

Magic Quadrant for Enterprise Application Servers, 2Q06

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Application server technology is the basis of business applications. This market is evolving to address changes in business application architectures. Service-oriented architecture, open-source software, event-driven architecture and high-end extreme transaction processing are the key drivers.

WHAT YOU NEED TO KNOW

An application server is system software that acts as a container for applications' custom business logic. It is a form of middleware — more specifically, it is platform middleware. The key function of an application server is to implement a programming model — used, in turn, by the programmers of applications. The models — such as Customer Information Control System (CICS) Command Level; Java 2 Platform, Enterprise Edition (J2EE)/JEE; .NET Microsoft Application Platform (MSAP) and Common Object Request Broker Architecture (CORBA) — are used by the programmers as extensions to the basics of the programming languages.

Some application server programming models are bound into a single language (J2EE), whereas others enable multiple languages (.NET MSAP and CORBA) to be used. Behind their programming model application programming interfaces (APIs), the application servers manage the optimization of system resources (such as memory and threads); manage the connectivity of the application to external resources, including database management systems (DBMSs), networks and other applications; provide quality of service (QOS) support, including availability, reliability, security, management, performance and scalability; and enable the distributed deployment of applications.

Most application servers are also extended with unique features — such as batch frameworks, object caching, event management, development tools and process management — differentiating vendor offerings. Some extensions cross into other technology areas and can make a product labeled an application server represent a suite of multiple categories of system software surrounding the central application server core. The reverse is also often true — products labeled as other than application servers carry much of an application server's functionality at the core of their offerings.

The prevailing categories of application server architecture (and the corresponding programming models) are the Microsoft-only .NET and the multivendor J2EE (now renamed JEE). Although these products dominate the current market, they compete with the older transaction-processing monitor (TPM) and object request broker (ORB) products, which continue to be the preferred options for some projects, and with such emerging offerings as PHP, POJO frameworks, Java Advanced Intelligent Networks (JAIN) Service Logic Execution Environment (JSLEE), massive-memory and massive-grid-based platforms, addressing the shortcomings of the leading options.

Enterprise application servers (EASs) are application servers that are suitable for enterprise-class projects.

STRATEGIC PLANNING ASSUMPTION(S)

By 2011, the now-prevailing Microsoft .NET and the JCP-driven Java EE models will be joined by an additional application server architecture and programming model, which will be used in more than 20 percent of new mainstream business application projects (0.7 probability).

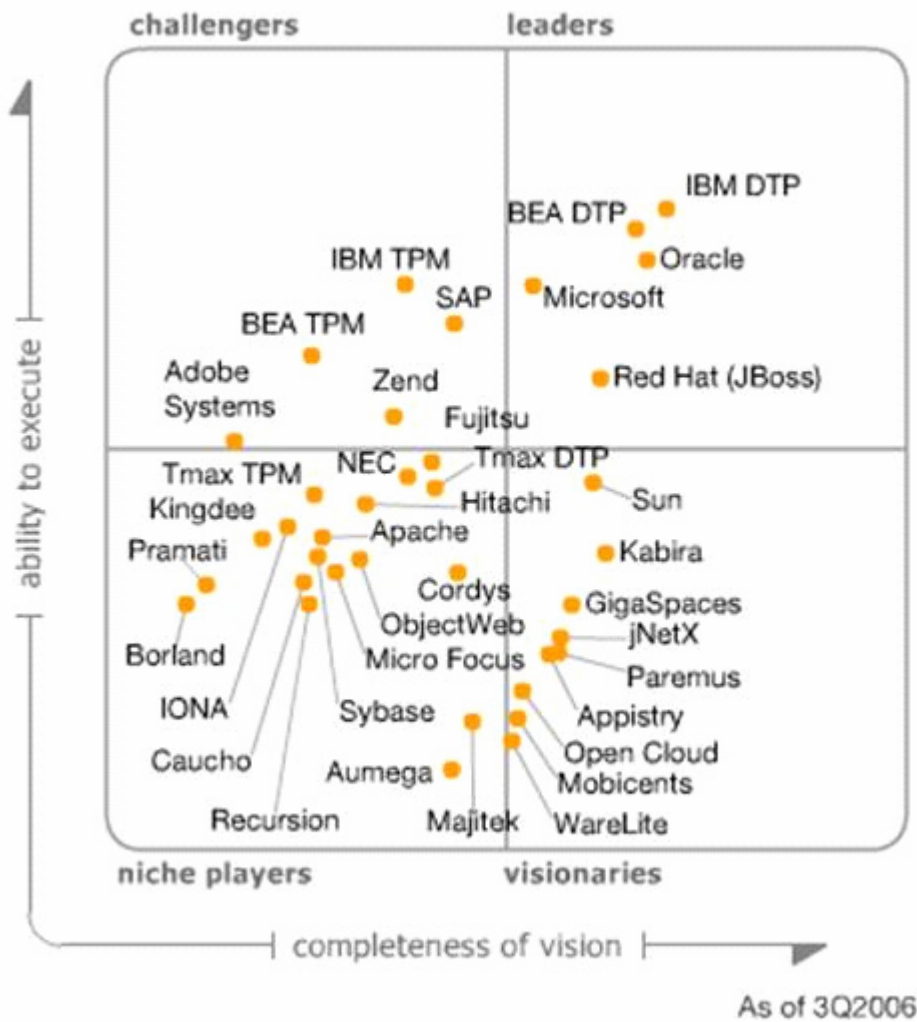
MAGIC QUADRANT

A Magic Quadrant represents Gartner's judgment of vendors' ability to execute and the completeness of their vision in a technology market (in this case, the EAS market). The Ability to Execute criteria reflect the staying power and record of execution of vendors in the market. The Completeness of Vision criteria reflect the vendors' ability to understand the market trends, influence them, and follow them with agility and consistency.

Vendors that are strong in the record of their execution and their ability to follow and influence the market are labeled "market leaders." The most-recent players in the market that have a limited record of execution, as well as well-executing vendors that are overly cautious on innovation and risk, are less likely to be leaders.

The Magic Quadrant can be seen as an arranged "long list" of vendors for a given market. Each user should devise its own shortlist, based on its specific circumstances and requirements, using the Magic Quadrant as one point of input, not as the deciding criterion.

Figure 1. Magic Quadrant for Enterprise Application Servers, 2Q06



Source: Gartner (August 2006)

Market Overview

Users and vendors that meet in the EAS market are driven to support enterprise-class software development projects. These projects often differ broadly in scope and specific requirements, and the user circumstances differ as well. These differences lead users to a wide variety of solutions,

and this broad range of demand supports a broad supply: This is a multibillion-dollar market that has dozens of notable vendors. Gartner rates 34 vendors in this Magic Quadrant, and we are tracking more, which may be added to future Magic Quadrants.

