October 20, 2010

The Forrester Wave™: Enterprise Business Intelligence Platforms, Q4 2010

by Boris Evelson
for Business Process Professionals

FORRESTER® Making Leaders Successful Every Day

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IBM Cognos, SAP BusinessObjects, and Oracle Lead, With Information Builders, SAS, Microsoft, and MicroStrategy Close Behind

by Boris Evelson
with Connie Moore, Rob Karel, Holger Kisker, Ph.D., James G. Kobielus, and Ralph Vitti

EXECUTIVE SUMMARY

In Forrester's 145-criteria evaluation of enterprise business intelligence (BI) platform vendors, we found that IBM Cognos, SAP BusinessObjects, Oracle, Information Builders , SAS, Microsoft, and MicroStrategy led the pack because of the completeness of not just BI, but overall information management functionality. Actuate came out as a Strong Performer on the heels of the Leaders offering equal — or in some cases superior — BI functionality, but it mostly relies on partners for the rest of its information management capabilities. TIBCO Spotfire also came out as a Strong Performer offering top choices for analytics, even surpassing other Strong Performers in the overall information management arena based on its traditional strength in middleware and application integration. Last but not least, QlikTech and Panorama Software moved up from Contenders and into the Strong Performers category based on the continuous improvements in their analytical capabilities.

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NOTES & RESOURCES

Forrester conducted demonstration-based product evaluations in February and March 2010. Evaluated vendors included Actuate, IBM Cognos, Information Builders, Microsoft, MicroStrategy, Oracle, Panorama Software, QlikTech, SAP BusinessObjects, SAS, and TIBCO Spotfire.

Related Research Documents

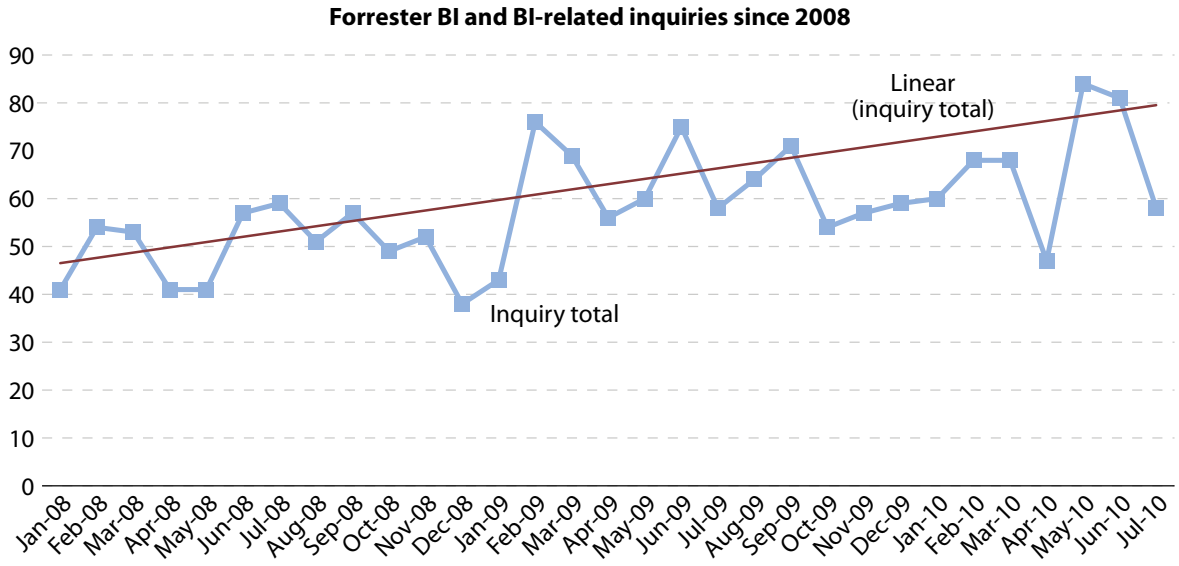
"The Forrester Wave™: Open Source Business Intelligence (BI), Q3 2010"
August 10, 2010

