Microsoft ®

Next-Generation Application Infrastructure

The Strategic Role of Middleware as Part of the Journey to the Cloud

Introduction

"Application infrastructure" (often referred to as middleware) is an essential enabling technology for helping IT meet the challenges of evolving their business applications. Given the constraints of the economy IT must increasingly find new ways to do more with less, and this means finding less expensive ways to develop new capabilities to meet the needs of the business. At the same time, the demands of business users are ever increasing. Environments of great predictability and stability have given way to business conditions that are continually changing, with shorter windows of opportunity and greater impacts of globalization and regulation. This puts IT departments under tremendous pressure and creates a perpetual problem: how to find new ways to bridge the demanding needs of the users/business with the reality of their packaged applications.

The traditional application infrastructure market has matured over the past decade with many advances in hardware and scale-up architectures allowing for increasingly mission-critical applications. However, multiple industry trends, such as Service Oriented Architectures, Composite Applications, Web 2.0, Cloud Computing and Datacenter Virtualization to name a few, are driving new requirements for how application

infrastructure can support the delivery of resource-efficient, self-managing, mission-critical applications. In particular, the emergence of cloud computing creates opportunities for rethinking the way IT builds applications and services over new application platforms, in ways that provide dramatic reductions in operating costs and greater levels of developer productivity.

Microsoft is delivering significant new advances across both private and public cloud environments, and bringing the best of both worlds to a new generation of application infrastructure – this evolves the proven and familiar application server technologies in .NET and Windows Server and brings these to the Windows Azure Platform, and also takes some of the next-generation fabric innovation used today in the Windows Azure Platform and brings this back to the on-premises application platform.

Featuring research from

Gartner ®

This paper outlines some of the emerging trends in application infrastructure and outlines how you can take advantage of these to get started today.

### The Industry Shift toward Composite Applications

Customers today experience tremendous cost and complexity when extending and customizing their Line of Business (LOB) application suites. Yet, while IT budgets are shrinking, the demands of business users are ever increasing, and the "clock speed" of business has dramatically accelerated. This puts tremendous stress on IT to find new ways to "cross the chasm" between the demanding needs of the users/business and the reality of their LOB packaged applications.

This on-going tension between IT and business is one of the main drivers leading to the emergence of composite applications as a solution development approach. Instead of significantly modifying existing LOB systems and relying solely on the packaged software vendor when there is a new business need, corporate IT departments are finding it increasingly cheaper and more flexible to build these composite applications on

top of and surrounding their core LOB systems. Using application infrastructure as the enabler, enterprises of all sizes can more rapidly build composite applications that extend the useful life of their underlying LOB systems. While the current economic cycle has certainly emphasized the value of this approach, we do not view it as a temporary change. Customers clearly want to bring more existing technology investments forward while increasing the flexibility of the applications that build on top of them. Composite application styles of development benefit from the broader adoption of SOA both by enterprise IT as well as the majority of ISVs. This finally makes stitching together custom and ISV components into higher-level Composite Applications a reality.

The use of composite applications and next-generation application infrastructure is a core part of preparing to extend your current IT environment into the cloud. While the industry begins to take advantage of the power of cloud computing, it is likely (some would say guaranteed) that this will happen over a number of years and will co-exist with the existing base of enterprise LOB systems that exist on-premises