Users' requirements for products in this market are continuously changing. Formerly optional features, such as support of Simple Object Access Protocol (SOAP) and messaging, have become essential, and formerly obscure innovations, such as grid orientation and microkernel-style plug-in, have become important commercial differentiators. Some features, regulated by standards bodies and available from most competitors, become near-commodity. Other features remain guarded vendor differentiators. Evaluation criteria for the EAS market change every time we revisit the market to reflect its current state-of-the-art and its evolving priorities.

Market Definition/Description

The EAS market is populated by vendors that offer system software with the following minimal characteristics:

- "Container" functionality for the custom software modules:
 - Deployable as a long-running server operating system task (OS "daemon")
 - Software modules are programmatically addressable through the container (remotable), although only the container task is visible by the operating system (not the "contained" software modules)
 - Operating system resources (including memory, threads and tasks) are managed by the container on behalf of the individual software modules, freeing the software module code from the need for direct interaction with the operating system
 - Provides resource pooling — database and network connections
- Support for distributed computing — load balancing and failover clustering between container instances
- API or other means for authentication and authorization by container
- API or other means for monitoring the status and for minimal management (including start and stop) of the container instance(s)
- API or other means to access a file system by a software module
- API or other means to access a relational database management system (RDBMS) via a software module
- API or other means for invoking software modules via a software module:
 - Within the same container instance
 - Across similar container instances
 - In other, dissimilar container types
- API or other means to demarcate an atomicity, consistency, isolation, durability (ACID)-style transaction

Leading EASs often have additional subsystems, such as those for messaging and queuing, publish and subscribe, distributed shared memory, advanced clustering for availability, integration

adapters, business process management (BPM), business rule engines (BREs), management, multichannel access and Web services. These are important and are considered in the ratings; however, they are not definitional.

Advanced application servers enable plug-in (such as microkernel-style) replacement of subsystems, support ultra-high-end extreme transaction-processing features and have special provisions to use underlying grid architectures, when available. These, too, are important capabilities that are considered in ratings, but are not definitional.

Inclusion and Exclusion Criteria

Vendors are included in the Gartner EAS Magic Quadrant if they meet the following criteria:

- The EAS product matches the market definition
- The minimal EAS product is delivered and supported directly by the vendor — the listed definitional features must be available directly from the vendor; the extended features may be available through partners
- A major release or a point release of the minimal EAS product was delivered during the past 12 months, or the vendor has publicly committed the product to be delivered during the three-month period following the publication date of the Magic Quadrant
- If the product is still in initial development, a generally available, minimal EAS product has been publicly committed to delivery during the three-month period following the publication date of the Magic Quadrant
- Enough information is available to Gartner from the vendor and its customers for a fair rating to be possible

Added

- Adobe Systems — acquired Macromedia
- Apache Software Foundation — delivered Geronimo project
- Aumega Networks — initiated coverage; event-driven application platform (EDAP) vendor
- GigaSpaces — initiated coverage; grid-based application platform vendor
- jNetX — initiated coverage; JSLEE application platform vendor
- Majitek — initiated coverage; EDAP vendor
- Micro Focus — initiated coverage; COBOL-based application server vendor
- Mobicents — initiated coverage; JSLEE application server vendor
- Open Cloud — initiated coverage; JSLEE application server vendor
- Recursion Software — initiated coverage; Voyager application server technology
- Red Hat — Acquired JBoss
- WareLite — initiated coverage; EDAP vendor

Dropped

- Fujitsu-Siemens — still in the market with the openUTM TPM, but no new version released during the past 12 months
- Desiderata Software — exited the market
- JBoss — acquired by Red Hat
- Macromedia — acquired by Adobe
- Novell — exited the market

Evaluation Criteria

Ability to Execute

The fundamental indication of a vendor's ability to execute is its attained industry and market presence and reputation, the record of its business and technical execution and the degree to which it has delivered the essential core functionality expected from a competitive product. We consider the following product characteristics as fundamental requirements for well-executing vendors (rated under the product/service criteria — see Table 1):

- Interoperability and standards compliance
- Product maturity
- Platform coverage
- Breadth of add-on and application from vendors
- Product viability and installed base

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	high
Overall Viability (Business Unit, Financial, Strategy, Organization)	standard
Sales Execution/Pricing	standard
Market Responsiveness and Track Record	high
Marketing Execution	standard
Customer Experience	high
Operations	standard

Source: Gartner (August 2006)

Completeness of Vision

The fundamental indication of completeness of vision is the degree to which a vendor anticipates and influences the prevailing market trends. We consider the following product characteristics as fundamental indications of a well-established market vision (rated under the Offering [Product] Strategy criteria — see Table 2):

- Advanced support of service-oriented architectures (SOAs)
- Event-driven architecture (EDA) support
- Advanced Web services support
- Impactful Web innovation
- Business process composition
- Ultra-high-end extreme transaction processing
- Productivity for developers
- Internal microkernel-style (pluggable) architecture
- Support of deployment on hardware grids

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	high
Marketing Strategy	standard
Sales Strategy	standard
Offering (Product) Strategy	high
Business Model	standard
Vertical/Industry Strategy	standard
Innovation	standard
Geographic Strategy	low

Source: Gartner (August 2006)

Leaders

Leaders in the EAS market combine insightful understanding of the realities of the market, the ability to influence the market's direction, the ability to attract a following and the capacity to lead. Leaders have the proven ability to deliver on their vision and to support their customers through periods of stability, as well as periods of change. The leaders control most of the market's business activity and are the primary influencers of market evolution.

However, a leader is not always the best choice for a particular user's project. Many are spread too thinly in their offerings, channels and geographies, which can cause them to fall behind the more-narrowly focused smaller vendors in support and in their commitment to individual mainstream customers. With some notable exceptions, leaders are typically large vendors with long-term industry records. They represent safe choices, but they are not necessarily best-of-breed vendors.

In 2006, the leaders in the EAS market are:

- BEA Systems — distributed transaction processing (DTP)
- IBM — DTP
- Microsoft

- Oracle
- Red Hat (JBoss)

Challengers

Challengers excel in their ability to attract large user followings, but owe that ability to a relatively narrow focus on a particular usage pattern for EAS technology. These vendors often trail the leading-edge industry innovations, and lack a broad industry appeal; however, they excel in their dependable execution. Some of these vendors are conservative followers of older and well-proven technologies, whereas others offer alternative approaches to some popular, but narrow, mainstream technology requirements. The conservative challengers are the best choice for similarly conservative users: Their time-proven technologies and support networks may carry certain guarantees that are not available elsewhere. The alternative challengers excel in their chosen patterns and are the best choice for a subset of the EAS users, while lacking some of the capabilities for the requirements of others.

