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Market Overview: Business Rules Platforms 2011

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

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Market Overview: Business Rules Platforms 2011

Which Are The Safe And Best Choices Now

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EXECUTIVE SUMMARY

After two years of vendor consolidation, which are the best business rules platforms for application development and delivery professionals to consider? In our judgment, based on growth rates, market presence, strength of product, and client interest, three vendors have risen to the leadership positions in this market, with two others coming on strong. IBM's ILOG has the strongest market position, but a surprising new alternative has gained strong initiative, and a one-time leader has lost momentum.

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Forrester gathered product and market-presence data from 11 business rules platform vendors, including Bosch Software Innovations, Corticon Technologies, CRIF, Experian Information Solutions, Fair Isaac Corporation (FICO), IBM, InRule Technology, OpenRules, Red Hat, Sparkling Logic, and WSO2, as well as information from dozens of clients under NDA. Customer research is based on client inquiries during 2010 through 2011.

Related Research Documents

["The Future Of Business Rules Platforms"](#)

July 5, 2011

["Best Practices In Implementing Business Rules"](#)

October 3, 2008

["Case Study: California Association Of Realtors Innovates With Business Rules"](#)

October 3, 2008

["The Forrester Wave™: Business Rules Platforms, Q2 2008"](#)

April 8, 2008

YOUR CHANGED BUSINESS RULES PLATFORM CHOICES

Clients interested in business rules management systems very often ask us:

- What are the latest developments in the business rules platform market?
- Which business rules products warrant our attention?

Although many application development and delivery (AD&D) professionals have experience implementing business rules platforms, Forrester's AD&D team has been receiving a continual flow of inquiries on this topic that suggests that clients want to know how the vendor landscape is changing and how those changes affect product choices. In fact, before evaluating a vendor's product features, clients consider the vendor's market momentum and the size of its customer base.

Our conclusion: Your choices in business rules products have in fact changed, because the vendors have consolidated, expanded, and/or retrenched. As a result, the number of leading products has declined since we last evaluated business rules platforms in 2008.¹

Business Rules Platforms Are Crucial For Fast Delivery And Flexibility

Every application development and delivery organization faces relentless demands from the business to deliver more solutions in less time at low costs to keep pace with business changes. The fastest changes are usually to choices, procedures, evaluations, sequences, and advice, each of which relies on a web of facts, conditions, calculations, and algorithms. As a result, business rules platforms have never been more important, because they:

- **Automate decisions for rapid business action.** Why automate decisions and other logic? So software can automatically apply the constraints, choices, etc. in your business policies and procedures. For many decisions, software is faster, cheaper, and more scalable than human mediation.
- **Allow direct expression of policies and decisions.** Translating business rules into programming code such as Java can be a nightmare of meaning lost in translation. The business domain expert tells the business analyst. The business analyst tells the developer. The developer gets it wrong a few times until she gets it right. Iteration is in fashion these days, but less iteration is better than more, especially when you have a deadline. Business rules platforms provide tools to directly express the logic of policies and decisions in terms that both business experts and application development and delivery professionals can readily understand.
- **Are best for complex logic.** And your most important logic is complex by definition. There is almost nothing you can't code in a programming language like Java or C#. Implementing business rules is no exception. The question is, how easy is it to implement the business rules? Simple business rules — for example, if age is less than 23, then require supplemental automobile

rental insurance — are easy to include in Java code. But business rules in the wild are seldom that simple. The rental insurance example may require variations in, say, 34 of the 50 states, which makes for very complex code. Some business rules require sophisticated pattern detection and inferencing that can be extremely difficult to implement in conventional programming.

Business rules platforms provide authoring tools to define complex logic that are much more productive than defining it using programming languages. The most important of these tools are decision tables, decision flows, decision trees, and scorecards.

