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**Background**

**Copyright and License**

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**Evaluation Methodology**

Some of the BI products look increasingly similar, and yet beneath the covers, there are significant differences. At BI Scorecard, we want to make sure you buy the best products for your company and understand these differences before deploying. BI Scorecard is the only analyst firm that tests BI suites hands-on, based on over 300 detailed criteria, and with the customer perspective in mind. Within each strategic and functional area, vendors and products are scored on various criteria that are based on:

- Features and aspects that customers often look for in evaluations
- Unique capabilities identified while evaluating products
- Vendor marketing claims that are either a point of differentiation or confusion

To evaluate products, we rely on customer references, feedback from partners and consultants, and vendor briefings and demonstrations. To ensure an objective, consistent comparison of products, we also evaluate the software hands-on.

Within a given feature category, 12 to 100 detailed features are considered. Summary scores are determined based on a weighted score within each category. In some cases, the summary percentages may not translate directly to the summary score for the following reasons: 1) a summary score may be rounded up or down when there is a wider gap among summary scores, 2) missing data points are considered in the totals and adjusted accordingly, 3) the vendor has released new capabilities that have been demonstrated but not fully tested.

Each feature is assigned a score of 0 to 3:

<table>
<thead>
<tr>
<th>Score</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Exceptional capabilities.</td>
</tr>
<tr>
<td>2</td>
<td>Very good capabilities.</td>
</tr>
<tr>
<td>1</td>
<td>Limited capabilities, difficult to do, or may require a work around.</td>
</tr>
<tr>
<td>0</td>
<td>Minimal capabilities out of the box. The software may require customization or coding to accomplish.</td>
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</tbody>
</table>
The BI market continued to show a tale of two worlds in 2013 and the first three quarters of 2014: large BI vendors with flat to modest revenue growth, and smaller vendors in the visual data discovery space with double-digit growth. Innovations in cloud, mobile, visual data discovery, and advanced analytics show particularly strong momentum and are points of differentiation. While agility has trumped the need for perfectly architected BI, there is a growing concern and recognition that even agile visual data discovery solutions need a degree of governance. The secret to continued success—for customers and vendors alike—is in striking the perfect balance between the two.

Cloud BI, meanwhile, is still not mainstream, but 2014 brought improvements and new releases. Microsoft started the year with Power BI in the cloud and a new cloud-focused CEO, with Satya Nadella replacing Steve Ballmer. Oracle, whose CEO Larry Ellison once dubbed the cloud as “nonsense,” released Oracle BI in the cloud in Q3 2014. IBM, who has offered options for Infrastructure as a Service (IaaS), will have its first BI Software as a Service (SaaS) with Watson Analytics due before year-end. MicroStrategy, who once insisted they needed to own the cloud data center, shifted to relying on Amazon Web Services. TIBCO Jaspersoft, who premiered the pay-as-you-go hourly service with Amazon, extended a similar offering to Spotfire. Birst continued its rapid growth and scored with NetSuite customers by offering Birst Express to them.

Mobile BI continues to be a puzzling segment and one in which BI teams must continue to evangelize the capabilities. Innovative companies say their executives and managers expect mobile BI, particularly on an iPad. However, the majority of BI teams say their users are not asking for it; access to new data sources has been a greater priority. There continues to be volatility in the capabilities—particularly with regard to offline and security—devices supported, and technology used to deploy mobile.

BI vendors have made multiple attempts at leveraging search and natural language processing for simplifying the BI interface and broadening its adoption. There has been little market traction to date, but in 2014, there’s been a second wave of attempts. Microsoft Power BI includes Q&A, a browser-based search interface. IBM Watson Analytics includes natural language processing. Oracle plans to launch a mobile interface, BI Ask, that combines natural language and voice. Start-ups DataRPM and ThoughtSpot also provide unique solutions leveraging search.

Approaches to pricing and packaging, both to lower the initial cost and to simplify the packaging, also took center stage in 2014. TIBCO and Actuate have shifted to subscription-only models for new customers, with Actuate also introducing a freemium version. MicroStrategy simplified its twenty-one a la carte products with numerous optional modules into four, all-inclusive products. IBM did something similar, reducing nine roles to four, and while it attempted and backed off this simplification in 2013, the latest effort seems to have more customer acceptance. Qlik released Qlik Sense, and with this, introduced the concept of token-based pricing related to number of logins, getting rid of its server-based pricing. SAP has also announced simplified pricing.

In considering these business and market dynamics, BI Scorecard recommends the following:
Ease of use and the ability to combine data from multiple data sources now outranks even data quality in terms of importance. In a volatile and fiercely competitive business environment, time to market and time to insight trumps a perfectly architected solution. The need for agility, however, does not obviate the need for trustworthy data and enterprise solutions. The optimal BI tool portfolio will include capabilities that support enterprise, consistent views of the data, along with agile solutions.

