The Forrester Wave™: Big Data Streaming Analytics Platforms, Q3 2014

by Mike Gualtieri and Rowan Curran, July 17, 2014

KEY TAKEAWAYS

Exploiting Perishable Insights Is A Huge, Untapped Opportunity For Firms

Forrester defines perishable insights as urgent business situations (risks and opportunities) that firms can only detect and act on at a moment's notice. Streaming analytics platforms can help firms detect such insights in high velocity streams of data and act on them in real-time.

Streaming Analytics Platforms Are Ready For Action

Streaming analytics platforms include both development tools to create streaming applications and a runtime platform. Streaming applications are built by threading together a series of streaming operators including filtering, aggregation/correlation, time windows, temporal patterns, location/motion, enrichment, query, and action interfaces.

Access The Forrester Wave Model For Deeper Insight

Use the detailed Forrester Wave model to view every piece of data used to score participating vendors and create a custom vendor shortlist. Access the report online and download the Excel tool using the link from Figure 2. Alter Forrester's weightings to tailor the Forrester Wave model to your specifications.

The Forrester Wave™: Big Data Streaming Analytics Platforms, Q3 2014

The Answer To Exploiting Perishable Insights

by Mike Gualtieri and Rowan Curran
with Holger Kisker, Ph.D., Martha Bennett, Boris Evelson, and David Murphy

WHY READ THIS REPORT

Streaming analytics is anything but a sleepy, rearview mirror analysis of data. No, it is about knowing and acting on what's happening in your business at this very moment — now. Forrester calls these perishable insights because they occur at a moment's notice and you must act on them fast within a narrow window of opportunity before they quickly lose their value. The high velocity, white-water flow of data from innumerable real-time data sources such as market data, Internet of Things, mobile, sensors, clickstream, and even transactions remain largely unnavigated by most firms. The opportunity to leverage streaming analytics has never been greater. In Forrester's 50-criteria evaluation of big data streaming analytics platforms, we evaluated seven platforms from IBM, Informatica, SAP, Software AG, SQLstream, Tibco Software, and Vitria.

Table Of Contents

Notes & Resources

Forrester conducted methodology-based evaluations in Q1 and Q2 2014 of seven streaming analytics platforms.

Related Research Documents

Use Sensors To Take Apps To The Next Level Of Customer Engagement
April 22,2014

The Forrester Wave™: Enterprise Data Warehouse, Q4 2013
December 9, 2013

Predictive Apps Are The Next Big Thing In Customer Engagement
June 25, 2013

THE VELOCITY OF BUSINESS DEMANDS STREAMING ANALYTICS

Business won't wait. That is truer today than ever before because of the white-water flow of data from innumerable real-time data sources. Market data, clickstream, mobile devices, sensors, and even good old fashioned transactions may contain valuable, but perishable insights. Perishable because the insights are only valuable if you can detect and act on them right now. That's where streaming analytics platforms can help. Forrester defines streaming analytics platform as:

> *Software that can filter, aggregate, enrich, and analyze a high throughput of data from multiple disparate live data sources and in any data format to identify simple and complex patterns to visualize business in real-time, detect urgent situations, and automate immediate actions.*

Business is fraught with risks and flush with opportunities. Both can materialize in a flash. Firms can use streaming analytics platforms to:

- **Visualize business in real-time.** Dashboards and other visualization software on top of streaming analytics platforms can help people visualize, monitor, and make sense of a massive amount of incoming data from multiple sources in real-time. Many streaming analytics platforms provide tools to design and build command-center style dashboards for human monitoring. It can also feed other dashboard/visualization tools and/or custom monitoring applications. For example, a streaming platform can be used to monitor social sentiment across a variety of platforms, providing a real-time visualization of customer attitudes toward a company.

