

Current Analysis

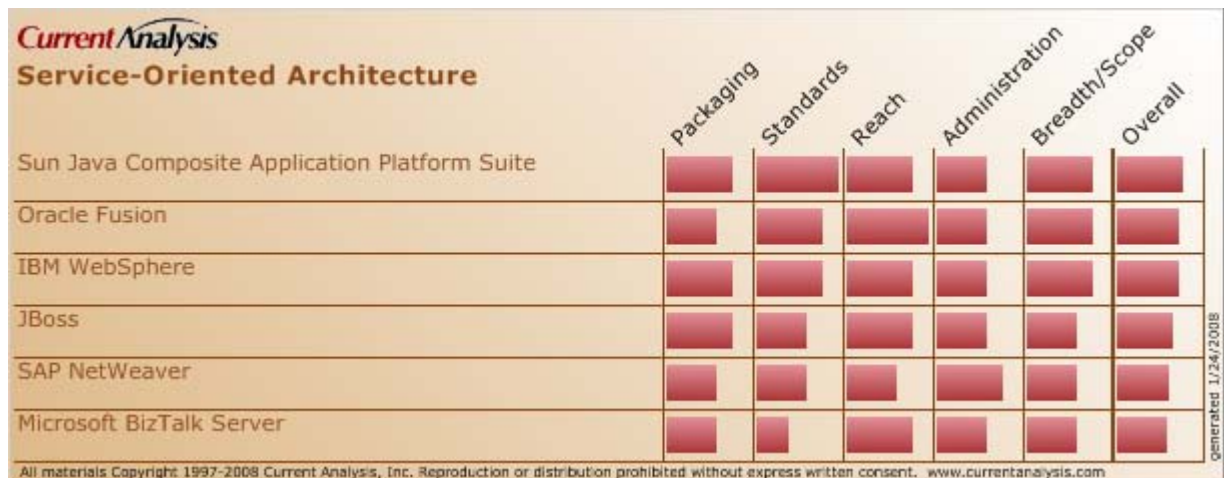
Service-Oriented Architecture Solution Assessments

Service-Oriented Architecture (SOA) has become the leading industry paradigm for software development. SOA-enabled software is inherently modular and reusable, with some profoundly beneficial qualities including: flexibility, agility and, above all, cost efficiency. To truly realize these benefits, however, companies must first implement the software infrastructure designed to enable and support SOA-based development.

This infrastructure solution, called a “SOA Suite”, consists of design, development, runtime, and management tools that are closely intertwined. Together, these SOA tools help customers move away from monolithic, legacy software and instead create discrete software services that can be assembled into larger applications. Because these software services are developed using strict interface standards, developers can quickly find pre-built components to suit specific business requirements, and combine them to form cross-platform applications capable of interacting with other SOA-enabled software.

The Current Analysis rankings of SOA solutions are based on how well they meet the following key customer selection criteria:

- Breadth and Cohesion of Portfolio
- Deployment and Administration
- Geographic, Market and Customer Reach
- Interoperability and Standards Support
- Packaging, Services and Support





Solution Assessment

Sun Java Composite Application Platform Suite

Service-Oriented Architecture (SOA)

Brad Shimmin
Principal Analyst, Application Infrastructure

January 4, 2008

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Current Analysis
Outsmart your competitors

Sun Java Composite Application Platform Suite

Report Info:

Analyst:
B. Shimmin
 Date Updated:
Jan 4, 2008
 Solution Class:
**Service-Oriented
 Architecture (SOA)**

Solution Description

Within the service-oriented architecture (SOA) marketplace, Sun offers a wide array of software products and associated support, educational and professional services, covering a range of horizontal SOA solutions, under the Sun Java Enterprise System (Java ES) brand name. Sun's Java ES family of products include tooling, integration and infrastructure products cover key SOA capabilities including business process management (BPM), business activity monitoring (BAM), B2B and enterprise application integration, identity management, portal enablement, data management, Web/application development, collaboration and governance.

Sun markets products in support of these capabilities bundled as solution-specific middle-ware packages within a series of Java ES suites. These solutions include the Java Identity Management Suite, Java B2B Suite, Java Composite Application Platform Suite (CAPS), Java Enterprise Service Bus (ESB) Suite, Java Application Platform Suite and Java Web Infrastructure Suite. Note that while Sun Java CAPS is a suite within the Java ES family, it bundles all of the elements mentioned above that are necessary to deploy a complete SOA solution. The company offers an array of purchase options for these suites, including standard licensing and a unique pricing and distribution model, in which customers pay yearly subscriptions of \$100 per employee per year for the base Java ES suite, to which customers can add Java CAPS for an additional 50 dollars per employee per year. Alternatively, customers can purchase Java CAPS for \$100 on its own and then add the company's ESB or B2B suite for \$50 per employee per year.

Sun employs a combination of direct and indirect channels to sell Java ES products within large enterprise and mid-market accounts worldwide. The company leverages its sizable installed base of hardware (server, storage, infrastructure) and Solaris customers for sales efforts, bundling developers' copies of Java ES Suites such as Java CAPS within Solaris. Customers can even purchase cable-ready hardware/software solutions with Java ES software pre-installed.