"Latest BI Adoption Trends — Still Strong And Going Ballistic"
March 9, 2010

BI CONTINUES TO EVOLVE AS THE LAST FRONTIER OF COMPETITIVE DIFFERENTIATION

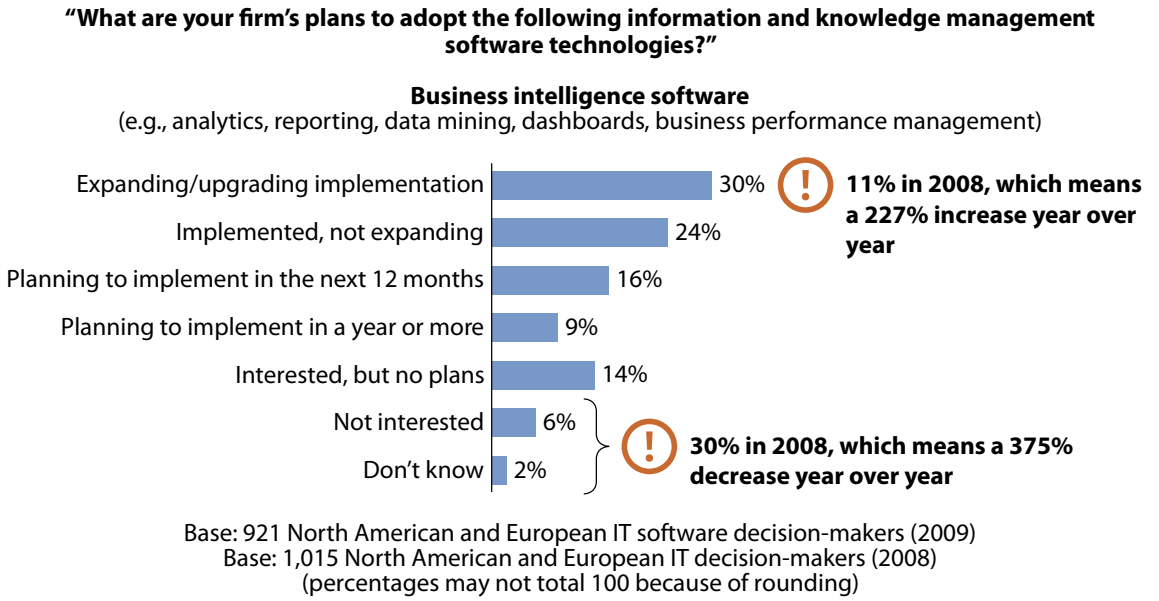
Business intelligence continues to be one of the top enterprise software and applications market segments where Forrester sees continually increasing interest and adoption levels (see Figure 1 and see Figure 2). Ever-increasing data volumes, complex enterprise operations, and regulatory reporting requirements continue to drive demand for BI in the middle (risk management) and back (finance, HR, operations) offices. But the major shift is in the increased demand for BI in the front offices (sales, marketing) too, as enterprises that do not squeeze the last ounce of information out of their data stores and applications, and that do not focus on getting strategic, tactical, and operational insight into their customers, products, business processes, and operations, risk falling behind competition. As a result, while the overall software market dropped by 8% in 2009, the BI software market increased by 15%.[1]

Figure 1 Yearly Trend In The Number Of Forrester BI And BI-Related Inquiries



56280 Source: Forrester Research, Inc.

Figure 2 BI Adoption Trends From 2008 To 2009



Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2009

56280 Source: Forrester Research, Inc.

Key Evaluation Criteria Updates

Forrester often defines BI in one of two ways. Typically, we use the following broad definition:

> *Business intelligence is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information used to enable more effective strategic, tactical, and operational insights and decision-making.*

But when using this definition, BI also has to include technologies such as data integration, data quality, data warehousing, master data management, text, and content analytics, and many others that the market sometimes lumps into the information management segment.[2] Therefore, we also refer to *data preparation* and *data usage* as two separate, but closely linked, segments of the BI architectural stack. We define the narrower BI market as (see Figure 3):

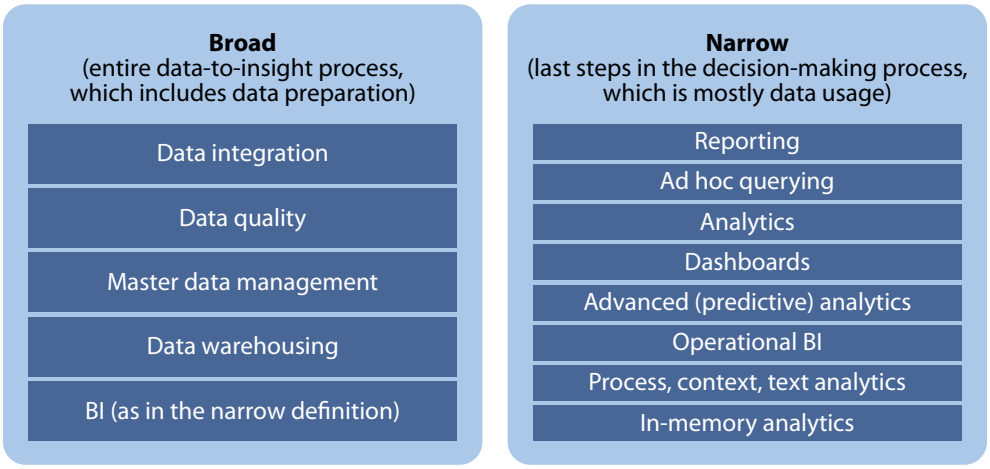
> *A set of methodologies, processes, architectures, and technologies that leverage the output of information management processes for analysis, reporting, performance management, and information delivery.*

With these two definitions in mind, we updated the criteria for the 2010 Forrester Wave evaluation of the BI market as follows:

- **We focused on data usage, while giving credit to the data preparation functionality.** The 2010 Forrester Wave evaluation, similar to the 2008 process, emphasized pure play or data usage functionality. However, we also gave due credit for the built-in feature sets and/or integration with the information management or data preparation capabilities.

- **We evaluated a few new features that our clients have inquired about over the past two years.** While the majority of the criteria remained the same from the 2008 evaluation — a testament to how much the BI market is still evolving, where only few features have become commoditized — we have also responded to the latest market trends and added the following new evaluation criteria: nonmodeled exploration, self-service BI, and analytical performance management and master data management (MDM).[3] Some of the older trends that we identified prior to 2008, such as SaaS and appliance form factors, advanced analytics, and BI with a search-like UI, also made it into the 2010 model.

Figure 3 Broad And Narrow Definitions Of The BI Market Segment



56280 Source: Forrester Research, Inc.

ENTERPRISE BI PLATFORMS EVALUATION OVERVIEW

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

Evaluation Criteria: Current Offering, Strategy, And Market Presence

After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We evaluated vendors against 145 criteria, which we grouped into three high-level buckets:

- **Current offering.** To assess product strength, we evaluated each offering against four groups of criteria: architecture, development environment, and functional and operational capabilities.

- **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 its 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, its partnership ecosystem, as well as horizontal and vertical industry applications.