FIGURE 1   Composite Applications
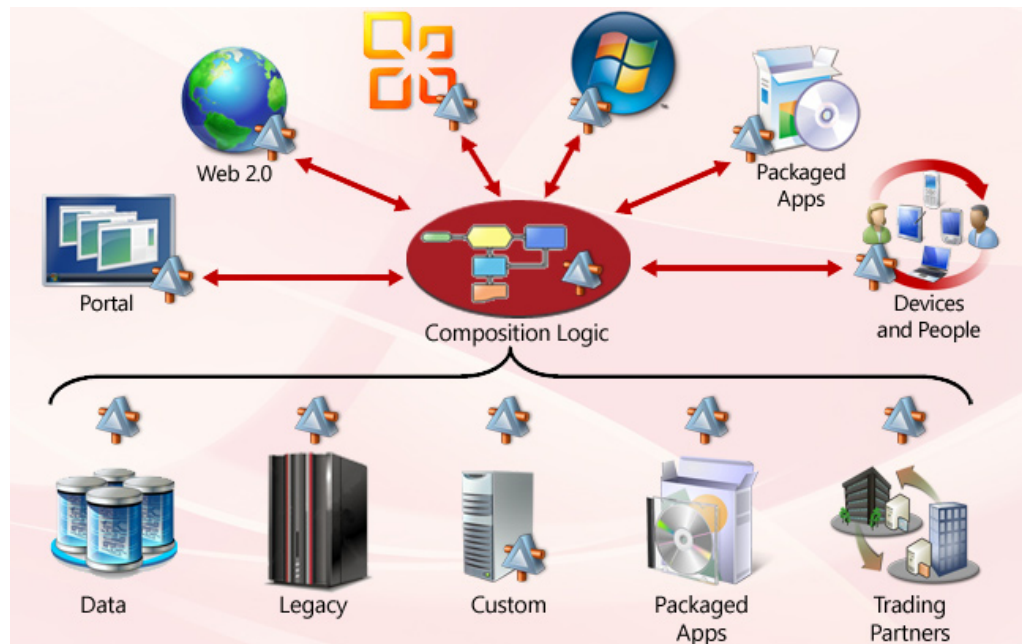
Source: Microsoft

today. To support this hybrid co-existence of both cloud and traditional systems, it is important to allow for new composite applications to be developed and deployed into the cloud. These new composite applications will still connect to, and leverage, existing on-premises applications and services in a secure and reliable fashion.

Taken together, these application infrastructure technologies enable building new integration composite applications by simultaneously bridging your existing LOB applications (either on-premises or in the cloud) through secure connectivity across network and geographic boundaries, and by providing a consistent development model for both Windows Azure and Windows Server. BizTalk Server 2010 delivers new pre-integration with both Windows Server AppFabric and Windows Azure AppFabric enabling rapid and productive development of composite applications. These technologies make development more productive by providing higher abstraction for building end-to-end applications;

and they simplify management and maintenance of applications by leveraging advances in the underlying hardware and software infrastructure.

Getting Started – Today!

As noted earlier, the IT industry is at a crossroads of intersecting IT trends, and this often raises questions about where to begin focusing efforts. There is always an on-going tension between supporting the day-to-day operational needs of IT and driving value from existing systems while simultaneously investing in new innovation opportunities like the cloud. Here are three simple recommendations as to how you can get started today.

1. **Bring the benefits of the cloud to your existing environment**
    Identify some of the cloud benefits you can begin to bring to your existing IT environment to drive efficiency and keep pace with the business. Innovative new capabilities like on-demand elastic scale and simplified development and management of service-

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About Microsoft's Application Infrastructure

Microsoft is responding to these industry trends through new and innovative capabilities delivered in our industry-leading Application Infrastructure technology suite. This consists of the following components:

Microsoft® BizTalk® Server 2010

For more information, see www.microsoft.com/biztalk

- **BizTalk Server 2010** enables organizations to connect and extend heterogeneous systems across the enterprise and with trading partners. BizTalk Server 2010 provides integration with Windows Server AppFabric and Windows Azure AppFabric to allow .NET developers to more rapidly build composite applications that connect to line-of-business (LOB) systems on-premises or through the cloud. This brings the familiar programming model of .NET to complex enterprise integration scenarios involving LOB systems.

Windows Server® AppFabric

For more information, see www.microsoft.com/ appfabric/server

- **Windows Server AppFabric** provides a set of application services focused on improving the speed, scale, and management of web and composite applications. Existing web applications are made faster and more scalable through distributed in-memory caching; and building and managing composite applications is simplified with out-of-the-box management and monitoring infrastructure for workflows and services.

Windows Azure™ AppFabric

For more information, see www.microsoft.com/ appfabric/azure

- **Windows Azure AppFabric** provides a comprehensive cloud middleware platform for developing, deploying and managing applications on the Windows Azure Platform. It delivers additional developer productivity by adding higher-level Platform as a Service (PaaS) capabilities on top of the familiar .NET and Windows Azure application model.

oriented applications are key foundational benefits you can start harnessing today in your existing IT environment. BizTalk Server and Windows Server AppFabric provide a powerful infrastructure that can provide immediate benefits for connecting and integrating your new SOA based initiatives.