- **Enable fast software change.** It can be hard enough to implement business rules in a programming language; it's even harder to change them. The original programmer might be long gone. Or the convoluted implementation might take longer to decipher than it actually takes to make the change.² Business rules platforms take logic out of application code and place it in a managed environment, allowing AD&D professionals to change and redeploy rules quickly using their authoring tools. Moreover, AD&D professionals can package application-independent rules with a variety of applications, ensuring that those applications keep pace with the business changes embedded in the rules.
- **Empower business experts to manage change.** The time we waste in a traditional software development life cycle (SDLC) to change the way the applications process business rules takes too long and is prone to error. Giving our business experts responsibility for maintaining rules and policies — enabled by tools — is the next evolutionary step. Who better to update business rules as the business changes than the policy experts: pricing analysts, regulatory attorneys, underwriting leads, credit analysts, collections analysts, and so on? The vast majority of business rules platform customers buy this software in the hopes that their business experts will directly author and manage updates to key business rules.

Demand For Business Rules Mirrors The Demand For Faster Change

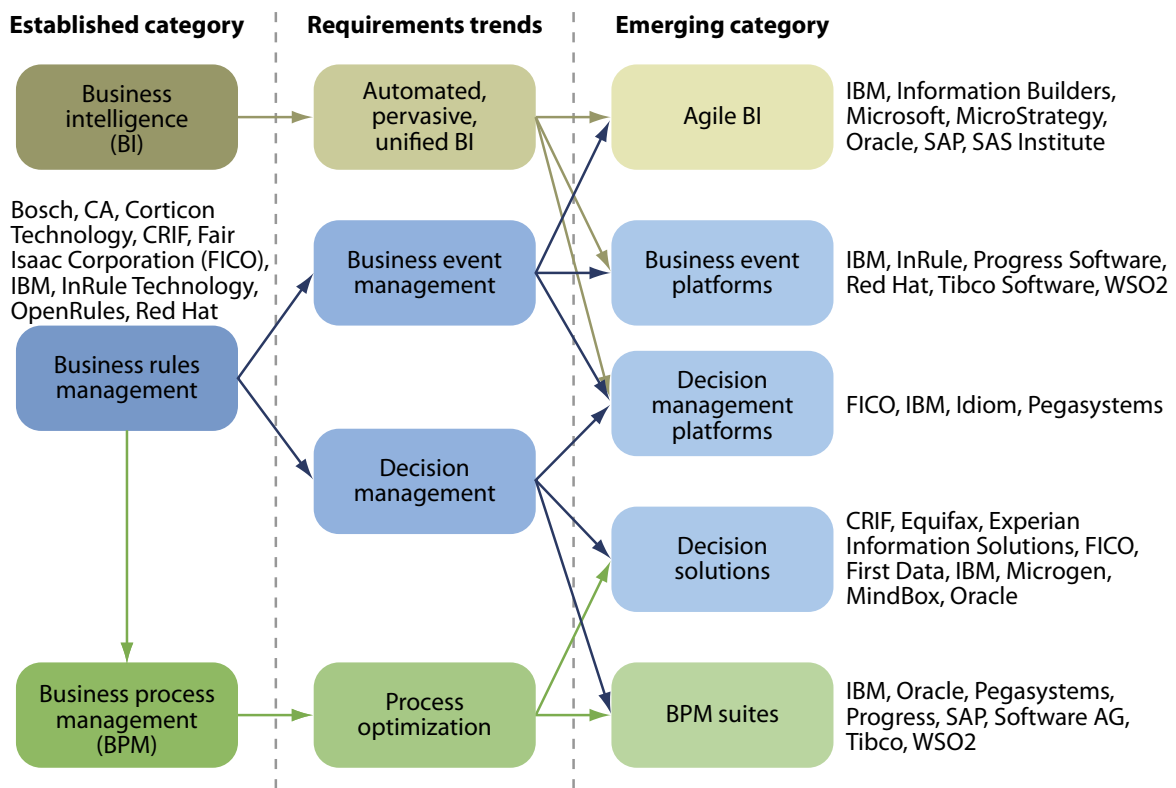
Forrester receives a steady stream of client inquiries about business rules, and they all express a common requirement: the need for faster change by empowering businesspeople to change rules. Looking at the market:

- **Key vendors are reporting rising numbers.** Six key vendors report growth in client adoption of business rules platforms as indicated by their revenues from business rules products and the size of their business-rules customer rosters (see Figure 1).³
- **Total revenues are rising.** The 11 vendors we evaluated in our 2008 assessment of the business rules market had estimated combined revenues of between \$265 million and \$395 million. The 10 vendors we included in this year's evaluation have estimated revenues of \$460 million.⁴ If we add in revenue estimates from the vendors that sell business rules as part of their business process management (BPM) suites — CRIF (CreditFlow), IBM (BPM products), Oracle, Pegasystems, SAP, Software AG, and Tibco Software — the market size easily surpasses \$600 million.⁵

Among the vendors in this year’s study, Bosch Software Innovations, Corticon Technologies, and InRule Technology report doubling (or more) their customer bases, and IBM also reports strong customer growth. Bottom line: These statistics indicate a healthy market.