Evaluated Vendors Must Meet Architecture, Functionality, and Scalability Criteria

Forrester included 11 vendors in the assessment: Actuate, IBM Cognos, Information Builders, Microsoft, MicroStrategy, Oracle, Panorama Software, QlikTech, SAP BusinessObjects, SAS, and TIBCO Spotfire. Each of these vendors has (see Figure 4):

- **At least three of the four major functional BI components.** Even though our current list of typical and advanced BI capabilities exceeds 20 items, we only included vendors that have at least three of the following four major components that are critical for large enterprise BI environments: production/operational reporting, ad hoc querying, OLAP, and dashboards.[4]

- **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 self-contained, complete, fully functioning BI environment.** We focused on generic BI tools, not technologically or functionally tied or limited to particular functional/horizontal applications (ERP, SCM, etc.). These tools must be self-contained, complete BI environments or platforms that do not have to be necessarily embedded in other applications.

- **Sufficient market presence and interest from Forrester clients.** We included vendors with at least 100 in-production customers present in more than one major geographical region, with more than 10% enterprise-grade, cross-line-of-business installations with more than 100 users. We also focused on vendors that Forrester clients frequently mentioned or asked about in the context of business intelligence.

- **Significant BI revenues.** Finally, we focused on vendors with at least $50 million in BI revenues.

Figure 4 Evaluated Vendors: Product Information And Selection Criteria

Vendor	Product(s) evaluated	Product version evaluated	Version release date
Actuate	Actuate BIRT	11	September 2010
IBM	IBM Cognos 8 Business Intelligence	8.4.1	October 2009
Information Builders	WebFOCUS	8	April 2010
Microsoft	SQL Server 2008 R2	2008 R2	May 2010
MicroStrategy	MicroStrategy	9 Release 2	January 2010
Oracle	Oracle Business Intelligence	11g	August 2010
Panorama Software	NovaView	6.2	June 2010
QlikTech	QlikView	9	May 2009
SAP	SAP BusinessObjects	XI 3.1	October 2008
SAS	SAS Enterprise Business Intelligence	4.2	February 2009
TIBCO Spotfire (TIBCO Software)	TIBCO Spotfire Analytics	3.1	March 2010

Vendor selection criteria

At least three of the four major functional BI components. Even though our current list of typical and advanced BI capabilities exceeds 20 items, we only included vendors that have at least three of the following four major components that are critical for large enterprise BI environments: production/ operational reporting, ad hoc querying, OLAP, and dashboards.
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Significant BI revenues. Finally, we focused on vendors with at least $50 million in BI revenues.

Source: Forrester Research, Inc.

MODERN ENTERPRISE BI PLATFORMS ARE FUNCTION-RICH, ROBUST, AND SCALABLE

Our evaluation uncovered a market in which (see Figure 5):

- **IBM Cognos, SAP BusinessObjects, Oracle, and SAS continue to lead the pack.** All of the 2008 Leaders maintained their overall positions, once again confirming the full commitment by their corporate senior executives to BI. All scores hit within a few decimal points of each other, but under the covers they are quite different. IBM Cognos rolled out Cognos 8 on System z and is busy integrating with the recently acquired SPSS, bringing traditional and advanced analytics closer together — all in a direct challenge to SAS traditional strengths.[5] SAP BusinessObjects continues to steamroll with innovative products like Explorer and in-memory analytical appliance — Business Warehouse Accelerator. Oracle has built new metadata-level OBIEE 11g integration with Fusion Middleware and Fusion Apps and continues to differentiate with its versatile ROLAP engine (a distinction shared only with MicroStrategy). SAS, the largest privately held software company, leverages its advantage of organically grown — with very few acquisitions — functionality with a seamlessly integrated BI platform.

- **Information Builders, Microsoft, and MicroStrategy move into the Leaders category.** The leadership space in the Wave just got more crowded with Information Builders, Microsoft, and MicroStrategy taking their well earned position among the Leaders. Information Builders continues to provide a very respectable alternative to the software behemoths, as the only midsize vendor to offer a nearly full BI stack functionality. Microsoft closed some of the previous gaps with acquisitions of data quality and MDM technologies, and now leverages SharePoint success and ubiquity as a critical component of a BI platform. And MicroStrategy earned the extra recognition with its new multisourcing and in-memory ROLAP capabilities.