Solution Elements (see Definitions and Descriptions appendix)

Solution Elements	Sun Java Composite Application Platform Suite
Application Servers	Sun Microsystems - Java System Application Server and GlassFish etc.
Business Process Management	Sun Microsystems - SeeBeyond eInsight Business Process Manager
Composition and Development Tooling	Sun Microsystems - NetBeans, Java Studio Creator and Java Studio Enterprise, SeeBeyond eVision Studio
Enterprise Service Bus and Integration	Sun Microsystems - SeeBeyond eGate Integrator, SeeBeyond eWay Intelligent Adapters etc.
Management, Governance and Security	Sun Microsystems - Java System Access Manager, Java System Directory Server, Enterprise Manager
Portal, Presentation, and Access	Sun Microsystems - Java System Portal Server
SOA Registry/Repository	Sun Microsystems - SOA Registry/Repository

Solution:

■ Summary

**Sun Java
Composite
Application
Platform Suite****Current Perspective: Competitive**

Sun's Java ES family of middleware products constitutes a competitive offering within the SOA market. Since acquiring enterprise integration vendor SeeBeyond in 2005, Sun has steadily built out a tightly integrated yet highly modular SOA platform that spans SOA, BPM/BAM, identity management, portal and B2B integration. Since 2006, when Sun truly began fielding a unified SeeBeyond/Sun SOA platform, the company has seen the number of Java ES subscribers grow to over 1.3 million, validating the company's multi-faceted approach to product packaging and licensing that lets the company easily target mid market customers with solutions that do not penalize smaller firms. This is due to a unique pricing and distribution model, in which customers pay yearly subscriptions of \$100 per employee per year for the base Java ES suite or may purchase the individual Java ES Suites such as CAPS for \$100 and the ESB or B2B suites for \$50 per employee per year.

This approach to licensing and subscriptions, which derives from the open source ISV market, extends to Sun's software solutions as well. The vendor fields a growing number of open source solutions, including an application server (GlassFish), and ESB (Open ESB, which is now in beta), a development IDE (NetBeans), operating system (Solaris), portal (OpenPortal), database (JavaDB) and of course development framework (Java). Sun does not market these solutions as stepping-stones to closed source counterparts. Rather, the vendor treats its open source offerings as means to germinate innovation and more importantly to penetrate the highly lucrative developer community virally via technologies. To this end, the firm has created some important open source product synergies. For example, Sun offers a certified and tested operating system and application server stack consisting of Solaris and GlassFish. Like Microsoft, Sun also seeks to leverage a proprietary development environment, NetBeans, as a unified tooling environment tied closely with both open and closed source Java ES products, such as GlassFish/Sun Java System Application Server and Sun SeeBeyond eGate Integrator.

Unfortunately, in its efforts to develop a hybrid open/closed source SOA platform with Java ES, Sun's product line is currently in a state of flux that has created some inconsistencies across product offerings. For example, GlassFish, which is licensed under both GPL and CDDL, bundles project Metro, which itself is still only licensed under Sun's CDDL and not able to support the dual-licensing scheme available with GlassFish. And Sun faces a marketing challenge with GlassFish V2, as this open source product plays a dual role under two different brands and version numbers relative to its licensed counterpart Java System Application Server 9.1. Similarly, though Sun's various Java ES Suites contain tightly integrated products, not all products are lined up in terms of release dates and interoperability. For example, the current release of Java CAPS (version 5.1) is not yet fully aligned with GlassFish V2 and NetBeans 6.0. With version 5.2, which is due out in Q2 2008, Sun intends to more fully align its various tooling and server offerings.

Once Sun moves beyond these growing pains and stabilizes its Java ES offerings, it will present the market with a low cost SOA solution that will appeal to Java-centric and open source-friendly organizations looking to lower initial startup costs through a highly integrated SOA suite.

Solution:

Strengths/Weaknesses

**Sun Java
Composite
Application
Platform Suite****Strengths**

- Sun continues to focus its go-to-market strategy on open source software and business models. For example, the company has moved from a per-socket pricing plan for select products such as its Java System Application Server 9.1 (the supported rendition of GlassFish V2), adopting instead an annual subscription plan. This continued move towards a service-based model complements Sun's three-tiered subscription model, which features live call transfer 24x7, indemnification from potential litigation, Sun Developer Expert Assistance (for a technical second opinion) and a dedicated support team.
- Sun is able to field a hardware and software that spans server, storage, operating system, database and supporting SOA software. For example, the company offers a certified operating system and application server stack consisting of Solaris (also available through GPL/CDDL) and GlassFish. This allows Sun to compete directly with IBM/Novell, Oracle/Red Hat and Red Hat, all of which offer certified stacks. This ability to ensure compatibility for the entire application platform stack has fast become a differentiator within the open source middle-ware market.
- Leveraging its broad product line that spans operating system to application container, Sun offers customers a single installation routine for SOA components as well as supportive tools including Sun Cluster, High Availability Session Store and Java DB. Customers can also purchase pre-installed systems that are cable-ready through Sun Customer Ready Systems (CRS) program.
- In a SOA market dominated by Java-based solutions, Sun has a distinct advantage as the owner/creator of this important platform, which allows the vendor to move the industry forward along lines that are advantageous to Sun. With the release of Java EE 5, for example, the company was the first to support the standard's numerous features such as annotations, EJB enhancements as well as tools that allow easier creation of Web Services.
- Though Sun backs up its direct sales program by utilizing viral marketing strategies based upon online sales for its Java ES products, the company also sponsors a number of partner programs that specialize in reselling and/or providing value-added consulting and integration services with direct services centers in 55 countries. With this approach Sun sells globally in over 100 countries and derives approximately 60% of its sales are from outside the US.
- Sun fields a number of tightly integrated Java System Suites under the Java ES brand that touch upon core SOA concerns as well as BPM, B2B integration, Web 2.0 collaboration and identity management. All products within these suites share a single user interface (tooling, management, etc.), registry/repository and runtime environment. This creates a highly unified experience for business owners looking for a consistent infrastructure that covers design, deployment, monitoring and management phases of the software lifecycle.

