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# The Forrester Wave™: Complex Event Processing (CEP) Platforms, Q3 2009

by Mike Gualtieri and John R. Rymer  
for Application Development & Program Management Professionals

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The Fledgling CEP Platform Market Is Vibrant, Competitive, And Dynamic

by **Mike Gualtieri** and **John R. Rymer**

with Randy Heffner and Wallis Yu

## EXECUTIVE SUMMARY

Forrester evaluated nine complex event processing (CEP) platforms using 114 criteria and found Progress Software and Aleri to be standout Leaders because of their top scores in the event processing features and strategy categories. Solid features and strategy also helped IBM, StreamBase Systems, and TIBCO Software find their way into the Leaders' circle. Coral8, Oracle, and UC4 are Strong Performers: Comparing scores using Forrester's default weightings, these vendors' current offering scores are strong enough for them to become Leaders, but their overall strategies are a step behind. Oracle grazed the Leaders' circle. EsperTech, the only open source option, is also a Strong Performer.

## TABLE OF CONTENTS

- 2 **"How Can We React To What Is Happening In The Business — Now?"**
- 4 **CEP Is In Transition From A Niche To A Mainstream Market**
- 5 **Complex Event Processing Platforms Evaluation Overview**
- 7 **The Forrester CEP Platform Wave Reveals Leaders And Strong Performers**
- 10 **Vendor Profiles**
- 12 **Supplemental Material**

## NOTES & RESOURCES

Forrester conducted lab-based product and strategy research during February and March 2009 and interviewed nine vendors: Aleri, Coral8 (the two companies subsequently merged), EsperTech, IBM, Oracle, Progress Software, StreamBase Systems, TIBCO Software, and UC4 Software (formerly SENACTIVE). In addition, Forrester interviewed two reference customers for each vendor's product (a total of 18 user companies).

### Related Research Documents

["European Airline Aims To Delight Passengers Through RFID Bag Tracking"](#)

July 15, 2009

["Must You Choose Between Business Rules And Complex Event Processing Platforms?"](#)

January 21, 2009

["CEP Adoption Is Broader, Deeper, And More Business-Driven Than IT May Expect"](#)

January 31, 2008

### “HOW CAN WE REACT TO WHAT IS HAPPENING IN THE BUSINESS — NOW?”

This is the big question that complex event processing (CEP) platforms seek to help organizations answer. Sometimes the answer is as simple as ordering more products when the inventory dips below safety stock, but often it involves recognizing patterns of business events that foretell critical business situations that require immediate action. To react to what is happening in the business now, organizations need to consider questions such as:

- What combinations of products are our customers buying right now, and how should we spend our advertising dollars?
- Do securities pricing trends indicate a buying or a selling opportunity right now?
- Are our rental vehicles in the right locations right now, and which ones should we move?
- How much money has our high roller lost as of this moment, and what should we do to keep him playing?
- Have all of our external partners completed their tasks in our business process, and can we automatically prompt those who have not?
- Which sequence of banking customer activities happening now should we investigate for fraud?

To answer these questions and ones like them, CEP platforms analyze streams of data as they flow from live sources such as transaction flows, click streams, market data feeds, and myriad other sources of data swirling around inside a business environment. The platforms then prompt either downstream applications or people to react to the information by resetting processing priorities, changing online sales strategies, buying and selling stocks, or performing some other action. Analyzing historical data stored in databases cannot provide answers to these questions; they require the business to act on urgent events as they happen. CEP platforms connect to live events from wherever they originate, be it a message queue, a click stream, a market data stream, or even a Customer Information Control System (CICS) transaction. Forrester defines a CEP platform as:

*Software infrastructure that can detect patterns of events (and expected events that didn't occur) by filtering, correlating, contextualizing, and analyzing data captured from disparate live data sources to respond as defined using the platform's development tools.*

CEP is one of a collection of product categories that have event processing features; others include business activity monitoring (BAM), business process management (BPM), systems and operations management, active databases, operational business intelligence (BI), some business rules applications, and some messaging middleware.<sup>1</sup> Each of these technologies seeks to recognize crucial events in the business, make those events known, and initiate either automated or manual responses. But each is also more limited than CEP platforms in handling live data, diverse data, pattern detection, diverse business processes, and volumes of data.