Dashboards and visual data discovery, once optional components of the BI tool portfolio, are now must-have modules. BI platform vendors have gradually added such capabilities to their portfolios, but these modules have varying degrees of integration and functionality. Solutions from pure-play vendors may lack integration with a BI platform, but in particular, visual data discovery capabilities are stronger from pure-play vendors. In this regard, customers should view solutions from specialty vendors as complementary to the BI platform that may have greater governance, production reporting, and scheduling and distribution capabilities.

Customers should make mobile BI a part of their BI delivery plans but should continue to expect significant change in this segment.

Self-service BI is a priority for many companies and BI teams. However, it’s important to understand the spectrum of self-service capabilities and requirements. This term should not be synonymous with the visual data discovery segment only, but also includes the more mature segment of business query and the oft-overlooked aspect of interactive reporting.

Innovation needs to be part of the BI team, and a number of leading companies have introduced the concept of an innovation lab. This is a challenge for BI teams with limited funding and bandwidth. Partnering with a local university is an option. Another is to partner more closely with the business on their prototypes, otherwise known as shadow-IT.

Big data is still an emerging set of technologies and only one component within a full analytic environment. On the front-end, a number of start-up vendors focus exclusively on accessing and visualizing big data sources, whereas traditional BI tool vendors provide access to both traditional SQL and big data sources. Performance and depth of integration varies greatly from vendor to vendor. Customers should expect continued volatility, innovation, and fragmentation in this segment, making a mix-and-match approach more practical in the short-term.

With so much activity in the BI tools market, IT can easily become side tracked and forget the ultimate value of business intelligence: to provide business users with a way to access and interact with data to manage and improve the business. BI teams should continue to actively manage their BI tool portfolios to deliver enterprise-class BI at the lowest cost to the organization. The BI tool portfolio may include a predominant BI standard along with additional products and tools that provide superior capabilities and business value.

No matter which solution you select for an enterprise-standard or new BI implementation, naysayers will second-guess that decision. The key to managing such second-guessers is to follow an objective, agreed-upon methodology in developing your BI tool strategy, with clear guidelines and use cases for particular modules and products. This selection process must include both the business users and IT experts. (Refer to the
complementary BI Scorecard selection methodology and spectrum of right tool for the right user.

This report discusses strategic and functional criteria to consider when evaluating vendors and major product modules. Scores are provided for leading platform vendors, specialty vendors, and open source vendors based on extensive evaluations, customer interviews, and vendor briefings. A brief description of noteworthy vendors we monitor is also included in the final section of the report.
Strategic Considerations

When evaluating BI vendors and their solutions, consider strategic aspects as well as current product capabilities. The degree of importance for strategic considerations versus product capabilities will vary depending on customer buying philosophy, BI organization and culture, past experience, and existing relationships.

The following table provides an overview of strategic considerations and current vendor market focus.

<table>
<thead>
<tr>
<th>BI Platforms</th>
<th>BI Growth &amp; Market Leadership</th>
<th>BI Breadth</th>
<th>Predictive Analytics</th>
<th>Pricing &amp; Packaging</th>
<th>Account Management</th>
<th>Support</th>
<th>BI Innovation</th>
<th>2014 YTD R&amp;D Spend</th>
<th>2014 Services Revenue</th>
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</tbody>
</table>

Legend: ★ Excellent ★ Good ★ Limited ★ Poor ★ Don’t Compete in Segment ★ M-services plus maintenance combined

Customers who make bigger investments and have a longer time horizon to deploy and evolve a solution will give greater weight to these strategic considerations. Customers who are making a smaller investment or who have a short window of opportunity may give greater weight to current product capabilities than to vendor strategies and relationships. Often, departments and business units with their own BI budgets will ensure a product more fully meets their immediate requirements than strategic considerations.

BI Tools Growth and Market Leadership

Market leadership scores reflect the vendors’ core BI revenues, number of customers, license revenue growth, and mindshare. As several vendors no longer break out BI revenues, we also look at user conference attendance, marketing events, and number of customer inquiries. The degree to which a particular vendor leads the market may also indicate a greater availability of resources for either hire or contract as you deploy and enhance a solution. Specialty vendors are scored for their leadership, growth, and appearance on short lists within their market segment.

Smaller vendors may not command the same market share as larger BI vendors, but they may be more nimble and innovative, with distinct capabilities. In buying from smaller vendors, customers must consider the vendor’s financial viability, which can be a challenge to assess for privately held vendors. Independent BI vendors also may have a
greater likelihood of being acquired, particularly if their capabilities are unique and complementary to the acquiring vendor. There is less likelihood of an acquisition when there is little differentiation in capabilities or overlapping technologies.

License revenue growth has often been an indicator of the long-term health of a company. When a company shows strong license revenue growth, it’s an indication the vendor is either adding customers or selling additional licenses to an installed base. In theory, the latter indicates product innovations. However, as vendors add flexible pricing, annual licensing, and SaaS capabilities, expect to see a greater shift in revenue mix. Ideally, vendors would break out their cloud BI revenues, but some are reporting this as maintenance.