Weaknesses

- As a hybrid open and closed source vendor, Sun is currently evolving its open source licensing strategies, adopting a joint licensing program under CDDL and GPL. This transition has created some inconsistencies across its product offerings. For example, GlassFish, which is licensed under both GPL and CDDL, bundles project Metro, which itself is still only

Solution:**Sun Java
Composite
Application
Platform Suite**

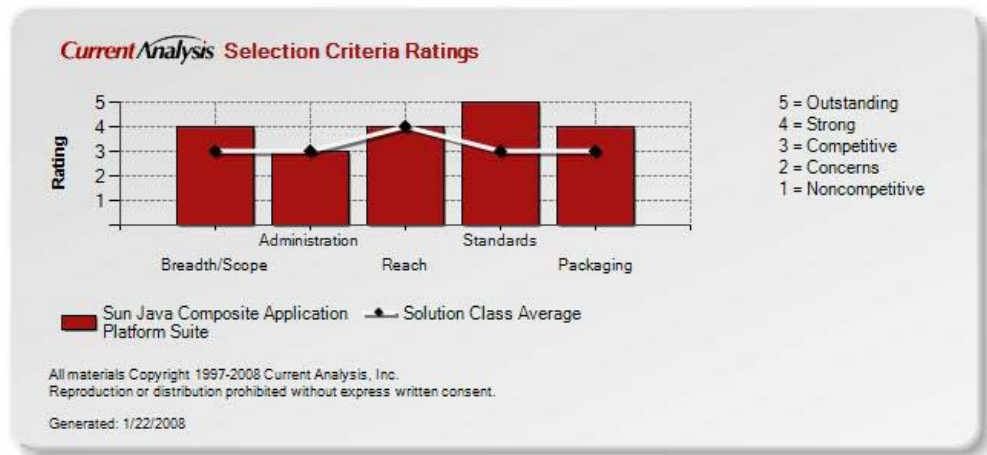
licensed under Sun's CDDL and not able to support the dual-licensing scheme available with GlassFish.

- Sun has done a great deal of work to unify its various products within its Java CAPS suite, including security and identity management, under a unified central development interface. However, centralized governance, administration, monitoring and other items have only partially been achieved across the entire Java ES product family. Because the SOA marketplace expects platform vendors to lead with SOA governance and management, Sun's slow movement in this space puts the company at a competitive disadvantage.
- Though Sun offers a number of Eclipse plug-in interfaces for its SOA products, the company remains at odds with the industry's overall move to an Eclipse-based tooling platform, preferring to back its NetBeans IDE for all development efforts. Also, it has refrained from joining the Eclipse Foundation. With significant technological advances offered with the newly released NetBeans 6, Sun continues to compete with Eclipse. This limits Sun's ability to influence developers working within highly heterogeneous environments, the majority of which demand more than mere support for Eclipse.
- While Sun provides a very capable and standards-based SOA governance solution with Sun Registry, the company does not productize this solution as a standalone product for use outside of Java ES Suite installations. Most rival companies market SOA registry / repository solutions both as a central hub for broader SOA offerings but also an entry point into heterogeneous SOA installations that do not currently possess governance capabilities.
- While Sun continues to bolster its SOA infrastructure offerings especially in support of the midmarket, the company has stayed away from productized vertical solutions with minor exceptions within healthcare, preferring instead to rely upon industry partners. This approach is currently being rejected by Sun rivals IBM, Oracle, BEA and others, which are seeking differentiation with customers weary of high integration costs through the development of pre-built business processes such as order-to-cash (which includes data models, BPEL scripts and metadata/artifacts).
- Even though Sun can fully support the SOA application lifecycle with roundtrip BPEL/ BPMN support via its eVision Studio and eInsight BPM product coupled with NetBeans, the company does not offer a single, role-based unified tooling interface for this lifecycle capable of supporting tasks such as Java EE development, process modeling and composition, service orchestration, message transformation and process optimization. Note that when Sun releases Java CAPS 5.2, it will offer a single unified interface for both Java EE development, process modeling/development and service orchestration, aligned with NetBeans 6.

