



## Sun minimizes customers' technology risks

success story:  
business rules management



<b>Client</b>	Sun Microsystems, Inc.
<b>Challenge</b>	Sun's homegrown rules management approach was becoming increasingly difficult to maintain in support of its new class of strategic services for minimizing customers' IT costs
<b>Solution</b>	FICO™ Blaze Advisor® business rules management system for advanced diagnostics
<b>Results</b>	The new Sun Risk Analysis System built with Blaze Advisor system went live in five months, and is currently used by over 9,000 people around the world. Those customers mitigating risks identified by the solution saw a 67% reduction in severe incidents, a 10x reduction in unplanned outages and increases in system availability.



*"The creation, maintenance and administration of rules knowledge presented a voluminous challenge to manage, and we needed to fashion a powerful and unyielding solution to the problem."*

—Rex Martin, Ph.D.,  
Principal Engineer and Architect  
in Sun Services' Knowledge  
Management and Innovation Team

### Blaze Advisor system powers customer risk analysis and diagnostics at Sun Microsystems

#### » CHALLENGE

Since its inception in 1982, Sun is widely viewed as an innovative leader in servers, storage, software and services with a 100% focus on network computing. Sun's philosophy of sharing innovation and building communities is at the forefront of its vision for the next wave of computing: the Participation Age. Sun develops technologies that power the world's most important markets and can be found throughout more than 100 countries and on the web.

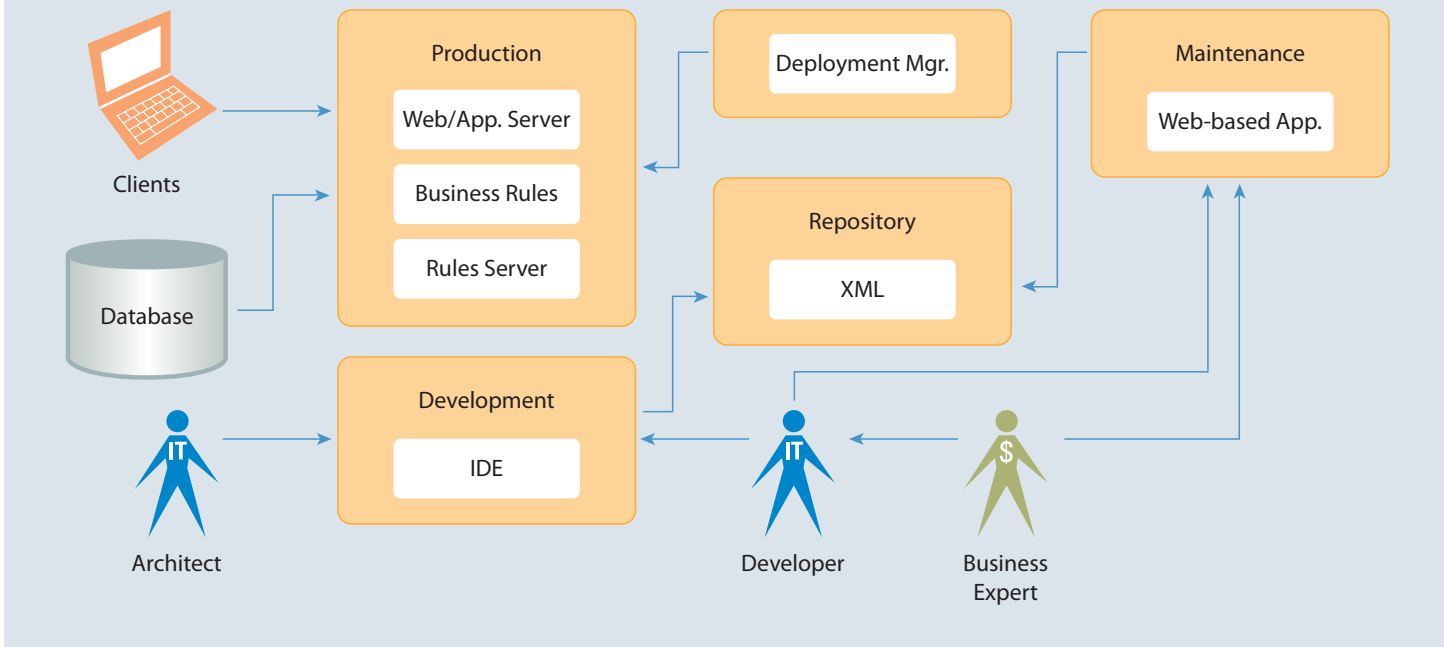
Supporting computing growth and the Participation Age, Sun Preventive Services enables Sun customers to significantly improve system uptime and availability, and reduce incident volume and cost. As a capability within Sun Preventive Services, the Sun Risk Analysis System (SRAS) is a Java technology-based solution that enables Sun to deliver enhanced risk analysis services to its customers. These services include hardware, software and patch-level assessment, as well as the examination of a variety of other critical systems data in order to identify and mediate potential IT issues before they can affect downtime.