## CEP Shines For Applications That Require Immediate Responses To Rapid Changes

CEP is best for applications that require near-real-time responses to dynamic, multifaceted, rapidly changing business situations such as algorithmic trading and transaction surveillance. CEP can also be used to manage and interpret events in a wide variety of business processes. For example, one insurance company uses CEP to monitor the actions of external business partners so that it can react if these actions delay the progress of deals.

CEP shines when used for:

- **Detect and inform applications.** CEP applications can act as intelligent information filters in real-time applications such as fraud detection applications, business activity monitoring (BAM) applications, and other applications that must detect relationships within continuous streams of data. For example, a large casino may have hundreds of cameras focused on the gaming floor but only seven surveillance professionals. A CEP application can use a plethora of disparate events such as player history, dealer history, and table outflows to help a surveillance application identify the most critical subset of camera feeds to display to the surveillance professionals (i.e., the feeds most likely to identify either a threat or fraud).
- **Detect and act applications.** CEP applications can recognize patterns of events and respond to those patterns by kicking off a process in an external application or pushing a critical event to a downstream system. CEP applications can also detect the absence of an expected pattern within a period of time. For example, an equity order-processing application might need to detect a funding-confirmation event from a cash management application followed by a market-maker confirmation event within 3 seconds before it can execute an order. If either critical event does not occur, the application cancels the order.
- **Event processing architectures.** Organizations can also use CEP to coordinate business processes that involve a jumble of heterogeneous information systems. Business processes are often triggered by one simple event or sometimes by a complex pattern of events, and a CEP application can easily detect these events and patterns. The CEP application can then trigger the appropriate actions in other applications, processes controlled by a business process management (BPM) system, or business rules executed by a business rules platform.<sup>2</sup> For example, an insurance claim event might trigger a process flow in an adjuster dispatch application and an external request to the local police department for an accident report. At the same time, the CEP application's analysis of the claim might cause it to initiate a process flow in a fraud application. The CEP application could then "wait" for completion of the adjuster report event and a fraud clearance event before triggering a claim adjudication process in yet another application.

While a CEP platform can be used to develop a standalone event-driven application, CEP platforms are also often part of a larger business process.

## CEP IS IN TRANSITION FROM A NICHE TO A MAINSTREAM MARKET

As a category, CEP has for most of its history been a niche market. However, during the past year, it has begun to enter the enterprise computing mainstream. The signal for this shift was IBM's decision last year to enter the CEP market through an acquisition.<sup>3</sup> With the second-largest enterprise software vendor promoting CEP, the technology's number of potential customers is likely to rise. Forrester believes that Microsoft and SAP will not be far behind in introducing CEP to their product portfolios; Oracle is already in the CEP market.

The CEP market landscape contains large vendors as well as specialists.