Solution:

Sun Java Composite Application Platform Suite

Key Selection Criteria



Breadth and Cohesion of Portfolio: **STRONG**

- Benefit** – Sun fields a number of tightly integrated Java System Suites under the Java ES brand that touch upon core SOA concerns as well as BPM, B2B integration, Web 2.0 collaboration and identity management. All products within these suites share a single user interface (tooling, management, etc.), registry/repository and runtime environment. This creates a highly unified experience for business owners looking for a consistent infrastructure that covers design, deployment, monitoring and management phases of the software lifecycle.
- Issue** – Even though Sun can fully support the SOA application lifecycle with roundtrip BPEL/BPMN support via its eVision Studio and eInsight BPM product coupled with NetBeans, the company does not offer a single, role-based unified tooling interface for this lifecycle capable of supporting tasks such as Java EE development, process modeling and composition, service orchestration, message transformation and process optimization. Note that when Sun releases Java CAPS 5.2, it will offer a single unified interface for both Java EE development, process modeling/development and service orchestration, aligned with NetBeans 6.
- Issue** - Regarding Sun's open source efforts, until its Open ESB enters the market, the company will see significant competition from smaller open source vendors, which are also fielding solutions based upon professional services and support solution that focuses on customer liability and indemnification. With the number of open source ESBs (from Red Hat, WS02, MuleSource and IONA) growing rapidly, Sun's advantage in this area is diminishing. Note that Sun has been seeding components of its Open ESB product (JBI framework, BPEL support) into its community for more than a year. Note that with CAPS 5.2, Sun will include Open ESB components.
- Benefit** - Sun is able to field a hardware and software that spans server, storage, operating system, database and supporting SOA software. For example, the company offers a certified operating system and application server stack consisting of Solaris (also available through GPL/CDDL) and GlassFish. This allows Sun to compete directly with IBM/Novell, Oracle/Red Hat and Red Hat, all of which offer certified stacks. This ability to ensure compatibility

Solution:**Sun Java
Composite
Application
Platform Suite**

for the entire application platform stack has fast become a differentiator within the open source middleware market.

- **Benefit** - Sun has standardized upon NetBeans as its primary development environment, discontinuing its Java Studio Creator or Java Studio Enterprise tools. These were both based upon NetBeans but employed additional functionality (Web and enterprise capabilities), which Sun has now open sourced and included within the NetBeans project. Sun is advising Java Studio Creator and Java Studio Enterprise customers to migrate to NetBeans 6.0, offering migration tools, guidance and six months of free migration support (which expires on June 3, 2008).

Deployment and Administration: COMPETITIVE

- **Benefit** – Management routines are typically carried out by point solutions, targeting specific tasks such as application deployment via Java CAPS Enterprise Designer. But Sun also offers a basic, centralized management solution, Enterprise Manager, which is capable of providing monitoring, management as well as deployment and patching services for all software available within Java CAPS.

- **Issue** – Though Sun is able to provide provisioning capabilities through its closed source management solution N1, the company does not offer a hosted, online support and management console in support of its Java ES suites as a whole. Sun does have an “Update Center” in beta and it has built into GlassFish the technology necessary to support this level of management, in which customers are able to perform one-click provisioning and other deployment/administration tasks that require collaboration with Sun. However, the company has not yet set a date for when this capability will be made available.

- **Benefit** – Leveraging its broad product line that spans operating system to application container, Sun offers customers a single installation routine for SOA components as well as supportive tools including Sun Cluster, High Availability Session Store and Java DB. Customers can also purchase pre-installed systems that are cable-ready through Sun Customer Ready Systems (CRS) program.

- **Issue** – Sun has done a great deal of work to unify its various products within its Java CAPS suite, including security and identity management, under a unified central development interface. However, centralized governance, administration, monitoring and other items have only partially been achieved across the entire Java ES product family. Because the SOA marketplace expects platform vendors to lead with SOA governance and management, Sun’s slow movement in this space puts the company at a competitive disadvantage.

- **Benefit** – Sun, like many SOA vendors, partners with governance providers such as AmberPoint. However Sun offers a very centralized governance solution through its Sun Service Registry, which is only available as a tightly integrated Java ES Suite component. In spite of its name, this solution serves as both a registry and an extensible repository built to support service lifecycle management routines such as versioning, validation, auditing, inter-registry federation and event notification.

Geographic, Market and Customer Reach: STRONG

- **Benefit** – Though Sun backs up its direct sales program by utilizing viral marketing strategies based upon online sales for its Java ES products, the company also sponsors a number

Solution:

**Sun Java
Composite
Application
Platform Suite**

of partner programs that specialize in reselling and/or providing value-added consulting and integration services with direct services centers in 55 countries. With this approach Sun sells globally in over 100 countries and derives approximately 60% of its sales are from outside the US.

- **Issue** - While Sun continues to bolster its SOA infrastructure offerings especially in support of the mid-market, the company has stayed away from productized vertical solutions with minor exceptions within healthcare, preferring instead to rely upon industry partners. This approach is currently being rejected by Sun rivals IBM, Oracle, BEA and others, which are seeking differentiation with customers weary of high integration costs through the development of pre-built business processes such as order-to-cash (which includes data models, BPEL scripts and metadata/artifacts).