2. **Start Enabling New Composite Applications**
Once you start service-enabling your application environment with modern application infrastructure, you should also start developing new composite applications that extend the capabilities of your existing LOB applications. Using the capabilities of BizTalk Server and Windows Server AppFabric together allows you to quickly assemble existing services together with declarative workflow-centric programming techniques. These new composites can be used either to develop custom .NET applications or to be surfaced into Microsoft SharePoint to enable end-user access and interaction with your LOB systems.

3. **Test-drive the Cloud**
Finally, start learning about the benefits of cloud computing and how this can provide new business opportunities and agility. As you begin to identify appropriate pilot applications that would benefit from this new delivery model, start "test-driving" the cloud by extending your existing composite applications.

Solution Profiles

To illustrate some of the tremendous benefits of this approach, let us briefly review two examples of new composite application business solutions built upon next-generation application infrastructure.

jettainer
WORLD CLASS ULD MANAGEMENT

"Without Windows Server AppFabric we would not have been able to use a service-oriented architecture … AppFabric was the enabler of the service-oriented solution we needed to create."

Dr. Ralf Hoelper, Director IT, Jettainer

Air Freight Container Firm Tracks 12 Million Moves a Year with Next-Generation Solution
Whenever a jetliner takes off, its luggage and other cargo is stored in specially constructed containers called unit load devices (ULDs). Jettainer, based in Raunheim, Germany, manages 80,000 ULDs for a customer base that includes some of the largest airlines in the world. The logistics of getting the right ULDs located at optimal levels at more than 500 airports around the globe are challenging. Jettainer, working with Microsoft Gold Certified partner Daenet, created a solution for managing the company's 12 million ULD moves a year. Based upon a new Microsoft-based Service Oriented Architecture using BizTalk Server and Windows Server AppFabric, this new composite application solution gave Jettainer the services hosting solution it needed, helped the company cut development time significantly, and linked back-end systems to enable a better view into operations.

Expertime

"Looking just at software maintenance—not considering the mainframe licensing and personnel costs—we anticipate a 70 percent reduction in operational costs from using AppFabric."

Philippe Lacroix, Chief Technology Officer, Expertime

70 Percent Cost Reduction as Windows Server AppFabric and BizTalk Server Replace Mainframe Solution
When JM Bruneau, a French supplier of office furniture, needed to replace the mainframe-based IT infrastructure that supports the company's U.S.$450 million in annual sales, it turned to Expertime. Expertime designs and develops enterprise application and infrastructure solutions for leading organizations including France Television, Carrefour, Nestlé Waters, and Bank of France. Expertime created a new composite application based upon service-oriented architecture principles using Windows Server AppFabric and BizTalk Server. When fully deployed, Expertime estimates that the new composite application solution will help JM Bruneau reduce its operational expenses by 70 percent compared to continued support for its legacy mainframe solution, while providing its call center agents with a better view of customer needs.

Windows Azure AppFabric provides secure and reliable connectivity that can enable you to easily bridge from your existing on-premises SOA and composite applications to the Windows Azure Platform; this helps ensure you connect these new cloud investments with your existing IT investments.

Taking this approach gives your organization the flexibility and control it needs to begin harnessing the benefits of the cloud both on and off premises and at your own pace. Application infrastructure provides your organization the control and flexibility it requires when trying to balance the immediate needs of the business while simultaneously preparing it for the future.

Source: Microsoft

Research from Gartner

Magic Quadrant for Application Infrastructure for Systematic SOA-Style Application Projects

New and composite service-oriented business applications require a complex collection of capabilities in runtime technologies and development tools. We examine the ability of leading application infrastructure vendors to provide users with complete end-to-end support for SOA-style application projects.

WHAT YOU NEED TO KNOW

Most new software projects target a service-oriented software model. Service-oriented applications separate the front-end business logic of the application from its back-end business logic. They are modular, and the modules (services and clients) are loosely coupled, shareable and distributable. They are also encapsulated behind documented programmatic interfaces. Most such applications are composites — that is, they partly use services that are newly designed for this application, and partly use services that already exist as part of other applications. Support of such architecture requires a multifunctional, underlying application infrastructure technology (middleware), often assembled by users from offerings of potentially different vendors. Some IT projects prefer this best-of-breed approach to assembling their enabling application infrastructure environments, although it requires IT organizations to act as system integrators (SIs) in assembling the disparate pieces into a cohesive platform for the project.