- **TIBCO Software has built the largest enterprise CEP position.** TIBCO is very well known in CEP, having been early to market and due in part to the vision of event-driven businesses founder and CEO Vivek Ranadive described in his business bestseller *The Power of Now*.<sup>4</sup> TIBCO has about 160 customers for its TIBCO BusinessEvents, many of whom use the product to extend their existing TIBCO integration and BPM installations. In fact, TIBCO's key to future growth could be its expertise in applying CEP to enterprise processes as opposed to specialized applications like financial trading.
- **Progress Software (Apama), StreamBase Systems, Coral8, and Aleri are founders.** Today's CEP products proceed from commercial implementations of seminal academic research conducted at Cambridge University from the early 1990s onwards, followed by those at Stanford during the late 1990s and, more recently, joint work at Brandeis, Brown, and MIT during the early 2000s. Aleri, Apama (now owned by Progress Software), Coral8, and StreamBase Systems were among the first companies to commercialize this research. Progress acquired Apama in 2005, and the company now has an extensive product set and a healthy 115 CEP customers. StreamBase Systems focuses its energies almost entirely on the big market for algorithmic trading and other financial-industry CEP applications. The company now sells not only its CEP platform but also packaged solutions. Aleri also cut its teeth in demanding financial trading markets, and the company merged with Coral8 during early 2009. The company plans a combined platform and tool set with an emphasis on capital markets.
- **IBM and Oracle seek to drive CEP adoption using different CEP approaches.** IBM acquired CEP pioneer AptSoft during 2008, renamed it WebSphere Business Events, and now promotes the product as one of the keys to its Smarter Planet strategy. IBM hopes to grow quickly by offering tools designed for business analysts rather than deep technologists and programmers. Oracle launched its EDA Suite in 2006 and added BEA's WebLogic Events Server to it in 2008. Now called Oracle Complex Event Processing (Oracle CEP), the former BEA product has a strong affinity with enterprise Java development now, and Oracle plans to expand its visual tool set in future releases.
- **UC4 bought SENACTIVE and plans to take it into operational management.** The only vendor offering a .NET option among the major CEP platforms, SENACTIVE, became part of UC4, a specialist in operational management software, during mid-2009. SENACTIVE

is based in Austria and had built an impressive position in online gaming and data center operations management but had only a small presence in North America. UC4 plans to employ the technology to expand its position in data center and operational management, but UC4's commitment to SENACTIVE as a general CEP development platform is not as clear. It renamed SENACTIVE's InTime platform UC4 Decision.<sup>5</sup>

- **EsperTech is the leading open source CEP provider.** EsperTech's founder and CEO, Thomas Bernhardt, became interested in CEP while working on trading systems and founded an open source project to build a CEP engine. The Esper CEP Engine has been available for three years and is available under a dual-license model. EsperTech focuses primarily on selling to independent software vendors but also has some corporate customers.

Oracle inherited a license to Esper when it acquired BEA, which had incorporated Esper into its WebLogic Event Server. In its 11g release of Oracle CEP, Oracle implemented its own Continuous Query Language (CQL).

- **Active Endpoints, Agent Logic, StarView Technology, and Sybase offer specialized options.** After beginning our research, Forrester discovered Agent Logic and StarView, two specialists in applying events to operational management.<sup>6</sup> StarView's focus is complex real-time manufacturing scenarios such as management of semiconductor labs seeking to better deal with the wide range of factors that can challenge process efficiency. Agent Logic's RulePoint is primarily aimed at "operational business intelligence (BI)." Active Endpoints provides a development environment that integrates CEP alongside service development and business process management. Sybase CEP incorporated a version of Coral8's engine for its capital-markets applications.

## COMPLEX EVENT PROCESSING PLATFORMS EVALUATION OVERVIEW

Forrester included nine vendors in our assessment of the CEP space: Aleri, Coral8, EsperTech, IBM, Oracle, Progress Software, StreamBase Systems, TIBCO Software, and UC4 Software. Aleri and Coral8 merged after Forrester began the research process. The combined company will continue selling the Aleri and Coral8 platforms for some time before providing a single, consolidated platform, and so Forrester evaluated both. UC4 acquired CEP vendor SENACTIVE late in our research process.

All evaluated vendors offer CEP platforms that (see Figure 1):

- **Employ CEP as the primary programming model for custom application development.** Forrester included CEP platforms designed to develop a wide range of custom applications and excluded from the evaluation BAM, systems management, and similar products that process events in a single context.
- **Support the full application life-cycle.** The CEP platforms that we evaluated incorporate application development tools, runtime environments, and operational management facilities.

- **Are being used by customers.** Evaluated CEP platform vendors had to provide at least two customer references Forrester could interview to verify that the product is implemented in a production environment for an ongoing business concern.
- **Are sold and supported as independent CEP platforms.** Forrester excluded products that embed CEP platforms in application solutions or other development platforms.
- **Are available.** To be included in this evaluation, the product and version had to be available for customers by January 15, 2009.