- **Benefit** – Sun has established a consistent message to reach open source-savvy customers. It sells its hybrid open and closed source solutions with a strong focus on training, consulting, support and indemnification (for open source offerings). This will help customers gain confidence in Sun's business model going forward. While not all of its middleware elements are open source, Sun can point out that all elements are available for the same subscription-based yearly pricing.

- **Benefit** – Unlike its closed-source rivals, which are struggling to make the transition from licensing to licensing plus subscription revenue streams, Sun has already established an open source-friendly business model that appeals strongly to the highly influential developer community. This puts Sun in an enviable position relative to industry predictions that call for 34 percent of worldwide software revenue to be driven by subscription-based purchases by 2008.

- **Issue** – While Sun provides a very capable and standards-based SOA governance solution with Sun Registry, the company does not productize this solution as a standalone product for use outside of Java ES Suite installations. Most rival companies market SOA registry / repository solutions both as a central hub for broader SOA offerings but also an entry point into heterogeneous SOA installations that do not currently possess governance capabilities.

Interoperability and Standards Support: **OUTSTANDING**

- **Benefit** – In a SOA market dominated by Java-based solutions, Sun has a distinct advantage as the owner/creator of this important platform, which allows the vendor to move the industry forward along lines that are advantageous to Sun. With the release of Java EE 5, for example, the company was the first to support the standard's numerous features such as annotations, EJB enhancements as well as tools that allow easier creation of Web Services.

- **Benefit** – In addition to supporting Java EE 5, Sun's Java ES products support most of the standards efforts relevant to a Java-based SOA environment. For example, GlassFish V2/Sun Java System Application Server 9.1 supports JAX-WS 2.1, JAX-RPC, REST, StAX, Spring and Java Server Faces as well as WS-I Basic Profile 1.1. And on the development side, Sun has begun supporting a broader swath of interpreted and scripting languages including JavaScript (with support for AJAX), C/C++ and PHP (in beta) as well as Ruby and Ruby on Rails.

- **Issue** - Though Sun offers a number of Eclipse plug-in interfaces for its SOA products, the company remains at odds with the industry's overall move to an Eclipse-based tooling platform, preferring to back its NetBeans IDE for all development efforts. Also, it has refrained from joining the Eclipse Foundation. With significant technological advances offered with the newly released NetBeans 6, Sun continues to compete with Eclipse. This limits Sun's

Solution:

**Sun Java
Composite
Application
Platform Suite**

ability to influence developers working within highly heterogeneous environments, the majority of which demand more than mere support for Eclipse.

- **Benefit** – Sun's strong Microsoft-to-Java technologies stand as a major differentiating factor. Building on its partnership with Microsoft, Sun has highlighted its support for .NET environments in GlassFish V2 with the Metro Web services framework (which includes the independent projects Tango and JAX-WS RI). The company now includes this stack with GlassFish V2, supporting .NET 3.0's Windows Communication Foundation (WCF). This stack also supports many WS-I standards, such as WS-Security, WS-Addressing, WS-ReliableMessaging and WS-Policy, making it a very capable platform for heterogeneous J2EE and .NET deployments

- **Issue** – Though Sun's various Java ES Suites contain tightly integrated products, not all products are lined up in terms of release dates and interoperability. For example, the current release of Java CAPS (version 5.1) is not yet fully aligned with GlassFish V2 and NetBeans 6.0. With version 5.2, which is due out in Q2 2008, Sun intends to more fully align its various tooling and server offerings.

Packaging, Services and Support: STRONG

- **Benefit** – Sun fields a number of clearly targeted software suites under its Java Enterprise System (Java ES) brand that combine software, online/phone support, professional services and educational tools in the service of specific horizontal use cases such as B2B integration, composite application development, identity management enterprise application integration (EAI) and basic Web and application deployment. These very well integrated suites can be purchased separately or as a single unit within the Java Composite Application Platform Suite, which includes tooling all of the SOA tools mentioned within this report.

- **Benefit** – Sun continues to focus its go-to-market strategy on open source software and business models. For example, the company has moved from a per-socket pricing plan for select products such as its Java System Application Server 9.1 (the supported rendition of GlassFish V2), adopting instead an annual subscription plan. This continued move towards a service-based model complements Sun's three-tiered subscription model, which features live call transfer 24x7, indemnification from potential litigation, Sun Developer Expert Assistance (for a technical second opinion) and a dedicated support team.

- **Issue** – As a hybrid open and closed source vendor, Sun is currently evolving its open source licensing strategies, adopting a joint licensing program under CDDL and GPL. This transition has created some inconsistencies across its product offerings. For example, GlassFish, which is licensed under both GPL and CDDL, bundles project Metro, which itself is still only licensed under Sun's CDDL and not able to support the dual-licensing scheme available with GlassFish.

- **Issue** - Sun faces a marketing challenge with GlassFish, as this open source product plays a dual role under two different brands and version numbers. As GlassFish V2, it is a free, community edition product, and as Java System Application Server 9.1, it is a supported, licensed (and now subscription-based) enterprise product. Obviously, the enterprise branding and version keeps pace with Sun's other enterprise products. However, GlassFish is the company's reference platform for Java EE support, and it carries the company's open source clout, which is lost with the enterprise branding.