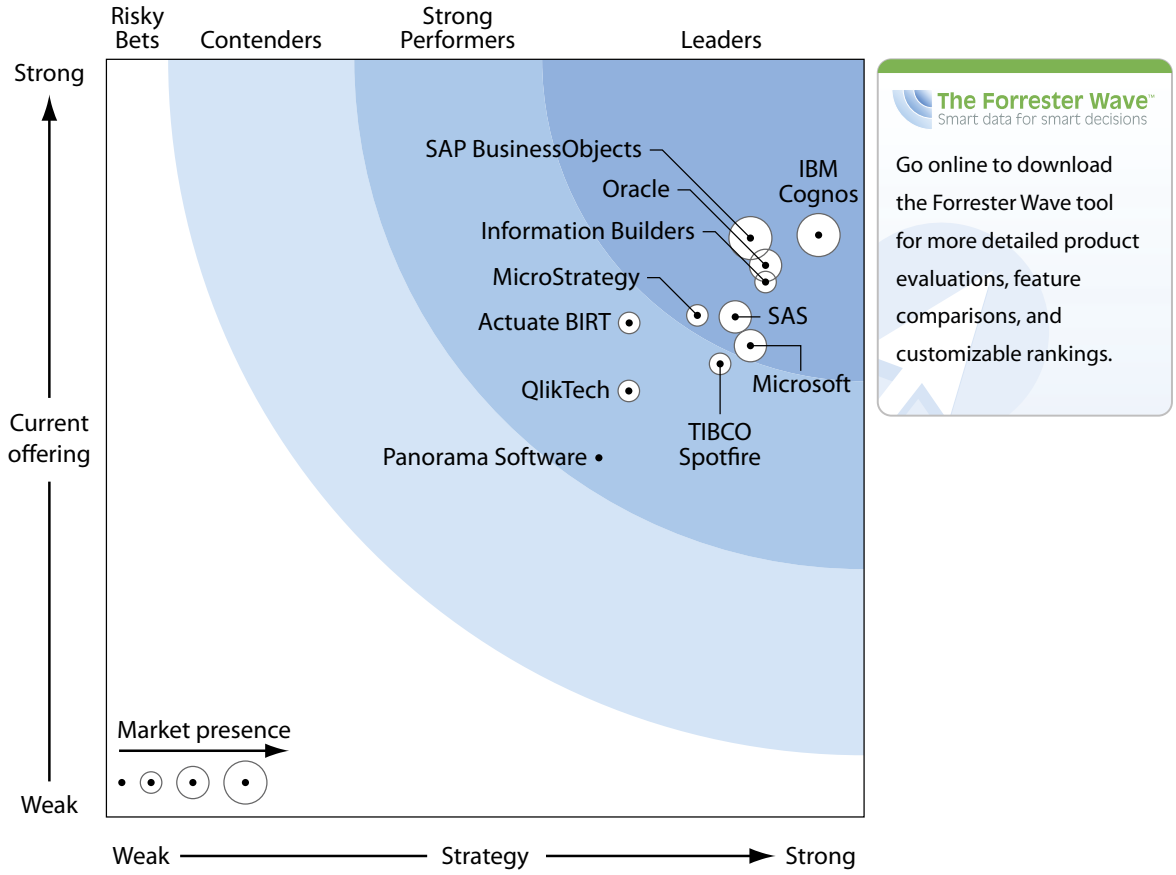
- **TIBCO Spotfire and Actuate maintain their Strong Performer status.** TIBCO Spotfire offers top choices for analytics and even surpasses the other Strong Performers in the overall information management arena based on its traditional strength in middleware and application integration. Actuate, a Leader in the 2010 Forrester Wave evaluating open source software BI, has revamped its entire platform and is now mostly based on open source BIRT technology.[6]

- **QlikTech and Panorama Software move into the Strong Performer category.** Both vendors got a well-deserved Forrester Wave upgrade based on the continuous improvements of their analytical capabilities. QlikTech, which launched a successful IPO in July 2010, has validated market need for in-memory analytics and modeless exploration with ongoing competition from TIBCO Spotfire and Microsoft's new PowerPivot product.[7] Panorama Software proves that although the market now enjoys new technologies and new approaches to analysis and reporting, MDX-based OLAP is still in high demand and in some cases is all that the business needs for certain types of BI use cases.

Actuate, Information Builders, MicroStrategy, Panorama Software, QlikTech, and SAS remain independent, still offering plenty of BI choices to large stack vendors, and potentially — even highly likely — still feeding the BI M&A furnace.

This evaluation of the enterprise BI platforms market should be a starting point only. We encourage readers to view detailed product evaluations and adapt the criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool.

Figure 5 Forrester Wave™: Enterprise BI Platforms, Q4 '10



Source: Forrester Research, Inc.

Figure 5 Forrester Wave™: Enterprise BI Platforms, Q4 '10 (Cont.)

	Forrester's Weighting	Actuate BIRT	IBM Cognos	Information Builders	Microsoft	MicroStrategy	Oracle	Panorama Software	QlikTech	SAP BusinessObjects	SAS	TIBCO Spotfire
CURRENT OFFERING	50%	3.26	3.84	3.53	3.11	3.31	3.64	2.37	2.81	3.82	3.30	2.99
Architecture	30%	3.26	4.15	3.61	3.06	3.57	4.08	2.42	2.65	3.99	3.70	2.95
Development	20%	4.20	4.15	3.70	2.90	3.30	2.90	1.90	3.35	4.05	2.95	2.95
Functional	30%	2.91	3.73	3.64	3.24	3.05	3.88	2.26	2.78	3.67	3.30	3.28
Operational	20%	2.87	3.23	3.09	3.18	3.35	3.34	2.93	2.53	3.57	3.04	2.63
STRATEGY	50%	3.45	4.70	4.35	4.25	3.90	4.35	3.25	3.45	4.25	4.15	4.05
Commitment	0%	3.60	3.20	4.60	3.20	3.00	3.20	3.40	1.60	3.80	4.40	3.00
Pricing and licensing	0%	2.42	3.36	3.58	1.94	3.12	2.82	3.38	3.96	3.56	2.44	3.68
Transparency	10%	3.00	2.00	3.00	2.00	3.00	3.00	1.00	3.00	2.00	1.00	0.00
Product direction	90%	3.50	5.00	4.50	4.50	4.00	4.50	3.50	3.50	4.50	4.50	4.50
MARKET PRESENCE	0%	2.12	4.60	2.26	3.93	2.30	3.55	1.68	2.89	4.81	3.35	2.09
Company financials	0%	2.20	3.10	2.50	2.80	2.80	3.10	1.30	3.70	3.10	2.80	1.90
Global presence	30%	3.65	4.60	3.45	3.90	2.85	4.15	2.00	2.70	4.35	3.90	3.30
Partnership ecosystem	20%	2.00	5.00	2.00	5.00	2.00	3.00	2.00	3.00	5.00	3.00	1.00
Install base	40%	1.30	4.30	1.60	4.30	2.00	3.00	1.70	3.70	5.00	2.70	1.70
Functional applications	10%	1.00	5.00	1.80	0.40	2.40	5.00	0.00	0.00	5.00	5.00	2.20

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

Source: Forrester Research, Inc.