**Figure 1** Evaluated Vendors: Product Information And Selection Criteria

Vendor	Product evaluated	Product version evaluated	Version release date
Aleri	Aleri Streaming Platform Live OLAP	3.1 5.1	January 2009 December 2008
Coral8	Coral8 Engine Coral8 Studio	5.6.0	December 2008
EsperTech	Esper Enterprise Edition Esper HA	2.3.0	November 2008
IBM	WebSphere Business Events	6.2.0	December 2008
Oracle	Oracle Complex Event Processing with aspects of Oracle BAM and Oracle Coherence (These modules are sold within the Oracle EDA Suite.)	10gR3	October 2008
Progress Software	Progress Apama	4.0.1	November 2008
StreamBase Systems	StreamBase Event Processing Platform	6.2	November 2008
TIBCO Software	TIBCO BusinessEvents	3.0	September 2008
UC4 Software	UC4 Decision (formerly SENACTIVE InTime) UC4 Insight (formerly SENACTIVE EventAnalyzer)	3.2	December 2008

**Vendor selection criteria**

The product must employ CEP as the primary programming model for custom application development.

The product must support the full application life cycle.

The vendor must provide two customer references.

The product must be sold and supported as an independent CEP platform.

The product and version must be generally available by January 15, 2009.

Source: Forrester Research, Inc.

## Our Evaluation Criteria Provide A Comprehensive View Of Each Platform

After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria for CEP platforms. We evaluated vendors against 114 criteria, which we grouped into three high-level buckets:

- **Current offering.** The current offering criteria measure the features provided by the vendor within its CEP platform, addressing runtime architecture, platform administration, event processing features, development tools, business end-user tools, and standards and interoperability. Current offering scores are depicted on the vertical axis of Forrester Wave™ diagrams. The Forrester Wave's current offering scores do not measure either product performance or stability and should not be used as a proxy for benchmark tests.
- **Strategy.** The strategy criteria assess the vendor's product road map and other key strategy elements, including the vendor's product and corporate strategies and the costs associated with the vendor's offering. Forrester's assessments of product and corporate strategy are subjective; the other scores are based on data. Strategy scores are depicted on the horizontal axis of Forrester Wave diagrams. In this section, Forrester placed great emphasis on vendors' willingness to publish their list prices, as clients want clear and predictable product costs.
- **Market presence.** The market presence criteria include the size of the vendor's employee and customer bases as well as its sales force and other channels. Market presence scores determine the size of the white circle surrounding each vendor's dot on the Forrester Wave diagram. The Forrester Wave's market presence scores do not measure market share and should not be used as a proxy for such estimates.

## THE FORRESTER CEP PLATFORM WAVE REVEALS LEADERS AND STRONG PERFORMERS

Forrester's evaluation of CEP platforms reveals a vibrant and competitive market consisting of five Leaders and four Strong Performers. Although event processing features and high throughput are still extremely important to CEP platform customers, the number of vendors that have built advanced tools for both developers and business end users is a sign that the market is maturing. Many of the vendors are broadening their sales and marketing efforts beyond capital market applications, the first big market for CEP platforms. The evaluation uncovered a market in which (see Figure 2):

- **Leaders Aleri and Progress stand out with high scores in event processing features, strategy.** Progress and Aleri exhibit across-the-board strength in runtime architecture, platform administration, CEP features, and tools for developers. Both platforms demonstrate their market maturity by earning sterling strategy scores for their planned enhancements, licensing options, and pricing transparency.



Progress Apama earned high marks for its event processing features, its development tools, and its business end-user tools, propelling it into its position as a Leader. Aleri's top score in CEP features and its high overall scores place it squarely in the Leader category as well.

- **IBM, StreamBase Systems, and TIBCO are also Leaders.** IBM, StreamBase Systems, and TIBCO BusinessEvents are Leaders because they have strong current offering scores and strategy scores.

IBM WebSphere Business Events' top score for business end-user tools (it tied with Progress Apama and UC4 SENACTIVE in this category) reflected the product's emphasis on these tools.

