, reporting and querying, scalability, and overall technical architecture. SAP customers particularly praised BusinessObjects' data integration, information delivery technical architecture, analytics,

operational capabilities, and SAP's corporate and product vision. SAP is the vendor that Forrester clients ask about most often in BI inquiries; recent survey data indicates that 36% of companies use SAP for BI. One concern that we often hear about BusinessObjects is that innovation and functional richness sometimes trump product-to-product integration; customers still are faced with multiple UIs and cannot reuse some objects across products.

- **IBM dwarfs its competitors in the breadth and completeness of BI capabilities.** If you want a single source to meet all your BI needs, and if those needs include software, hardware (including mainframes), and professional services, no vendor can fully compete with IBM. Clients know that they can rely on IBM Cognos because, unlike some of its competitors, IBM puts a high priority on integration and stability, even at the expense of sometimes being late to the market with certain capabilities, such as cloud BI software-as-a-service. Forrester found that IBM Cognos had excellent capabilities in analytics, data integration, information delivery, MDM, performance management, reporting and querying, scalability, and overall technical architecture. IBM customers particularly praised Cognos' analytics, performance management, operational capabilities, reporting and querying, and technical architecture and IBM's corporate and product vision. IBM accounts for the sixth highest number of Forrester BI inquiries; recent survey data indicates that 31% of companies use Cognos for BI.

- **SAS isn't just about analytics — it also provides an enterprise-grade BI platform.** Although firms have known SAS as a leader in advanced and predictive analytics for years, don't overlook the fact that it also has a formidable BI platform. Firms engage with SAS on BI to benefit from one-stop shopping for data management (ETL, MDM, and DQ), BI products including SAS analytics appliances, expertise with business domain and industry vertical applications, and data management professional services. Using SAS BI can also help clients reduce their dependence on a single software vendor. Forrester found that SAS BI had excellent capabilities in data integration, supported query languages, scalability, internationalization, BI customization with a rich set of APIs, analytics, MDM, performance management, and reporting and querying. SAS customers particularly praised its data integration, information delivery, technical architecture, analytics, operational capabilities, and corporate and product vision. SAS accounts for the eighth highest number of Forrester BI inquiries; recent survey data indicates that 14% of companies use SAS for BI. Concerns about SAS BI include a lack of pricing transparency and a failure to offer perpetual licenses.

- **Microsoft delivers a leading BI platform with a familiar Excel interface.** Even if you've standardized on other BI tools, you probably use, or at least have, Microsoft BI components like SQL Server, SharePoint, and Excel — so Microsoft BI should be on your shortlist. Microsoft's BI stack provides all of the necessary capabilities to support managed BI self-service. Business users create BI content in their own sandboxes — via the BI features in Excel 2013 and the cloud-based Power BI, which Microsoft recently released into public preview — and collaborate and share BI content via SharePoint. This allows IT to productionalize what users create and

share; for example, a Power Pivot model saved to SharePoint becomes an Analysis Services cube that IT can productionalize with robust ETL and an enterprise-grade UI. Forrester found that Microsoft BI had excellent capabilities in query languages, availability of BI appliances, internationalization, customization via a rich set of APIs, MDM, and reporting and querying. Microsoft customers particularly praised the vendor's data integration capabilities. Microsoft tied for the second-highest number of Forrester BI inquiries; recent survey data indicates that 55% of companies use Microsoft for BI. Concerns include the Microsoft centricity of the BI platform — it requires SQL Server, SharePoint, and Office) — and its heavy reliance on partners for implementation and systems integration services.

- **Oracle supports the only plug-and-play BI for complex ERP environments.** The latest versions of Oracle BI Enterprise Edition (OBIEE) and Oracle BI Applications, as well as the Fusion versions of Oracle ERP, have one thing in common: a single metadata layer called the common enterprise information model (CEIM). In an all-Oracle environment, merely installing the three platforms delivers instant operational and analytical BI, with reporting directly out of ERP. CEIM also facilitates "actionable BI," whereby firms can take actions such as updating the transactional applications (ERP, CRM) with little to no coding. The recent acquisition of Endeca gives Oracle BI additional capabilities to analyze and explore (using faceted navigation) hierarchical data that doesn't fit into traditional relational or multidimensional structures, such as product data with complex, ragged, uneven, or unbalanced hierarchies. Oracle packages OBIEE, Endeca, Essbase, and the TimesTen database with the Exalytics appliance; customers have a choice of relational, multidimensional, hierarchical, and in-memory databases — covering most BI use cases. Oracle accounts for the fourth highest number of Forrester BI inquiries; recent survey data indicates that 45% of companies use Oracle for BI. Concerns include a lack of desktop self-service BI tools and the paucity of citable clients using OBIEE in heterogeneous non-Oracle environments.