- **Detect urgent situations.** Application developers, and sometimes business analysts, can use the tools provided by streaming platforms to define simple or complex analytical patterns of urgent business events. Urgent because they happen in real-time. Events because they represent a meaningful moment that must be acted upon. O2 (Telefonica UK) in England uses streaming analytics to leverage location and motion data to offer international data plans to customers when on a train headed for the Chunnel, allowing them to capitalize on a higher conversion rate than they achieve when offering plans to customers once they've entered France.

- **Automate immediate actions.** Streaming analytics platforms hum quietly but vigilantly in the background until it detects an urgent situation (e.g., risk or opportunity). Developers can design streaming applications to issue alerts to humans through email, text, or push notifications, or to other applications through message queues or service calls. For example, energy providers can use streaming analytics to monitor their grids, identify opportunities for predictive maintenance, and automatically deploy crews based on certain thresholds.

Thinking In Streams Is Different

Streaming analytics platforms include both development tools to create streaming applications and a runtime platform.[1] The streaming application programming model is unfamiliar to most application developers. It's a different paradigm from normal programming where code execution controls

data. In streaming applications, the incoming data controls the code. The heart of all streaming applications is a set of streaming operators that are configured and threaded together to process the incoming streams.

The following streaming operators are the fundamental building blocks of streaming applications:

- **Filtering.** Streaming data can be filled with irrelevant information. Filtering operators allow developers to narrow the incoming stream to include only the data relevant to the application. For example, dropping all events with a "US" tag for an application aimed at data from Canada.

- **Aggregation/correlation.** Streaming applications almost always combine data streaming from multiple sources. Aggregation/correlation operators allow developers to combine multiple streams into one stream not unlike a tributary flowing into a larger river: for example, correlating IDs of newly opened bank accounts with high volumes of transactions to detect fraud.

- **Location/motion.** With the proliferation of mobile devices, the world is flush in geographic and localized location data streaming from vehicles, machines, and/or people in motion. Location/ motion operators allow developers to define locations and/or motions of interest: for example, identifying that a customer is on a specific train by correlating their changing location and speed against train schedules.

- **Time windows.** Streaming data flows in real-time, but applications often need a snapshot of the stream over an arbitrary time period. Time windows operators allow developers to define a time period and the streaming data to include in the "window." Time windows can then be used to perform time series analysis in real-time such as running totals, weighted moving averages, Bollinger Bands, and many others. For example, a time window could show all transactions in the last five minutes over $10,000 in value, and calculate a rolling average.

- **Temporal patterns.** Streaming data often contains interesting patterns that only emerge as new streaming data arrives. A common temporal pattern occurs when an event A arrives at time t and another event B arrives at time $t+x$. Temporal pattern operators allow developers to define arbitrarily complex relationships between streaming events at different times to detect patterns. For example, a streaming platform for traffic could use temporal patterns to note that a score of vehicles all dropped their speed on a highway within ten seconds, possibly indicating an accident.

- **Enrichment.** Streaming data often requires reference data to provide additional context. Enrichment operators allow developers to pull in reference data from databases. The reference data adds needed context for other streaming operators. For example, a data stream from a home improvement store's POS system could enrich its transactions against customer records, revealing that the customer is probably working on a roofing project.

■ **Query and action interfaces.** The result of stream analysis to either feed another system or directly take an action. Query operators allow developers to expose streams to other applications through a query interface. Action operators allow developers to send alerts or call services in other applications that in turn can kick-off other actions such as business processes. For example, a streaming application could be implemented as a data service, taking in high volumes at high velocity and allowing customers to query those stream and run analytics relevant to their own business needs.

■ **Custom, built-in, and third-party libraries.** Incoming data streams often need to be parsed or interpreted by the streaming platform in order to pull meaning from the data. To extract this value, streaming platforms often include built-in, third-party, or user-customized libraries to address specific data types. For example, many streaming platforms include libraries for common use-cases, such as determining location from a set of GPS coordinates.