Many users are looking to support their projects with an integrated application infrastructure suite provided by one vendor, thus eliminating the burden to act as an SI for the application infrastructure. Most vendors recognize this buying pattern by offering technology suites targeting some popular and/or important project styles.

The application infrastructure suite of a vendor can be applied to different types of projects. Here, we examine vendors' application infrastructure worthiness for systematic service-oriented architecture (SOA)-style application projects. At the same time, two other Magic Quadrants have been published examining vendors' application infrastructure suites against the requirements of application integration and SOA interoperability and governance projects.

Systematic projects include long-term consideration and project planning in the process of design and technology selection for the application. They target applications that are intended for extended periods of use, carry advanced service-level requirements and typically have an impact on the overall information context of the business organization. These are distinct from opportunistic projects that are undertaken in response to urgent demands and target applications of limited lifetime, responsibility and complexity. These projects value time to market and cost optimization above the long-term use and flexibility of the application. This Magic Quadrant focuses only on the systematic project types, in part because the opportunistic projects rarely focus on selection of the application infrastructure, rather focusing on finding the best-fit development environment that encapsulates everything else.

In this Magic Quadrant, we examine a market where buyers (IT projects) are looking for application infrastructure technology to fulfill the end-to-end requirements of a systematic, SOA-style application project. For each competing vendor, we evaluate how well that vendor's portfolio of application infrastructure offerings fulfills the requirements of such projects. The evaluation of a particular vendor is based on the premise that the vendor is the sole provider of the complete end-to-end set of requirements for this project type.

MAGIC QUADRANT

Market Overview

In recent years, Gartner has identified a trend in enterprise IT projects away from the best-of-breed middleware selection and toward selecting a sole, or at least a primary, provider of enabling technology for the planned project type. Thus, we have noted the emergence of a new type of market, defined by the requirements of a particular type of IT project, rather than by the taxonomy of vendor offerings (the traditional type of technology markets).

While continuing to analyze markets for specialized products — for example, enterprise application servers, horizontal portals, business process management suites and business

intelligence tools — Gartner is also providing analysis of the overall application infrastructure market through the lens of some prevailing use patterns. Buyers in such markets are not looking to invest in a grand, all-encompassing application infrastructure technology stack, but rather are looking for a vendor that understands and supports the kind of project requirements they face.

A systematic SOA-style business application project is one such type of project that is a frequent initiative of mainstream enterprise IT, and will continue to be through the next five years. With this project type, the effort centers on the modeling and design of an SOA-style application topology, and the development of service implementations and user-facing logic (which is often multichannel). The orchestration of new and pre-existing like and unlike services is a key requirement (including some degree of SOA-style integration and governance).

Users and vendors that meet in this market are driven to support systematic software development and deployment projects designed to deliver new and/or composite SOA business applications. The "new" in the project characterization indicates that most software and the data model of the application are newly designed for this project. The "composite" refers to use of pre-existing external services. The "service oriented" in the characterization means that the software architecture will consist of clients, service interfaces and service implementations.

Gartner also offers a separate analysis of the strategic SOA infrastructure projects, where the market is focused on establishing the operational and governance environments for coexistence and interoperation of multiple SOA-style applications. This market does not include in consideration the requirements of building new SOA-style services or clients, and it does not target any one application project, but rather targets the establishment of a long-term infrastructure platform for the current and future SOA-style software resources — internal, purchased, remote (B2B) and cloud-sourced. If your project looks to build a systematic SOA application and, in the process, establish the governance

FIGURE 1 Magic Quadrant for Application Infrastructure for Systematic SOA-Style Application Project

Source: Gartner (October 2010)

As of October 2010

and operational platform for the future SOA-style application projects and acquisitions, we recommend that you examine the "Magic Quadrant for Shared SOA Interoperability Infrastructure Projects" together with the vendor assessments presented in this research.

Gartner also offers analysis of systematic application integration projects. This type of project focuses on the integration of pre-existing software that is resident in a variety of different systems, custom-designed, purchased, contracted as a cloud service or offered by partner enterprises. There is no focus on the ability to construct new applications. There is also no priority for SOA-style integration at the expense of other integration practices. If your project, while building a new SOA application, must substantially interact with non-SOA external resources, then we recommend that you examine the application integration Magic Quadrant, along with this research, to fine-tune your decision process.