StreamBase earned the second-highest score for development tools and excelled in event processing features.

TIBCO BusinessEvents had the highest scores for strategy, runtime architecture, and platform administration. It also fared well in the business end-user tools category.

- **Coral8, Oracle, and UC4 are Strong Performers.** Coral8, Oracle CEP, and UC4 offer broad and solid runtime architectures, platform administration, event processing features, and tools for developers. They would have been Leaders if they had earned stronger strategy scores.

Coral8 earned strong scores in runtime architecture and event processing features. Coral8's strategy score was hurt by the uncertainty of the product's future as a separate offering from Aleri.

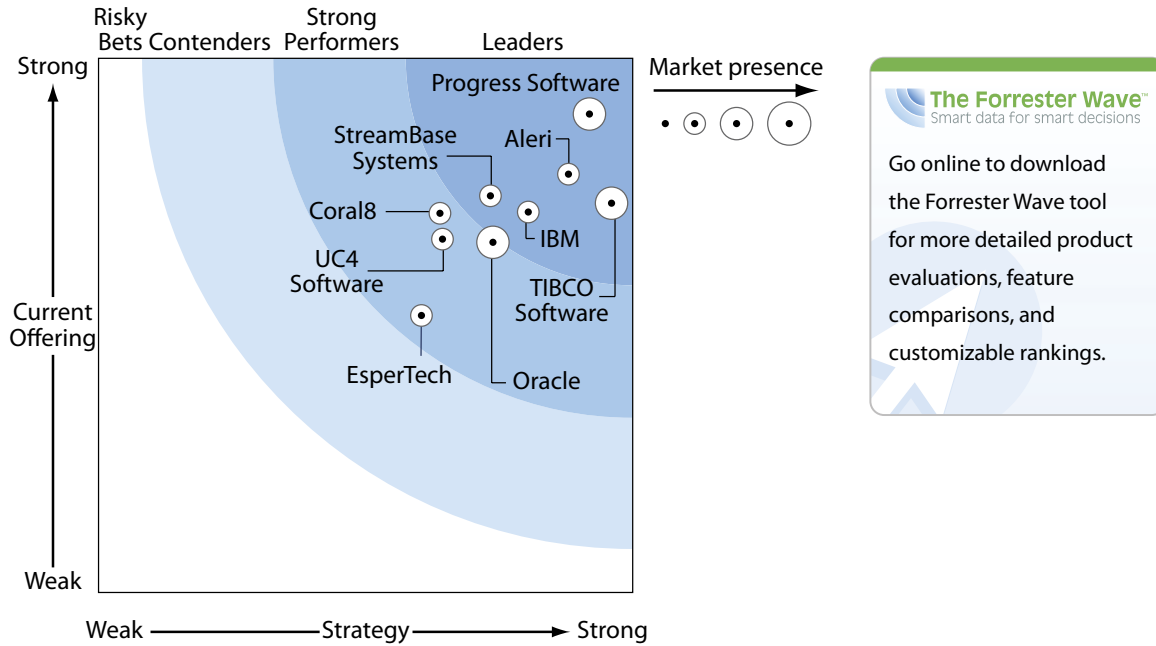
Oracle CEP has plenty of running room to improve its current offering in the future by improving its tools for developers and business end users.

UC4 (formerly SENACTIVE), the only .NET product of the lot, earned a top score for business end-user tools (it tied with IBM Business Events and Progress Apama in this category).

- **EsperTech is a Strong Performer — which is remarkable given its small size.** EsperTech, the only open source product in the evaluation, earned strong scores for runtime architecture, platform administration, and event processing features. Like many open source projects, EsperTech lacks strong tools for business end users and administrators, which put it at a disadvantage against all other platforms in the evaluation. EsperTech's highly embeddable Java architecture, strong CEP feature set, and open source status make it a top candidate to be embedded in other vendor tools or applications.

This evaluation of the CEP platform market is intended to 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 2** Forrester Wave™: Complex Event Processing (CEP) Platforms, Q3 '09



Source: Forrester Research, Inc.