Market Overview: Open Source Is Hyped, But Commercial Vendors Got The Goods

Wow. Forrester survey data revealed a 66% increase in firms' use of streaming analytics in the past two years.[2] The market for streaming analytics platforms is growing far beyond its roots in industrial operations and financial services. Today, a variety of enterprise software companies, pure-play vendors, and open source platforms are offering streaming analytics platforms for every industry and every scale. Forrester sees the main routes for obtaining a streaming platform as being:

■ **Open source Storm has lots of buzz today.** Apache Storm is an Apache incubation at The Apache Software Foundation (ASF), sponsored by the Apache Incubator. Even at this early stage, it is utilized by well-known companies with significant volumes of streaming data, such as The Weather Channel, Spotify, Twitter, and Rocket Fuel. It is, however, a very technical platform that lacks the higher order tools and streaming operators that are provided by the vendor platforms evaluated in this Forrester Wave evaluation.

■ **Enterprise software vendors.** Software AG, SAP, and Tibco Software acquired their streaming platforms. IBM's platform came out of IBM Research. Other enterprise players, such as Microsoft and Oracle, have products which include the capabilities of streaming analytics but are not sold as standalone platforms.

■ **Start-up vendors.** Startups such as DataTorrent offer a streaming analytics platform specifically designed to run inside Hadoop. Continuuity Codename jetStream is working with AT&T to develop a streaming analytics platform that also runs inside Hadoop.

■ **Streaming in the cloud with Amazon and maybe Google.** AWS launched Amazon Kinesis in late 2013 making it a young platform. The platform is designed exclusively for application developers so it lacks many of the higher level tools that the vendors in this evaluation have had years to develop and refine. Rather than being a high-level tool, Amazon Kinesis provides

developers with foundational APIs and infrastructure that enable them to build just about any streaming application. It's a roll-your-own platform that higher level streaming analytics platform can be built on top of. Amazon Kinesis is an important addition to the AWS family of services that we expect AWS developers will embrace with gusto. Google just announced Google Cloud Dataflow, a data processing service that includes streaming capabilities.

BIG DATA STREAMING ANALYTICS PLATFORMS EVALUATION OVERVIEW

To assess the state of the big data streaming analytics market and see how the vendors and their platforms stack up against each other, Forrester evaluated the strengths and weaknesses of the top commercial big data streaming analytics platform vendors. Forrester expects the market for big data streaming analytics platforms to unfold at a measured pace as the buying firms get a handle on exactly how to use these platforms and integrate them into their existing analytics and application architecture.

Evaluation Criteria Focus On Vendors' Current Offering, Strategy, And Market Presence

After examining past research, enterprise need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We evaluated vendors against 50 criteria, which we grouped into three high-level buckets:

- **Current offering.** We evaluated each platform's architecture (including workload optimization features); data and processing features; setup, management, and monitoring tools; and compatibility and community features.

- **Strategy.** We reviewed each vendor's strategy to assess how they plan to meet current customer demands and fill gaps for enterprise deployments. Core evaluation criteria included acquisition options; ability to execute on their strategy; product road map; and customer support capabilities.

- **Market presence.** To determine each vendor's market presence, we evaluated their company financials; global presence and installed base; as well as strategic partnerships with other software vendors, professional services firms, and software-as-a-service (SaaS)/cloud/hosting providers.

Evaluated Vendors Have Streaming Analytics Operators

Forrester included 7 vendors in the assessment: IBM, Informatica, SAP, Software AG, SQLstream, Tibco Software, and Vitria. All of these vendors have: (see Figure 1):

- **Streaming analytics operators.** All the platforms we evaluated offer higher-order streaming operators that greatly simplify the design and development of streaming applications. Many vendor products that claim streaming analytics functionality are actually frameworks to ingest

and route data, but they do not have streaming operators or you have to develop them yourself. For example, Amazon Kinesis is a streaming platform, but provides no higher order streaming operators — developers must code them themselves.