- **Information Builders can step in at any time with a platform to support all BI needs.** If you want to reduce your dependence on ERP and software stack vendors; need an integrated BI platform that includes ETL, DQ, and MDM; have exotic data sources, including mainframe; and really need a BI platform that can scale, Information Builders WebFocus is a top choice. Forrester found that WebFocus had excellent data integration, information delivery, overall technical architecture, scalability, analytics, MDM, performance management, reporting and querying, and operational capabilities. WebFocus customers particularly praised its data access, technical architecture, analytics, performance management, reporting and querying, and operational capabilities and the vendor's corporate and product vision. Information Builders accounts for the 10th highest number of Forrester BI inquiries; recent survey data indicates that 4% of companies use it for BI. Concerns include lack of desktop based self-service BI tools and the fact that WebFocus is based on Information Builders' 4GL Focus programming language. While Focus has a 30-year, battle-tested history of handling very large data sets, some clients are concerned that they will need to supplement the WebFocus GUI with good old-fashioned coding in Focus for especially complex programming tasks.

- **MicroStrategy shines with seamless architecture and a top mobile BI platform.** MicroStrategy has grown organically and architected its entire suite as a single platform. Forrester clients find that, after making the initial investment and effort in MicroStrategy, the reusability of all objects and the relational OLAP engine with drill-anywhere capability often result in a lower long-term total cost of ownership. We've also seen clients having the most success with enterprise-scalable mobile BI applications delivered on the MicroStrategy platform. Forrester found that MicroStrategy had excellent mobile information delivery, scalability, integrated metadata, and reporting and querying functionality. MicroStrategy customers particularly praised the vendor's data access, information delivery, reporting and querying, operational capabilities, and corporate and product vision. MicroStrategy accounts for the seventh highest number of Forrester BI inquiries; recent survey data indicates that 9% of companies use it for BI. Concerns include its high reliance on a largely disappearing network of partners, many of which have been acquired, for architectural components like ETL, DQ, and MDM.

- **Actuate is a top choice for scaling to millions of reports and users.** Massive scalability — interactive reporting applications producing output consumed by millions, not just thousands, of users — is Actuate's sweet spot. Its top use cases involve distributing complex, interactive online statements to customers of large financial services institutions. The Eclipse Foundation's BIRT, the basis of Actuate's platform, is used by more than 3 million developers and is open source — so it lends itself nicely to embedded BI and try-before-you-buy use cases. In 2013, Actuate closed one of the gaps in its portfolio, business user self-service analytics, by acquiring Quiterian. Forrester found that Actuate had excellent data access, information delivery, scalability, integrated development environment (IDE), BI knowledge management, and reporting and querying capabilities. Actuate accounts for the ninth highest number of Forrester BI inquiries; recent survey data indicates that 4% of companies use Actuate for BI. Concerns include its high reliance on a largely disappearing network of partners, many of which have been acquired, for architectural components like ETL, DQ, and MDM.

Strong Performers

- **Tibco Software excels in intuitive and interactive data visualizations and advanced analytics.** Tibco Spotfire is the space shuttle of in-memory analytics and advanced data visualization, embedding more predictive analytical routines than its closest competitors. Spotfire also tightly integrates with Tibco's data, process, rule, and event management software — including the recently acquired StreamBase — for real-time analytics, which includes advanced complex event processing and business activity monitoring capabilities. Although Spotfire's roots are in deployments targeting power analysts and data scientists, today many organizations implement it for all types of knowledge workers, from casual users to mobile executives. Forrester found that Tibco Spotfire had excellent integration with process workflow and rules engines, cloud offerings, analytics, data visualization, and MDM capabilities. Tibco accounts for the 11th highest number of Forrester BI inquiries; recent survey data indicates that 4% of companies use Spotfire for BI.

Spotfire supports most enterprise BI use cases, such as analytics, data visualization, dashboards, and data exploration, but does not support pixel-perfect reporting — so customers often deploy Spotfire in addition to, not instead of, a broader enterprise BI platform from another vendor.

■ **QlikTech still shines with its unique, differentiated in-memory self-service data exploration.** Data visualization is a hot buzzword these days, but it's no panacea. Most data visualization tools rely on underlying relational or multidimensional data models, limiting them to answering questions prebuilt into the data models. QlikView breaks through such barriers with associative data architecture that exposes any-to-any relationships between entities and attributes. Business users can explore these relationships, and uncover previously unknown information, just by typing in a few keywords. Forrester found that QlikView had excellent capabilities in IDE and collaborative BI. QlikTech customers particularly praised QlikView's data access, data integration, overall technical architecture, and analytics and QlikTech's corporate and product vision. QlikTech accounts for the fifth highest number of Forrester BI inquiries; recent survey data indicates that 6% of companies use QlikView for BI. QlikView supports most enterprise BI use cases, such as analytics, data visualization, dashboards, and data exploration, but does not support pixel-perfect reporting — so customers often deploy QlikView in addition to, not instead of, a broader enterprise BI platform from another vendor.