- **Benefit** – Sun provides a very simple but flexible support program for Java ES customers,

Solution:

**Sun Java
Composite
Application
Platform Suite**

employing a multi-tiered approach based upon company size and selected level of support. All licensed customers receive the same basic online and telephone technical support along with online training. Larger customers receive additional training and professional services credits. Customers can then choose from multiple software service plans specifying support SLAs, customer advocacy and online support options.

Solution:

■ Go To Market

**Sun Java
Composite
Application
Platform Suite**

Solution Positioning

- Like most SOA platform providers, Sun positions its Java ES offerings as a broad collection of SOA-centric products that can be utilized individually or in concert. However, Sun actively markets an open source-centric business model that focuses on a subscription-based package that couples software, professional services, support, training/education and support within a single offering at a fixed price tag.
- Sun fields a growing number of open source solutions, including an application server (GlassFish), and ESB (Open ESB, which is now in beta), a development IDE (NetBeans), operating system (Solaris), portal (OpenPortal), database (JavaDB) and of course development framework (Java). But unlike many rivals, Sun does not market these solutions as stepping-stones to closed source counterparts. Rather, the vendor markets its open source offerings as means to germinate innovation and more importantly to penetrate the highly lucrative developer community virally via technologies.
- With the firm's recent stock ticker change from SUNW to JAVA it is clear that Sun intends to leverage its leadership role within a heavily Java-biased SOA marketplace. To that end, the firm plays a very active role within the Java Community Process (JCP) program, which it formed in 1998 to move Java forward not as Sun-controlled technology but as an open, industry-led platform via third-party submitted Java Specification Requests (JSRs). Sun has strengthened this community now that it has open sourced Java Compatibility Kit (JCK).
- The company firmly targets the SMB and mid-market with solutions that do not penalize smaller firms, owing to a unique pricing and distribution model, in which customers pay yearly subscriptions of \$100 per employee per year for the base Java ES suite or may purchase the individual Java ES Suites such as CAPS for \$100 and the ESB or B2B suites for \$50 per employee per year.
- Sun positions the Java ES product family as a "phased-in" solution that allows customers to select an appropriate entry point and then gradually expand capabilities over time. Customers can start out with a basic application execution environment with Sun's Java Application Platform Suite or focus on a specific problem such as corporate mergers with Sun's Sun Java B2B Suite. Or customers can upgrade to or simply deploy a broad SOA platform that covers all available technologies (sans specific application adapters) with the Java CAPS solution.

Solution Traction

- Overall, Sun has garnered a great deal of community momentum surrounding its open source efforts. Since the launch of GlassFish in 2005, for example, the company has grown its list of project committers to more than 30, including ISVs such as Oracle, Ericsson and Terracotta. The broader community has grown into the thousands and it has spawned more than 3.5 million GlassFish downloads since July 2006, when Sun released GlassFish V1. And GlassFish is now directly supported within a number of important development projects, including Eclipse, Genuitec's MyEclipse and IDEA. It is also included along with Sun's NetBeans product. There are also more than 30 non-Sun committers for the company's Open ESB project.
- Sun's decision to stick with NetBeans rather than adopt Eclipse has shown significant trac-

Solution:**Sun Java
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Application
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tion within Sun's developer community. Over the past three years, Sun's download count for NetBeans has grown 300 percent to more than 16 million downloads, and its email subscriber list has grown to 506,432. These encouraging numbers coupled with Sun's growing collection of over 100 NetBeans community members, which now includes Nokia Corporation and Wipro Technologies, give NetBeans much needed credibility within an Eclipse-dominated industry.

- With two years under its belt since acquiring SeeBeyond, Sun has steadily moved toward a tightly integrated yet highly modular SOA platform that spans SOA, BPM/BAM, identity management, portal and B2B integration. Since 2006, when Sun truly began fielding a unified SeeBeyond/Sun SOA platform, the company has seen the number of Java ES subscribers grow to over 1.3 million.
- Sun has released a Java certification toolkit (Java Compatibility Kit) as well as the majority of the Java SE Java Development Kit (JDK), called OpenJDK, to the open source community under version 2 of the Gnu Public License (GPL). In doing so, Sun has answered a longstanding criticism surrounding the company's heretofore incongruous approach to open source, which embraced open source but kept Java closed in order to stave off possible "forks" that might lead to incompatible versions of Java. By reversing this stance, Sun has now possesses a coherent open source strategy that spans operating system, application server, and now development platform.

Solution:

■ Solution Elements - Definitions and Descriptions

**Sun Java
Composite
Application
Platform Suite**

Solution Element:

Application Servers

Definition:

Application servers are a key element within a SOA implementation, providing the foundation upon which most applications are deployed. They are comprised of server software designed to deliver applications to clients (computers, mobile devices). These servers are typically bundled with broader development, deployment and management tools. On their own, they focus on standards support for application containers such as Java and .Net and provide clustering, fail-over, load balancing, and distributed deployment services.

Product Description:

Sun Microsystems – Java System Application Server and GlassFish etc.