**BI Suite Breadth**

In considering the BI lifecycle from source system to analytic applications (shown in the following figure), vendors covered by BI Scorecard provide core BI capabilities (query, reporting, analysis, dashboards) and may provide additional capabilities, including operational applications, data integration, data quality, master data management (enterprise information management or EIM), database platforms, performance management, and analytic applications. When evaluating BI platforms, consider whether you will give preference to vendors who provide solutions in these other market segments. Scores for these aspects indicate whether a vendor has strong presence in any of these related segments; it does not reflect scores for product capabilities or depth of integration with the BI platform.

**Market Focus & BI Lifecycle**

![BI Scorecard Diagram](image)

Vendors with a broader BI focus offer the promise of greater integration and breadth of capabilities. In reality, degree and depth of integration varies vendor to vendor. Oracle and SAP, for example, may give BI integration with the business applications a greater emphasis, while IBM and Microsoft may give a greater emphasis to server systems, database, and infrastructure integration. Buying from a single vendor means there is one vendor who is accountable for problems and with whom you can negotiate volume discounts. However, it also means that the BI unit vies with other divisions for R&D, support, and marketing dollars.
You will find substantial differences in vendor strategies in terms of their BI breadth. How much weight you give these criteria and which strategy you think is “right” will depend on:

- existing investments your company has already made in the related segments, whether source systems, IT infrastructure, ETL, etc.
- the degree to which the vendor has successfully integrated the related modules and the depth of capabilities.
- who is sponsoring your BI project, whether the CIO, CFO, or VP of a line of business, and who has greater influence on related software and technology investments.

**BI Suite Breadth – Enterprise Information Management**

The EIM segment includes data integration, master data management, and data quality and profiling. Vendors that have an EIM solution will tout the value of “trusted” data, as business users can see the end-to-end data lineage from a report or dashboard down to where the data was extracted from. In reality, this visibility for the business user is variable and in need of improvement across the industry. It is sometimes possible as well to get this degree of visibility by mixing and matching products. While IT teams may be the main evaluators of the EIM modules, business users have greater influence on the BI tools and suites.

**BI Suite Breadth – Performance Management**

Performance management applications include budgeting, planning, financial consolidation, and strategic scorecards.

Most BI buyers treat performance management purchases separately from BI purchases. However, just because a vendor offers a solution in both market segments, this does not mean that the performance management and BI solutions are deeply integrated or robust in both segments. Some vendors, such as MicroStrategy, Information Builders, Qlik, and Actuate, have chosen not to pursue the performance management market. Information Builders and Actuate offer scorecards but not budgeting and planning solutions.

**BI Suite Breadth – Analytic Applications**

A number of vendors offer analytic applications for particular industries or functional areas. SAS, for example, emphasizes its “solutions” more so than its BI platform and is considered a leader in fraud detection and warranty analysis. Oracle has been successful in selling and enhancing its analytic applications that provide pre-built extractors, data models, and reports for E-business Suite, PeopleSoft, Siebel, and J.D. Edwards. SAP has continued to expand its analytic applications that are source-system agnostic and focused on particular vertical industries.

Beyond the analytic applications from BI vendors, there are numerous solutions from niche vendors, some that OEM BI capabilities from the leading BI players and some that build their own BI capabilities within an analytic application.
**Advanced Analytics**

Predictive analysis is used in a variety of forward-looking applications such as fraud detection, customer scoring, risk analysis, and campaign management. Advanced analysis and the task of creating predictive models are reserved for specialist users, with SAS, IBM (via SPSS), and SAP leading the market. Historically and typically, the process of accessing data to build and test predictive models is not part of the BI platform, and data is extracted into a separate analytic environment. The results of the advanced models are also kept separate from other analyses. In an effort to make BI more actionable, some BI vendors are incorporating the results of the advanced analytics into the BI front-end.

In 2014, SAP released Infinite Insight, a product aimed at both the business analyst (with technology acquired from KXEN) and the statistician (with technology from in-house developed Predictive Analysis). SAS released Visual Statistics which integrates with its Visual Analytics product.

**Pricing and Product Packaging**

BI pricing and packaging continues to be confusing for BI buyers but several have moved to simplify their packaging. Most vendors offer named user licensing, server-based, or a combination of the two. SAP and Qlik offer concurrent user pricing. There may be special packaging for departmental or SMB deployments.

BI Scorecard subscribers are encouraged to view the related report on this topic and to be aware of the pricing and packaging complexities early in the buying process.

Scores on this criterion reflect pricing transparency and degree of complaints from customers about inconsistent and confusing packaging policies: can customers readily figure out what they need to buy, without hidden fees for common and essential features? Customers are advised to pay attention to virtualization policies, counting of server cores or sockets, and test and development environments.