In 2006, the challengers in the EAS market are:

- Adobe Systems
- BEA Systems (TPM)
- IBM (TPM)
- SAP
- Zend Technologies

Visionaries

Most of the vendors in the Visionaries quadrant are relatively small innovators that are invested in addressing the limitations of the dominating application server styles. Some will eventually merge with, be acquired by or become the market leaders. Others will limit their target markets to focus on their core competencies and become niche players, or they will grow to be challengers. Some will exit the market. Visionary vendors lack proven user followings and, thus, represent higher long-term risk; however, they offer the greatest opportunity for differentiation for users looking for the competitive use of IT.

In 2006, the visionaries in the EAS market are:

- Appistry
- GigaSpaces
- jNetX
- Kabira
- Mobicents
- Open Cloud
- Paremus
- Sun Microsystems

- WareLite

Niche Players

These technology providers operate well in a vertical industry, a geographic segment of the EAS market or the original equipment manufacturer (OEM) market segment. Niche players are often specialists in their areas and may represent the optimum choice for some projects and for some IT organizations by offering the specialized expertise, more-relevant support practices, flexible terms and conditions, and greater dedication to a particular market segment and its customers.

Some niche players look to grow their businesses to challenge the leaders. Others discover innovative solutions that attract interest beyond their target market segments and emerge as visionaries. However, most niche players are focused on serving their market segments and customer bases, and they generally limit their ambitions to maintaining their segment excellence. Most niche players serve their historic customer bases and lack the ability or the interest to invest in carrying these customers forward. As their investment in the market declines, some of those vendors will be dropped from Magic Quadrant coverage, because they are no longer viable, competitive options for new users.

In 2006, the niche players in the EAS market are:

- Apache Software Foundation
- Aumega Networks
- Borland Software
- Caucho Technology
- Cordys
- Fujitsu
- Hitachi
- IONA Technologies
- Kingdee International Software Group
- Majitek
- Micro Focus
- NEC
- ObjectWeb Consortium
- Pramati Technologies
- Recursion Software
- Sybase
- Tmax Soft

Vendor Comments

Adobe Systems

With the acquisition of Macromedia in December 2005, Adobe, a multibillion-dollar vendor, entered the application server space for the first time with two fundamental products: JRun4 and ColdFusion. JRun4 is a J2EE-1.3-certified, compatible application server, used mostly as a servlet container. Despite its innovative internal architecture, the product suffers from a low level of vendor commitment. Adobe's popular ColdFusion, Flex and Breeze bundle JRun, but also support other J2EE implementations, further reducing JRun's momentum and market share. ColdFusion is a high-productivity application server, using proprietary ColdFusion Markup Language (CFML), but executing within the standard Java servlet container. CFML is a rare example of a non-Java programming language for the JVM. ColdFusion MX7 Enterprise Edition also supports the J2EE programming model through the bundled JRun4 or other J2EE application servers. It is used in thousands of organizations. With embedded J2EE, ColdFusion combines the portability of a JVM and the ease of use of a non-object-oriented programming environment. This, plus the strategic support of Adobe, a software industry giant, makes ColdFusion a challenger to the EAS market leaders.

Apache

Apache is an open-source project coordination and licensing body, represented here as the entity behind the Geronimo project. Geronimo is an open-source, J2EE 1.4, test-certified application server. It has a reputation for consistent, noncommercial support of open-source projects, and many Apache projects, such as Tomcat, are widely used in the industry. Tomcat alone barely qualifies as a complete enterprise-class application server for its minimal transaction management and its primary model of direct interaction with the user. However, Geronimo is a complete and innovative open-source implementation of the J2EE specification. Geronimo is in its first commercial release and has a minimal installed base. It suffers from being late to the J2EE market overall and the open-source J2EE market in particular. IBM has strongly endorsed Geronimo and acquired the company (Gluecode) that employed many of Geronimo's initial lead contributors. It is using Geronimo distribution as the basis of its low-end WebSphere, Community Edition offering. Aggressive support by IBM, the open nature of Apache licenses and the technical innovation of the Geronimo committers are the primary driving forces behind Geronimo's momentum. (Apache: Apache Software Foundation)

Appistry

Established in 2001, Appistry offers the Enterprise Application Fabric (EAF), a grid-based application platform. The company operates in the U.S. and Europe, and focuses on the financial services, logistics and military/intelligence markets. The Appistry EAF is based on a specialized, microflow-enabled, language-independent programming model. Appistry's vision is to achieve maximum reliability, availability and scalability for transactional and analytical applications atop large clusters of networked commodity hardware boxes. In Appistry EAF, the topology and technology platform is managed and exposed to applications as a single computing resource that can be automatically and transparently extended to applications and dynamically allocated to meet specified QOS policies. The Appistry EAF road map includes support for WS_* standards, improved development tools and extended caching capabilities. The product has approximately 10 customers (which is more than most of its direct competitors), and it can support Java and .NET. Appistry's challenges include gaining production deployment references, expanding its geographical and vertical market coverage, and developing partnerships with key systems integrators (SIs) and independent software vendors (ISVs).

Aumega

Based in India, Aumega has commercial operations in the U.K. and Japan. The company's flagship product is the Indus programming language, a Java extension designed to support event-driven, agent-based programming in highly distributed scenarios. Indus can be used for sensor-based systems, networked consumer devices, and telematic and business applications, because it deploys on JVMs, plain operating systems and on the bare hardware platform. The Indus Enterprise SDK is an original, Indus-based, EAS product displaying characteristics of event-driven and grid-based application platforms. It provides transaction management, grid deployment, agent coordination protocols, load balancing, security and fault-tolerant connections. The product has no production deployments, and it is still not generally available, but it is used in Indus Live, a software-as-a-service (SaaS) platform enabling peer-to-peer Internet-based, consumer-oriented application interoperability. The Indus Enterprise software development kit (SDK) is of interest chiefly to technically astute organizations looking for leading-edge technology to support highly differentiating applications on top of tera-architectures combining sensors, radio frequency identification (RFID), embedded devices and traditional systems. (Aumega: Aumega Networks)

BEA DTP

BEA is represented twice in the Magic Quadrant: as a DTP vendor of the J2EE application server BEA WebLogic and as the TPM vendor of BEA Tuxedo. BEA's Tuxedo DTP monitor dominates the market. Although the category is rarely considered for new project starts, it is the foundation of thousands of live, mission-critical enterprise systems. Tuxedo offers high performance and availability levels for distributed environments. It is based on internal enterprise service bus (ESB)-like messaging middleware and has supported SOA-style applications since the mid-1990s. BEA has gradually and slowly enhanced Tuxedo to support XML and Web services, but, otherwise, it has largely kept the product unchanged in recent years. Its users are happy with the product's quality; however, it suffers from the declining availability of skills in the market and the declining attractiveness of C/C++ and COBOL (Tuxedo's only supported languages) as languages for business application programming. The well-established bridge between Tuxedo and WebLogic J2EE makes BEA WebLogic a natural candidate for transitions from Tuxedo to Java, often preserving the transitioning users' commitment to BEA. (BEA: BEA Systems)