- **But growth is steady, not explosive.** These figures indicate steady growth only in revenue and in number of new customers. This level of growth is appropriate for the product type, as business rules platforms require a fair amount of expertise and planning from customers, and the products tend to be used in certain high-complexity and/or high-change parts of business architectures. In other words, business rules platforms aren’t yet high-volume, must-have products for every company.
- **Products have reached a point of perceived parity.** We’ve also found that the functional differences between the business rules platforms matter less and less to clients. Most of the products have matured to the point where they share a similar set of features now: a set of developer tools, authoring tools for business experts, execution engines, integration points, and administration and management tools.

Figure 1 Selected Business Rules Vendor Stats Indicate Growth



WHICH BUSINESS RULES VENDORS ARE RISING, AND WHICH ARE FALLING?

In our 2008 evaluation of the business rules platform market, we found a healthy collection of choices led by Corticon Technologies, Fair Isaac Corporation (FICO), Haley Limited's Haley Expert Rules, ILOG, and Pegasystems. Today's landscape highlights big changes in the three short years since that evaluation: Haley is now owned by Oracle (and part of a public sector solutions group), IBM owns ILOG, and Pegasystems moved up to become a leading BPM vendor.⁶

In today's business rules landscape, then, which vendors are in the strongest positions and have the strongest momentum?

Business Rules Vendors Rising In Stature

Five business rules platform vendors have the strongest momentum in large enterprises (see Figure 2):⁷

- **IBM + ILOG = an irresistible market force.** IBM's acquisition of ILOG during 2008 seems to have kicked off a big upsurge in adoption of JRules, ILOG's flagship product. Our estimates of IBM's business rules revenues, growth, and customer base are all very strong, and we see ILOG JRules in virtually every client situation as a serious shortlist contender. Why?

JRules is a solid product with an extensive range of features for both professional developers and business experts. During the past two years, IBM has concentrated on integrating ILOG JRules with its BPM, business events, and decision modeling products as well as into several of its Smarter Planet solutions as a way to automate decisions.⁸ IBM also put renewed emphasis on JRules for z/OS. These activities will create continued momentum for JRules simply by introducing it into IBM's formidable and as yet untapped client base — even as IBM has slowed the pace of feature innovation in JRules to focus on integration with its other platform products.

- **Red Hat JBoss provides the low-cost alternative to IBM ILOG.** Right on the heels of IBM's acquisition of ILOG, client inquiry spiked on Red Hat's JBoss Business Rules Management System (BRMS) and Drools (the open source project upon which JBoss BRMS is based). A familiar pattern ensued: Developers, looking for a business rules platform less expensive than IBM's, found their way to a JBoss product.⁹

JBoss Enterprise BRMS (and Drools) is a good-enough business rules platform that provides a basic developer interface and a decision-table tool but not the rich range of authoring metaphors found in Bosch Software Innovations, Corticon Technologies, IBM ILOG, FICO Blaze Advisor, and others. JBoss is also moving more slowly than Corticon, IBM, and others to provide tools for business-expert authoring, rules life-cycle management, and repository. The vast majority of activity we see with JBoss BRMS is led by professional developers who use the product to manage a subset of the logic in their Java applications.¹⁰ Red Hat also incorporates the JBoss Enterprise BRMS rules engine into its service-oriented architecture (SOA) suite.¹¹

- **InRule Technology rules the .NET platform.** InRule, a small company with a strong business rules platform, has risen to become the top choice for .NET architectures. Microsoft does not provide a business rules platform of its own, so InRule is a primary choice for .NET shops that need this technology. Corticon, IBM ILOG, and FICO also provide business rules platforms for .NET, but these vendors are far more prevalent in enterprise Java architectures than they are in .NET architectures.