**Account Management**

With the role of BI increasing in organizations, customers should be able to view their BI provider as a strategic partner. Unfortunately, such partnership is sorely lacking at larger firms but more available in smaller firms or consulting partners. The ideal account manager understands the customer’s business and is involved enough to know that the appropriate BI solution is being deployed effectively (and working!). In order for the account manager to achieve this, the account manager must also understand the vendor’s product line. High sales-force turnover can make this a challenge.

Scores for this item reflect consistently positive or negative customer feedback, as well as customer satisfaction surveys conducted by the vendor, third parties, and the 2014 Successful BI Survey (survey collection Q4 2013). Vendors with more than 25% of survey respondents rating account management as poor or needing improvement were given a yellow or limited score.
Support

All BI products have their problems, and no vendor’s software is immune to bugs (although some vendors do seem to have higher software quality standards than others). When a problem arises, customers can reasonably expect to contact technical support to resolve the problem. In some cases, this may be in the form of a work around, and in others, it may be a matter of waiting for a software patch or new product release. Communication about the status of a resolution and built-in escalation procedures are both important. Customers do have a responsibility here to ensure they are using the software in a supported environment and to report problems in a clear way that can be readily documented. Support should never be considered as a replacement for training and reading quality documentation.

Vendors may offer different support levels that range from:

- Web-based support in which problems are logged online and customers can search a knowledge base. Vendors vary in the quality of the articles in their knowledge bases and how frequently support personnel must contribute articles.

- Telephone support in which problems are reported and diagnosed by phone and remote Web sessions.

- Premium support that involves a technical support person periodically visiting the customer site to resolve problems.

With varying levels of support available, we strongly advise customers to consider the value of a higher support level, particularly during initial deployments, migrations, or significant user ramp-up. Money saved by using a lower support level can quickly be lost when problems are encountered and not readily resolved.

Scores for this item reflect consistently positive or negative customer feedback, as well as customer satisfaction surveys conducted by the vendor, third parties, and the 2014 Successful BI Survey. Vendors with more than 25% of survey respondents rating support as poor or needing improvement were given a yellow or limited score.

BI Innovation

BI innovation considers key enhancements and time to market, as well as future development plans. Key innovation areas considered in this score include visual discovery; mobile BI, search and natural language processing (NLP), collaboration, and cloud BI. These items are given the greatest weight. Additional areas considered are improvements to the core capabilities and frequency of releases, integration of predictive analytics with BI, and support for Hadoop and noSQL data sources, and data preparation for business users. Vendors who are first to market with an innovation are given a higher score. Vendors who have provided the innovation through acquisition are given partial credit. Specialty vendors are scored for innovation that pertains to their market segment.

R&D Spending

The percentage of revenues spent in research and development is reflective of how much the vendor invests in improving existing products and developing new ones. Percentages shown here are for year-to-date through Q3 when the vendor is publicly held.
Services Revenue

The importance of services revenue is hotly debated in the BI industry. Some believe that a high percentage of services revenues is indicative of a complex product line that requires a lot of additional consulting fees to implement. Others see it as a way of customizing the solution for a particular industry vertical. As an example of this contrast, IBM earns a significant portion of revenues from consulting services, in part a diversification from its hardware and software business. Microsoft, on the other hand, earns very little in services revenue, preferring that its strong partner network fulfill this role. Some vendors include maintenance fees in this figure (indicated with an M in the scorecard), making it difficult to get a side-by-side comparison.
Customers have sometimes aspired to buy one BI tool to meet all their business intelligence requirements. This is an impractical goal. At best, you may aim to buy several modules from a single vendor, but the more successful BI deployments pursue a strategy of the right tool for the right user, with recognition that a predominant standard may be supplemented with tools from specialty vendors.

BI vendors may offer a broad range of capabilities as part of a BI solution or may specialize in one particular module. The importance of a particular module will vary among customers, and certain modules are more important to different user segments. The following spectrum positions BI tool modules according to the user segments that predominantly use any given module. More sophisticated users may need advanced features, whereas modules that have broader usage warrant features with mass appeal and ease of use. For example, statisticians may need advanced analytics, whereas call center operators and front-line workers may need BI nuggets embedded in an operational application. Managers and sales personnel may want dashboards delivered on an iPad.
The following chart shows which capabilities customers reported as being most successful within an overall BI deployment (according to the 2014 Successful BI Survey, 513 respondents). Consistent with 2012 survey results, fixed reports had the highest success rate, closely followed by business query as the most successfully deployed BI module.

Based on customer advisory sessions and anecdotal feedback from customers, some data points seem unusually high and may not reflect the same definitions we use. For example, 59% cite use of Office & Excel add-ins but this seems overstated and customers may be selecting this simply for exporting data. Also, 51% of companies said they had successfully deployed visual data discovery capabilities, but it's unclear if some customers associate this with greater use of charting capabilities within business query, dashboard, or OLAP viewing modules rather than the distinct category.

