Magic Quadrant for Application Infrastructure for Systematic Application Integration Projects

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Enterprises need functionality that ranges from basic robust messaging to advanced support for B2B that can be applied to application integration. We examine vendors whose products address the needs of systematic A2A, B2B and cloud-to-on-premises application integration projects.

Market Definition/Description

Application integration is defined as "giving applications that were designed independently the ability to interoperate." In 2008, Gartner republished a seminal paper identifying three integration styles: data consistency, multistep process and composite application integration (see "Understanding the Three Patterns of Application Integration").

The objective of data consistency integration is to make data across all applications consistent. For example, if a customer changes a billing address in a CRM application, that event is pushed out to other applications (such as accounting, billing and ERP) so that the applications can update their databases with the current data.

Multistep process integration entails orchestrating the execution of business process activities, regardless of whether the activities are performed by software (applications or services), humans or intelligent devices in a manner that automates the flow of execution through instances of the business process. Comprehensive support for multistep process integration entails supporting multiple styles of business processes, including system to system, human to human, collaborative, document-centric and administrative.

The development of composite applications — the third style of integration — is growing rapidly as organizations seek to leverage established assets (including the services created using service-oriented architecture [SOA]), and to minimize the amount of new code that must be developed and maintained.

Initially, data consistency and multistep process integration styles were applied for internal, application-to-application (A2A) integration and B2B integration. The challenge of integrating applications includes integration with cloud-based applications. A wide range of approaches for integration — from integration software to integration platform as a service (iPaaS) to integration services — are now commonly applied, and each approach has its strengths and challenges, which

makes choosing the best approach for a particular IT project ever-more complex (see "How to Identify the Right Basic Approach for Your Application Integration Project").

Historically, B2B and A2A integrations have been considered separate practices conducted by separate groups. However, at the technology level, B2B integration technology has much in common with middleware for A2A integration, including communication, transformation, adapters and orchestration features. For this reason, organizations are moving toward establishing best practices that create a unified approach for A2A and B2B integration. For more information, see "The Pros and Cons of Seeking a Single Source for Your Application Integration Solutions."

This Magic Quadrant emphasizes the product capabilities most relevant to projects that have as their primary objective applying the above styles to:

- Integrate applications deployed on-premises and externally (i.e., at trading partners or in the cloud, e.g., as software as a service [SaaS]).

- Create business services and business object services using existing assets.

These projects deliver increased cohesion and unified access to all types of resources, including packaged applications, legacy applications, and applications that are new and custom-designed. When evaluating products to meet these requirements, an important goal of systematic application integration projects is to acquire as many technical capabilities as possible from one vendor.

In this Magic Quadrant, we have evaluated 17 vendors. Some vendors that were not included may be suitable for integration projects requiring particular features, or in particular geographies or vertical markets.

This research reflects the continued consolidation in the application integration market — for example, SAP's acquisition of Crossgate. At the same time, new vendors like Red Hat, MuleSoft, Talend and WSO2 have emerged that target the low end of the application integration market using the business model of providing fee-based support and maintenance for and extensions to open-source technologies.

Finally, some integration projects are taking advantage of a growing set of cloud-based iPaaS and integration brokerage (IB) offerings. The current trends are to leverage cloud-based integration solutions for cloud-to-on-premises integration, cloud-to-cloud integration and B2B integration, but not yet frequently for A2A integration of resources that are entirely on-premises.

To succeed in the modern business computing environment, organizations must have the flexibility to experiment and innovate, while preserving the overall integrity and quality of service of their core systems. To achieve this, most enterprises are engaged in two kinds of projects:

- Systematic projects: These are designed to advance core, enterprise-computing capabilities.

- Opportunistic projects: These are projects with a less-formal approach to design, review, testing, documentation, etc.

The product and vendor evaluations in this Magic Quadrant can be used to select products for both project types, but the evaluation criteria are most heavily weighted toward supporting systematic

projects, because these projects require a more comprehensive set of product features that best reflects the vendors' ability to provide and support enterprise application infrastructures for larger, more demanding IT projects.

Magic Quadrant

Figure 1. Magic Quadrant for Application Infrastructure for Systematic Application Integration Projects
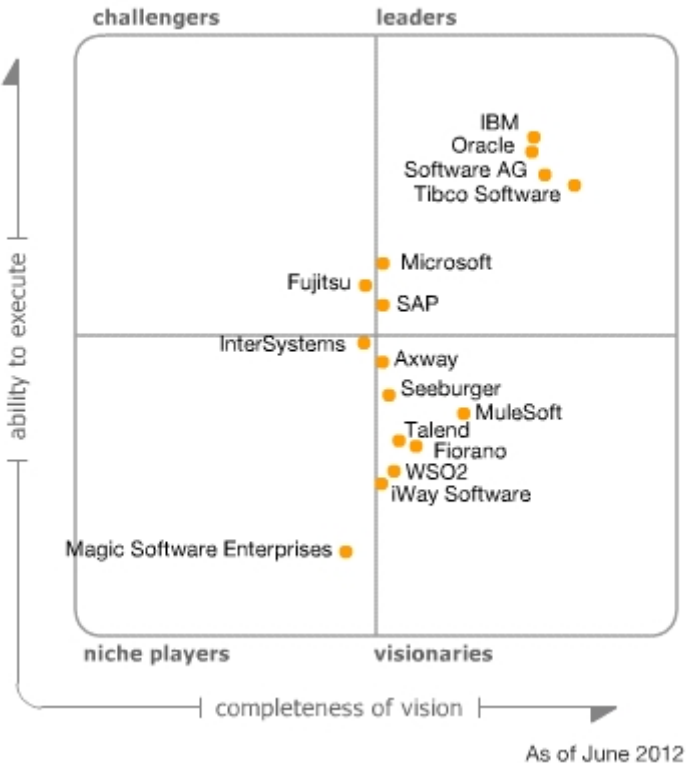
Source: Gartner (June 2012)

Vendor Strengths and Cautions

Axway

Axway is a longstanding vendor in the integration space whose products and services focus on helping customers connect and manage business interaction networks. This line of products, and its solutions based on that technology, primarily address B2B integration and managed file transfers (MFTs) with business partners and customers. It also is used to support file-based integration within the firewall.

The bulk of Axway's technology has been built through internal development and several successful acquisitions. Primary products for systematic application integration projects are Axway B2Bi solutions 1.5 (June 2011), Axway MFT Suite Secure Transport 5.1 (July 2011) and Transfer CFT 2.7.1 (April 2011), Axway Integrator 3.6 (May 2011), Axway ProcessManager 2.3 (May 2011), Axway Community Management 1.1 (November 2011) and Axway Sentinel 3.5 (March 2011) for industries spanning the supply chain (including automotive, pharmaceutical, manufacturing, and transport and logistics), the public sector, financial services and healthcare.

While Axway's offerings focus on file-based movement, its products can be used to support A2A, human-to-human, human-to-system, system-to-system and B2B integration.

Strengths

- Axway has a leading B2B and MFT software platform (also available as integration as a service).

- A mature technology exists for core file-based integration projects, a good range of offerings that supports process implementation and business activity monitoring (BAM), and a well-established customer base worldwide (over 11,000 organizations in more than 100 countries).

- The company has a proven history of execution, growth and intelligent acquisition use.

Cautions

- The company's products are now threatened by competing megavendors and smaller specialists pursuing B2B technology sales, such as Extol International, Adeptia and 1EDISource.

- Axway must continue to resolve duplication in functionality, for example, coming from its acquisition of Tumbleweed Communications, and must continue to minimize the customer impact from migration off products that have reached the end of the line (e.g., AMTrix).

- There are limited third-party resources and Axway brand awareness outside the company's historical territories (France and the U.S.).

Fiorano

Founded in 1995, Fiorano was one of the first vendors to offer an enterprise service bus (ESB) product. Its application integration products include Fiorano ESB, FioranoMQ and Fiorano Adapters. Fiorano offers a distributed ESB, and its technology supports application and system integration projects.