VENDOR PROFILES

While the Forrester Wave graphic may seem to indicate little differentiation among the leading vendors, in reality that is not the case. The offerings are quite diverse, each one with its own unique set of strengths and weaknesses.

Leaders

- **IBM Cognos wants to be your one and only BI provider, from hardware to desktop.** Indeed, between hardware, software, and applications, including the office apps from the Lotus suite, and more than $10 billion in BI-related investments, IBM is the only vendor that can provide one-stop shopping for BI platform and tools. Furthermore, IBM GBS, including the newly formed BAO consulting organization, is uniquely positioned to supplement BI software and applications with strategic and management consulting services. The biggest difference from the 2008 evaluation comes in the form of tighter integration with multiple IBM products, such as Metadata Workbench, Business Viewpoint, DB2 Cubing Services, and Lotus. Additionally, IBM Cognos

leads the market with metadata-generated BI applications (Adaptive Application Framework, or AAF), where all components of a complete BI solution (including reports) are automatically generated from a single metadata set — making BI architecture, design, implementation, and support much more agile.[8] And last, but not least, IBM Cognos now mounts a serious challenge to SAS and Information Builders with a mainframe version of its BI applications.

IBM Cognos is by no means done with its portfolio of BI tools. There's still plenty to work on. Supplementing its in-memory TM1 OLAP offering with modeless exploration and analysis similar to QlikTech, TIBCO Spotfire, and Microsoft PowerPivot is a necessity, not a luxury, these days — it's a gap that IBM still has to fill. And IBM Cognos still needs to catch up to superior self-service BI SaaS offerings from its main competitor, SAP BusinessObjects.

- **SAP BusinessObjects believes in and delivers the "best BI tool for each job."** When you're looking for the top report writer, look no further than Crystal, which is probably OEMed and embedded into more applications than any other commercial BI tool. SAP BusinessObjects Explorer is an innovative product combining the power of OLAP on the back end with the simplicity of search-like UI and the flexibility of faceted exploration and analysis (typically the realm of search, not BI tools).[9] Xcelsius remains popular with many executives because they can take the self-contained Flash files, which combine dashboard application and data, on the road and use it on laptops in a disconnected mode — even without SAP software installed on that machine. BEx is still the most widely used and popular query and analysis tool for SAP BW users. And last but not least, Business Warehouse Accelerator appliance combines the flexibility of columnar and inverted index databases with the speed of in-memory database to provide a unique and powerful DBMS optimized for BI. Additionally, SAP leads the large vendor pack in self-service BI SaaS offerings.[10]

  Alas, all that power does not come without a price, and the price to be paid is product-to-product integration and object reuse. Some SAP BusinessObjects products still require separate development environments and have different user interfaces, and not all objects can be reused from product to product. While SAP will close that gap somewhat in the next release with a more common UI, a common prompting engine, and drill-through capabilities from some products to others, full and seamless integration is probably still at least a couple of major releases away.

- **Oracle's BI platform leapfrogs some competitors in 11g release.** Siebel and Hyperion acquisitions brought completely new and largely overlapping BI technology to Oracle. Not only did Oracle have to make strategic product choices between its own legacy BI and the newly acquired products, it also had to make tough strategy calls on which Hyperion and Siebel products would be front and center of the new OBIEE (Oracle BI Enterprise Edition) Suite. In several 10.x versions and especially in the latest 11g release, Oracle delivers on the direction it set for itself back in 2007. As a result, OBIEE, mostly based on Siebel and Oracle legacy

products (BI Server and Oracle Answers from Siebel and BI Publisher from Oracle) has taken shape as Oracle's strategic BI platform, with Essbase as a MOLAP add-on that can serve as either a source to OBIEE BI Server or an individual BI workspace on top of BI Server as a data source. Oracle continues to differentiate itself from the competition with hardware/software bundles (especially since the Sun acquisition), and with its OBIEE BI Server ROLAP engine, which brings multiple advantages over MOLAP. And in addition to closing some of the gaps it had in 10.x versions such as lack of RIA functionality, 11g release actually leapfrogs the competition with Common Enterprise Information Model (CEIM) — including the ability to define actions and execute processes right from BI metadata across BI and ERP applications.[11]

CEIM enables OBIEE 11g to plug right into any Oracle Fusion application metadata, eliminating the need, in some cases, to build costly data warehouses or data marts. But that's a luxury that only Oracle Fusion ERP applications — and not any other vendor ERP applications users — will enjoy. Yes, OBIEE can report and analyze data from any source, it just won't be as plug-and-play simple as with the Fusion Apps. And users of Hyperion BI reporting tools (other than Essbase) such as IR (Interactive Reporting), should watch out — these applications are now in lifetime support-only mode. While Oracle stays committed to this lifetime support, Forrester expects that all strategic and next-generation BI enhancements will mostly go to OBIEE.