InRule’s latest release (version 4) employs a redesigned development environment that is designed to fit inside larger applications and inside tools that address specific business domains.

- **Bosch Software Innovations rocks in Europe but struggles to take hold in the US.** The former Innovations Software Technology, now known as Bosch Software Innovations, has registered remarkable growth, both from sales of its business rules platform and solutions based on that software — its 2010 growth rate was 47%. Bosch Software Innovations’ most dramatic growth seems to be from professional services, but clearly it is also selling many more software licenses. Bosch Software Innovations is also developing solutions that it can sell into Bosch’s manufacturing base.
- **Corticon Technologies presses on as an independent, this time with big partners.** As the saying goes, Corticon has run hot and cold during the past seven years as it shifted customer focus from independent software vendors (ISVs) to enterprises. Now Corticon is focused once again on enterprise customers as its primary market and is beginning to benefit from a new partnership with HP. Corticon has always had a strong product; now the partnership with HP will also help it compete in a market in which IBM is the big force. Of course, Corticon may also end up belonging to HP.¹² Corticon also has a .NET environment, but we primarily see its Java products among enterprise customers.

Figure 2 Vendors With Strong Position And Momentum

	Momentum & position rating	Revenue (millions)	Revenue growth	Customer base
Bosch	Moderate	\$10	47%	250
Corticon	Moderate	<i>\$15</i>	45%	450
CRIF	Moderate to weak	\$6	5%	50
Experian	Moderate	\$65	7%	315
FICO	Moderate to weak	\$69	0.4%	500
IBM	Strong	<i>\$200</i>	<i>25%</i>	1,200
InRule	Strong	\$6	<i>25%</i>	225
Red Hat	Strong	<i>\$2</i>	<i>25%</i>	100

Source: Forrester Research from vendor reports
 Note: Red italics indicate Forrester estimates.

Business Rules Vendors Falling In Stature

Two vendors — CA and FICO — have become less relevant as choices during the past several years. Forrester believes both companies have decided to service their existing customers rather than compete with IBM for a market-leadership position with all of the risk that would entail:

- **FICO has retrenched to focus on selling more to existing customers.** FICO once was ILOG's primary competitor. The two vendors had roughly equivalent revenues and customer bases. Now, we only occasionally see FICO and its Blaze Advisor business rules platform in open competition with IBM ILOG, JBoss BRMS, and others.¹³ The key signal to us about FICO's competitive ambitions: We see the company targeting mostly high-end decision-management solutions, not business rules platforms integrating predictive analytics, decision modeling, linear programming/optimization, and business rules execution.¹⁴ FICO's market presence suffered along with the fortunes of its large financial-services customers during the Great Recession of 2008 and 2009. The company reported a return to growth for the division containing Blaze Advisor in its most recent financial statements and may also have benefitted from its return to a specialized salesforce for decision management.
- **We don't see FICO investing in an architecture/technology refresh of Blaze Advisor.** Fico continues to invest in the product, but the vendors with the initiative in this market have each made major investments in their core technology during the past six to seven years.¹⁵
- **CA is servicing its Aion installed base.** We noted in our 2008 report that CA's strategy had shifted to providing its Aion customers with expanded capabilities in rules authoring and management. This strategy has continued, and as a result we do not see CA in competition for new accounts.¹⁶

Vendors That Now Compete In Other Categories

Some business rules vendors have expanded into other product categories. As a result, the decision to choose these vendors for a business rules product is more complex because business rules management is no longer their primary focus or their product sets include additional capabilities not directly related to business rules management. Within this category, there are:

- **BPM vendors that also provide rules.** BPM vendors now often incorporate a business rules platform into their suites.¹⁷ Typically, BPM customers use business rules to automate relatively simple decisions within automated processes. The critical point for customers about these suppliers: A BPM vendor's rules product may not support all of your business rules requirements. These simple rules capabilities typically lack a full complement of rules authoring tools, rules change management facilities, and engines capable of handling large-scale workloads. However, the business rules capabilities of some BPM suites — particularly Pegasystems and SAP — are strong in their own right. The issue with these providers: They provide a lot more than business rules platforms. Customers who want just a business rules platform are better off buying a product focused on that need.