BEA TPM

BEA is represented twice in the Magic Quadrant: as a DTP vendor of the J2EE application server BEA WebLogic and as the TPM vendor of BEA Tuxedo. The BEA J2EE offering has one of the largest installed bases in the industry and is regarded as one of the best implementations of the J2EE specification. In recent years, BEA has committed to increased investment in vertical specialization (especially for telecommunications) and, more recently, in endorsing open-source programming models for Java as a complement or alternative to J2EE. BEA's investment in SOA is spread between WebLogic and AquaLogic, and its investment in EDAPs is modest, although it does have a specialized version of WebLogic for RFID processing (an event-driven application style). Its long-term plans envision a microkernel-style internal architecture. BEA has also applied substantial innovation to its JRockit JVM, extending its functionality with unique high-performance capabilities, released as Web Logic Server, Real Time Edition. The largest independent vendor of middleware, BEA can, at any time, be considered an attractive acquisition target, but its own successful recent acquisitions and its increasing market capitalization make a takeover more difficult and less likely. (BEA: BEA Systems)

Borland

Borland offers a J2EE application server, Borland AppServer (BAS), and a CORBA application server, Borland VisiBroker (BVB). BVB is a long-standing CORBA platform, one of only two surviving CORBA implementations in mainstream production use. BVB has been upgraded to support Web services and better align its CORBA programming model with a multi-platform SOA environment. Most of BVB's use is as an embedded CORBA engine of third-party applications and tools. (BAS is one such application, embedding BVB.) This J2EE application server is uniquely built on top of the CORBA BVB, and, unlike most other J2EE application servers, is not written in Java. This differentiation enables the product to offer high performance and modular deployment; however, in recent years, the product has been a lower priority on Borland's business agenda, which is focused on application life cycle management initiatives. As the result, J2EE/JEE certification testing of BAS is behind most of the market, and BVB and BAS are rarely updated or promoted. Besides potential high performance (with expert tuning), the product is best suited for users combining CORBA and Java runtimes. (Borland: Borland Software)

Caucho

Caucho is a Java and Web services innovator company that offers Resin, a J2EE-style application server. Although a Sun Java licensee, it has not yet passed the J2EE/JEE certification tests. A GPL-licensed open-source subset is also available, centered on the servlets programming model, including servlet clustering. Caucho claims more than 6,000 enterprise users (including CNet, Kodak Gallery and Salesforce.com). Most users employ the high-performance Resin Web server and servlet/Java Server Pages (JSP) engine only. In addition to Java and J2EE features, Caucho offers a "clean room" high-performance implementation of PHP 5 (Quercus), uniquely using all-Java as the enabling technology for PHP. Caucho also offers nonstandard, but optimized, binary and XML protocols for Web services (Hessian and Burlap, respectively). The company is clearly committed to innovation and invention, but lacks a clear vision of the mainstream market requirements. It is late with J2EE certification, does not effectively invest in building its brand recognition and relies on nonstandard protocols for differentiation, which limits its potential market to mostly the leading-edge technical enthusiasts. (Caucho: Caucho Technology)

Cordys

Cordys is a Dutch company that was formed by the former executives and lead engineers responsible for the Baan ERP product. The company has offered Cordys platform technology since 2004. Part of the current Cordys 4.2 is its innovative Java application server (Cordys WS-AppServer). WS-AppServer uses Cordys' messaging-based ESB transport for internal communications (in addition to its main role as the core of Cordys' integration technology), uses the Web Services Description Language (WSDL) specification for defining component interfaces and allows XML as a native data type, extending the Java native data types. Thus, it's well-positioned as the foundation for Web-based applications that process XML data and large numbers of Web-based transactions. However, the application server appeal is reduced by its limited installed base of fewer than 50 enterprises and because the product is offered only as part of the larger Cordys 4.2 platform. The company is not positioning WS-AppServer to be a stand-alone competitive offering.

Fujitsu

Fujitsu has more than 150,000 employees. Its EAS Interstage Application Server is a cornerstone of flexible service integration and business agility at the business service layer of its TRIOLE infrastructure concept. Fujitsu treats SOA as a key component of business agility, and plans to expand SOA features in the Interstage suite. To achieve business continuity aimed at zero

downtime, Fujitsu is extending Interstage Application Server capability to offer mainframe-class QOS to keep response time stable for fluctuating workload conditions, as well as concurrency processing (priority control) and resource pool and reuse features, along with automatic server configuration (provisioning/re-purposing) for hardware resource optimization. Interstage supports EDA (such as publish/subscribe) development, as well as abnormal recovery framework. Fujitsu also introduced Business Application Server and Job Workload Server as extended application servers to incorporate COBOL applications and batch job processing in an SOA environment and an EDA. Fujitsu's Interstage product is available globally with support centers and a certification program, and Fujitsu has been working on enhancing its global presence. Most of its Interstage revenue comes from Japan.

GigaSpaces

Established in 1999, GigaSpaces provides the GigaSpaces Enterprise Edition platform, a grid-based application platform. GigaSpaces has offices in the U.S., the U.K., France and Israel. GigaSpaces Enterprise Edition includes an application logic container and application provisioning services based on open-source Rio technology. The product also integrates the Spring Java framework and SymphonySoft's Mule, an open-source enterprise service bus (ESB). In addition, it provides tightly coupled caching, parallel processing, database and applications access, and Java Messaging Service (JMS) support. It is based on a proprietary implementation of the JavaSpaces specification, and is also available as a stand-alone product (Caching Edition). This infrastructure can store objects in distributed in-memory caches and support clustering, replication, failover, load balancing and security. Enterprise Edition has been on the market for less than a year, but it already has some production customers. GigaSpaces faces the typical challenges of a small, leading-edge innovator, including moving a complex technology that can currently be used to best advantage only by the most-technically skilled developers to mainstream adoption and aligning ISV and SI partners to enable rapid penetration of new accounts and vertical industries.

Hitachi

Hitachi offers its uCosminexus Application Server as a universally underpinning infrastructure for its APS product family (such as the uCosminexus service platform). uCosminexus Application Server integrates application development, runtime and system operation, and it facilitates hardware virtualization, autonomous operation and service integration. uCosminexus Application Server offers automatic scale-out in rapid workload increase by working with JP1 (Hitachi's system management middleware) and a virtualized server (such as BladeSymphony), along with proactive problem detection and prevention or problem localization, which reduces recovering/redeploying time and procedures and problem analysis features. Hitachi is the first vendor to implement a transaction scheduler for J2EE servers and features, such as proactive request flow control and workload balancing, along with priority control features, for performance enhancement beyond standard J2EE server features. uCosminexus supports Enterprise JavaBeans (EJB) annotation, as well as EJB 3.0 dependency injection for easier SOA service development. uCosminexus is only available in Japan; however, it will be used to build Hitachi's distribution channel outside Japan, mainly focusing on the Asia/Pacific (APAC) region.