- **Information Builders offers full BI stack alternative to large software vendors.** If for whatever reason you are not looking for a software stack lock-in from a large vendor but still have large enterprise BI requirements, Information Builders indeed offers such a choice. Behind the scenes of WebFOCUS is Information Builder's FOCUS product, which has more than 30 years of built-up expertise in large-scale — including mainframe — data management architecture and data processing. Information Builders also continues to lead the market with the richest set of data and application adapters, which other BI vendors still OEM and rely on. Since our last Forrester Wave review of the product in 2008, Information Builders has closed most of the gaps with new functionality such as data quality and integrated advanced analytics using open source "R" tools. And it continues to innovate with highly differentiated reporting functionality like Active Reports, where all data is cached in the browser. This means that if the user pulls the network cable out, she won't even notice that she's not online anymore. Even as mobile BI applications on smartphones and PDAs become increasingly popular, they still remain in the realm of "nice to have," while the seamless online/offline functionality of Active Reports has a highly practical application for BI road warriors.

The use of FOCUS technology as the base for WebFOCUS architecture is generally its strength — but it can also sometimes be a weakness. With every new release, Information Builders puts more and more functionality into the WebFOCUS point-and-click GUI, constantly reducing the need to program in FOCUS language. But we hear that in some extreme cases where GUI just doesn't cut it, the user still has to roll up his sleeves and solve a problem with good old FOCUS 4GL programming. And that may require resources with skills that not all enterprises are willing to invest in.

- **SAS continues to amaze the market with uninterrupted 32-year growth.** Even though the integration of IBM SPSS and open source R into third-party BI applications pose some new challenges to SAS, it does remain a leader in integrated BI and advanced analytics. While SAS is a $2.3 billion company, it grew mostly organically, with much fewer acquisitions than other large software vendors. As a result, its BI products are more seamlessly integrated, and SAS can enjoy the freedom of almost fully concentrating on innovation rather than integration. SAS also leads the market in the area of embedded analytics, where advanced analytics are embedded and executed right in DBMS engines, leveraging their processing power and scalability and eliminating the need to move data between analytical and relational data stores.[12] And SAS continues to address the innate complexity of its powerful BASE SAS programming language with new products SAS Rapid Predictive Modeler (RPM). Rather than coding in BASE SAS, analysts can now use RPM to automatically step through a behind-the-scenes workflow of data preparation, variable selection, and transformation; fit a variety of algorithms; and perform model assessment based on best practices developed by SAS to create predictive models.

  But there's no time to rest for SAS either. It can do a better job on prepackaged ERP BI solutions — traditional strengths of its top large competitors IBM, Oracle, and SAP. And even though its JMP product provides in-memory advanced data visualization capabilities, SAS does need to offer a broader alternative to all of the latest in-memory analytics products. Even though Forrester is still a big fan of seamlessly integrated BI platforms, perhaps SAS should consider more acquisitions to accelerate the pace of closing all of the current gaps in its BI portfolio.

- **Microsoft BI gets a unique pervasive advantage from SharePoint and Office products.** Even though IBM and Google continue to pose serious challenges, Microsoft does enjoy the advantage of having the most ubiquitous portal and collaboration platform, SharePoint, and the most pervasive office product, Microsoft Office. And guess what? If you own SharePoint — which means that you also own SQL Server — and Microsoft Office products already, like it or not, you actually have all of the components of the Microsoft BI platform! It's hard to beat that value proposition pricewise. And while Microsoft may not have every single bell and whistle of a more expensive BI suite, it doesn't need to, because the price/feature equation definitely works in its favor. This may be especially attractive to frugal buyers who believe in the 80/20 rule. Forrester consistently hears from our enterprise clients that very few use the entire set, or 100% of the functionality of their BI platform. For example, while prospective buyers can't compare the 10 or so data mining algorithms that come with Excel and SQL Server to the hundreds of more advanced functions that SAS and SPSS offer, Microsoft's fewer, less complex features can be good enough, and they can be rolled out to and used by many more users.

  Our pet peeve with Microsoft BI is that it can't be run on a non-Microsoft platform. Yes, you can connect, pull, and integrate data in SQL Server and SharePoint Servers from databases and file systems residing on any platform. But if you do all your development in Eclipse and Java, mostly have Unix/Linux flavor servers and DBMS platforms, and are committed to rolling out a portal

and collaboration platform other than SharePoint, Microsoft BI may not be the best choice for you. Microsoft BI also has significant gaps in its unified, common metadata model and in federated data access to heterogeneous sources — gaps we know Microsoft plans to close in the near future.

- **MicroStrategy introduces significant multisourcing and in-memory ROLAP upgrades.** MicroStrategy moves into the Leaders category with its "we only do BI and therefore we're best at it" attitude. While one can argue that getting all of the BI and information management components from a single provider has its advantages, there's something to be said about a vendor's ability to concentrate all its efforts on nothing but pure-play BI. MicroStrategy continues to build on its traditional strength of a differentiated ROLAP engine, which not only brings processing power and scalability but also a potentially lower long-term total cost of ownership due to the reduced number of total reports, data marts, and MOLAP cubes that need to be built and maintained. As many other BI vendors claim federated and heterogeneous data access capabilities, it's typically done in separate EII products, which are not as "dimensionally aware" as MicroStrategy's new multisourcing option. Even though MicroStrategy is a public company, it runs more like a private business and shares a similar story with SAS and Information Builders of few acquisitions and seamlessly integrated platform. MicroStrategy also has an exclusive offering: a completely free version with unlimited use for up to two developers and 100 users.