- **Across-domain streaming analytics.** The products included in this evaluation are general-purpose streaming analytics platforms that don't focus technologically or functionally on particular functional or horizontal applications — such as enterprise resource planning (ERP); customer analytics; customer relationship management (CRM); business intelligence (BI); data warehousing (DW); extract, transform, load (ETL); or the middleware stack. To be included in our evaluation, the vendors needed to offer a self-sufficient, general-purpose streaming analytics platform that can stand alone, meaning that it does not need to be embedded in other applications.

- **Customer references.** All of the participating streaming analytics vendors provided contact information for at least two customers that agreed to speak to Forrester about their use of the streaming analytics platform.

- **Sparked client inquiries and/or has a platform that put them on Forrester's radar.** Forrester clients often discuss these vendors and platforms through inquiries; alternatively, the vendor may, in Forrester's judgment, warrant inclusion in this evaluation because of technology trends or their market presence.

Figure 1 Evaluated Vendors: Product Information And Selection Criteria

Vendor	Product evaluated	Product version evaluated	Version release date
IBM	IBM InfoSphere Streams	3.2	October 2013
Informatica	Informatica Platform for streaming analytics	9.6	January 2014
SAP	SAP Event Stream Processor	SP04	December 2013
Software AG	IBO: Apama and Terracotta	5.1	December 2013
SQLstream	Blaze	4	March 2014
Tibco Software	Tibco StreamBase	7.3	March 2014
Vitria	Vitria Operational Intelligence	4.2	December 2013

| Vendor selection criteria |
|---|
| The platform must be a cross-domain streaming analytics platform. |
| The vendor must have at least two public customer references for the platform. |
| The platform has generated interest from Forrester's client base and analyst community. |

Source: Forrester Research, Inc.

MATURE PLATFORMS LEAD THE PACK, BUT THE HEAT IS ON

Forrester's evaluation of general-purpose big data streaming analytics platforms reveals five Leaders, one Strong Performer, and one Contender (see Figure 2).

- **Leaders.** The Leaders in this big data streaming analytics platforms evaluation are IBM, Informatica, SAP, Software AG, and Tibco Software. The Leaders have high scores in all the key evaluation areas: architecture, development tools, and stream processing. These are mature platforms. The vendors have the resources and vision to take advantage of the increased adoption of streaming analytics by firms.

- **Strong Performers.** With a stronger strategy score, Vitria would have been a Leader. Unlike most of the Leaders, the genesis of the streaming analytics platforms from Vitria is rooted in their integration platform. Vitria's platform is based on a broader set of tools for business process management with embedded streaming analytics capabilities to provide what it calls "operational intelligence" application.

- **Contenders.** SQLstream would have been a Strong Performer if it had a higher strategy score. SQLstream has a valuable, differentiated approach to streaming — using SQL. But, its limited resources (it's the smallest company evaluated) hamper its ability to scale its sales, marketing, and strategic partnerships.

This evaluation of the streaming analytics platforms market is intended to be a starting point only. We encourage clients to view detailed product evaluations and adapt criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool. Clients can also schedule an inquiry with the analysts to discuss specific needs.