The use of Fiorano technology for application and system integration projects demonstrates the reliability and performance expected and experienced by its customers.

Strengths

- One of the earliest ESB vendors, Fiorano offers a unique and highly productive development process — what you see is what you get. That is, what is graphically specified at design time is what is executed.

- The company has a proven, scalable and reliable integration platform that can be hosted on-premises, or offered as a cloud-based service.

- There is compatibility with diverse OSs and application servers.

- Fiorano can address a broad range of use cases, including application and system integration scenarios, simple to high-end sophisticated SOA (including event-driven architecture [EDA]) and the integration of on-premises with cloud-based applications.

Cautions

- The company has low market visibility, and its marketing sometimes shifts usage scenarios, which could confuse potential customers seeking application integration technology.

- It is a small vendor, with limited sales and support staff for SOA and the application integration market.

- The company supplies only the SOA and integration backplane; it must partner to deliver BAM and portal capabilities.

- The limited company size may present challenges in attracting risk-averse technology adopters.

Fujitsu

Fujitsu's recent corporate strategy, the "Human Centric Intelligent Society," will position the company to enable human-knowledge-centered IT. To support this positioning, Fujitsu's application infrastructure is focused on big data, in-memory data grid technology and business process management (BPM).

Fujitsu's position in this Magic Quadrant is based on the functionality provided by its Interstage family of products, which includes Interstage Interaction Manager (IIM) v.9.1.1, Interstage Service Integrator (ISI) v.9.4, Interstage Job Workload Server v.9.3, Interstage Information Integrator (III) v. 10.3, Interstage Business Operation Platform (BOP) v.12.0, Interstage Business Process Manager v. 11.2, and Interstage Information Quality v.10.2 and Interstage Studio v.10.1.

Strengths

- Fujitsu's Interstage family provides a broad set of products to cover all styles of application integration (i.e., composite applications, multistep processes and data consistency) at all levels of the application stack (i.e., the presentation, business process, services and data layers).

- Fujitsu offers proven integration capabilities for complex integration scenarios, such as the integration of custom legacy applications with other legacy applications, packaged applications

and cloud services. Interstage BOP (Cordys is the OEM) enables prebuilt solutions for quick integration of packaged applications and some cloud services. Fujitsu leverages Cordys BOP's characteristics to attract new customers and partners that prioritize fast initial delivery of commonly required integration solutions.

- The combination of ISI and III enables seamless support for batch and real-time data integration.

Cautions

- Fujitsu's Interstage brand recognition is still relatively low outside Japan. This makes it difficult for Fujitsu to obtain opportunities for more strategic or complex application integration projects to prove Interstage's capability.

- Fujitsu has not yet clearly disclosed its plans for the evolution of Interstage BOP or its role and position in the Interstage product family, where its features overlap some Interstage products.

- Fujitsu's efforts to provide integration support for mobile devices have been slower and less innovative than those of other leading integration middleware providers.

IBM

IBM has been in the application infrastructure market for over 40 years, starting with its veteran Information Management System (IMS) and Customer Information Control System (CICS) transaction processing monitors, an early form of application platform. IBM has been a player in modern application infrastructure middleware since the early 1990s, with the introduction of the IBM MQSeries (now WebSphere MQ) message-oriented middleware (MOM). Since then, the company has been expanding its offering in this market with the introduction of the Java-based WebSphere Application Server, the WebSphere Message Broker (WMB; then MQSeries Integrator), WebSphere Portal and several other products developed in part internally and in part deriving from acquisitions.

IBM delivers application infrastructure not only in the form of software products, but also as hardware appliances and cloud services. The company has announced its intention to significantly expand its cloud application infrastructure service offering in 2012. It was the first large software vendor to target the application integration project market since the early 1990s, and it has gradually expanded its offering in this space to address additional requirements, such as B2B and cloud services integration.

The portfolio of products that was considered in order to assess IBM's position in this Magic Quadrant includes members of the WebSphere family and other product lines. The most relevant are the WebSphere MQ MOM; WMB, WebSphere ESB (WESB) and WebSphere DataPower integration appliances providing ESB capabilities; WebSphere Transformation Extender (WTX) for advanced message transformation; Sterling B2B Integrator and WebSphere DataPower B2B Appliance XB62 for B2B integration; Sterling Connect:Direct for MFT; WebSphere Cast Iron for cloud services integration; IBM BPM for orchestration; WebSphere Adapters; and WebSphere Registry and Repository (WSRR), the WebSphere DataPower Service Gateway XG45 appliance and IBM Tivoli Composite Application Manager to support SOA governance. Other IBM products relevant to application integration projects include Rational Software Architect and Rational

Application Developer for modeling and development; WebSphere Extreme Scale and WebSphere DataPower XC10 Appliance for in-memory data grid and caching; WebSphere Virtual Enterprise and Tivoli Application Performance Management Suite for administration, monitoring and management; and IBM Workload Deployer for elastic application infrastructure deployment.

Strengths

- IBM has brand recognition, global reach and market share in key application infrastructure middleware segments. It also has mind share, and a large and loyal installed base of hardware and software products leveraged for IBM sales to support application integration projects.

- The company has a comprehensive product line, including market-leading offerings (e.g., WebSphere MQ, WMB, WebSphere DataPower, Sterling B2B Integrator, WebSphere Cast Iron and WebSphere Connect:Direct) and fit-for-purpose offerings addressing specific application integration requirements (for example, cloud integration, B2B integration and MFT). The offering is sustained through massive partner programs and is complemented by a range of consulting and professional service options. Over the years, it has accumulated significant deployment successes for large and business-critical application integration projects in multiple vertical sectors, and in virtually all geographical areas, especially in the IBM mainframe installed base.

- A wealth of marketing and product initiatives (e.g., Smarter Cities, Smarter Commerce, Smarter Oil and Gas, and Smarter Banking) is driving adoption of IBM's application infrastructure products for a variety of use cases, including application integration projects.

- New IBM offerings such as IBM PureSystems (integrated hardware and software stacks optimized for ease of deployment and management) and IBM SmartCloud (IBM's public cloud) have the potential to drive adoption for IBM's application infrastructure products, including to support application integration projects, through innovative distribution channels targeting key segments (e.g., small or midsize businesses [SMBs]) that traditionally have shown scant interest in the most sophisticated products in IBM's application infrastructure portfolio.

Cautions

- The implementation of large-scale application integration projects may require the acquisition and deployment of many products, including Rational for modeling and development, IBM BPM, WESB, WMB, WTX, Sterling B2B Integrator, Sterling Connect:Direct, WebSphere Cast Iron, WebSphere DataPower appliances, and IBM Tivoli technology for monitoring and management. When user organizations have complex needs that cannot be addressed by individual fit-for-purpose products, IBM's offerings can be expensive, and may create the need for a significant amount of professional service and support to deploy and get the application integration infrastructure up and running to address specific user organizations' requirements as they require.

- The relentless pace of IBM's acquisitions in the application infrastructure space continuously challenges IBM with product rationalization and positioning issues; this could exposes users to product discontinuity or migration problems.

- Despite plans to rationalize and simplify the product portfolio (e.g., in ESB), the fine-grained differences, functional overlaps and product integration challenges — for example, among WMB, WESB, WebSphere Cast Iron and the WebSphere DataPower integration appliances — make it difficult for potential users to determine the best fit for their requirements.

- Although it has been on the market for at least six years, WESB, as a stand-alone product (it is also embedded in IBM BPM), still has a small installed base, compared with the most popular ESB products. This makes the relevant skills hard to find, particularly for deployments on specific platforms like z/OS, which poses questions about the direction product evolutions will take.

InterSystems

InterSystems is a privately owned vendor of application infrastructure and business solutions, and a leader in the healthcare vertical market, where it demonstrates outstanding vision and execution. Its application and data integration capabilities are provided by InterSystems Ensemble, its collection of prebuilt integration adapters and its adapter development framework. InterSystems Ensemble is an integrated application development, deployment, composition and integration platform built on the company's Cache object and relational database. Ensemble is also available as a hosted service on Amazon Elastic Compute Cloud (Amazon EC2), or as a shared-hardware multitenant service when used in conjunction with RightScale. HealthShare builds on Ensemble, and provides specialized application integration capabilities for the healthcare industry. The privately held company claims over 1,500 customers.