Historically, when known system problems arose, Sun would issue static documents like Sun Alerts to its customers. These alerts and the symptoms of these alerts were associated with specific hardware and software configuration issues. Sun realized that a new architecture would be more powerful if they could associate classes of knowledge and symptoms together rather than by specific issues. This would give Sun the background information to group and analyze symptoms together and provide a framework for a more proactive and predictive prescription to a potential problem.

In 1999, Sun decided to build an in-house rules engine that was the platform for the first Sun Risk Analysis System. This system was created and written with PERL/Java by ten developers over a period of two and a half years.

By 2004, the Java rules systems had evolved and matured quite rapidly since its first iteration in 1999. Sun decided to evaluate a "make versus buy" decision for a commercial rules management system. The evaluation involved engaging key stakeholders and establishing their requirements for a new rules-based system. "The creation, maintenance and management

## Managing the business and business rules with FICO™ Blaze Advisor® business rules management system



Blaze Advisor system has dramatically improved Sun's ability to manage its business rules, with a faster and more efficient core rules engine, and with greatly simplified and streamlined rules creation and maintenance.

of rules knowledge was a big challenge to manage and we needed to bring in something that was commercial-strength," said Rex Martin, Ph.D., Principal Engineer and Architect in Sun Services' Knowledge Management and Innovation Team. "We saw the opportunity to focus our developer- and program-level talent expertise on the process of converting content of human knowledge into new rules to make a more powerful and comprehensive system."

The evaluation team had many years in theoretical and practical rules systems experience. In order to identify applicable products, the team translated the requirements into weighted evaluations criteria for its initial research and market survey. The initial list of solutions included 27 commercial and 6 non-commercial solutions (open source, freeware, etc.) that was narrowed to a short list of 10 solutions for issuing an RFP. Ultimately, four vendors were selected to work with Sun's development team for a product/use case demonstration.

Internally, there were concerns over the costs of continuing to build and maintain all of the components of Sun's current home grown rules engine. Sun had already experienced first-hand

the necessary upkeep and maintenance with the previous in-house system.

### » SOLUTION

After the comprehensive review of the leading business rules technology vendors, Sun selected FICO™ Blaze Advisor® business rules management system. Already certified to work with the Sun environment, FICO's 100% Java solution provided Sun's Risk Analysis team with a scalable enterprise approach to rules management, and a platform to support a mission-critical application. Specific features that influenced Sun's decision to select the Blaze Advisor system included an enterprise rules repository, enhanced rules metadata properties and its powerful querying capability.

With any new technology project, there is the need to manage the change. The strong history, legacy and pride in programming at Sun required a renewed perspective from the usual "see the coding" mentality to "how can we get the dynamic business logic" into the code. It was a two-step challenge—the first being the culture shift of programmers giving up the control and visibility into the rules

coding. The second shift was how to harness and capture the business knowledge of the various stakeholders and translate that into system logic that could be readily used in the SRAS.