  But the "we only do BI" strategy does carry risks, as well (risks shared with other pure-play BI vendors like Actuate). Heavy reliance on information management software partners can be perilous these days, since they are all slowly but surely disappearing under the umbrella of large software stack vendors and becoming competitors. As a result, MicroStrategy is falling a bit behind the market in such next-generation technologies such as integrating BI with processes and workflows and integrated metadata. And even though MicroStrategy offers a few (free of charge) industry data models, it cannot successfully compete with other BI vendors that offer prepackaged ERP BI solutions.

Strong Performers

- **Acquisitions and integration with TIBCO products edge Spotfire closer to a full BI stack.** Whereas in 2008 TIBCO Spotfire competed in the market only based on its in-memory analytics functionality, today it's a completely different story. It closed many of the gaps it had in full-stack BI and information management offering by acquiring Insightful — an advanced analytics vendor — and striking an OEM deal with Composite Software for federated, heterogeneous data access. The resulting combination of integrated BI, process, rules, workflows, event streams, and advanced analytics, building on TIBCO's traditional strengths in application and data middleware, is hard to beat. TIBCO Spotfire continues to lead and share the increasingly important in-memory analytics market with QlikTech and Microsoft

PowerPivot. But whereas QlikTech and Microsoft in-memory models are limited to what can fit into memory at one time, TIBCO Spotfire offers a unique memory-swapping or paging feature, which lets it analyze models that are larger than a single available memory space (although paging can sometimes significantly slow down the analysis).

Even with all of its traditional strengths, acquisitions, and its newly integrated platform, TIBCO Spotfire is still not a BI panacea. For example, it can hardly compete — and actually does not — with report writers like Actuate and SAP BusinessObjects Crystal for producing pixel-perfect production reports for mass distribution (printing bills or customer statements, for example). As a result, Forrester hardly ever recommends in-memory analytics products as a replacement, but rather as complementary technology for broader BI suites. But with the expanding breadth of the TIBCO Spotfire offering, enterprises may be increasingly challenged to draw a line between a replacement and an add-on strategy.

- **Actuate muscles into OSS BI, leveraging its large-scale BI application development strengths.** Just like with MicroStrategy, if what you're looking for is a pure-play BI platform, Actuate BIRT is one of the right options. Actuate leveraged technology and experience from its commercial source products such as e.Reports and iServer into its latest BIRT-based product line. As a result, Actuate BIRT can be used for mass (millions) end user BI applications and for highly complex, multisource (with scalability and load balancing challenges) BI applications like interactive online customer statements. In the most recent edition, Actuate also added BIRT Data Objects, which can be used for disk- or memory-based OLAP-style analysis and end-user-built dashboards. Actuate is investing heavily in mobile BI with native BIRT iPhone, iPad, BlackBerry, and Android (future plans) applications. Actuate is also expanding its offering into printstream and end-to-end document management capabilities (or ILM — information life-cycle management). Producing reporting applications often starts a life cycle, where information needs to be distributed, stored, secured, and archived. With that approach in mind, Actuate acquired Xenos and is currently integrating Actuate's and Xenos' document management capabilities.

  But Actuate also confronts the same risks as MicroStrategy with a heavy reliance on information management software partners (such as data integration, data quality, data warehousing), and falling behind the market in such next-generation technologies as integrating BI with processes and workflows and integrated metadata. And even though BIRT users can enjoy multiple industry data models and applications provided on the BIRT Exchange Marketplace, Actuate cannot successfully compete with other BI vendors that offer prepackaged ERP BI solutions.

- **QlikTech takes its rightful place among larger BI vendors with a successful IPO.** QlikTech has the honor of being the only successful BI vendor IPO in recent years — in fact, it was the only one. This is especially remarkable, since in a current tough economic climate it is extremely tough to convince any financier to make any new technology investments. QlikTech, however, was able to convince the investors — and Forrester fully agrees with the supporting arguments — that the

BI market is still very thinly penetrated and has a strong potential to grow; in the long term, it may even surpass the enterprise resource planning (ERP) and transactional applications markets. There have been two very significant updates in QlikTech functionality since the 2008 review. First, unlike some of its direct competitors, QlikTech can now update its memory model row by row, instead of requiring the entire model to be reloaded into memory. This is especially useful for use cases with near-real-time, or low latency, reporting requirements. which are traditionally a weakness in other in-memory technologies. And QlikTech also capitalizes on a feature that's traditionally reserved by search vendors like Endeca or Attivo. It can now supplement traditional OLAP operations with faceted navigation, which can be especially useful for data sets with unbalanced and sparse hierarchies.

By concentrating solely on in-memory analytics, QlikTech should not be considered as a replacement option but rather just as an add-on to broad BI suites. Even though it has been in the in-memory analytics business longer than most of its competitors and so can claim the best memory optimization and compression, it still lacks the capability to load and analyze models that are larger than one single memory space.

- **Panorama Software gets a Strong Performer upgrade based on a broader data access platform.** Panorama still wants to be your primary BI provider if all you do is OLAP. While Panorama NovaView does not provide its own OLAP engine, it does shine with a top-grade OLAP GUI. So if an enterprise has multiple OLAP servers — such as Microsoft Analysis Services and PowerPivot, Oracle Essbase, SAP BW, and OSS Mondrian — and you want to use a single OLAP GUI for a common user experience and simpler training, rollout, and change management efforts, NovaView may just be the right option. Panorama's main gap in the past was that it could only access and analyze data from OLAP and not from relational sources. The evaluated version now solves the problem — any relational data can be accessed and analyzed, albeit still by creating an intermediate OLAP structure. We also especially liked a couple of the unique features of NovaView: 1) tight integration with Microsoft Outlook and Office Communicator and 2) an ability to display two values in a single cell, split diagonally (great for analyzing related numbers like budget or forecast versus actuals). Panorama also continues to lead the market with the only OLAP option available for Google applications in its Panorama Pivot Tables for Google Spreadsheet product.