Strengths

- InterSystems has an advanced, well-integrated technology suite, including a dual-mode (object-oriented and relational) database (Cache), internal support for event processing in the Ensemble platform, a large collection of application and protocol adapters (especially rich for the healthcare industry), multilayer business process orchestration tools, increasingly sophisticated business analytics and other platform functionality, including a cloud services delivery option.

- A leading presence and name recognition in the healthcare industry as an integration technology provider (Ensemble), and advanced support of healthcare industry integration standards and protocols allows the company to effectively compete in this market against larger overall software industry giants like IBM, Oracle and Microsoft.

- A profitable private business with no debt, a worldwide presence and a large number of partners establish the company as a formidable presence in the healthcare industry. Its offerings for electronic health record exchange with HealthShare and TrakCare maintain the company's vertical industry leadership as the healthcare industry changes worldwide.

Cautions

- Despite a multiyear effort, InterSystems remains largely unknown as an application integration platform provider outside the healthcare market. This, combined with minimal presence and

influence in industry trends, consortia and standards initiatives (outside healthcare) push the company toward a niche in the overall application infrastructure market.

- Minimal support for specialized B2B integration scenarios (such as electronic data interchange [EDI] and trading partner management) force customers to alternative vendors and the consequent additional cost of system integration.

- There are no publicly committed plans to respond to mobile, social computing and other new emerging industry trends (although the recent investment in big data business analytics is a welcome exception).

iWay Software

iWay Software entered the application integration market in 2001 by providing adapters, and expanded to the point of providing on-premises and cloud-based integration offerings. Its primary application integration products include iWay Service Manager 6.1.4, Trading Partner Manager 6.1.4 and its Universal Adapter Suite.

Building on its strength and market presence in adapters, iWay now offers a set of commercial products and cloud-based services that can be used for A2A, B2B and cloud-to-on-premises integration projects.

Strengths

- The deployment footprint is smaller than that of many vendors, because the use of Java Platform, Standard Edition (Java SE) as a container technology circumvents the need for a full-blown Java Platform, Enterprise Edition (Java EE) application server.

- iWay has the largest adapter portfolio (more than 300) on the market, and a comprehensive adapter development environment (Universal Adapter Offering), with an application introspection feature.

- The company has a cloud-based offering hosted on Amazon EC2 that, together with standard Service Manager, offers potential customers a range of purchase models, from perpetual licenses to usage-based pricing. Amazon Machine Image hosting Service Manager licenses are sold through iWay, resulting in customers receiving one invoice for both Amazon and iWay products.

- Service Manager is less expensive than competing products from megavendors, which has contributed to growing the customer base to more than 500.

Cautions

- iWay suffers from lack of brand awareness and limited marketing.

- The experience of users and system integrators with iWay adapters is uneven, and their cost makes it challenging to build an ROI-based business case for the entire iWay platform.

- iWay has no governance solution of its own, and offers prepackaged integration with AmberPoint (now owned by Oracle). Users of other governance solutions will require manual integration.

- The ESB suite market is maturing; consequently, buyers are becoming more conservative, and are gravitating toward megavendors. As a result, smaller vendors like iWay face increasing competitive challenges.

Magic Software Enterprises

Magic Software Enterprises is a vendor of development, middleware and integration technology. The Magic xpi Integration Platform (formerly iBOLT 3.2) was reviewed for this Magic Quadrant and includes ESB capabilities, as well as specialized frameworks for particular integration solutions. This version is the same as the version reviewed in the prior iteration of this research. Only minor additional capabilities have been added since that time.

Strengths

- Function-rich and easy-to-use Magic xpi Integration Platform is based on the foundations of Magic xpa Application Platform (formerly uniPaaS), a proven, metadata-driven application development platform and runtime container that provides transformation, routing, human workflow, modeling, composition, portals and BAM.

- Specific Magic xpi packages address SAP Business One, JDE Connect, salesforce.com, SharePoint, Microsoft Dynamics, HL7 and iSeries integration scenarios. Delivery is through a global network of partners (independent software vendors [ISVs], value-added resellers [VARs] and system integrators) that provides much greater distribution and support than the company size would suggest.

- A project is under way to revamp core Magic xpi capabilities by using in-memory data grid technologies to provide real-time data transfer and store-and-forward capabilities, as well as extreme scalability and seamless fault tolerance.

- Magic has recently been executing quite well on its revenue trajectory, and has beaten expectations regarding revenue in past years, with sustained double-digit growth since 2009.

Cautions

- Visible investment in new product capability is modest at best (although an in-memory data grid rewrite has been promised).

- While the architecture is open, the focus on specific scenarios limits the appeal to heterogeneous organizations looking for general-purpose technology.

- Magic is a smaller public company whose products compete with offerings from much larger vendors, and it is challenged to match scope and scale for larger customers. Magic is investing in improving its visibility in key markets, and recently developed new branding.

Microsoft

BizTalk Server 2010 is Microsoft's primary integration technology. In 2011, Microsoft garnered 13% of ESB suite market software revenue. The current release is tightly integrated with Visual Studio, Team Foundation Server and the AppFabric offering.

BizTalk Server enjoys the largest customer base of any commercial or open-source software (OSS) offering. However, its cloud-first approach to providing on-premises application infrastructure, as demonstrated by AppFabric and the Azure Service Bus (ASB), will result in significant challenges to the customer base.

Strengths

- Microsoft has brand recognition, global reach, mind share and a huge installed base of products leveraged for BizTalk Server sales, and results in the broad availability of skills, services and add-ins that fit within the environment.

- BizTalk Server has an installed base of more than 11,000 customers — two-thirds are estimated to be BizTalk Server 2006 Enterprise Edition or newer versions, establishing a broad base of mature and stable products with proven track records.

- Microsoft offers AppFabric Connect to integrate BizTalk Server 2010 with Window Server AppFabric, making it easier to leverage Windows Workflow Foundation and Windows Communication Foundation.

- Microsoft uses price as a weapon for its SOA infrastructure offerings. Microsoft .NET Framework and AppFabric are provided at no additional cost as part of Windows OSs. BizTalk is the least-expensive licensed integration offering from a leading vendor.

Cautions

- Microsoft is making significant investments in the Windows ASB with the goal of it becoming its mediation technology going forward. Gartner projects that it will be available as an on-premises offering during 2014; at that point, users will have a choice between ASB and BizTalk Server. However, in conversations with BizTalk users, Microsoft has committed to a maximum of two additional versions of that product.

- Microsoft has disclosed that BizTalk Server interfaces and, consequently, composite services created using BizTalk Orchestration will not run on ASB. The company has not identified tooling or best practices for moving BizTalk interfaces or services deployed on BizTalk Server with ESB Guidance or ESB Toolkit to the ASB.

- For organizations contemplating a transition from BizTalk Server to ASB, the currently available functionality lacks transformation, routing, adapters and flow management. Microsoft is offering a technical preview entitled "Azure Service Bus EIA and EDI Lab Release." However, it is not meant to be used for production deployments, and there is no guarantee that the version of ASB used for the on-premises product will look like the technical preview.

- There is a growing demand for support for governance and life cycle management activities in systematic application integration projects. Team Foundation Server offers some life cycle management features for interface artifacts created using Visual Studio. System Center offers operational policy management in a Windows environment. However, to obtain a unified set of technologies that supports design time and operational governance across assets deployed in a distributed heterogeneous environment, most users rely on technologies from Microsoft partners like HP and SOA Software.

- For a registry, Microsoft offers a bare-bones Universal Description, Discovery and Integration (UDDI) 3.0 implementation that is ill-suited for storing interface metadata. While Microsoft partners with HP (Systinet) and SOA Software (Repository Manager) for advanced registry features, it does not provide first-line support for these products.