Each of the following sections provides a brief explanation of the individual BI tool segments or modules of the BI platform. For a more detailed discussion of individual criterion within a category, consult the BI Scorecard® detailed criteria reports. Note: the term “suite” is used here to refer to multiple modules that reside on a common BI platform. The degree of integration of these modules continues to vary from vendor to vendor.
The following summary table compares vendors across each major BI functional area. Please note that for any given module, how customers weight individual criterion will impact the summary-level scores.

Specialty vendors are scored only in those categories in which they compete.

<table>
<thead>
<tr>
<th>BI Platforms</th>
<th>Self-Service BI</th>
<th>Information Delivery</th>
<th>Production Reporting</th>
<th>OLAP Viewer</th>
<th>OLAP Platform</th>
<th>Office Integration</th>
<th>Administration</th>
<th>Architecture</th>
<th>Public Cloud BI</th>
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<td>SAP BusinessObjects</td>
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Legend:  
Excellent  
Good  
Limited  
Less than 45%  

Weight of detailed criterion affects summary market scores. Customers are advised to apply their own importance weighting. Specialty vendors are scored only in those segments in which they compete.  
S = Scripted Demo  
P = Preliminary Score.

Understanding Self-Service BI

Self-service BI is a priority for many companies. However, the vision for self-service BI is not new and is what defined the emergence of the business intelligence tools market in the early 1990s. Some of the first BI tools on the market, such as BusinessObjects (now part of SAP) and Cognos Impromptu, enabled users to access data stored in relational database systems without the need to understand how to write their own SQL queries. Prior to these tools, IT would write the SQL and send users raw data in a Lotus spreadsheet. OLAP tools, meanwhile, allowed for faster performance, dimensional comparisons, and drill-down, with a greater use of charts. Both of these technologies, then, allowed for self-service, with varying degrees of initial IT involvement. IT is involved in the initial deployment both to make it easier for end users but also to protect source systems from being crippled from runaway queries.
The new category of visual data discovery tools also allows for self-service BI but, depending upon the vendor and tool, with less initial support from IT than either OLAP or business query tools. As they use in-memory engines for performance, they are less constrained than traditional OLAP cubes to enable speed-of-thought performance. The data volumes, degree of Web-based authoring, and breadth of analytic queries varies significantly from product to product. For these reasons, visual data discovery tools are just one component of a self-service BI portfolio and do not currently replace other approaches to self-service BI.

Early deployments of business query modules sometimes failed because BI administrators interpreted users’ demands for ad hoc capabilities with a blank screen (see the *TDWI Top 10 Mistakes in Deploying BI Tools*, 2004). There are indeed some users that need to create new queries, but the majority of business users simply want flexibility within an existing dashboard or report. They do not want to go into a complicated authoring mode but instead want to tweak a dashboard or report by filtering, sorting, or personalizing the display. Because it seems the hype of new tools in visual data discovery is overshadowing the broader requirements of report interactivity, we have moved scores for these capabilities out of the information delivery category into their own segment.

In evaluating self-service BI capabilities, customers are encouraged to consider this spectrum of requirements, use cases, and degree of IT involvement to deploy.

**Ease of Use**

Ease of use in BI tools is an often-cited barrier to broader adoption. With customers now considering ease of use more important than other technical factors, ease of use has been added to the BI Scorecard Product Summary. This score is a composite of the ease of use for the following modules: business query, dashboards, and visual data discovery. Ease of use for production reporting modules, OLAP, and Office are not considered here. In assessing ease of use, we look for how intuitive the software is, number of clicks to complete a task, and a logical workflow. In addition to assessing ease of use for individual BI modules, survey results for ease of use were considered to develop the final summary score.
**Business Query & Reporting**

This module is often referred to as “ad hoc query,” but such terminology is misleading. Unable to wait weeks or months for IT to develop a new report, business users often demand the ability to create queries and reports themselves. The business environment changes at a rapid pace; information requirements can change as correspondingly fast. Business query tools facilitate a self-service reporting environment and allow business users to answer their own questions and do their own analysis. This module assumes, however, that the data mart or warehouse environment has been established and that IT has developed a business view to the physical tables, points of contrast to visual data discovery tools.

In some cases, a report is truly ad hoc; the report answers a one-off business question that will never be posed again. Most often, though, a report is not ad hoc; it becomes a standard report authored by a business user rather than by a central IT programmer.

In recent years, some vendors and industry analysts have viewed this segment of tools as less relevant, suggesting they fall short of providing any meaningful intelligence and lamenting that data chaos has been replaced with report chaos. It is true that customers have made missteps in deploying these tools. Overwhelming users with unconstrained data access does not add business value – empowering them with timely insights does. For these reasons, IT and BICCs in particular need to stay involved in the BI authoring process to ensure these tools are leveraged in a controlled way and with best practices. While a decision supported by information from business query and reporting may not have the same big ROI as a single insight from predictive analytics or visual discovery, this class of tools is usually the first step in offering self-service BI in a governed way. Further, it is a key module for using BI for monitoring and managing the business.