IBM DTP

IBM appears twice in the Magic Quadrant because it provides the J2EE-based WebSphere Application Server and an array of TPMs (CICS Transaction Server, IMS Transaction Manager and TPF). WebSphere Application Server is one of the most popular J2EE platforms: It has been on the market for many years, enjoys vast industry support and has an impressive installed base. Technically, it is regarded as being on par with (and often superior to) its most prestigious competitors. It is involved in a large number of business-critical deployments (including IBM's

System Z9 mainframes), and it is almost always considered in large, competitive enterprise bids. Recently, IBM launched the Geronimo-based WebSphere Community Edition to cover the low end of the market, and the company is focusing investments on improving extreme transaction-processing features, such as gridlike clustered deployment, virtualization, application partitioning, scheduling, batch and distributed caching. The future evolution of the product is likely to include a componentized, OSGi-based deployment architecture, as well as support for advanced WS_* standards, SCA, JEE5 and EJB3.

IBM TPM

IBM appears twice in the Magic Quadrant because it provides the J2EE-based WebSphere Application Server, as well as an array of TPMs: CICS Transaction Server, IMS Transaction Manager and TPF. IBM's TPM products dominate the mainframe transaction-processing market and represent a still-profitable and growing business, despite slow declines in the installed base due to consolidation, outsourcing and other factors. IBM has introduced support for Java, Web services, process management, event notification and a wealth of interoperability features, making its TPMs "first-class citizens" in SOA infrastructures. In fact, TPM applications are increasingly being integrated with new J2EE or .NET-based front ends in SOA scenarios, thus generating more mainframe workload and eventually more revenue for IBM, despite a constant decline in mainframe technology costs. However, IBM TPMs face competition from modern EASs (including IBM's own WebSphere Application Server) for new developments, mainly because of the mainframe technology costs of adoption and the declining popularity of COBOL, PL/1 and C, the primary programming languages for these products.

IONA

IONA's Orbix enterprise application server, the product relevant to this Magic Quadrant, emerged in the 1990s as the leading CORBA platform. IONA focuses on Global 2000 customers in telecommunications, financial services, government and manufacturing/logistics. Orbix is still IONA's main revenue source; however, the company has staked its future on the SOA infrastructure market, where it competes with its leading-edge Artix ESB product and the Celtix open-source ESB. Orbix provides CORBA 2.5 and selected CORBA 3 features, extended security, high availability, transaction management, monitoring and logging. The Orbix family also includes a mainframe version aimed at the integration of CICS and IP Multimedia Subsystem (IMS) applications. Orbix is a mature product that is frequently used for business-critical projects. It is based on the visionary Adaptive Run Time infrastructure, a platform capable of dynamic, on-demand plug-in of system services. IONA will continue to capitalize on the Orbix installed base and possibly gain new customers; however, given the entrenched perception of CORBA as legacy, niche technology, the Orbix customer base is expected to shrink. This will happen slowly, because many users must remain on Orbix for several years for technical or business reasons. (IONA: IONA Technologies)

jNetX

Incorporated in 2001, jNetX is focused on the telecommunication operators market. With its main development labs in Russia, it operates globally. The jNetX N(x) platform is designed to enable the development of applications integrating intelligent networks, IP multimedia services, value-added services and telecommunication service orchestration for legacy and next-generation fixed and mobile networks. N(x) is based on a JAIN SLEE-based EDAP. It comes with a rich set of protocol adapters, a protocol abstraction layer, an exposure layer (to publish network and value-added services through various interfaces), and management and development tools. Notable N(x) differentiators are its visual development environment and its rule-based service orchestration tool, which enable developers to create "coarse-grained" services combining JAIN SLEE-based services and SOA services. With approximately 12 clients, N(x) is the most-proven

JAIN SLEE-based EDAP in the market. It is supported by a reasonable number of global and local SIs; however, widespread adoption of N(x) is hindered by the still-limited popularity of JAIN SLEE, and by jNetX's lack of industry knowledge and financial muscle needed to operate in vertical industries other than telecommunications.

Kabira

Founded in 1996, Kabira has offices in Europe, North America and Japan and operates primarily in the telecommunications, financial-services and defense areas. The Kabira Transaction Platform (KTP) is an EDAP that is based on a distinctive, event-oriented, "all in memory" architecture. KTP is primarily designed for high performance (up to tens of thousands of transactions per second) and also provides high-availability clustering. On top of KTP, Kabira also offers interoperability protocols, application adapters, and packaged applications for telecommunications and financial-services institutions. With almost 10 years in the market and 75 customers, Kabira provides the most-mature, proven EDAP, typically deployed in large, business-critical applications. KTP adoption has increased during the past three years, and Kabira is actively promoting the platform in its key vertical industries. Kabira technology is aligned with the requirements of EDAs and addresses users' demands for platforms supporting the most-extreme transaction-processing requirements. Kabira's challenges include improving support of standards (for example, JEE, .NET, WS_* and SCA), maintaining its lead over mainstream EASs and attracting investment from ISVs and SIs.

Kingdee

Headquartered in China, Kingdee was founded in 1993 to develop an accounting software package. Since then, it has become a leading vendor of ERP and CRM software in China. As its presence in China has grown, Kingdee has expanded its focus to specifically target the middleware space, including the stand-alone J2EE application server market. Core to this offering is Kingdee Apusic Middleware, a suite of products based on Kingdee Apusic application server. Kingdee is a Sun partner and licensee, and Kingdee Apusic is J2EE-1.4-compliant certified. Kingdee Apusic Middleware is the underlying runtime platform for Kingdee applications products, and it also supports the integration of Kingdee applications with external software (legacy systems and other packages). Although the company has publicly stated its intention to drive worldwide growth, its presence is primarily limited to China and Hong Kong in terms of customer adoption. However, in its core market, Kingdee is well-established, with a particularly strong presence among Chinese government agencies. (Kingdee: Kingdee International Software Group)

Majitek

Incorporated in 2001, Majitek operates in Australia and has offices in the U.S. and Singapore. It targets the media, telecommunications, financial-services, healthcare and government markets. The Majitek GridSystem is a Java- and XML-enabled, grid-based application platform designed to provide carrier-grade performance, scalability, reliability and manageability over a grid (large cluster) of commodity boxes. It supports transaction, security and life cycle management. It dynamically allocates grid computing resources to applications and supports transparent grid nodes failover and provisioning. GridSystem is based on Jini and JavaSpaces, which provide the core, peer-to-peer distributed computing infrastructures for the platform. It also supports servlets and JCA for interoperability purposes. Majitek has few production clients; however, because it's based on standard and relatively popular technologies, it can be relevant to customers looking for highly scalable and available application platforms that support business-critical applications on commodity hardware. Key challenges for Majitek include demonstrating its claims of superior productivity and QOS against mainstream J2EE platforms and gaining support from a reasonable number of ISVs and SIs.