Sun fields a number of application server solutions within its Java ES product family. Java System Application Server and GlasFish. This J2EE and Java EE capable application server provides a foundational platform for the delivery of sever-side Java applications and Web services. This open source product is a licensed version of Sun's open source application server GlassFish. Both open and licensed versions are tightly integrated with Sun's development tools Sun Java Studio Enterprise (retired), Sun Java Studio Creator (retired) and NetBeans. This product offers the following key features:

- Java EE 5 compatible
- In-memory replication
- Secure remote management
- .NET interoperability via Project Metro
- Open Source as both CDDL and GPL
- Server-side scripting via project Phobos

Java System Message Queue. A part of Sun's Solaris operating system, this product integrates disparate applications via Java Message Service (JMS) . Key features include:

- Clustering for message servers
- Fully JMS compliant
- Support for HTTP and HTTPS
- SOAP support
- Encryption
- High availability database for failover

Java System Web Server. Also included with Solaris and all Java ES solutions, this basic Web server offers a platform for Web services, JSP, Java Servlet, NSAPI and CGI technologies. Key features include:

- Built-in HTTP reverse-proxy
- Pattern matching for complex URIs
- Java EE 5 compliant Java application container
- HTTP Compression
- Built in search engine

Solution:

Solution Elements - Definitions and Descriptions *(Continued)*

**Sun Java
Composite
Application
Platform Suite**

Java System Web Proxy Server. As with most proxy servers, this product provides basic network traffic management based upon request locations. Key features include:

- Firewall traversal via SOCKS5
- LDAP support
- Document caching based on user requests
- URL filtering

Solution Element:

Business Process Management

Definition:

Though there is still a thriving market for pure-play business process management (BPM) solutions, most SOA suites come with a fully capable BPM product tied closely with application deployment, orchestration and integration servers. A typical BPM solution within a SOA suite supports process design, execution and optimization tools, including the following activities: process modeling, design and development; process discovery, monitoring and optimization; process rules development and execution; and business process execution.

Product Description:

Sun Microsystems SeeBeyond eInsight Business Process Manager

SeeBeyond eInsight Business Process Manager - This solution serves as Sun's primary toolset for business process management activities. Layered on top of SeeBeyond eGate Integrator, SeeBeyond eInsight Business Process Manager is designed to help business analysts model, test, deploy, monitor and manage composite business processes. Key features include:

- WS-BPEL and BPMN support
- SOAP/HTTP-free calls to Java CAPS services
- Full rules engine and rules designer
- Integration with Enterprise Manager
- Built-in instance fail over capabilities
- Java-based API for external workflows
- Integration with Java System Application Server
- Automatic publishing to Sun Registry

Solution Element:

Composition and Development Tooling

Definition:

Many SOA elements such as BPM solutions, application servers and ESBs include their own development tools in support of product-specific programming needs. However, most SOA suites also provide an overarching, general, integrated development environment (IDE) that

Solution:

■ Solution Elements - Definitions and Descriptions (Continued)

**Sun Java
Composite
Application
Platform Suite**

can support, augment or replace these more specialized development tools. A typical SOA IDE can deliver server side or client-side applications, the latter, often supporting rich Internet application (RIA) technologies such as AJAX.

Product Description:

Sun Microsystems – NetBeans, Java Studio Creator and Java Studio Enterprise, SeeBeyond eVision Studio

Sun offers a number of development tools in support of its Java ES family of products. However, the company has begun consolidating these offerings under its NetBeans IDE. While the company still supports Java Studio Creator and Java Studio Enterprise, it is encouraging customers to move to NetBeans by offering migration tools and free migration support during the first six months of 2008. The SeeBeyond eVision Studio is a rapid composite application design and generation tool that does not require coding. This includes a Web page and page flow designer and outputs interfaces for use within business process management and portals (via JSR 168). The NetBeans product represents Sun's primary development interface in support of Java SE solutions. This open source IDE focuses on Java, C, C++, Ruby UML, Web services, development, interfacing closely with Java SE products such as Java System Application Server. Key SOA features include:

- Full Java EE support, spanning JDK 1.1 through JDK 6
- Test tools including unit testing and debugger
- Application profiler for memory optimization
- Swing GUI builder
- BPEL designer integrated with GlassFish
- XSLT Designer
- Composite Application Service Assembly Editor
- Graphic WSDL editor
- XML Schema editor

Solution Element:

Enterprise Service Bus and Integration

Definition:

Business activity monitoring (BAM) concerns the monitoring of and reaction to business processes and the events stemming from those processes, often in real time. Most BAM solutions are tied closely with or included as a part of a BPM solution. BAM products help customers ensure alignment between key performance indicators (KPIs), which have been declared during process development and the performance of running processes. As such, these products must perform data and event collection and event analysis, utilizing correlational techniques to uncover dependancies. Users interact with BAM products through visualization dashboards and actionable alerts, though which processes can be modified or enacted.

Solution:

■ Solution Elements - Definitions and Descriptions (Continued)

**Sun Java
Composite
Application
Platform Suite**

Product Description:

Sun Microsystems – SeeBeyond eGate Integrator, SeeBeyond eWay Intelligent Adapters etc.