MuleSoft

MuleSoft is a venture-capital-funded company that provides support and maintenance for technologies developed by the Mule open-source community. The OSS community has 25 MuleSoft developers focused on Mule ESB, and an external community of 80 developers. The current unified release of the Mule Enterprise suite of products is 3.2, and includes Mule ESB, MQ and Data Integrator (data transformation technology). The release became generally available in October 2011. The 3.3 release of the suite is planned for June 2012.

MuleSoft pursues an open-core, commercial open-source model. The core ESB is an open-source-community product. MuleSoft sells license subscriptions to its Mule Enterprise suite of products. The list price of the subscription is $48,000 per year for eight processing cores at the Silver (eight hours a day, five days a week) level of maintenance.

The market for application integration technology continues to consolidate. Vendors offer classically licensed commercial software products that are expensive. This opens the door (based on an increasing number of Gartner client inquiries) for vendors offering subscriptions to an open-core, commercial open-source model, and makes it attractive to organizations that are tightening their capital outlay.

One of the early OSS ESB providers, MuleSoft has evolved its offerings with a focus on supporting integration, regardless of whether the applications are hosted on-premises or in the cloud.

Strengths

- The company has over 2 million downloads, 3,200 estimated production deployments and 300 supported customers, with a growing number of references using Mule ESB in mission-critical deployments.

- MuleSoft is building a portfolio of packaged integrating processes (iApps, in the MuleSoft vernacular) for cloud-to-cloud and cloud-to-on-premises integration.

- Mule Studio, MuleSoft's integrated development environment (IDE), offers graphical and code-level views of integration logic that remain synchronized, regardless of where changes are made.

Cautions

- My-Channels, the technology underlying Mule MQ, was acquired by Software AG. MuleSoft will face the challenge that changes to my-Channels made by Software AG may not align with MuleSoft's intended direction.

- MuleSoft's focused offerings are in competition with other open-core, commercial model vendors offering broader feature sets that include BPM and data integration technology.

- While MuleSoft has a large number of technical and SaaS adapters, it offers few adapters for commonly deployed packaged applications, such as Siebel or PeopleSoft.

- MuleSoft relies on partners to leverage and extend Mule ESB and Data Integrator (MuleSoft's data transformation feature) to support B2B integration, creating the problem that the integrated set of technology (MuleSoft and the partner offering) has not yet experienced the production testing of a large installed base.

Oracle

Oracle entered the application infrastructure middleware market in the early 2000s. It consolidated its position as one of the top vendors in this space with the acquisition of BEA Systems in 2008. Since then, the company has continually extended its offering — Oracle Fusion Middleware (OFM) — through internal developments and acquisitions. Since the acquisition of Sun Microsystems in 2010, Oracle has the intellectual property of the key Java technology set. Oracle sells OFM as a set of stand-alone products and product suites, but also as an enabler for its packaged application business, and as components of its engineered systems offering. In October 2011, the company announced its intention to enter the cloud application infrastructure service (commonly referred to as platform as a service) market as part of its broader Oracle Public Cloud initiative. BEA Systems had a mixed track record in the systematic application integration project market. Therefore, when the company was acquired, Oracle put BEA Systems' application integration platform (WebLogic Integration) in maintenance mode, and focused investments on evolving its own technology for this market.

The evaluation of Oracle's position in this Magic Quadrant is based on the functionality provided by the OFM 11g family of products, which includes the Oracle SOA Suite (Oracle Service Bus, Oracle BPEL Process Manager, Oracle Business Rules, Oracle B2B Integration, Oracle BAM and other components) supporting ESB and orchestration requirements, Oracle JDeveloper modeling and development toolset, and Oracle Enterprise Manager for administration, monitoring and management. Other Oracle products that may be relevant for systematic application integration projects include Oracle BPM and Oracle Enterprise Repository for metadata management, as well as Oracle WebLogic Suite (Oracle WebLogic Server, Oracle Coherence, Oracle TopLink, Oracle Web Tier and other components) providing Java EE-based back-end container, in-memory data grid, object-relational mapping and load balancing capabilities.

Strengths

- OFM is a large business that positions Oracle as the second-largest application infrastructure middleware vendor in the market, according to Gartner 2011 market share data. The technology is supported by a vast network of partners. Thousands of organizations in virtually every geography and in multiple vertical industries have successfully deployed combinations of OFM products, in a large number of cases to support large and business-critical application integration scenarios, at times involving but just as often not involving Oracle's packaged applications.

- OFM provides a comprehensive, integrated (a common development toolset, management environment, metadata services and runtime platform) and feature-rich application infrastructure offering that also provides leading technologies to support systematic application integration requirements, such as those incorporated in the widely adopted Oracle SOA Suite.

- Oracle's vision for the evolution of OFM addresses key application integration technologies (e.g., Oracle SOA Suite optimization for Exalogic hardware, enhanced mapping [improved XML to non-XML and XML to JSON], MFT and ebXML Messaging Services v.3, Applicability Statement 3 [AS3] and Applicability Statement 4 [AS4] support), emerging requirements (e.g., cloud services integration) and delivery models (public cloud and vertically integrated systems).

- Synergies with large Oracle Database Management System (DBMS) and packaged application businesses create opportunities for cross-selling OFM technologies to support application integration projects.

Cautions

- In 2011, Oracle application integration middleware revenue grew slightly below the industry average (8.5% versus 9.9%); in key segments, such as portals, BPM suites (BPMSs) and ESBs, Oracle's revenue was flat versus 2010. This slowdown in growth momentum may indicate sales execution problems in some geographies, partly deriving from the long sales cycles for Exalogic (which is sold by the OFM sales organization), possibly slowing OFM adoption at the very high end.

- Some large and loyal OFM users, especially those accustomed to BEA Systems' support, report dissatisfaction with Oracle's support.

- Although the Oracle B2B Integration product (part of Oracle SOA Suite) is a legitimate B2B gateway, it misses key features (supplier scorecard, campaign management and trading-partner self-provisioning) typically supported by leading products. Moreover, the company has no strategic focus on e-commerce B2B integration, and its track record in this market is limited, compared with that of B2B specialists or other application integration middleware providers.

- Some Oracle clients are experiencing licensing and pricing issues when upgrading from pre-11g versions of OFM, due to the change in the underlying application server (from Oracle Internet Application Server to Oracle WebLogic Suite) that sometimes results in higher licensing costs.

SAP

The products considered to assess SAP's position in this Magic Quadrant belong to the SAP NetWeaver 7.3 family, and include SAP NetWeaver Process Orchestration (SAP PO),SAP Solution Manager, SAP NetWeaver Application Server ABAP/Application Server Java, SAP NetWeaver Portal and SAP NetWeaver Gateway. SAP has positioned itself as a middleware player, and has gained solid traction for many components of its NetWeaver products when introduced as adjuncts to business applications. The transition to Hana architecture places even more emphasis on these components as they become the mechanism by which users can consume the advanced features of that environment.

Strengths

- SAP has been very successful in selling its integration capabilities to existing application customers, with over 5,000 customers.

- SAP PO (the current integration product) and its road map are aligned with the bulk of customer needs, other than high-scale segments such as financial services. SAP PO's scalability has improved significantly in recent releases.

- For organizations strongly committed to the SAP application strategy, NetWeaver is an obvious and compelling (commercially and from a skills perspective) technology option for integrating SAP with other applications, primarily because of the common skills used to operate SAP middleware and applications (not surprisingly, since SAP applications also leverage the SAP middleware).

- New capabilities based on the Hana architecture (such as the ability to push execution of some code into the parallelized Hana database) have significant potential for SAP to move ahead of rival application infrastructure providers.

Cautions

- SAP will have multiple generations of integration technology available from different platform releases. This is needed to address cloud integration scenarios, but multiple deployments may challenge users in the term.

- SAP's application infrastructure capabilities are still mostly sold to and used by its application customers, and SAP has not had widespread success promoting its use outside this context, for example, to ISVs and system integrators.