Just like any other "analytics only" product, NovaView is not a replacement but rather an add-on to other BI platforms. There's also the question of long-term viability of the OLAP market, as it is rapidly being supplemented — and at some point, possibly replaced — with more powerful OLAP-like technologies such as in-memory analytics. When, not if, that happens, Panorama will have to reinvent itself by taking advantage of new in-memory and SaaS technologies.

SUPPLEMENTAL MATERIAL

Online Resource

The online version of Figure 5 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 respective 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 gathered data through a survey of 10 of each vendor's current customers.

The Forrester Wave Methodology

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

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

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave 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.

ENDNOTES

[1] While the whole IT market is facing challenging economic times, the global software market declined by 8% in 2009 compared with the previous year. Business intelligence (BI) software, which can provide transparency and decision support to improve business performance and help companies through difficult times, did not share the same fate and actually showed solid double-digit growth, even in 2009. See the May 10, 2010, "The State Of Business Intelligence Software And Emerging Trends: 2010" report.

[2] If information managers do not have a current strategy to coordinate information management (IM) initiatives, they must cope with application and information silos that are mired in the past, inflexible to maintain, costly to operate, noncompliant, and difficult to integrate. See the August 11, 2009, "Refresh Your Information Management Strategy To Deliver Business Results" report.

[3] When you analyze whether your BI vendor can support end user self-service, consider the list of "self-service" options and related BI tool requirements in Boris Evelson's blog post. Source: Boris Evelson, "Not all BI self service capabilities are created equal," *Boris Evelson's Blog For Business Process Professionals*, April 26, 2010 (http://blogs.forrester.com/boris_evelson/10-04-26-not_all_bi_self_service_capabilities_are_created_equal). Also, it's all about "prediscovery" vs. "post-discovery" of data. Source: Boris Evelson, "Information Post-Discovery - Latest BI Trend," *Boris Evelson's Blog For Business Process Professionals*, May 16, 2009 (http://blogs.forrester.com/boris_evelson/09-05-16-information_post_discovery_latest_bi_trend).

[4] Forrester's long list of BI stack components includes: advanced analytics, analytical performance management, scorecards, BI-specific DBMS, BI workspace, dashboards, geospatial analytics, low-latency BI, metadata-generated BI apps, non-modeled exploration and in-memory analytics, OLAP, packaged BI apps, process/content analytics, production reports and ad hoc query builders, search UI for BI, social network/media analytics, text analytics, and Web analytics.

[5] Large BI vendors are pulling together deeper advanced analytics strategies — a trend strongly confirmed by IBM's recently announced plan to acquire SPSS. Forrester believes this strategic trend will continue and will benefit business process and application (BP&A) and information and knowledge management (I&KM) professionals seeking to build integrated traditional and advanced (predictive) BI applications. See the August 18, 2009, "Business Intelligence (BI) Polishes Its Crystal Ball" report.

[6] If you're looking for a traditional, pure-play BI application (that mostly relies on other vendors for data integration) and highly scalable and function-rich reporting functionality, Actuate BIRT is the right option. See the August 10, 2010, "The Forrester Wave™: Open Source Business Intelligence (BI), Q3 2010" report.

[7] In-memory analytics are all abuzz for multiple reasons. Speed of querying, reporting, and analysis is just one. Flexibility, agility, and rapid prototyping are others. While there are many more reasons, not all in-memory approaches are created equal. For a deeper look at five options buyers have today, see Boris Evelson's blog. Source: Boris Evelson, "I forget: what's in-memory?" *Boris Evelson's Blog For Business Process Professionals*, March 31, 2010 (http://blogs.forrester.com/boris_evelson/10-03-31-i_forget_whats_in_memory).

[8] Agile BI is first and foremost a different approach to designing and building BI applications. The purpose of Agile BI is to: 1) get the development done faster, and 2) react more quickly to changing business requirements. See the April 22, 2010, "Agile BI Out Of The Box" report.

[9] Faceted search takes a free text query and returns a rich search results page with multiple ways to display and interact with the results like "refinement tools." Refinement options (such as date, price, or location) are extracted from the content during the content processing step or are based on explicit metadata stored separately in a taxonomy. See the March 18, 2010, "Q&A: Search Fundamentals For Information & Knowledge Management Pros" report.

[10] In January 2010, SAP BusinessObjects plans to strengthen its BI SaaS portfolio with the next generation of SAP BusinessObjects BI OnDemand, which will expand the capabilities of the crystalreports.com and SAP BusinessObjects BI OnDemand products to offer a fuller self-service SaaS solution targeted mostly at the casual BI user. See the January 26, 2010, "BI In The Cloud? Yes, And On The Ground, Too" report.

[11] Online analytical processing (OLAP) is a core component of a complex business intelligence architectural stack. Even as vendors begin to explore alternative technologies for "slicing" and "dicing" large data sets, OLAP engines, servers, and models still play a key role in most BI solutions for small, midsize, and especially large enterprises. See the January 12, 2009, "Latest BI Adoption Trends In Enterprises: Bright Future, But Off To A Slow Start" report.

[12] Predictive analytics can play a pivotal role in the planning and day-to-day operations of your business. It can help you focus strategy and continually tweak plans based on actual performance and likely future scenarios. For more information on predictive analytics and the vendor landscape, see the February 4, 2010, "The Forrester Wave™: Predictive Analytics And Data Mining Solutions, Q1 2010" report.

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