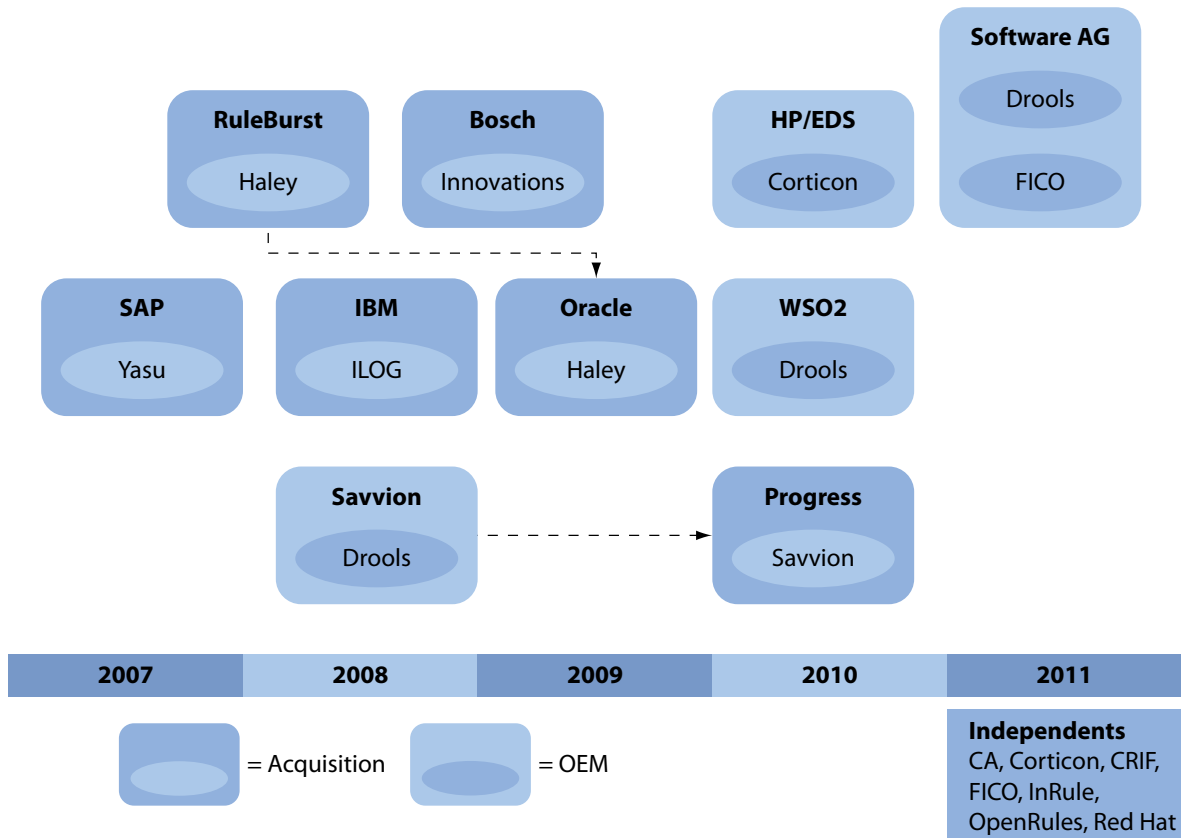
- **Vendors that provide decision solutions.** Several vendors of business rules platforms sell business solutions based primarily on their technology rather than based on development platforms. We call these products decision solutions because they primarily automate or enforce business policies in marketing, online commerce, loan origination and eligibility, credit risk, underwriting of credit and insurance risks, collections, pricing, and other business functions. CRIF, Equifax, Experian Information Solutions, FICO, First Data, and MindBox are examples of providers that focus primarily on the financial services sector. CRIF, Experian, and FICO also expose their business rules development tools to help customers tailor decision solutions to their specific needs. IBM is developing a variety of industry-specific solutions incorporating ILOG, and Oracle has embedded Haley into its public sector solutions organization, primarily to address eligibility applications.