Recently, a new category of application infrastructure has emerged. As cloud computing moves toward the mainstream, application infrastructure technology emerges that is designed specifically for the requirements of that use pattern. In this Magic Quadrant, we examine several cloud technology providers to reflect this trend and to acknowledge that, as IT organizations evaluate enabling technology for their projects, platform-as-a-service (PaaS) options compete with traditional on-premises alternatives.

This Magic Quadrant is intended for IT projects that are looking for a single vendor to support all or most of the project requirements end to end. Projects that prefer custom best-of-breed selection of component technologies for their new SOA-style applications should examine multiple Gartner technology-centered Magic Quadrants, including "Magic Quadrant for Enterprise Application Servers," "Magic Quadrant for Horizontal Portals," "Magic Quadrant for Business Process Management Suites" and "Magic Quadrant for Integration Service Providers."

Market Definition/Description

Gartner defines application infrastructure as the technology that underlies and enables development, deployment and execution of business applications. Other than the associated design and development tools, this technology is also often referred to as middleware. This Magic Quadrant considers a segment of the total application infrastructure market from the perspective of buyers whose primary interest is the systematic development and deployment of mixed new and composite SOA applications. This is not a market defined by any one technology category, but rather it examines all categories of technology inside of the application infrastructure (middleware) space, as applicable to the particular selected project type.

This Magic Quadrant covers the market where IT projects take a systematic approach to building an SOA-style business application (a mix of new code and compositions), and looks for one vendor to meet all end-to-end requirements of such projects. In planning these projects, the key investment is made to designing new business logic for user-facing (clients) or data-facing (services) components of an application and to assembling new and pre-existing components into transactions and orchestrated business processes. The resulting applications are intended for long-term use and,

therefore, must be scalable, changeable, open and extensible. Due to their strategic nature, these projects are choosing enabling technology based on the merits of the middleware as the primary consideration. Many deploy advanced software design models like event processing, SOA federation and XTP.

Inclusion and Exclusion Criteria

Vendors that are included in this Magic Quadrant have sufficient technology and expertise in their total portfolios to support, as the sole application infrastructure provider, the mainstream systematic projects of creation and deployment of new self-contained or composite SOA-style business applications.

The key technical characteristics that are essential to such offering portfolios are:

- Competitive technology of a back-end application execution container(s), including support for SOA-style modularity, accessible from like and unlike clients; capable of supporting advanced quality-of-service requirements, but also suitable for modest-scale projects; worthy of the requirements of systematic project efforts.

- Competitive technologies of front-end execution container(s), including support for SOA-style external resources, accessing like and unlike services; worthy of the requirements of systematic project efforts.

- Development and runtime modeling, design, maintenance and management tools required to establish and manage one complete SOA-style application.

- Development and runtime capabilities for service orchestration, with access to like and unlike, local and remote service interfaces.

- Governance of SOA resources, though limited here to just the one application context.

"Systematic-worthy" implies capacity for long-term planning, management and extensibility for the application, and anticipation of major future requirements.

Both as-a-product and as-a-service offerings are covered, because cloud is considered an alternative candidate model in project planning.

A vendor's entire offering portfolio is considered, without regard to product packaging. All the above capabilities must be delivered and supported by the vendor being assessed. Some of the technology in the total evaluated portfolio might be an OEM product owned by a third party. This is acceptable as long as the user's primary support experience is with only the vendor being assessed, which requires that the OEM product be seamlessly integrated with the main vendor's offering. Delegating Level 3 support is acceptable.

There must be evidence of production success (present or imminent) by this vendor as a sole provider of technology for this project type.

Vendors with revenue from application infrastructure deployments of less than $10 million may not be included. However, vendors that we deem of particular note based on the volume of relevant Gartner inquiries may be included, as an exception, despite this limitation.