Micro Focus

Micro Focus provides COBOL application development, modernization and deployment tools on several platforms, including mainframes. The company has a large installed base worldwide and enjoys long-lasting partnerships with premier system vendors, SIs and software companies. The Micro Focus Server is a COBOL-based application server that includes a CICS compatibility layer enabling offloading of CICS mainframe applications. Micro Focus has solid credibility as a provider of COBOL technology, and its CICS capability is based on proven technology that it has been selling for years as a part of its Windows-based COBOL/CICS development and testing environment. Hence, Micro Focus is well-positioned to arrest the slow erosion at the low end of the CICS installed base, generate revenue and establish itself as an enterprise-class application platform provider. The Micro Focus Server is typically used to port, modernize and Web-services-enable COBOL applications; however, at times, it's also used for new SOA applications. Due to COBOL's declining popularity, the product will continue to be adopted mostly by users and ISVs with established skills for this programming language.

Microsoft

Microsoft does not offer a named product for the EAS market; however, it clearly competes against EAS vendors. Microsoft's "application server" is mainly bundled into Windows Server 2003 as a set of features: IIS Web server, .NET Framework, ASP.NET and WinForms. The former COM+ enterprise services complete the picture, with support of distributed transactions, resource optimization and pooling. Microsoft offers high levels of productivity to developers and a choice of programming languages, but its EAS technology operates only in the Windows environment. Although .NET and Windows Server 2003 technologies work well and are technically able to support large business applications, most users see Microsoft's application server as an option for less-demanding applications. In part, this perception is based on past technical problems that have now been addressed; however, it also results from the limited, mixed record of Microsoft as a supporting partner for large-scale enterprise business application projects. The upcoming Windows Server "Longhorn" operating system will offer significant new capabilities to Microsoft application server users, but this is likely to be at the cost of some discontinuity.

Mobicents

Mobicents is an open-source holding company that coordinates the project efforts of Mobicents' JAIN JSLEE-based event-driven application server (EDAS). The company is generating minimal revenue, but Mobicents plans to gain a financial position from support and consulting engagements as its server becomes a production offering. Mobicents' JSLEE implementation is available from Mobicents.org under a dual license: general public license or commercial. The product is fully certified for JSLEE 1.0 (JSR 22) and includes some features of the forthcoming JSLEE 1.1 (JSR 240). Mobicents uses multiple component parts of JBoss application server. There is a close relationship between the engineering teams of JBoss and Mobicents. Mobicents aims at the high-end telecommunications market as its first target. It supports multiple communications protocols via prepackaged resource adapters, including SIP, Parlay, GoogleTalk, Asterisk and Diameter. It can also receive Java Remote Method Invocation (RMI) and HTTP/SOAP processing requests. Mobicents' ambition is to address high-volume, event-driven project styles across industries, but its minimal production experience challenges its mainstream appeal.

NEC

NEC is a Japanese vendor with more than 150,000 employees. NEC is committed to SOA for its solution from three perspectives: real-time management, risk management and life cycle

management. As its core product, NEC has positioned the EAS WebOTX (J2EE 1.4, WS-I BP 1.0, WS-Security 1.0, SAML Token Profile 1.0) and rolled out SOA backbone components. These include a business process engine based on WS-BPEL2.0 (which is not yet officially available); the Enterprise Service Bus, with an ESB graphical user interface (GUI)-based and configuration-based development environment (JBI 1.0 certified WebOTX Enterprise Service Bus was rolled out 30 June 2006); and a Universal Description, Discovery and Integration (UDDI)-based service registry. In addition, an EJB gateway has been introduced to integrate the VB.NET client (rich-client application) to EJB, as well as an improved XML parser. JMS1.1/message-driven beans (MDB) is also supported, as are CORBA event services and notification service. NEC WebOTX's strength is in a proven, mission-critical-ready EAS, and its stability and reliability and reuse capability are extended with multi-JavaVM, JMX-based system resource optimization and management flexibility by working with NEC's "WebSAM" enterprise management product. WebOTX is currently available in Japan. NEC is forming partnership relations with ISVs and joint ventures to build WebOTX distribution channels outside Japan, focusing on the APAC region.

ObjectWeb

Formed in 2002 and now made up of more than 65 members, ObjectWeb is an international consortium dedicated to facilitating the development and adoption of open-source technology at the application infrastructure level, including application servers. ObjectWeb is a not-for-profit organization, financed exclusively by the contributions of its members. ObjectWeb does not offer support services. It sponsors more than 100 open-source projects, including JOnAS — a test-certified, J2EE 1.4, lesser general public licensed, open-source EAS. Significant components of JOnAS (such as transaction management and clustering) have been contributed by Groupe Bull — a long-standing player in the online transaction processing (OLTP) middleware markets. JOnAS also includes functionality beyond J2EE: HSQLDB, an open-source DBMS; a STRUTS-based system management tool; and RMI over local call transports. The internal architecture of JOnAS is based on the microkernel model. JOnAS has limited market penetration at this time. The recently established ObjectWeb partnership with OrientWare of China may become a significant new business opportunity for the company and its JOnAS EAS. (ObjectWeb: ObjectWeb Consortium)

Open Cloud

Formed in 2000 in New Zealand, Open Cloud's current headquarters is in the U.K. It has, with Sun, led the JSLEE 1.0 and 1.1 specifications (JSRs 22 and 240, respectively) into the Java Community Process (JCP). Despite the current telecommunications-specific focus of JSLEE, Open Cloud is also being evaluated by nontelecommunications companies. However, due to minimal productivity tools and uncertain industry commitment to JSLEE, the short-term market for Open Cloud (and other JSLEE vendors) is focused mainly on leading-edge telecommunications IT departments. Open Cloud offers Rhino 1.4, a JSLEE-1.0-compliant EDAS, which has been available since February 2004, and has been certified JSLEE-compliant since April 2004 — the first in the industry. The first live production deployment of Rhino was delivered early in 2006. The product offers "carrier-grade" QOS (including high-end availability, transaction management, fault tolerance, clustering, in-memory database and multiprotocol communications adapters) and aims at ultra-high-end, event-driven extreme transaction-processing projects. However, the company's minimal production experience and installed base pose a challenge to its market appeal.