**Figure 2** Forrester Wave™: Complex Event Processing (CEP) Platforms, Q3 '09 (Cont.)

	Forrester's Weighting	Aleri	Coral8	EsperTech	IBM	Oracle	Progress Software	StreamBase Systems	TIBCO Software	UC4 Software
<b>CURRENT OFFERING</b>	50%	3.90	3.53	2.57	3.55	3.27	4.45	3.69	3.62	3.29
Runtime architecture	10%	4.24	4.24	3.23	3.97	3.51	4.19	3.51	4.78	3.60
Platform administration	10%	3.50	3.63	3.97	3.34	3.54	3.87	2.77	4.20	3.53
Event processing features	40%	4.83	4.58	3.53	3.94	3.69	4.75	4.82	3.35	2.91
Development tools	20%	3.80	2.07	0.94	2.44	2.50	4.68	4.16	2.81	3.27
Business end-user tools	15%	1.90	2.30	0.00	4.40	2.30	4.40	1.00	3.80	4.40
Standards and interoperability	5%	3.00	3.00	5.00	2.00	5.00	3.00	3.00	5.00	2.00
<b>STRATEGY</b>	50%	4.40	3.20	3.02	4.03	3.70	4.60	3.67	4.80	3.22
Product strategy	50%	5.00	2.60	2.24	3.86	3.80	5.00	4.14	5.00	3.44
Corporate strategy	50%	3.80	3.80	3.80	4.20	3.60	4.20	3.20	4.60	3.00
Cost	0%	1.66	2.32	3.30	3.00	1.00	3.00	2.34	1.35	3.00
<b>MARKET PRESENCE</b>	0%	2.28	2.69	2.01	2.30	3.21	3.56	2.62	3.41	2.99
Installed base	40%	1.70	3.10	2.40	2.30	3.20	3.40	2.30	3.40	2.90
Revenue	10%	0.00	0.00	0.00	5.00	5.00	5.00	0.00	5.00	5.00
Revenue growth	10%	5.00	0.00	5.00	0.00	1.00	0.00	3.00	1.00	1.00
Systems integrators	5%	3.00	5.00	0.00	3.00	3.00	5.00	5.00	3.00	5.00
Services	10%	3.00	2.50	2.00	3.00	4.00	4.00	4.00	4.00	4.00
Employees	15%	3.00	3.00	0.30	2.50	4.00	5.00	2.00	5.00	2.00
Technology partners	10%	2.00	5.00	3.00	0.50	1.75	3.00	4.50	1.50	2.75

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

Source: Forrester Research, Inc.

## VENDOR PROFILES

### Leaders: Strong Event Processing Features And Strategies

- **Progress Software (Apama division).** With an installed base of 115 customers and strong product features, Progress Software's Apama division is a strong CEP option. Progress Software's backing gives Apama the resources to pursue expansion plans. Planned enhancements for the Apama platform include improved Java-based development as well as additional graphical modeling tools for both developers and business users, improved debugging, expanded dashboard features, and improved vertical industry support.
- **Aleri.** The Aleri platform is a strong product backed by a strong strategy. Forrester estimates that fewer than 40 companies use the product — but the Aleri platform's future lies in a coming combination with Coral8 due in 2010.

Aleri will combine Coral8's strong development features with its own offering in a new consolidated platform due in 2010. The combination promises to provide expanded application visualization tools, additional tools for business users, and additional solution templates and frameworks.