■ **Tableau Software is moving to disrupt the BI market with highly intuitive data visualization.** Building effective data visualization requires much more than just technology. Very few business analysts have a background in data visualization best practices to answer questions like: Is a data set best visualized using a scatter plot or a bar graph? How many different colors should a single graph use? Can we put two graphs with different scales next to each other on a single dashboard? Tableau can answer these and many other questions about best practices based on the psychology of human visual perception. Its GUI and library of white papers clearly shows that this is Tableau's specialty. Forrester found that Tableau had excellent data visualization and Hadoop integration capabilities. Tableau customers particularly praised the data access, information delivery, overall technical architecture, metadata architecture, self-service BI, and operational capabilities and the vendor's corporate and product vision. Tableau tied for the second-highest number of Forrester BI inquiries — a real feat for a vendor that wasn't even on our radar screen until just a few years ago. Recent survey data indicates that 5% of companies use Tableau for BI. Tableau supports most enterprise BI use cases, such as analytics, data visualization, dashboards, and data exploration, but does not support pixel-perfect reporting — so customers often deploy Tableau in addition to, not instead of, a broader enterprise BI platform from another vendor.

SUPPLEMENTAL MATERIAL

Online Resource

The online version of Figure 3 is an Excel-based vendor comparison tool that provides 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:

- **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.

- **Product demos.** We asked vendors to conduct demonstrations of their product's functionality. We used findings from these product demos to validate details of each vendor's product capabilities.

- **Customer reference surveys.** To validate product and vendor qualifications, Forrester also conducted surveys with 94 of the vendors' 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 document — and then score the vendors based on a clearly defined scale. These default weightings are intended only as a starting point, and we 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 evaluation follows, go to http://www.forrester.com/marketing/policies/forrester-wave-methodology.html.

Integrity Policy

All of Forrester's research, including Forrester Wave evaluations, is conducted according to our integrity policy. For more information, go to http://www.forrester.com/marketing/policies/integrity-policy.html.

Forrsights For Business Technology

Forrester's Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012 was fielded to 634 IT executives and technology decision-makers located in Canada, France, Germany, the UK, and the US from small and medium-size business (SMB) and enterprise companies with 100 or more employees. All respondents reported working for companies that were currently using or planning to use business intelligence (BI) technologies. This survey is part of Forrester's Forrsights for Business Technology and was fielded during October 2012 and November 2012. Survey respondent incentives included gift certificates and research reports.

Each calendar year, Forrester's Forrsights for Business Technology fields business-to-business technology studies in more than 17 countries spanning North America, Latin America, Europe, and developed and emerging Asia. For quality control, we carefully screen respondents according to job title and function. Forrester's Forrsights for Business Technology ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of IT products and services. Additionally, we set quotas for company size (number of employees) and industry as a means of controlling the data distribution. Forrsights uses only superior data sources and advanced data-cleaning techniques to ensure the highest data quality.

ENDNOTES

[1] Self-service BI capabilities go well beyond user-friendly or intuitive interfaces. To learn how to maximize your return on BI investment, see the June 12, 2012, "The Forrester Wave™: Self-Service Business Intelligence Platforms, Q2 2012" report.

[2] Continued economic uncertainty and major industry-changing dynamics like mobility and the shift to digital business put a premium on data and information to facilitate strategic decision-making. Meanwhile, the potential to mine and analyze vast quantities of data is transforming activities across the value chain. Whether it's optimizing the customer experience via social media or improving logistics by embedding sensors in vehicles, data analysis is simply critical. To learn what capabilities are available and which will best suit your organization's needs, see the July 11, 2013, "TechRadar™: BI Analytics, Q3 2013" report.

[3] Enterprises find ADV platforms to be essential tools that enable them to monitor business, find patterns, and take action to avoid threats and snatch opportunities. See the July 17, 2012, "The Forrester Wave™: Advanced Data Visualization (ADV) Platforms, Q3 2012" report.

[4] Self-service BI capabilities go well beyond user-friendly or intuitive interfaces. To maximize your return on BI investment, see the June 12, 2012, "The Forrester Wave™: Self-Service Business Intelligence Platforms, Q2 2012" report.

[5] Predictive analytics enables firms to reduce risks, make intelligent decisions, and create differentiated, more personal customer experiences. But predictive analytics is hard to do without the right tools and technologies, given the increasing challenge of storing, processing, and accessing the volume, velocity, and variety of big data. In order to navigate the complex technology landscape, which will lead your organization into the future of data advantage, see the January 3, 2013, "The Forrester Wave™: Big Data Predictive Analytics Solutions, Q1 2013" report.

[6] For more on ETL, refer to Forrester's 60-criteria evaluation of enterprise ETL vendors. See the February 27, 2012, "The Forrester Wave™: Enterprise ETL, Q1 2012" report.

[7] Reporting is still No. 1 on users' priority lists for adoption, with 81% implementations in firms' business units. Source: Forrsights Strategy Spotlight: Business Intelligence And Big Data, Q4 2012.

About Forrester

A global research and advisory firm, Forrester inspires leaders, informs better decisions, and helps the world's top companies turn the complexity of change into business advantage. Our research-based insight and objective advice enable IT professionals to lead more successfully within IT and extend their impact beyond the traditional IT organization. Tailored to your individual role, our resources allow you to focus on important business issues — margin, speed, growth — first, technology second.

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