The critical point for customers about these suppliers: Their value is in the combination of their industry knowledge and underlying platforms. If you seek a general-purpose development platform, be aware that a solutions provider's investments will be in both its platform and in industry frameworks and other solutions assets — not its platform alone. Be sure you are comfortable that the vendor's platform road map will keep pace with your needs.

VENDOR CONSOLIDATION SIGNALS MARKET MATURITY

During the past four years, SAP acquired Yasu Technologies, RuleBurst bought Haley and was subsequently acquired by Oracle, IBM swept up ILOG, and an industrial conglomerate best known for auto parts — Bosch Group — acquired Innovations Software Technology (see Figure 3).

Figure 3 Business Rules Platform Consolidation Timeline



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Source: Forrester Research, Inc.

Big Vendors Have Consolidated Business Rules Platforms

When a technology reaches a certain level of maturity and attracts a critical mass of customers, large vendors swoop in to add the technology to their portfolios. But why, specifically, did the big vendors consolidate the business rules market?

- Large vendors have the resources to scale up sales and support.** The smaller vendors that made business rules a commercial technology required substantial investment in sales, support, and product integration to be attractive to large-scale customers and expand their potential client base globally. That expansion is expensive; therefore, it made more sense to merge with a large vendor that already had the marquee name, sales, support, and distribution channels. In turn, the acquisitions offered large vendors the opportunity to double or triple revenues and create additional product offerings.

- **Large vendors are better able to integrate business rules into larger solutions.** The independent business rules platform vendors also increasingly found themselves having to integrate their platforms into broader architectures and solutions. Customers were demanding that their vendor make its business rules platform a feature of their architecture. Large vendors with broad portfolios are in a much better position than independent vendors to coordinate the business terms and technical integration to meet this demand, and they also provide customers with the proverbial single throat to choke.
- **Larger vendors have resources to reduce adoption barriers.** Despite strong progress in development and administration tools across vendors, customers still stumble over talent barriers to successful implementation of business rules solutions. Will the large vendors invest in reducing the high level of design and implementation skill required to build business rules solutions? So far, we haven't seen it.

Note that not all of the big vendors acquire business rules platforms to add the technology to their platform stacks: Tibco Software turned to organic development, whereas Software AG and Savvion (now part of Progress Software) employ open source software to fill their needs for business rules platforms.¹⁸ HP's partnership with Corticon Technologies is typical of a systems integrator's selection of key technology components for solutions rather than an acquisition or original equipment manufacturer (OEM) relationship that feeds a platform stack.

Business Rules Platforms Innovation Seeks Optimization And Integration

We sometimes see customers selecting business rules platforms strictly on their belief that the vendor's tools for business experts will actually be empowering. The major vendors have offered authoring tools for years, but many also require heavy support from professional application developers. This trend has two results:

- **Demand for products that empower business experts to minimize developer involvement.** Bosch Software Innovations, Corticon Technologies, the financial-services specialist CRIF, and OpenRules have the most-aggressive approaches to business-expert authoring and typically require less developer support than IBM ILOG, FICO Blaze Advisor, and JBoss BRMS.¹⁹
- **New opportunities for independent vendors that innovate in business-expert features.** The major vendors aren't pursuing a great deal of innovation in business-expert tools, a fact that creates an opening for innovation by the independents. So far, we've seen two vendors — OpenRules and Sparkling Logic — take up the challenge.²⁰ OpenRules implements the Decision Model methodology.²¹ Sparkling Logic hopes to combine three features to ensure that business experts can reliably author rules on their own: a unique decide-by-doing tool, social collaboration, and a software-as-a-service (SaaS) solution that reduces the time and expense to start working.