Figure 2 Forrester Wave™: Big Data Streaming Analytics Platforms, Q3 '14
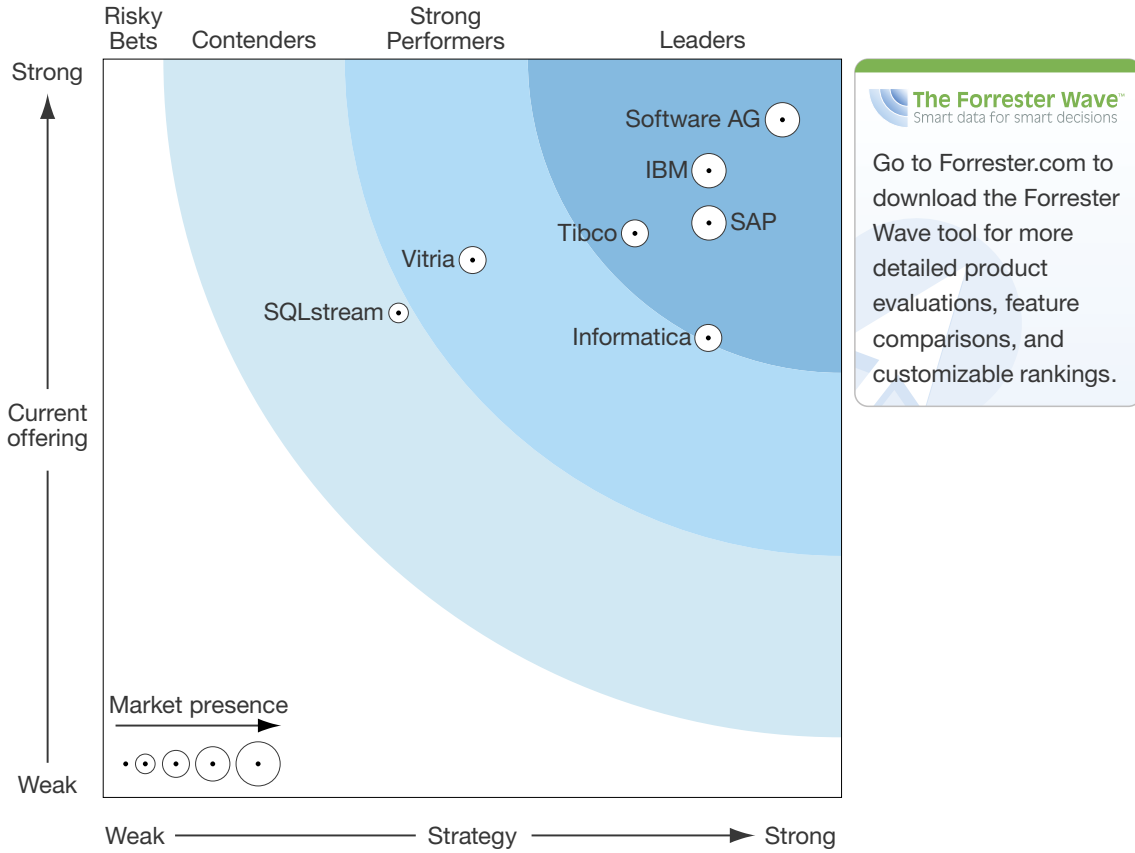
Figure 2 Forrester Wave™: Big Data Streaming Analytics Platforms, Q3 '14 (Cont.)

	Forrester's Weighting	IBM	Informatica	SAP	Software AG	SQLstream	Tibco	Vitria
CURRENT OFFERING	50%	4.24	3.11	3.89	4.59	3.28	3.82	3.64
Architecture	20%	4.20	3.09	4.15	4.46	3.14	3.29	4.06
Data sources	20%	5.00	3.00	4.00	5.00	3.00	3.00	1.00
Development tools	20%	4.60	3.80	4.40	4.60	4.20	4.60	4.60
Stream processing	20%	4.80	3.60	4.80	5.00	4.10	4.60	4.30
Business applications and platform integration	20%	2.60	2.05	2.10	3.90	1.95	3.60	4.25
STRATEGY	50%	4.10	4.10	4.10	4.60	2.00	3.60	2.50
Licensing and pricing	20%	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Ability to execute	25%	5.00	5.00	5.00	5.00	1.00	5.00	3.00
Product road map	25%	3.00	3.00	3.00	5.00	1.00	1.00	1.00
Implementation support	30%	5.00	5.00	5.00	5.00	3.00	5.00	3.00
MARKET PRESENCE	0%	3.70	2.60	3.50	3.70	1.08	2.70	2.43
Company financials	30%	4.00	3.00	4.00	4.00	1.25	3.00	2.75
Installed base, industries, and market awareness	50%	3.80	2.20	3.40	3.80	1.40	3.00	2.20
Partnerships	20%	3.00	3.00	3.00	3.00	0.00	1.50	2.50

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

Source: Forrester Research, Inc.