- SAP's B2B integration strategy improved with the acquisition of Crossgate, but is still unproved, particularly for large-scale B2B supply chain integration projects, where its customers usually employ third-party B2B gateway software solutions.

- Incremental improvements in SAP's platform products are substantial for its customers, but are often merely equivalent to capabilities found in competing products, and remain behind several in terms of high-availability/high-scale solutions.

Seeburger

Seeburger, one of the major European integration vendors, has established itself as a strong international player, mainly based on the excellence of its technology (whose intellectual property is completely owned by Seeburger). Its Business Integration Server (BIS) is founded on a fully interoperable service bus and contains a high-performance, any-to-any transformation engine especially well-suited for EDI. This also makes it well-suited for supporting A2A, B2B and cloud-to-on-premises integration projects.

While Seeburger's BIS (available on-premises and as managed services) is best-known for its support of B2B integration, it also can support A2A and cloud-to-on-premises integration projects.

Strengths

- Seeburger remains a leader for multienterprise B2B projects because of its technology, which is entirely internally developed and well-integrated.

- BIS has been extended by the addition of MFT technology, which also extends the B2B interaction styles it supports.

- Seeburger's customer base continues to expand in several geographies, including Japan and Asia/Pacific, China and Eastern Europe, and its financials look healthy.

- The company's cloud strategy, which addresses B2B and A2A, is well-executed, well on its way to being implemented and valid for both B2B and A2A.

Cautions

- Seeburger's focus on internally developed technology excellence limits its capability to grow through technology acquisition.

- The B2B managed service offering, which the company began two years ago, has not been succeeding according to plan. The offering was recently revised and appears to be gaining momentum, but further development is needed.

- Seeburger's future as an independent company has always been the subject of speculation. Good technologies typically survive acquisitions, but there is a higher-than-average risk of an ownership event.

- A significant portion of Seeburger revenue is as the B2B partner for SAP applications. In the past, SAP has promoted Seeburger as a partner in the field. While this is still happening, SAP is developing its own suite of B2B applications and managed services in the wake of the Crossgate acquisition, which could put pressure on Seeburger.

Software AG

Software AG started in the late 1960s as a provider of DBMS (Adaptable Data Base System [ADABAS]) and fourth-generation language (4GL; natural) mainframe-based products. In the early 2000s, the company repositioned itself as an application infrastructure technology provider through

a combination of internal developments and acquisitions, with webMethods in 2007 and IDS Scheer in 2009 being the most notable. Currently, application infrastructure is the main business for Software AG, generating more than 50% of its product revenue. The systematic application integration project market has been a key focus for the webMethods stack since its origins, well before the company was acquired by Software AG.

The evaluation of Software AG's position in this Magic Quadrant is based on the functionality provided by the webMethods Suite 8.2.2 family of products (released in November 2011). This includes webMethods Integration Server, supporting ESB and orchestration requirements; webMethods Message Broker and my-Channels Nirvana for MOM; webMethods BPMS, providing process orchestration capabilities (along with other BPMS features); webMethods Trading Networks for B2B integration; webMethods Adapters; webMethods EntireX and ApplnX for mainframe integration; CentraSite for metadata management; and webMethods Designer for modeling and development. Other Software AG products relevant to application integration projects include the Aris Platform for enterprise modeling, process performance monitoring and dash board design; Terracotta Enterprise Ehcache and Big Memory in-memory data grid technology; and webMethods Business Events for CEP.

Strengths

- The webMethods Suite provides a large and growing application infrastructure business with a large installed base of approximately 3,500 clients leveraging the technology in the context of multiple usage scenarios, including numerous large-scale and business-critical application integration deployments in multiple vertical markets and geographies.

- The webMethods Suite is a comprehensive, advanced and proven application infrastructure product set for A2A (including mainframe) and B2B integration projects, which is well-integrated on a coherent, OSGi-based foundation (e.g., a common runtime container, unified design and development tool, unified metadata management and integrated business/technical modeling through Business Process Model and Notation [BPMN] 2.0) and incorporates leading technologies (universal messaging, event processing platform, in-memory data grid and mobile device support).

- Software AG's vision for the webMethods Suite evolution addresses key application integration standards (e.g., Electronic Banking Internet Communication Standard [EBICS] and enhanced Applicability Statement 2 [AS2]), technologies (e.g., new messaging architecture based on the recently acquired my-Channels Nirvana product, self-service community management, public and private cloud support, platform as a service and mobile enablement) and emerging requirements (e.g., cloud/SaaS integration and mobile integration).

- Software AG is investing in strengthening its sales and marketing operations in North America, including the creation of a unit dedicated to serving U.S. federal government, to boost business in the region.

Cautions

- In the course of 2011, Software AG experienced uneven business performance primarily attributed to sales execution problems, especially in North America. Although the company has taken corrective actions to improve its business performance in the region, organizations in North America may occasionally experience changes in sales and support interfaces with the company when engaging in application integration initiatives.

- Implementing the ambitious road map Software AG has announced is challenging from a technology, go-to-market and sales perspective. User organizations should anticipate potential delays, plan reformulations and migration issues as the webMethods Suite goes through the transition.

- Although Software AG plans continuing support for the homegrown webMethods Broker MOM, the company's messaging investments will favor the recently acquired my-Channels Nirvana technology. User organizations should primarily look at Nirvana for new application integration projects, especially if these require a broad range of connectivity options (e.g., peer-to-peer and mobile device support, and Web streaming), in addition to traditional hub-and-spoke messaging. Gartner believes that although Software AG is planning to release this capability in December 2012, webMethods 8.2.2 doesn't yet provide a unified deployment, administration and management environment across the product set. This makes IT operations challenging when users need to deploy multiple webMethods products to support their application integration requirements, thus contributing to further raising the costs of what in some cases is already an expensive product set.

Talend

Talend acquired the foundation for its application integration platform through its November 2010 purchase of Sopera. This foundation has been extended to become Talend Open Studio for ESB. This set of OSS features is complimented by additional OSS offerings that can be applied to application integration problems, including Talend Open Studio for Data Integration, Talend Open Studio for Data Quality and Talend Open Studio for master data management (MDM).

Talend pursues an open-core, commercial open-source model. Its subscription offerings that align with its OSS offerings include Talend Enterprise Data Integration, Talend Enterprise Data Quality, Talend Enterprise MDM and Talend Enterprise ESB. The company also offers Talend Enterprise BPM via a partnership with BonitaSoft. Unique to Talend is the integration of all products in the suite via underlying metadata in one repository, as well as common design, deployment, runtime and monitoring environments.

While a relative newcomer to the ESB suite market, Talend is the first vendor to offer a platform that integrates a suite for application integration with data integration and BPM technologies through a common repository/environment.

Strengths

- Talend Open Studio for ESB is a robust suite founded on the broadly adopted Apache CXF, Camel, Karaf and ActiveMQ open-source projects, to which its engineers are active contributors. The suite is available for the Linux, Windows and Mac OS operating environments, and for OSS application servers like Tomcat and JBoss. The suite has a library of over 450 connectors for data migration and synchronization that it shares with Talend's data integration, data quality and MDM offerings.

- Talend uses a graphical approach to implementing Apache Camel Enterprise Integration Patterns.

- It offers an all-in-one feature for testing the implementation of enterprise integration patterns.

- Through Talend's Unified Platform technology foundation, Talend Enterprise ESB is integrated with platforms for data quality, data integration, MDM, BPM and SOA via one repository, as well as common design, deployment, runtime and monitoring environments.

Cautions

- Talend is a relatively young company founded in 2005, and dual-headquartered in Los Altos, California, and Suresnes, France. It is methodically expanding into the U.S. and EMEA, but has a limited presence in Asia/Pacific, with offices in Tokyo and Beijing. Its products have not been proved by an installed base comparable with that of leading vendors.

- B2B support is limited to the most common B2B file formats (e.g., EDI and Electronic Data Interchange for Administration, Commerce and Transportation [EDIFACT]) and protocols (e.g., RosettaNet, FTP and S/FTP, AS2 and SWIFT).