- **StreamBase Systems.** With an installed base of 75 customers, a strong focus on capital market CEP, and strong product features, StreamBase Systems offers a strong platform. StreamBase's chosen future lies in a larger portfolio of financial services applications that rely on its underlying CEP platform.
- **TIBCO Software.** TIBCO Software has the second-largest roster of CEP customers (160 customers) and strong product features. TIBCO has succeeded with CEP by selling it as an add-on to its enterprise integration products. TIBCO's road map for BusinessEvents includes a new Eclipse-based development environment, a new data grid, expanded dashboard and analysis tools, additional business rules modeling and management features, new tools for business analysts, and expanded monitoring and management tools.
- **IBM.** IBM reports having about 45 customers for WebSphere Business Events (WBE), but it just released a new version that may help it start adding customers at a faster pace. IBM plans to continue driving its leadership in CEP tools for business users in future releases, and it also plans to add a Web-based tool for developers; add a simulation tool; and improve integration of WBE and WebSphere Business Monitor, ILOG JRules, and WebSphere Process Server. On May 15, 2009, IBM announced the availability of an event stream processing platform called InfoSphere Streams. It is unclear how WBE and System S may coexist or merge in the future.

### Strong Performers: Three Leaders If Not For Strategy Woes, One Open Source Option

- **Oracle.** Oracle does not reveal its customer counts, but Forrester believes the company has sold Oracle EDA Suite that contains Oracle CEP to approximately 200 to 300 customers. Forrester also believes that a smaller number of customers actually use Oracle CEP. Oracle's road map for its CEP engine includes a rebuild of its Visualizer tool, additional feature for geospatial processing, and deeper integration with Oracle Coherence, BPEL Process Manager, Enterprise Manager, and Oracle Database.
- **Coral8.** About 60 customers use Aleri's Coral8 platform. Coral8's road map includes convergence with the Aleri engine and tools, addition of real-time OLAP features and/or tools, easier clustering, and support for "grid computing" environments. It is not clear how Aleri will position Coral8 to new customers or how customers will choose the Aleri platform versus the Coral8 platform once the platforms are merged.
- **UC4.** Before its acquisition by UC4 Software during June 2009, SENACTIVE had signed up about 40 customers. Though this is not a big market presence, UC4 Decision's comprehensive features make the platform a Strong Performer. SENACTIVE's road map featured a new analysis

server and an expanded portfolio of vertical industry solutions, but UC4 is likely to modify this plan during the coming months.

- **EsperTech.** EsperTech's installed base is difficult to know because its engine is available as a free download. The company reports about 500 downloads of the most current version but does not know how many of these downloads made it into production. EsperTech plans to expand its tooling for developers by including new visual development tools in its next release. EsperTech is the only open source option in this evaluation.

## 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 three data sources to assess the strengths and weaknesses of each solution:

- **Hands-on lab evaluations.** Vendors spent 4 to 6 hours with a team of analysts, demonstrating key features using a scenario-based testing methodology. We created a level playing field by evaluating each product using the same scenario(s) and the same criteria.
- **Vendor surveys.** Forrester surveyed vendors on their product features, strategies, and market presence. 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 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.

## ENDNOTES

- <sup>1</sup> For an extended discussion of event processing technologies, see the September 1, 2006, “[EDA, SOA 2.0, And Digital Business Architecture](#)” report.
- <sup>2</sup> Any combination of CEP, BPM, business rules, commercial off-the-shelf (COTS), or custom-developed apps might be used together to implement an event-driven process (and to connect between diverse subprocesses). The more complex the events and the correlations between them, the more CEP can help in such scenarios. To find out the differences between CEP and business rules, please see the January 21, 2009, “[Must You Choose Between Business Rules And Complex Event Processing Platforms?](#)” report.
- <sup>3</sup> IBM announced its intention to acquire AptSoft on January 23, 2008. IBM also announced availability of an additional CEP platform called InfoSphere Streams on May 15, 2009. Oracle added its CEP engine in 2006 and then inherited BEA’s WebLogic Events Server in 2008.
- <sup>4</sup> Ranadive’s *The Power of Now* (McGraw-Hill, 1999) was a *New York Times* bestseller. Ranadive’s second book is *The Power to Predict* (McGraw-Hill, 2006).
- <sup>5</sup> SENACTIVE had two products: the InTime platform, which is now known as UC4 Decision, and Event Analyzer, which is now known as UC4 Insight.
- <sup>6</sup> Neither Agent Logic nor StarView Technology had come up in client conversations about CEP prior to this Wave.

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