Meanwhile, the large vendors are pursuing four major incremental improvements in their core business rules platforms:

- **New human-interface technologies that will empower business experts.** So-called Web 2.0 human-interface technology afforded an opportunity to create rich web-based human experiences for business rules authoring. Previously, most business rules platform vendors relied on Microsoft Windows desktop applications for this sort of functionality. Corticon, FICO, and InRule rewrote their human-interface layers to embrace Web 2.0.
- **Easier embedding that will open the door to broader adoption by ISVs.** Corticon, FICO, and InRule all hope that by opening up their products to allow ISVs to create their own authoring tools, partners will be more apt to embed the rules engines in their product offerings — time will tell. Open source products Drools and OpenRules appear to be the leading choice for OEMs; however, OpenRules is less well known than Drools, and Jess is still in the picture.
- **Integration with other products that will make rules even more valuable.** Integration has been a major thrust for the ILOG team inside IBM for the past two years; the integration of ILOG with BPM and events platforms was readily apparent at IBM's Impact 2011 conference. Bosch Software Innovations has invested in integration with Java application life-cycle management products to make it easier to incorporate Visual Rules' generated Java code into broader applications. Lastly, FICO has improved integration between Blaze Advisor and the other components of its decision-management suite.²² The result: Handoffs between the separate tools in the suite are far less obvious than before, improving ease of use.
- **Better performance and manageability for large-scale implementations.** Large-scale means two things in business rules platforms. First, each of the big vendors has brought the expected incremental improvements in raw rules-processing performance in recent releases. The effect of these performance optimizations on real applications will vary. In our experience, data architecture, not raw rules engine performance, is the source of most performance problems in rules applications. Second, Bosch Software Innovations introduced new tools to manage big collections of rules, bringing it to parity with the leading vendors — particularly IBM — in this regard.

At one time years ago, business rules platforms were a risky, esoteric investment. That's not the case anymore. The market's consolidation signals a level of maturity in the products, tools, and practices that makes business rules platforms accessible to everyone, not just the most risk-tolerant customers.

RECOMMENDATIONS

STOP CODING ALL YOUR BUSINESS RULES IN JAVA, C#, COBOL, ET AL

Sure, your programmers can code just about any logic in Java, C#, and COBOL. That doesn't mean they should do so. In today's fast-moving worldwide economy, software must be able to automate and inform business decisions and to change as fast as the business changes. Business rules platforms are better than code for creating and managing decision and policy logic, and they belong in your application development and delivery strategy.

- **Use a pure-play business rules platform to implement decisions and policies.** Business rules platforms have the most-mature business rules execution engines, rules life-cycle management features, and, most importantly, expressive business rules authoring tools that are designed for fast implementation and fast change.
- **Use business rules engines for simple event-processing applications.** If you've already adopted a business rules platform for decision and policy automation, you will also be able to use it to detect and respond to some event patterns. Business rules engines do best in event-processing scenarios involving one or two event sources and modest amounts of data.
- **Use CEP platforms for large, complex business-events applications.** Some business processes such as algorithmic trading require applications that continuously monitor market data to detect interesting patterns to buy or sell equities. These pattern-detection rules would be difficult if not impossible to implement in pure-play business rules platforms; they really call for complex event processing (CEP) platforms. Many of the business rules platforms are starting to offer business event capabilities, but the maturity and scalability are not there yet to compete with CEP platforms.
- **Use BPM to implement business rules tightly coupled with business processes.** Many of the BPM products provide business rules capabilities within their products. Use the rules capabilities in the BPM products when they are tightly coupled with the business process, but beware that for very complex rules, you may be better off integrating a pure-play rules engine with BPM.

SUPPLEMENTAL MATERIAL

Companies Interviewed For This Document

Bosch Software Innovations	InRule Technology
Corticon Technologies	OpenRules
CRIF	Red Hat
Experian Information Solutions	Software AG
Fair Isaac Corporation (FICO)	Sparkling Logic
IBM	Tibco Software
Informatica	WSO2