- Talend looks to Apache projects and its R&D staff to provide adapters. While it provides adapters to Microsoft CRM and salesforce.com, it only offers a limited set of adapters for widely deployed commercial packaged applications, such as the adapter for SAP Business Suite.

Tibco Software

Tibco Software is a leading provider of integration middleware. It was founded in 1997 and by 2011, Tibco garnered $222 million in total software revenue for its ESB suite offerings for a 9.3% share of a $2.39 billion market (see "Market Share: All Software Markets, Worldwide, 2011"). Its portfolio of products for application integration includes ActiveMatrix Service Bus (AMSB), ActiveMatrix BusinessWorks and Enterprise Message Service.

In 2010, Tibco acquired Proginet and Foresight. During 2011, it combined BusinessConnect, Foresight and Spotfire to form a B2B platform that improved inbound transaction validation and visibility into B2B transactions. Also, Proginet and BusinessConnect trading partner management products were revised so that they now share a single trading partner management feature.

A long-standing player in application integration, Tibco has improved BusinessWorks, EMS and BusinessConnect, and has established integrated, near-neighbor solutions to support BPM, complex-event processing (CEP) and BAM activities.

Strengths

- Comprehensive, well-proven application integration products, with modern, OSGi-compliant architecture, that are hosted in an innovative ActiveMatrix container technology.

- The application integration products are complemented by integrated offerings that support near-neighbor activities, including SOA (e.g., ActiveMatrix Policy Manager, ActiveMatrix Service Performance Manager and support for service component architecture [SCA]) and BPM (e.g., ActiveMatrix BPM) and CEP (e.g., BusinessEvents and Spotfire).

- BusinessConnect now has a more comprehensive set of features that improves visibility. However, building up a substantial set of successful deployments comparable to those of B2B gateway software leaders such as IBM and Axway will take time.

- Tibco's offerings provide a very high quality of service and service levels in complex heterogeneous environments with stringent SLAs.

Cautions

- ActiveMatrix BusinessWorks ships with a set of features and off-the-shelf adapters that is applicable in many integration projects. However, not all these features are required for simple and some medium-complexity interfaces.

- Scaling up integrations built on the AMSB with a logical progression of technology for complex integration through the adoption for SOA, BPM and CEP adds up to a hefty total investment.

- Tibco's pricing and flexibility in negotiations differ widely from sale to sale, making the cost of licenses difficult to predict.

WSO2

WSO2 provides a broad, streamlined open-source platform developed in conjunction with a number of open-source communities (especially Apache). This platform is intended to be good enough for most users that can do without the less commonly used features of existing integration products. WSO2 is evaluated in this market based on its open-source suite of platform technologies, including:

- WSO2 Enterprise Service Bus 4.0.3

- WSO2 Application Server 4.1.2

- WSO2 Data Services Server 2.6.3

- WSO2 Governance Registry 4.1.1

- WSO2 Business Process Server 2.1.2

- WSO2 Business Rules Server

- WSO2 Mashup Server 2.1.0

- WSO2 Web Services Framework

- WSO2 Business Activity Monitor 1.3.2

- WSO2 Complex Event Processing Server 1.0.2

- WSO2 Message Broker 1.0.2

- WSO2 Carbon Studio (for developing across all products) 1.0.14

WSO2 has created a compelling offering for organizations looking to simplify and streamline their integration solutions.

Strengths

- Lightweight, open-source versions of core platform capabilities linked via OSGi deliver a highly flexible environment with straightforward usage and capabilities.

- Successful deployments in high-volume environments add to the credibility of the solution for larger enterprises and mission-critical systems.

- A highly standardized and open architecture gives substantial freedom for organizations to combine and enhance solutions with existing integration technology.

- The company is growing, and has acquired capital for expansion and further development.

Cautions

- WSO2 is still a small company (130 customers and 160 employees), compared with industry-leading commercial software providers in this space.

- While the breadth of the platform is impressive, the deployments have mostly been driven by integration needs and the use of the ESB. Some platform components (such as the gadget server) are based on technologies whose future is not certain.

- A limited selection of prebuilt adapters and frameworks means users must add more of their own solution content than is the case with options from more mature vendors.

Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

Added

Talend acquired Sopera and, in essence, takes Sopera's place on this Magic Quadrant.

Dropped

The following vendors have been dropped from this Magic Quadrant:

- **Cordys** did not meet the market penetration criterion.

- **E2E** did not meet the market penetration criterion.

- **Extol International** did not meet the market penetration criterion.

- **GXS** did not meet the functional criterion.

- **Hitachi** did not meet the geographical-coverage criterion.

- **NEC** did not meet the geographical-coverage criterion.

- **Pervasive Software** did not meet the market penetration criterion.

- **Progress Software** announced on 26 April 2012 its intention to sell several businesses, including its main SOA, BPM and integration offerings. Progress will no longer promote these products as platform middleware for integration. While the products may remain viable choices in the hands of new owners, this decision means Progress no longer qualifies for this Magic Quadrant.

- **Red Hat** did not meet the functional criteria.

- **Sopera** was acquired by Talend.

- **Sterling Commerce** was acquired by IBM.

- **TmaxSoft** did not meet the geographical-coverage criteria.

Inclusion and Exclusion Criteria

The vendors in this Magic Quadrant have sufficient technology and expertise in their total portfolios to be the sole application infrastructure providers for systematic application integration projects.

The key technical characteristics essential to such an offering are:

- Technology that:

    - Implements communication that reliably moves messages among endpoints

    - Supports fundamental Web and Web services standards

    - Implements the bindings necessary to create associations between consumer and provider endpoints

- Has an architecture that can apply optional intermediary functions to in-flight messages

- Supports typed messages

- A design surface and a process execution engine for implementing multistep process integration

- Support for transformation of canonical documents and messages (XML, EDI, industry standards and Web Services Description Language [WSDL])

- A repository for the storage, browsing and management of message definitions and transformations

- Adapters for applications, databases, A2A and B2B protocols, cloud APIs, etc.

The ability of these products to support systematic application integration projects implies that they must enable developers to design, develop and maintain application integration interfaces over an extended life cycle, and to deploy them to environments that permit high throughput, low latency and high availability.

As-a-product and as-a-service offerings are covered, as the cloud is considered an alternative development and deployment platform for these services. However, specific user organizations may require solutions that run only on-premises or only in the cloud so that the ability to meet the enumerated requirements with both delivery models is advantageous to the vendor.

Each vendor's entire offering is considered, without regard to product packaging. All capabilities must be delivered and supported by the vendor. Some technology in the evaluated portfolio may be under OEM from a third party. This is acceptable as long as the user's primary support experience is with the vendor being assessed. Delegating Level 3 support is acceptable.

There must be evidence of production success by the vendor as the sole provider of the technology for the project type.

Vendors with product license and maintenance revenue from application infrastructure deployments of less than $10 million may not be included. In the case of vendors pursuing a subscription-based, open-source business model, the subscription revenue limit for exclusion is $5 million. Vendors must realize substantial revenue from two of three global regions (the Americas, EMEA and Asia/ Pacific) to be included.

The vendors will be limited to the approximately 15 that offer the greatest and broadest market penetration, and meet all functional inclusion criteria noted above.

Evaluation Criteria

Ability to Execute

A detailed description of the Ability to Execute criteria can be found in "Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market."

Application integration projects are typically driven by experienced architects and engineers working for a center of excellence (COE). When selecting products, they look for the best suite of technologies from a functional standpoint, and for good integration among the component parts to minimize development and operational costs. Additionally, they look for reliable and widely proven products in their geography and industry sector, and favor vendors that can demonstrate the ability to execute in these realities with successful and proven case stories and references.

Given the presence in this market of software megavendors like IBM, Oracle and Microsoft, it is critical for vendors to have outstanding and focused execution of their marketing plans in order to have the message heard by prospects and clients. Therefore, a vendor's product/service excellence (in terms of the offering's functional completeness and maturity, and the degree of integration of the individual components), marketing execution and customer experience are especially critical to success in this market. Consequently, these criteria are weighted higher than other Ability to Execute criteria. Viability, sales execution/pricing, marketing responsiveness and track record, and excellence in operations are important evaluation criteria for execution, but no more than in any other market.