This module helps business users answer such questions as:

- do I have enough product on hand to ship this order? (potential subsequent ad hoc: if I’m short at my main warehouse, can I supply product from elsewhere?)

- who are my top 10 customers? (potential subsequent ad hoc: who fell off this year’s list?)

- which suppliers have shipped late? (potential subsequent ad hoc: are there other suppliers that provide the same product on time?)

Many BI vendors provide basic business query capabilities. The more robust products will support the ability to query multiple fact tables, perform rankings and subqueries, and merge personal data sources with central data marts and data warehouses. In evaluating business query tools, customers should not automatically “exclude” products with a limited score, particularly if they require only basic capabilities.

**Visual Data Discovery**

Visual data discovery products have experienced rapid growth in the last four years, and this module should now be considered as another way of facilitating self-service BI. Several factors have helped accelerate the adoption of these tools. First, greater use of 64-bit operating systems has made in-memory processing more scalable. At the same time, their ease of deployment has allowed lines of business to develop more flexible and appealing solutions faster than central IT has been able to deliver enterprise BI. Last, the
successful IPOs of QlikTech in 2010 and Tableau in 2013 have brought excitement and mainstream attention to the category.

This software segment was pioneered mainly by pure-play vendors; larger BI platform vendors have since added visual data discovery capabilities.

In evaluating this module, customers must consider not only the need for visual data discovery, but also whether they need a fast, flexible deployment versus an enterprise solution with more robustly modeled data and governance.

It’s also important to note that vendors in this space may focus on different types of discovery and users. Some solutions, such as Tableau, MicroStrategy Visual Insight, Microsoft Power View, SAP Lumira, and SAS JMP are well suited to the individual user. QlikView, TIBCO Spotfire, and SAS Visual Analytics are more geared to building robust applications for many users. In the past year, Qlik released Qlik Sense for individual users and TIBCO released Spotfire Desktop.

### Dashboards

According to industry visualization expert Stephen Few, President of Perceptual Edge, “a dashboard is a visual form of information display, which is used to monitor what's currently going on in the business at a glance.” Any tool that can display multiple objects from multiple data sources, then, can correctly be referred to as a dashboard. Better dashboard products, though, go well beyond these two criteria to be more interactive, visual, and supporting insight to action. A dashboard may be composed of:

- a map that color codes where sales are performing well or poorly.
- a gauge chart that shows if expenses are over/under budget.
- a trend line that tracks stock outs.
- a cross-tab of top-selling products.

Ideally, users want to assemble their own dashboards with the information relevant to their job. Not all tools allow this, though, and may require IT to build the dashboards. For BI Scorecard to consider something a dashboard, it must enable information from multiple data sources, be highly visual, have a way of highlighting exceptions (traffic lighting or alerts), and have a degree of interactivity. Dashboard products from BI platform vendors may have integration and reusability with the BI platform.

While many of the dashboard products evaluated receive good scores at the summary level, there are substantial differences at the detailed level. Performance and suitability for a particular product as an operational dashboard that would include alerting, access to unmodeled data sources, and extensive caching varies widely. Some visual data discovery tools allow business users to create their own dashboards.

### Interactive Reporting

Once either IT or a power user has created a report using either a production reporting tool or a business query tool, an information consumer will initially view this report. Information consumers may want to navigate the report via a table of contents, sort within the report, filter displayed data, or change a rendering from a tabular data set to a chart.
Scores in this category reflect how easily a user can do this automatically, without having to go into an authoring mode and without requerying the data source. Better tools create the interactive viewing automatically, without IT having to program capabilities into the report design.

**Information Delivery & Access (BI Portal, Scheduling, Search)**

This functional area includes criteria for information consumers. This primarily includes report scheduling, report bursting, alerting, BI portal integration, search, collaboration, offline mode, and display of meaningful business meta data. In short, once customers have tackled the biggest challenge of getting to the data, the next major focus should be on putting those reports and analyses directly in the hands of more decision-makers yet in an appropriate interface that requires minimal training.

Initially, visual data discovery vendors have not considered scheduling and distribution capabilities a requirement, particularly as they want users to remain in the discovery tool. However, customers are increasingly demanding these capabilities. Some technology partners may fill a void. BI platform vendors who have newly added visual discovery capabilities may support scheduling and distribution, but customers should not assume scheduling of reports and queries extends to visualizations and dashboards.

**Mobile BI**

Mobile business intelligence allows users to access BI content from smartphones and tablet computers, ideal for sales personnel, field workers, and traveling executives. Mobile BI has existed for years, initially via static reports on BlackBerry devices. More recently, vendors have broadened device support to include Apple and Android phones and to provide greater interactivity for sort, filter, change display type, refresh a report, location awareness, and offline or airplane mode. Only a few BI vendors leverage capabilities such as built-in GPS and barcode readers. Tablet devices such as the iPad are particularly ideal for consuming dashboards.