Oracle

Oracle's EAS, Oracle Application Server 10g Java Edition, sits at the core of Oracle Fusion Middleware, the foundation of the next generation of Oracle's business applications. Java Edition is a J2EE-1.4-certified and Web-services-enabled product, providing support for high-end QOS, including gridlike clustering, backup and recovery, failover and disaster recovery; persistence;

management; job scheduling; adapters; and application development, via JDeveloper 10g and Eclipse. Although it has less "mind share," and is supported by fewer ISVs than its immediate competitors, the Oracle EAS has gained considerable adoption during the past three years, based on its aggressive pricing, energetic sales and marketing, and the product's maturation. The number of large, business-critical deployments is significant, industry endorsements are growing, and the product is increasingly compared to similar BEA and IBM systems in competitive bids. Oracle's vision is distinguished by early endorsement of EDAP-style infrastructures, support for specialized versions (such as for telecommunications applications), deep integration with Oracle database technology (including the TimesTen in-memory DBMS) and commitment to extreme transaction-processing requirements.

Paremus

Established in 2001, Paremus provides the Infiniflow Enterprise Service Fabric (ESF), a Java-grid-based application platform. Operating in the U.K. and the U.S., Paremus focuses on financial services and other vertical industries through partnerships and OEM agreements. Infiniflow ESF is based on a loosely coupled, event-oriented architecture built on Jini/JavaSpaces and OSGi. Infiniflow ESF is designed to provide scalability and continuous availability by dynamically and transparently allocating tasks across a set of virtualized, networked computing and storage resources. Future versions will support the Spring Java framework, Web Services Choreography Description Language (WS CDL), simulation, improved self-tuning and optimization, and JCA. Infiniflow ESF is a visionary platform. It has some production customers and Paremus' open-source-based go-to-market strategy is designed to attract mainstream users. Therefore, the company has the opportunity to leverage increasing user interest in scale-out platforms for high-availability, business-critical applications. Challenges include simplifying its value proposition, expanding its geographical coverage, growing its customer base and extending its network of partners.

Pramati

Pramati's business is established primarily in India (the vendor claims more than 150 enterprise users). It is little known in North America or Europe, although it has now established its American headquarters in San Jose, California. Pramati's main product is Pramati Server — a J2EE-1.3-certified compatible application server. The company also plans to bring out a J2EE 1.4 product and a preview version of Java EE 5. The product is offered with a dedicated development toolset (Pramati Studio) and systems management tools. Pramati points to these tools and the high performance of its servlet engine as its key differentiators, along with dedicated support. In May 2006, Pramati announced a strategic investment in the professional service business with the formation of MiddlewareWorks. This indicates the company's interest in extending its business model from pure software to services. For a smaller vendor with differentiated technology, but a lack of resources to compete against the industry giants, such a combination may be a more-pragmatic approach to preserving its viability and growth. (Pramati: Pramati Technologies)

Recursion

Recursion was founded in December 2001, through the management buyout of several product lines from ObjectSpace. A key transferred technology was the Voyager platform for distributed Java computing. Through Voyager, the company continues the middleware innovation work begun by ObjectSpace in 1997. Voyager is a unique and long-standing middleware product. Its key vision is based on the mobile software agent model as the alternative to static (resident) software modules exchanging messaged data. Multiple-agent behavior patterns are supported, including single-use, multiuse and propagation. Voyager uses JBoss Rules for flow rule processing, and plans to add support of JBoss' JMS, JTS and JMX implementations for messaging, transaction coordination and systems management. Recently, Voyager added

support of J2ME to participate in mobile networks. Voyager's history is dedicated to promoting the idea of the intelligent agent alternative to traditional remote procedure call (RPC) and message-oriented middleware (MOM) communications. It is an innovative technology looking for a "killer application" or an equally visionary user organization. (Recursion: Recursion Software)

Red Hat (JBoss)

In June 2006, Red Hat completed its acquisition of JBoss and has now switched entirely to JBoss' Application Server as its strategic J2EE offering. JBoss (which is now Red Hat's middleware division) offers a J2EE 1.4, LGPL-licensed, open-source application server and the JBoss Enterprise Middleware System (JEMS) APS. The JBoss application server challenges the leading commercial J2EE vendors and pressures the entire market for lower costs and subscription pricing. The product uses a microkernel-style internal architecture that makes it attractive to ISVs looking to embed minimal enabling technology for their applications. JBoss support is rated highly by users, and its product offers such innovations as aspect-oriented programming, early support of EJB 3.0, rule processing, and asynchronous JavaScript and XML (Ajax) support. Despite its success in market penetration and name recognition, JBoss has generated only modest revenue (coming from its support network subscriptions). The Red Hat acquisition represents a serious test of the product's long-term viability, bringing with it the opportunities associated with a larger vendor's resources and channels, as well as the challenges of a now-public (that is, revenue-driven) and less-independent business.

SAP

SAP provides its NetWeaver Application Server EAS only as part of its software infrastructure foundation: SAP NetWeaver. Almost all mySAP business applications run on NetWeaver Application Server. It supports J2EE and the proprietary Advanced Business Application Programming (ABAP) environment (most SAP applications are based on ABAP, also widely used by SAP customers and partners) on the basis of some common system services. The product currently features J2EE 1.3 and Web services support, a data abstraction layer, a repository for distributed version management, change management services, improved clustering and an Eclipse-based developer studio. By YE06, SAP will add support for J2EE 1.4 and JEE 5, as well as a fail-safe Java Virtual Machine (JVM) and other improvements. Users deploy NetWeaver Application Server mainly to implement Web front ends to SAP applications, rarely for large-scale, custom J2EE systems. The performance, scalability and compatibility of the J2EE stack are aligned with the competition. Adoption and third-party support are growing, but still trail its most-popular competitors. Its packaging and deep integration with SAP technology makes NetWeaver Application Server a formidable contender in the SAP installed base; however, its slow evolution makes it less appealing than leading competitors for other classes of users.