SeeBeyond eGate Integrator solution serves as an enterprise service bus (ESB), offering the following key integration capabilities and features:

- JCA adapters
- JMS messaging
- JMX management
- Guaranteed messaging
- Transformation services
- OS Support for Solaris, Windows, Linux, HP-UX, AIX, Tru64
- Support for 3rd party application servers (deploy and monitor)
- Tied closely with for other SeeBeyond products

SeeBeyond eWay Intelligent Adapters. Sun offers more than 80 pre-built adapters that provide integration with systems, databases, middleware and communications protocols. These can be exposed as Web services or as Java applications.S

eeBeyond eXchange Integrator. This B2B integration product provides web-based trading partner profile management and message-tracking services, supporting ebXML as well as other standards like EDI and AS2.

SeeBeyond eXpressway Integrator. This solution couples with SeeBeyond eXchange Integrator to provide onramping services for smaller trading partner network participants. It provides basic implementation process, graphical configuration wizards, and partner downloadable connectivity software.

SeeBeyond eTL Integrator. This product provides real-time and batch extract, transform and load capabilities for bulk data interchange between disparate databases and file system.

SeeBeyond eView Studio. This solution allows customers to identify common records across from across disparate line-of-business applications by building a cross-index of different local identifiers. This tool, which supports bulk data loading and data analysis capabilities allows for quick data warehousing without requiring a full data warehouse solution.

Solution Element:

Management, Governance and Security

Definition:

Business activity monitoring (BAM) concerns the monitoring of and reaction to business processes and the events stemming from those processes, often in real time. Most BAM solutions are tied closely with or included as a part of a BPM solution. BAM products help customers ensure alignment between key performance indicators (KPIs), which have been declared during process development and the performance of running processes. As such, these products must perform data and event collection and event analysis, utilizing correlational

Solution:

■ Solution Elements - Definitions and Descriptions (Continued)

**Sun Java
Composite
Application
Platform Suite**

techniques to uncover dependencies. Users interact with BAM products through visualization dashboards and actionable alerts, though which processes can be modified or enacted.

Product Description:

Sun Microsystems Java System Access Manager, Java System Directory Server, Enterprise Manager

Java System Access Manager. This product is Sun's flagship identity and access management solution. It integrates tightly with a number of Java ES products including Java System Portal Server and SeeBeyond eInsight Business Process Manager to provide required user authorization services. Key features include:

- SAML and ID-FF security assertions for identity federation
- Java System Directory Server
- Enterprise Manager
- Support for IBM WebSphere, BEA WebLogic
- Tied tightly with Sun's Java System Application Server and Java System Web Server
- Policy agents for enterprise applications from Oracle, SAP and IBM

XML encryption and digital signature capabilitiesJava System Directory Server. This high performance, 64-bit directory server provides a number of key benefits:

- Virtual directory and directory proxy services
- Microsoft integration
- Replication services for data availability
- LDAP 2 and 3 support
- X.509 Digital Certificates

Virtualization based upon MySQL 5.0, Oracle9i and IBM DB2 9Enterprise Manager. This general purpose management interface serves as a unified management console for the entire Java ES product family. This product provides In-flight business process visibility for all composite

Solution Element:

Portal, Presentation, and Access

Definition:

Within a SOA implementation, the method of choice for deploying data and application logic is the portal. Portals consist of a run-time environment upon which portlets are executed and user access is granted, as well as a portlet composition and management interface. Increasingly, SOA practitioners are deploying applications both within portals and as stand alone applications utilizing RIA scripting technologies such as AJAX. Web 2.0 applications are increasingly sold as a value-add or as composition tools (mashups) within these application delivery environments. And most SOA development tools are able to deploy applications using RIA technologies and portlet standards as well.

Solution:

■ Solution Elements - Definitions and Descriptions (Continued)

**Sun Java
Composite
Application
Platform Suite**

Product Description:

Sun Microsystems Java System Portal Server

Java System Portal Server. This collaboration-savvy portal product is based upon Sun's open source solution, OpenPortal. It offers the following key features:

- User generated Wikis
- Identity-based content delivery
- File sharing
- Group calendaring and task management
- Surveys and polling
- Content management capabilities with FatWire license
- Built in search engine
- Business process visualization
- Integration with Sun Java Communications Suite for email, calendaring and real-time collaboration

Solution Element:

SOA Registry/Repository

Definition:

The central hub (or brain) within any sizable SOA installation is the registry/repository, a server software solution that acts much like a directory server for the services that comprise composite applications. This SOA directory actually contains two distinct elements: a registry, which houses references to available Web services and associated artifacts; and a repository, which houses the overall SOA information necessary to govern running composite applications, including service versioning, policies, access requirements and performance agreements.

Product Description:

Sun Microsystems - SOA Registry/Repository

While Sun does not market a stand-alone registry/repository, it provides a full SOA governance solution in the Sun Service Registry, which is tightly integrated with the company's fully Java ES product family, in particular eInsight Business Process Manager and SeeBeyond eGate Integrator. Its key features include:

- UDDI 3.0 and ebXML Registry 3.0 support
- Web service version control
- User-defined taxonomies
- Automatic service artifact discovery
- Event logging and audit trail support
- Java and .NET interoperability