Sun used a combination of Sun Six Sigma and the Sun Product Life Cycle (PLC) during the software development phases. The PLC is Sun's core business process for managing the total product lifecycle from product concept development and business planning to product retirement. One of the major technical challenges to overcome a successful project completion included learning the different technologies that make up the SRAS solution and deploying an initial production release within six months.

### » RESULTS

Sun Preventive Services provides customers with risk analysis and mitigation solutions that can help them cut costs, more effectively manage risks and improve availability of key IT systems. The new solution with its business rules management system significantly enhances Sun's ability to diagnose problems and recommend resolutions in a timely and effective manner. The ability to use built-in

rule templates for inputting new alerts has helped structure symptoms and resolutions much faster and easier. Utilizing the rule flow utilities of the new system allows decisioning components to be copied over and customized as needed, rather than hard-coded from scratch.

From a development and deployment perspective, the revitalized system time to implementation has been outstanding. The original system used 10 Sun programmers over two and a half years to get the first system running. The new system with the FICO™ Blaze Advisor® business rules management system took seven programmers, two knowledge engineers, and two Blaze Advisor system consultants five months to get the entire system running and into production.

The technical results and the management of the system have also surpassed expectations. First, the core rules engine has been faster and more efficient than the team expected. Second, the rules creation and maintenance process has been simplified and streamlined. Senior-level knowledge engineers are able to maintain complex rules packages using the built-in IDE of the Blaze Advisor system. Last, the ease of integration of the system has been outstanding as part of an Application Server environment.

"Blaze Advisor system gives us the ability to scale and broaden our rules-based system in ways we did not have the time or resources to consider before," says Paris Bingham, Principal Engineer and Senior Rules/Modeling Lead for Knowledge Management and Innovation at Sun. The return of investment in manually changing the hard-coded rules in the previous SRAS system compared with the Blaze Advisor system has been estimated by Sun on the magnitude of "10 to 20 times better."

"The Blaze Advisor system provides Sun tremendous scalability and time to market," added Martin. "By adopting and implementing FICO's technology, Sun was able to achieve specific ROI in terms of manpower, costs and time that was otherwise committed to the development and maintenance of our hard-coded rules. In only five months Sun was able to construct a more robust rules-based infrastructure that, up until now, took two and a half years."

The framework to expand the business rules engine-based applications will take Sun from performing analytics of rules that are around problem/risk analysis to looking more at some traditionally true "business rules." These include areas such as policies, entitlements and constraints to allow Sun to centralize some services that they previously did not have the ability or time to do.

Today, SRAS is used by more than 9,000 people around the world, including customer IT staff and Sun technical support staff. Sun is expecting that number to grow rapidly as the success of the system contributes to broader use within the Customer Networked Services and across other Sun organizations. Those customers mitigating risks identified by the solution saw a 67% reduction in severe incidents, a 10x reduction in unplanned outages and increases in system availability.

### Recent Honors for FICO and Blaze Advisor system

- Best Business Rules Management System for 2008—InfoWorld
- Best Business Rules-Based Decision Management for 2008—Yphise
- 2008 Innovative Implementation Award—ACORD

## Decision Yield

### Precision

Sun can precisely prescribe preventative services that include maintenance and software patches with a decisioning capability that easily scales for any complex diagnosis.

### Consistency

Accurate data input and collection of system knowledge into the rules base has greatly improved Sun's ability to effectively diagnose problems, and identify and recommend resolutions in a timely and effective manner.

### Agility

The Blaze Advisor system was built in five months versus two and a half years and can now be readily updated with the latest knowledge to better serve Sun's customers.

### Speed

The Blaze Advisor system provides Sun the ability to scale and broaden its rules-based systems in ways it did not have the time, or resources, to consider before.

### Cost

The ROI on the system has been calculated by Sun as "10 to 20 times better" than changing hard-coded rules.

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*—Paris Bingham,  
Principal Engineer and Sr. Rules/Modeling  
Lead for Sun Services' Knowledge  
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