To rate the vendors' ability to execute for the product criterion, we considered the same characteristics in each of the three application infrastructure Magic Quadrants. Across the three Magic Quadrants, the evaluation of these characteristics is weighted equally in determining the final product rating, because they are independent of the specific requirements of the project types addressed by the Magic Quadrants. This is the list of technical features and capabilities considered for this and the other related application infrastructure Magic Quadrants:

- **Functional completeness (standard weight):** Evaluates the extent to which the vendor's application infrastructure offering currently supports the full range of technical features and capabilities listed in the Completeness of Vision section.

- **Technical and business maturity (standard weight):** Evaluates the maturity of the offering in terms of its longevity in the marketplace, architectural stability, installed base and proven ability to support the requirements of the application infrastructure markets for business-critical scenarios.

- **Technical extensibility (standard weight):** Evaluates the ability of the platform to easily, quickly and effectively incorporate new standards, technologies, and acquired and third-party products in terms of the platform technology and internal architecture, as well as the vendor's track record in extending its offering.

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	Standard
Marketing Execution	Low
Customer Experience	High
Operations	Standard

Source: Gartner (June 2012)

Completeness of Vision

A detailed description of the Completeness of Vision evaluation criteria can be found in "Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market."

Most enterprises realize that applications no longer stand alone, and that engaging in an application integration project will be required nearly every time a new application is deployed. Infrastructure supporting application integration will require refinement and extension as new requirements (e.g., the consolidation of B2B and cloud/SaaS integration with on-premises application integration) emerge, and the organization's application portfolio grows. Therefore, users favor vendors that not only provide the proven and reliable set of capabilities needed to address current requirements, but also present a credible road map for the evolution of their application infrastructure offerings to address emerging standards (e.g., OSGi), technologies (e.g., CEP and mobile device support) and usage scenarios. This is the reason why, for this market, we weight Completeness of Vision criteria such as market understanding (that is, the ability to anticipate user requirements and competitor challenges), product strategy and innovation higher than any other. Sales, vertical/industry and geographic strategies are important to succeed in this market, but no more so than in other markets, as experience shows that the many application integration products have proved successful in multiple industry sectors and geographies.

To rate vendors' Completeness of Vision for the product criterion, we considered the same technical features and capabilities in each of the three application infrastructure Magic Quadrants in terms of their current form and planned evolutions. However, for each Magic Quadrant, the evaluation of the different features and capabilities is weighted differently in determining the final product rating to reflect the specific requirements, and the priorities of the particular types of projects the Magic Quadrant refers to. This is the list of technical features and capabilities considered and their weight for this Magic Quadrant:

- **Back-end containers (no weight):** Features and capabilities to support the execution of mainstream SOA-style, custom-built back-end business logic (i.e., basic server application container features such as programming frameworks and languages, runtime interpreters and virtual machines [Java Virtual Machine or similar], interoperability and access from like and unlike platforms, management, quality-of-service support and other like capabilities). It may include support for leading-edge and high-demand SOA-style, custom-built back-end application logic (i.e., extreme transaction processing, event processing, parallel processing, support for multitenant deployments of applications as a service, footprint optimization, nonintrusive versioning and other capabilities).

- **SOA modeling, design and composition tools (standard weight):** Features and capabilities to support SOA-style modeling, design and development, including separation of front-end and back-end business logic, design of service interfaces, metadata management, choice of SOA patterns (remote procedure call [RPC], EDA and Web-oriented architecture [WOA]), service composition and mediation, productivity aids and other capabilities.

- **Front-end containers (low weight):** Features and capabilities to support the execution of SOA-style, user-facing front-end business logic in a multichannel environment (i.e., supporting a choice of front-end architectures, such as traditional rich client, traditional Web client, rich Internet client, Ajax, mobile, portal and/or others), and its ability to access SOA-style interfaces of like and unlike platforms.

- **SOA governance (standard weight):** Features and capabilities to support the implementation of SOA governance processes, with specific reference to the following aspects:

  - SOA policy management and enforcement

  - Registry/repository and metadata management

  - Statistical and key performance indicator (KPI) data collection

  - Governance of services in the cloud

  - Monitoring and management

  - Application and service life cycle management

  - Interoperability with other SOA governance technologies

- **Core ESB (high weight):** Features and capabilities to support core ESB capabilities, including reliable communication among endpoints through a variety of protocols, support for fundamental Web and Web service standards, the ability to bind consumer and provider endpoints, and the ability to apply optional intermediary functions (e.g., transformation and routing) to messages in flight, and messages for which the contents are explicitly defined and documented.

- **Advanced ESB (high weight):** Features and capabilities to support capabilities like reliable communication among on-premises, B2B or cloud endpoints through a variety of protocols, strong external partner community management, and internal proprietary and B2B standard messages and security, including in-flight and at-rest message encryption and demilitarized zone (DMZ)-based, reverse-proxy servers.

- **Orchestration (microflow, service composition and straight-through process) design and execution (high weight):** Features and capabilities to support application composition, including design tools and execution engines for supporting the implementation of microflow, service composition and straight-through processes (human-centric workfellow is not required).

- **Message/data schema/mapping (high weight):** Features and capabilities to support message/data schema management and mapping. This includes support for documents and messages in canonical formats (e.g., XML, EDI, industry standard formats [such as HL7, SWIFT, ACORD, RosettaNet and others], WSDL, etc.), the availability of a metadata repository for storing documents and message formats (for storing and browsing), and a mapping tool to translate and convert messages from one format to another.

- **Adapters (high weight):** Features and capabilities to support adapters for packaged applications, DBMSs, MOM, application servers, transaction processing monitors, standard and proprietary A2A and B2B protocols, cloud/SaaS APIs, and other application and technology environments.

- **External partner community management (standard weight):** Features and capabilities to support external partner community management, which facilitates the provisioning, configuration and MDM of adapters, communication protocols, message formats and other integration artifacts across large numbers of applications and systems, trading partners, internal SOA services and cloud APIs, and multiple projects. Key community management functionality includes collaboration via Web applications and social networking tools, campaign/program life cycle management, and role-based task delegation and tracking.

- **Architectural consistency (standard weight):** Initiatives, patterns, features, capabilities and standards to support integration and architectural coherence of the application infrastructure offering (e.g., common [across the individual products] development tools, metadata repository, runtime containers, flow managers, monitoring and management tools, security and other common components; support for "pluggability" standards such as OSGi or Java Business Integration [JBI]).

- **Openness and interoperability (standard weight):** Features and capabilities to support interapplication and intra-application communication and federation among disparate SOA environments (i.e., communication middleware and standard protocols). Initiatives, patterns, features, capabilities and standards to support interoperability and integration with other vendors' platforms, as well as to enable users to incorporate third-party products and technologies in your application infrastructure offering.

- **Monitoring, management and administration (standard weight):** Features and capabilities to support operations (administration, security, governance, version management, disaster recovery, etc.) of projects based on the vendor's application infrastructure.

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	High
Marketing Strategy	Low
Sales Strategy	Low
Offering (Product) Strategy	High
Business Model	Low
Vertical/Industry Strategy	Standard
Innovation	High
Geographic Strategy	Standard

Source: Gartner (June 2012)

Quadrant Descriptions

Leaders

Leaders in the application infrastructure for Gartner's systematic application integration projects are vendors with a proven, comprehensive and integrated set of products that addresses A2A, B2B and cloud-to-on-premises integration projects. They have an ample installed base of products to cross-sell their integration solutions, and have demonstrated their ability to anticipate technology and market trends over the years by extending their offerings to support the data consistency, multistep process and composite application integration styles that occur in systematic integration projects. They have a sizable installed base of reasonably satisfied clients that extends internationally.