ENDNOTES

- ¹ Forrester conducted its last evaluation of top vendors of the leading business rules platform products in 2008. See the April 8, 2008, "[The Forrester Wave™: Business Rules Platforms, Q2 2008](#)" report.
- ² When rules are locked up inside application code, developers usually can't simply revise the code expressing the rule to make changes. Rather, they must sort out the dependencies within the code to revise the rule and then put the affected application modules through a full testing regime.
- ³ Most of these vendors draw revenues from a variety of sources, not just business rules platform sales.
- ⁴ In 2008, we gathered data from nine business rules platform vendors: CA, Corticon Technologies, Fair Isaac (FICO), Haley Limited, ILOG, Innovations Software Technology, InRule Technology, Pegasystems, and SAP, as well as two additional specialized platform providers, Experian and Intelligent Results (First Data). See the April 8, 2008, "[The Forrester Wave™: Business Rules Platforms, Q2 2008](#)" report.
- ⁵ Revenue figures are estimated because Oracle, Pegasystems, and SAP primarily sell business rules platforms as part of their BPM environments. We rarely see organizations considering these vendors for standalone business rules platforms anymore.
- ⁶ Pegasystems took the top spot in the Forrester Wave evaluating business process management suites. See the August 24, 2010, "[The Forrester Wave™: Business Process Management Suites, Q3 2010](#)" report.
- ⁷ The chart presents our rating of the vendors on a simple scale of strong, moderate, and weak based on three factors: reported or estimated growth rate, revenue base, and our assessment of whether or not the vendor's market position is clearly differentiated. Bosch Software Innovations and Corticon Technologies have good growth rates but are playing by IBM's rules (premium pricing and enterprise sales) and thus have weaker market positions. Red Hat and InRule, on the other hand, have clearly differentiated positions from IBM and strong growth.
- ⁸ For more information about CEP vendors and products, see the August 4, 2009, "[The Forrester Wave™: Complex Event Processing \(CEP\) Platforms, Q3 2009](#)" report.
- ⁹ We've seen this pattern repeated for many years in Java application servers. The JBoss application server is a popular alternative to IBM's WebSphere Application Server and Oracle's WebLogic Server based on its strong capabilities and its usually much lower costs.
- ¹⁰ A strong and important trend in business rules platforms is authoring by business experts in cooperation with application development and delivery professionals. For more on the best practices to enable this use of business rules platforms, see the October 3, 2008, "[Best Practices In Implementing Business Rules](#)" report.
- ¹¹ JBoss Enterprise SOA Platform is the product name.
- ¹² HP's partnership with Corticon is not exclusive. InRule also provides rules technology to HP for use in a Medicaid management solution deployed in five states as well as for use in custom solutions.
- ¹³ The financial industry turmoil during the Great Recession of 2008 to 2009 undoubtedly damaged FICO's fortunes in the market. A large portion of FICO's customers are financial services organizations.
- ¹⁴ In a briefing during early 2011, one of FICO's decision management product leaders told us, "We spend a lot of time on growing our existing customers rather than getting new customers."

- ¹⁵ FICO's biggest recent investment in Blaze Advisor was a new human-interface layer to accommodate Web-2.0-style interfaces and ease creation of custom experiences for the product.
- ¹⁶ CA declined to participate in our research for this report.
- ¹⁷ Other business process management (BPM) products with rules capabilities include Software AG, which resells FICO Blaze Advisor for sophisticated business-rules requirements but promotes its own simpler engine (based on Jess) for BPM decisioning. Progress Software's Savvion BPM and WSO2's Carbon incorporate the Drools open source project, and Tibco Software is transitioning from an OEM relationship with Corticon to its own business rules platform. IBM competes in this market by integrating its BPM platform with ILOG.
- ¹⁸ Red Hat reports that although Progress Software and WSO2 employ Drools in their solutions, neither has a formal ISV relationship with Red Hat to support the technology.
- ¹⁹ Corticon's BRMS Version 5 introduces a rule-flow authoring metaphor to ease rule definition — the first time the company has departed from solely depending on a decision-table metaphor.
- ²⁰ Sparkling Logic was created by the former product and engineering leaders of FICO's decision-management products, including Blaze Advisor. The company has developed new methods for capturing knowledge from experts in the context of their customary work. The approach allows authoring of rules without having to build a data model first and employs collaboration technology for governance and refinement. For more information, visit the Sparkling Logic website (<http://my.sparklinglogic.com/>). Sparkling Logic plans to bring its product, called Smarts, to market during the summer of 2011, at which time we'll be able to determine the value of its work.
- ²¹ The Decision Model was created by Larry Goldberg and Barbara von Halle and is described in their book (Barbara von Halle and Larry Goldberg, *The Decision Model: A Business Logic Framework Linking Business and Technology*, Auerbach Publications, 2009).
- ²² FICO improved integration in its Decision Management Tools suite through a new repository for all of the suite's modules. Previously, FICO employed different repositories within its suite.

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