Sun

A J2EE application server is a core component of all Sun strategic Java Enterprise System suites. Sun's EAS comes in Platform, Standard and Enterprise editions. The Platform edition is an entry-level application server intended for applications loaded into a single address space. Platform Edition 8.2 is an open-source implementation of J2EE 1.4. It is used as a J2EE reference implementation, distributed to all J2EE 1.4 licensees. Platform Edition 9.0 is the new community open-source implementation of Java EE 5 (Project GlassFish). Full clustered enterprise-oriented editions of J2EE are available as the Standard and Enterprise editions. The Enterprise edition supports advanced clustering, including failover, state replication and dynamic administration. Both are based on the older Platform Edition 8.1 and are scheduled to be moved to Platform Edition 9.0. The Standard and Enterprise editions are not open source. The product is differentiated by its access to the advanced Sun SOA repository/registry, its free entry-level

version, its early support of Java EE 5 and the advanced, high-availability state management engine in the Enterprise version. (Sun: Sun Microsystems)

Sybase

Sybase is a long-standing enterprise software vendor. Its Sybase EAServer is a test-certified J2EE 1.3 application server (the 1.4 version is due in 3Q06) that supports CORBA and (uniquely) PowerScript programming models on the same processing engine. Thus, unlike most of its competitors, Sybase supports multiple programming models within the context of its application platform. Since its acquisitions of AvantGo, Dejima Technology, XcelleNet and OnePage, Sybase has invested strategically in the enterprise-oriented mobile application space. To that end, Sybase has substantially enhanced its support of mobile (disconnected or intermittently connected) modes of operations in EAServer, as well as its mobile development, portal, integration and BPM tools (all built over EAServer). Separately, Sybase subsidiary iAnywhere has recently developed an EDAS (RFID Anywhere) that supports RFID-related vertical applications, which is potentially expandable to other styles of event-driven systems. These offerings make Sybase a focused vertical competitor. This is arguably a wise strategy, considering the saturation of the horizontal EAS market.

Tmax DTP

Tmax is represented twice in the Magic Quadrant: as a DTP vendor of the J2EE application server Java Enterprise User Solutions (JEUS) and as a TPM vendor of Tmax. JEUS is Tmax's J2EE-1.4-compatible, certified application server. It is a clustered, high-availability platform, oriented to high-end enterprise transaction processing. Tmax customers are able to mix Java (via JEUS) and C or COBOL (via Tmax) programming in shared transactional contexts. JEUS is available under traditional perpetual licensing or under a term subscription licensing arrangement. Like Tmax, JEUS's installed base is primarily in South-Korean-based companies. Tmax is a strong player in this market and competes effectively with the major global leaders, primarily via strong local name recognition, channel strength and locally based support. However, Tmax has not managed to translate its South-Korean market strength into regional market share or mind share across the APAC region or in other areas. (Tmax: Tmax Soft)

Tmax TPM

Tmax is represented twice in the Magic Quadrant: as a DTP vendor of the J2EE application server JEUS and as the TPM vendor of Tmax. Tmax was founded in South Korea in 1997 as a TPM company. Officially headquartered in the U.S., its R&D is in South Korea, which remains Tmax Soft's core market. Tmax is the company's core online TPM, based on X/Open XATMI standards (compatible with Tuxedo ATMI) for C and COBOL programming. In its core market of South Korea (and, increasingly, the broader APAC region), Tmax Soft has effectively positioned Tmax as a local alternative to BEA Tuxedo for high-end, DTP applications. Relative to the major global players in this space, Tmax has a well-established reference base and strong name recognition in its core market. (Tmax: Tmax Soft)

WareLite

Incorporated in 2000, WareLite is active in the U.K. and Italy. It provides an EDAP: the WareLite Business Operating Support System (WL BOSS). In WL BOSS, the occurrence of an event (an incoming message) triggers the execution of an associated business process, a logical flow of business rules (C/C++ components, developed via a Visual-Studio-based tool) that manipulate events using WL BOSS services. WL BOSS is distinguished by its business process state persistence layer, which enables transparent data partitioning across multiple DBMSs for scalability and availability. WL BOSS has been demonstrated in several proofs of concept. A

couple of security and sensor-based applications are available from partners; however, it has no production installations. WL BOSS is one of the few EDAPs in the market. Its architecture, which is designed for business-critical deployments, can be attractive to users, SIs and ISVs looking for a platform to support event-driven systems, especially in the context of sensor-based applications. However, validating the product's value with a reasonable number of production deployments and improving its rather rudimentary tools are critical challenges for WareLite.

Zend

Zend almost single-handedly leads and facilitates industry adoption of PHP, a scripting language designed for building the server-side logic of data-centric Web applications. PHP is used as the foundation of millions of Web sites. Zend Engine is the open-source PHP language interpreter managed by Zend. Zend Engine is known for technical quality and high productivity. Zend's recent investment in scalability and service orientation (especially with the introduction of PHP 5) and its notable partnerships with enterprise powerhouse vendors (IBM and Oracle both sponsor PHP-based products) make PHP increasingly suitable for enterprise-class projects. Zend also offers Zend Studio (for PHP developers) and Zend Platform (technology suite for the high-end software project styles), as well as other extension technologies, all of which are closed vendor sourced. Most of the industry experience with Zend PHP is in user-facing application scripts, and Zend's recent focus on enterprise-class capability (through the new features of PHP 5 and Zend Platform) has not yet been widely adopted or shown to be a viable alternative to leading EAS vendors. (Zend: Zend Technologies)

RECOMMENDED READING

"Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market"

Acronym Key and Glossary Terms

ABAP	Advanced Business Application Programming
ACID	atomicity, consistency, isolation, durability
Ajax	asynchronous JavaScript and XML
APAC	Asia/Pacific
API	application programming interface
BAS	Borland AppServer
BPM	business process management
BRE	business rule engine
BVB	Borland VisiBroker
CFML	ColdFusion Markup Language
CICS	Customer Information Control System
CORBA	Common Object Request Broker Architecture
DBMS	database management system
DTP	distributed transaction processing

EAF	Enterprise Application Fabric
EAS	enterprise application server
EDA	event-driven architecture
EDAP	event-driven application platform
EDAS	event-driven application server
EJB	Enterprise JavaBeans
ESB	enterprise service bus
ESF	Enterprise Service Fabric
GUI	graphical user interface
IMS	IP Multimedia Subsystem
ISV	independent software vendor
J2EE	Java 2 Platform, Enterprise Edition
JAIN	Java Advanced Intelligent Networks
JCP	Java Community Process
JEMS	JBoss Enterprise Middleware System
JEUS	Java Enterprise User Solutions
JMS	Java Messaging Service
JSLEE	JAIN Service Logic Execution Environment
JSP	Java Server Pages
JVM	Java Virtual Machine
KTP	Kabira Transaction Platform
MDB	message-driven beans
MOM	message-oriented middleware
MSAP	Microsoft Application Platform
OEM	original equipment manufacturer
OLTP	online transaction processing
ORB	object request broker
QOS	quality of service
RDBMS	relational database management system
RFID	radio frequency identification
RMI	Remote Method Invocation

RPC	remote procedure call
SaaS	software as a service
SDK	software development kit
SI	systems integrator
SOA	service-oriented architecture
SOAP	Simple Object Access Protocol
TPM	transaction-processing monitor
WL BOSS	WareLite Business Operating Support System
WS CDL	Web Services Choreography Description Language

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets, skills, and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood of the individual business unit to continue investing in the product, to continue offering the product and to advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements, and so on

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the Web site, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling product that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature set as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including verticals.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

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