Leaders in infrastructure that supports systematic application integration provide a comprehensive ESB suite offering and the ability to integrate that offering with other relevant technologies, including community management, data integration, governance and BPMS products. This is combined with a strong commitment to this market expressed through focused value propositions and go-to-market strategies (for example, by packaging platforms and/or by providing integrated product and services offerings specific for this market), support for the most relevant industry standards — for example, support for SOAP-based and representational state transfer (REST) Web services, Business Process Execution Language (BPEL), BPMN and OSGi — and a well-defined road map addressing most emerging requirements such as cloud/SaaS integration.

Established leadership (achieved through organic growth or via acquisitions) in the adjacent application infrastructure for systematic SOA infrastructure market is a common trait across all Leaders. This reflects some commonality in the technology between the two usage scenarios, and

is partly a consequence of the logical progression from having adopted a systematic approach to application integration to selecting a shared approach to SOA infrastructure by the most advanced users. Consequently, organizations that have endorsed a Leader's platform to support their systematic application integration projects find it natural and nondisruptive to adopt the same platform (or extensions and/or variants) to support their SOA infrastructure requirements.

Leaders' offerings are rich and mature. However, in some cases, they're biased toward the vendors' packaged application portfolio. Despite the efforts of most Leaders to devise entry-level versions of their technologies, they are sometimes considered too complex or expensive for organizations with minimal experience in systematic application integration, or for businesses that are budget-constrained or looking for a focused, fast-to-deploy and easy-to-use platform.

Challengers

Challengers have demonstrated that their technology can support the implementation of numerous large business integration projects, and have built platforms capable of effectively competing against, and often besting, those of Leaders. However, these vendors are followers, rather than leaders, in providing new, innovative features, or their innovation is focused on a specific problem space. In some cases, their vision is not manifested through focused marketing messages and value propositions. In other cases, their vision is not manifested through comprehensive geographic coverage. Challengers could become Leaders through greater product innovation, combined with a marketing and sales focus on all aspects (A2A, B2B and integration of cloud-based applications) of application integration.

Visionaries

Visionaries demonstrate innovation from a product and technology innovation perspective. They have significant investments in integration technology, and their prospects for survival and growth depend on their ability to establish a strong presence in the market for application infrastructure for application integration. However, the products of some larger Visionaries have relatively small installed bases; in some cases, their production readiness is not fully proved via a spectrum of mission-critical deployments.

Through diligent and focused execution, some Visionaries could become Leaders, but the likelihood is small. Limited sales, marketing, engineering and support resources create enormous obstacles for such ambitions. Many of these vendors are likely to merge or be acquired by larger companies, but some offer excellent and highly innovative products that outperform large vendors' offerings.

Often, products from vendors in the Visionaries quadrant can be used with point products from other vendors to create a comprehensive middleware infrastructure that has all the features offered by the one-stop-shopping suites of larger vendors in the Leaders quadrant.

Niche Players

Niche Players often offer good, and in some cases excellent, integration technology. However, the focus of the Niche Player on a specific vertical market has sometimes resulted in products that are

less useful in integration problems outside that domain. Alternatively, a vendor may lack focus on this problem space, which, for it, is a marginal business. Other reasons for vendors to be positioned in this quadrant are that they have limited sales, marketing and support resources, or are committed to only one geography or installed base.

Nevertheless, application integration technology from a Niche Player can be an optimal choice for specific classes of users (for example, users in a particular vertical market where the vendor's integration technology is focused, or users in the same geography where the vendor is focused). Additionally, Leaders' and Challengers' products are often too complex and expensive for SMBs, or for users whose requirements are not overly demanding. Users with less stringent requirements may find more suitable products from Niche Players and Visionaries.

A vendor in this quadrant could emerge as a Visionary through a greater commitment to innovation and focus on the market.

Context

Application integration is getting applications that were designed independently to work together. Most everyone in IT understands the challenges created by stand-alone, stovepiped applications. Consequently, virtually every software project that deploys a new application involves application integration tasks.

The part of the application infrastructure market focused on integration products for A2A, B2B and cloud-based application integration will undergo consolidation, because multiple product features are used across each project type. Many users are looking to support their integration projects with an integrated suite provided by one vendor, thus eliminating the burden to act as a system integrator for application infrastructure. To address this, even market-leading vendors have more work to do to complete the modernization and consolidation of the technologies to support these integration projects, and to secure long-term viability and market share retention in an economic environment that is driving organizations to implement extensive cost-cutting measures.

Gartner offers analyses of application infrastructure for two additional project types. One analysis is for systematic, SOA application projects. In this type of project, the effort centers on the modeling and design of an SOA application, and the development of service implementations and user-facing logic (which is often multichannel). The orchestration of new and pre-existing services is a key requirement (including some degree of integration and SOA governance). If your project, while implementing the strategic SOA backplane and governance for your organization/domain, also intends to make decisions or provide recommendations about the tooling for supporting the implementation of SOA applications, see "Magic Quadrant for Application Infrastructure for Systematic SOA Infrastructure Projects" for more details.

Gartner also analyzes technology vendors for systematic SOA infrastructure projects. These projects are usually driven by the organization's SOA COE, and typically consist of the architecture, design, implementation and deployment of two macrocomponents — the SOA backplane and SOA governance — that can be implemented at different times for convenience, although they work best when selected and implemented as an integrated, enterprisewide (or domainwide) platform. SOA-

enabling infrastructures are meant to be shared by virtually any SOA application project in the enterprise (or domain). See the "Magic Quadrant for Application Infrastructure for Systematic SOA Application Projects."

Market Overview

Application integration technology burst into the middleware market in the mid-1990s. At that time, sophisticated integration products were offered exclusively by specialists — i.e., vendors that only provided application integration technology. Initially termed "message brokers," the products from these vendors focused on providing a graphical approach to specifying the business logic required to transform and intelligently route data among applications to achieve data consistency.

From 1999 to 2001, IBM and Microsoft entered the application integration market, where they have since been joined by Oracle, SAP and Fujitsu. These vendors are often referred to as "megavendors." The term is used to characterize large vendors that provide products and services whose applicability extends well beyond that of application infrastructure.

Gradually, both types of vendors have expanded the features they provide in conjunction with the broker to the point where each vendor could deliver a suite of products that can addresses a broad range of application development and integration requirements. During this time, the popularity of SOA applications grew, and ESB technology designed to mediate interactions between clients and services was introduced. The products offered by ESB vendors evolved in the same manner — adding features (in the form of services) that resulted in a comprehensive suite. Due to changing consumer buying practices and the increasing functional overlap that resulted as ESB and integration suite products moved toward one another in terms of features, the markets merged (see "The Integration Suite and ESB Markets Have Merged").

Today, megavendor offerings have reached feature parity with specialist offerings. Although specialists can sometimes outmaneuver megavendors through innovations in BPM tools, BAM features and CEP capabilities, megavendors are countering by sowing fear, uncertainty and doubt about smaller vendors, by matching the innovation of specialists through internal development or acquisition, and by expanding sales to include a broad set of assets that is complementary to application infrastructure (such as solutions, services, patterns and templates), and add significant value to organizations involved in SOA, BPM and CEP initiatives.

As the popularity of application integration rose, so did the interest in B2B collaboration. Companies disenchanted with the cost of private, proprietary EDI value-added network (VAN) services began seeking software alternatives that provided community management and secure, message-based transport over TCP/IP networks, including the Internet. Thus emerged the market for B2B gateway software, until recently addressed by the "Market Update for Business-to-Business Gateway Software Vendors."

Until the last few years, IT users have tended to implement integration projects for A2A and B2B projects separately; however, users are increasingly looking for a consolidated integration solution

to both problems. Thus, three important trends have driven the consolidation of both A2A and B2B integration project styles to this revised version of the application integration Magic Quadrant:

- Application infrastructure vendors have extended their portfolios to include products that support B2B collaboration.

- Vendors of B2B collaboration products are extending their portfolios to include products that support A2A integration.

- Enterprises are consolidating disparate B2B integration and application integration initiatives. This includes the consolidation of technologies, best practices and governance.

Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

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

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 that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales 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 initiatives, 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 website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products 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 sets 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 vertical markets.

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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