VENDOR PROFILES

Leaders

- **IBM InfoSphere Streams is industrial strength.** IBM scored highest on performance and scalability optimization, and also has comprehensive stream processing operators and development tools that can satisfy the gnarliest of use-cases. This is not surprising because InfoSphere Streams emerged from IBM Research in 2009 and continues to benefit from IBM's significant investments in research. InfoSphere Streams include customers in healthcare, financial services, telecommunications, government, energy and utilities, financial services, manufacturing, and transportation.

- **Informatica infuses its first-class business rules engine with streaming capabilities.** Informatica loves data. It eats it for breakfast, lunch, and dinner through its well-known integration technologies. Less known is Informatica RulePoint, a business rules platform. In 2011,

Informatica decided to refactor RulePoint and include streaming capabilities. It is one of two vendors evaluated in this Forrester Wave that enables developers to gracefully author streaming applications using both business rules and streaming operator constructs built-into the platform.

- **SAP aims to make Event Stream Processor a first-class service in Hana.** SAP's Event Stream Processor (ESP) is a standalone, general purpose streaming analytics platform that has a long, rich history as one of the original complex event processing engines.[3] It has a broad base of customers in financial services, telecommunications, manufacturing, energy, retail, transportation and logistics, and public sector. SAP's most significant road map item for ESP is to integrate it as a service that can run within its Hana in-memory database. This will provide streaming analytics capabilities to Hana's strong analytics capabilities.

- **Software AG's vision puts real-time customer experience first.** The beating heart of Software AG's streaming platform is Apama, an asset they acquired from Progress Software in 2013. It is not surprising that Software AG has the highest "current offering" score. Apama has a long and strong history as a complex event processing platform used for algorithmic trading applications and market monitoring dating back to its origins in 2001. But, it is also used by telecommunication firms and credit card companies to provide real-time, location-based, and customer-preference based offers to consumers. Other industries include retail banking, telecommunications, retail, gaming, logistics and supply chain, government, energy and utilities, manufacturing.

- **Tibco StreamBase advances the art of real-time dashboards.** Tibco Software has been a force in the high-frequency trading market for more than fifteen years, and its acquisition of StreamBase last year has given them the tools they need to meet the needs the wider streaming analytics market. StreamBase appeals to both professional and business developers with an intuitive interface that is a combination of graphical and SQL-like queries. The LiveView Data Mart allows non-developers to build queries based on incoming streams, which customers have leveraged into applications that become essentially data services, served to internal or external customers, to be easily built out of the box.

Strong Performers

- **Vitria supplies companies with critical analytics, visualizations, and actions in one package.** One of the smaller vendors assessed in this Forrester Wave evaluation, Vitria nonetheless has a proven track record of helping companies produce quantifiable revenue. With their all-in-one Operational Intelligence product, Vitria wraps three critical components of streaming analytics together in one native product. In industries from energy providers to food service chains, Vitria implements a platform that allows companies to quickly stand up streams, begin running analytics, and cueing appropriate responses. Having a unified platform from the bottom-up offers some unique options for how rules are created, such as creating a geospatial watch area using its workbench dashboards.

Contenders

- **SQLstream makes streaming accessible to a standing army of SQL experts.** One of the newer entrants to the market, SQLstream began providing a unique platform for streaming analytics in 2009. Fully compliant with the ANSI and ISO's SQL standards, the platform's programming model and scripting means that the learning curve will be shallow for many developers. The platform's declarative nature allows streams to be easily parallelized to ensure delivery of events and activation of actions, making SQLstream Blaze an appealing option for customers where lives or expensive assets are on the line.