The mobile market continues to be in a state of flux, with many companies moving to a bring-your-own-device (BYOD) policy. Corporate customers and BI vendors alike must navigate a fragmented market with as-of-now unclear industry standards.

In evaluating mobile solutions, BI Scorecard currently rates vendors with device-specific applications higher, as this gives users a better experience. As HTML5 gains market acceptance and functionality, this scoring may change as requirements and capabilities change. BI platform vendors must provide native Apple and Android device support, for both reports and dashboards, with device-based caching for offline or airplane mode to receive an excellent score.

Specialty dashboard vendors must provide native iPad device support with device-based caching to receive an excellent score. Vendors who use predominantly a Web app approach receive a limited or poor score. While Web apps sometimes have broader BI functionality, the slower performance and limited use of the tablet and/or smartphone capabilities result in an inferior user experience.

**Production Reporting**

“Production”-style reporting is the process of querying a transactional database, and then formatting it to create a document, perhaps an invoice, a bank statement, a check, or a list
of open orders. When the reporting is not against the transaction system, it may be against an operational data store or detailed data within a data warehouse. IT usually develops these reports for the following reasons:

- The data source is an operational system that is not designed for ad hoc or analytic queries. Granting business users access to directly query the source system may impact transaction processing.
- Reports will be embedded within an application as part of a process or operational task.
- The information requirements are static, such as list-style reports or regulatory reports.

Within the industry, the terms production reporting and pixel-perfect reporting are sometimes used interchangeably; however, many business query tools support highly formatted and pixel-perfect reporting. For more discussion on this topic, consult the BI Market Segments Report.

**OLAP**

OLAP provides interactive analysis by different dimensions (geography, product, time) and different levels of detail (year, quarter, month). For many users, OLAP has become synonymous with drill-down capabilities. Many BI vendors, though, will now provide drill-down capabilities without a full-blown OLAP engine or database on the back end. The differences in vendor OLAP capabilities are in the OLAP platform approach (MOLAP, ROLAP, DOLAP), in-memory approaches, and in the ability to handle analytic calculations (rank, percent of totals, this-year versus last-year variance analysis). In evaluating OLAP capabilities, it’s important to distinguish between OLAP platform requirements and capabilities and OLAP user interface requirements and capabilities. With the rise of in-memory platforms, columnar databases, and analytic appliances, the need for a separate OLAP database purely for speed reasons should be challenged.

Among OLAP viewers, there continues to be significant variability in the intuitiveness of the drilling and pivoting, users’ ability to create custom sets, ability to rank items, drill within a chart and the breadth of chart types, ability to drill and filter or to drill and expand.

**Spreadsheet / Microsoft Office Integration**

It is sometimes said that Microsoft Excel is unofficially the leading BI tool. Business intelligence teams have tried to ignore it and sometimes disable it, because it can wreak havoc on the one thing a data warehouse is supposed to provide: a single version of truth. Yet users are passionate about spreadsheet integration, and it is the preferred interface for power users. The issue for BI teams and businesses, then, is how to facilitate the integration while managing its use. In BI’s early days, integration was often limited to a one-time export of data from the BI tool to a disconnected spreadsheet. Nowadays, BI platforms allow Excel and the BI environment to work better together. As well, Office integration may extend beyond just the Excel spreadsheet to include other Microsoft Office applications such as PowerPoint, Word, and Outlook. Better approaches to Microsoft Office integration allow end users to work from within the Office interface while maintaining a live connection to the BI environment; it is much more than a one-time export.
**Architecture and Administration**

Administrative and architectural criteria span the entire set of BI product capabilities (in theory). For product suites that are not yet integrated, there may be multiple interfaces to administer the security, design the solution, and control the servers. Clearly, the more integrated the administration across the core BI platform (as well as EIM and analytic applications), the lower the cost of ownership. Administrative criteria center on several major topics: security, meta data design, development, and server administration. Architecture criteria relate to operating systems and platforms supported, depth and breadth of suite integration, and scalability features such as support for in-memory processing and Hadoop.

**Cloud BI**

Support for cloud BI was previously tracked within the architecture category, but with its increased importance in the industry, in 2013, it was pulled into a separate summary level. Considerations here include the maturity of the BI capabilities, the robustness beyond simple file sharing, and the ability to refresh cloud and on-premises data sources.

**Ease to Deploy and Design**

Installing BI software is a small part of a total deployment. The larger cost of ownership and time to deploy a solution comes with building the BI meta data layer, developing reports, and content. Visual data discovery tools are known for their rapid implementation because they often lack a meta data layer and do not require up-front modeling. BI platforms, meanwhile, may require more up-front modeling, which reduces agility in lieu of greater governance and re-usable components.
The following sections highlight key strengths and challenges for leading vendors. BI Scorecard subscribers should consult individual vendor overview reports and product reviews for more in-depth analyses.

**MicroStrategy**

MicroStrategy is one of the few publicly traded pure-play BI vendors. Its 2013 total revenues were just over $575 million, a 2% growth rate and below the industry average. Its 2014 year-to-date revenues have grown 5% compared to 2013, with a net income loss of $17.6 million. There have been a number of organizational changes to address slowing sales, including the appointment of a new company president in 2012, greater emphasis on core BI, and reduction in workforce by 700 jobs, or 20%.

In early 2014, the company released its second-generation in-memory engine: Parallel Relational In-Memory Engine (PRIME). PRIME was co-developed with customer Facebook to address data scalability challenges on analyzing its billions of customers. Compared to MicroStrategy’s earlier OLAP Services, PRIME can load more data, faster: terabytes versus the 100 GB limit in OLAP Services. PRIME can be used to accelerate relational data models with flexible schemas, whereas OLAP services supported a single star schema. PRIME is mainly limited to predictable workflows such as dashboards and currently available only in the cloud, with an on-premises version expected in the near future.

MicroStrategy has also been aggressively improving its visual data discovery capabilities based on Visual Insight. Visual Insight was first released in 2011 and comes in three versions: enterprise and integrated with the BI platform, Express in the cloud, and Desktop, a freemium personal edition. Visual Insight 9.4 was released in Q3 2013 with long-awaited data blending capabilities. Previews of the next release, code-named Polaris, include data wrangling, replacement of Flash user interface with pure HTML5, more abilities for end users to create attribute dimensions, and forecasting.

MicroStrategy has one of the most integrated BI platforms and has continuously expanded its BI capabilities through innovation versus acquisition. A strategic point of differentiation versus other vendors is that MicroStrategy has remained focused on core BI, choosing not to expand into performance management or data integration. There have, however, been investments in identity management (Usher) and social marketing (WISDOM) that have created confusing messaging in recent years. The scalable, integrated architecture and robust semantic layer are appealing to IT; however, they also can be a barrier to agility in that MicroStrategy works best with a well-defined data warehouse and conformed dimensions. Enhancements such as the multi-source option for federation and user import of external data source partly address this.

The company was early to embrace mobile capabilities, taking a native app approach for iOS and Android tablets and phones. Content can be explicitly authored for a mobile device, with support for offline, remote wipe, data input, multimedia, and push notifications.

MicroStrategy Cloud was first released in 2011, with partnerships with Informatica for data integration in the cloud and Teradata and ParAccel as the analytic databases. However, MicroStrategy initially established its own data centers, and in 2014, it added support via Amazon Cloud and KDDI in Japan. Cloud now accounts for 15% of the company’s...
product revenues, growing 90% in the last year. The cloud strategy now has two main editions: MicroStrategy Analytics Express (SaaS), which includes core BI capabilities, and MicroStrategy Cloud (PaaS), which additionally includes Office and Mobile. With MicroStrategy Cloud, data can be left on-premises.

Other innovations such as collaboration and search are lacking.

**Key Strengths**: Industrial-strength OLAP; tightly integrated platform, with robust administrative features and interactive and appealing dashboards; device-based mobile with broad device support; full-featured cloud solutions.

**Key Challenges**: Less agile solution for customers lacking a data warehouse; turmoil in leadership; competition from both big BI platform vendors and more agile competitors; limited availability of third-party resources.

**Recent Events**:

- Q2 2014: Simplified packaging and pricing announced.
- Q1 2014: Support for third-party cloud providers added; MicroStrategy PRIME released.
## Strategic Considerations (Q4 2014)

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<thead>
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<th>BI Platforms</th>
<th>BI Growth &amp; Market Leadership</th>
<th>BI Breadth</th>
<th>Pricing &amp; Packaging</th>
<th>Account Management</th>
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<th>2014 YTD R&amp;D Spend</th>
<th>2014 Services Revenue</th>
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### BI Platforms
- **BI Growth & Market Leadership**
- **BI Breadth**
  - EIM
  - Performance Management
  - Analytic Applications
  - Predictive Analytics
- **Pricing & Packaging**
- **Account Management**
- **Support**
- **BI Innovation**
- **2014 YTD R&D Spend**
- **2014 Services Revenue**

### Specialty
- **Qlik**
- **Tableau**

### Legend:
- **Excellent**
- **Good**
- **Limited**
- **Poor**
- **Don’t Compete in Segment**
- **M-services plus maintenance combined**

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**BI Scorecard 2014**
**Product Capabilities (Q4 2014)**

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<tr>
<th>BI Platforms</th>
<th>Self-Service BI</th>
<th>Information Delivery</th>
<th>Production Reporting</th>
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<th>Office Integration</th>
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**Specialty**

- Qlik
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**Legend:**
- **Excellent**
- **Good**
- **Limited**
- **Less than 45%**

Weight of detailed criterion affects summary market scores. Customers are advised to apply their own importance weighting. Specialty vendors are scored only in those segments in which they compete. S=Scripted Demo  P =Preliminary Score.