SUPPLEMENTAL MATERIAL

Online Resource

The online version of Figure 2 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 data sources to assess the strengths and weaknesses of each platform:

- **Product demos.** Vendors spent 1 hour with a team of analysts who performed a hands-on evaluation of the product using a guided demo methodology. We evaluated each product using the same methodology, thus creating a level playing field by evaluating every product on the same criteria.

- **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.

- **Customer reference calls.** To validate product and vendor qualifications, Forrester also conducted reference calls with at least two 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.

Methodology

Forrester's Business Technographics Global Data And Analytics Survey, 2014, was fielded to 1,658 business and technology decision-makers located in Australia, Brazil, Canada, China, France, Germany, India, New Zealand, the UK, and the US from SMB and enterprise companies with 100 or more employees. This survey is part of Forrester's Business Technographics and was fielded from January 2014 to March 2014. ResearchNow fielded this survey on behalf of Forrester. Survey respondent incentives include points redeemable for gift certificates. We have provided exact sample sizes in this report on a question-by-question basis.

Each calendar year, Forrester's Business Technographics fields business-to-business technology studies in 10 countries spanning North America, Latin America, Europe, and Asia Pacific. For quality control, we carefully screen respondents according to job title and function. Forrester's Business Technographics ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of business and technology products and services. Additionally, we set quotas for company size (number of employees) and industry as a means of controlling the data distribution and establishing alignment with IT spend calculated by Forrester analysts. Business Technographics uses only superior data sources and advanced data-cleaning techniques to ensure the highest data quality.

Forrester's Forrsights Budgets And Priorities Survey, Q4 2013, was fielded to 3,382 IT executives and technology decision-makers located in Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Japan, Malaysia, Mexico, the Philippines, New Zealand, Russia, Singapore, the UK, and the US from small and medium-size business (SMB) and enterprise companies with 100 or more employees. This survey is part of Forrester's Forrsights for Business Technology and was fielded from June 2013 to September 2013. ResearchNow fielded this survey online on behalf of Forrester. Survey respondent incentives include points redeemable for gift certificates. We have provided exact sample sizes in this report on a question-by-question basis.

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

We have illustrated only a portion of survey results in this document. To inquire about receiving full data results for an additional fee, please contact Forrsights@forrester.com or your Forrester account manager.

ENDNOTES

[1] Streaming analytics is broader than CEP or BAM. See the upcoming, "Lost In Data Translation? Forrester's Data Taxonomy To The Rescue" report.

[2] Base: 746 NA and EU tech decision-makers. Source: Forrester's Business Technographics Global Data and Analytics Survey, 2014.

Base: 634 NA and EU technology decision-makers. The question asked "What is your firm's/business unit's current use of the following technologies?" Source: Forrester's Forrsights BI/Big Data Survey, Q3 2012.

[3] Source: Holger Kisker, "SAP Acquires Sybase — What's The Strategic Intent Behind The Deal?," Holger Kisker's Blog, May 13, 2010 (http://blogs.forrester.com/holger_kisker/10-05-13-sap_acquires_ sybase_%E2%80%93_what%E2%80%99s_strategic_intent_behind_deal).

About Forrester

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

FOR MORE INFORMATION

To find out how Forrester Research can help you be successful every day, please contact the office nearest you, or visit us at www.forrester.com. For a complete list of worldwide locations, visit www.forrester.com/about.

CLIENT SUPPORT

For information on hard-copy or electronic reprints, please contact Client Support at +1 866.367.7378, +1 617.613.5730, or clientsupport@forrester.com. We offer quantity discounts and special pricing for academic and nonprofit institutions.

Forrester Focuses On
Application Development & Delivery Professionals

Responsible for leading the development and delivery of applications that support your company's business strategies, you also choose technology and architecture while managing people, skills, practices, and organization to maximize value. Forrester's subject-matter expertise and deep understanding of your role will help you create forward-thinking strategies; weigh opportunity against risk; justify decisions; and optimize your individual, team, and corporate performance.

« **ANDREA DAVIES,** client persona representing Application Development & Delivery Professionals