Added

This new Magic Quadrant is a continuation of research started with "Magic Quadrant for Application Infrastructure for New Systematic SOA Application Projects." Compared to that Magic Quadrant, the following vendors have been added:

- **E2E Technologies** — A new vendor supporting SOA-style projects starting from the background of integration and composition

- **EngineYard** — An application-platform-as-a-service (APaaS) competitor supporting SOA-style projects using Ruby on Rails

- **Google** — Entered the SOA project competition with App Engine APaaS and its announced App Engine for Business version

- **Heroku** — An APaaS competitor supporting SOA-style projects using Ruby on Rails

- **LongJump** — An APaaS competitor supporting SOA-style projects using a shared-everything cloud application development model

- **Microgen** — Microgen Aptitude is a technology suite focused on SOA-style projects, starting from the context of business process management and integration

- **Pramati Technologies** — An SOA platform vendor with a large installed base in India

- **WSO2** — A new open-source initiative offering a comprehensive platform for SOA-style application projects

Dropped

This new Magic Quadrant is a continuation of research started with "Magic Quadrant for Application Infrastructure for New Systematic SOA Application Projects." Compared to that Magic Quadrant, the following vendors have been dropped:

- **Coghead** — The company assets were acquired by SAP and the product was discontinued

- **SpringSource** — The company was acquired by VMware and is not, at present, focused on SOA-style projects

- **Sybase** — The company was acquired by SAP

Evaluation Criteria
Ability to Execute

A software vendor's ability to execute in any market indicates the provider's attained industry, market presence and reputation, the record of its business and technical execution, its attained financial position and the degree to which it has delivered the essential core functionality expected from a competitive product in the specified market.

The systematic SOA business application projects considered herein have an intended long-term impact; and, thus, the project attitude toward technology selection is generally conservative. Ability to execute is a significant consideration in these selections, because the buyer expects to establish a long-term relationship with and some degree of dependence on the vendor. In addition to the importance of product-established presence, buyers highly value the viability of the vendor, customer experiences with the vendor and the vendor's pricing policies. These characteristics are more important than the vendor's speed of market responsiveness, the flamboyance of its marketing or the effectiveness of its internal operations. Thus, in the application infrastructure market for systematically building and deploying new SOA-style business applications, the following criteria and weightings determine the Ability to Execute rating (see Table 1).

The Product/Service criterion is the only category that has subcategories. To rate vendors' ability to execute for the Product/Service criterion, we considered the following three defining characteristics, as they apply to a vendor's entire portfolio of application infrastructure offerings in the context of this market:

- **Functional completeness (weight: standard):** 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 (weight:** standard): 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 market for business-critical scenarios.

- **Technical extensibility (weight: high):** 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.

A detailed description of the other Ability to Execute criteria can be found in Section 2.3.2 of the "Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market."

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product/Service	high
Overall Viability (Business Unit, Financial, Strategy, Organization)	high
Sales Execution/Pricing	high
Market Responsiveness and Track Record	standard
Marketing Execution	low
Customer Experience	high
Operations	standard
Source: Gartner (October 2010)	

Completeness of Vision

The fundamental indication of a software vendor's completeness of vision in any market is the degree to which the vendor anticipates and influences prevailing market trends.

For systematic SOA-style business application projects, the vision of a vendor is reflected in its ability to track the changing mainstream enterprise requirements, offer long-lasting standards support and enhance the product with modern capabilities — without detracting from its reliability and established practices. Thus, the vendors' market understanding and the resulting product packaging and positioning, as well as investments in intelligent innovation, are all important as prospective users try to estimate how well the vendors will remain aligned with their (and the market's) long-term requirements.

Geographic strategy is important mostly to the largest multinational corporations, but also to the organizations considering technology for which the support center may be many time zones away. Sales, marketing and business model strategies are of secondary importance to users — only as further assurances of the continuing popularity of the vendor's products in this market. Thus, in the application infrastructure market for building and deploying new SOA business applications, the following criteria and weightings determine the Completeness of Vision rating (see Table 2).

The Offering (Product) Strategy criterion is the only category that has subcategories. To rate vendors' vision for the Offering (Product) Strategy criterion, we considered the following defining characteristics, as they apply to a vendor's entire portfolio of application infrastructure offerings in the context of this market:

- **Back-end containers (weight: high):** 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 and quality of service [QoS] support, including performance, availability, security, manageability, scalability and other like capabilities). Advanced examples will also 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, unintrusive versioning and other capabilities).

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

- **Front-end containers (weight: high):** 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 standard and nonstandard SOA-style interfaces of like and unlike platforms.

- **SOA governance (weight: standard):** Features and capabilities to support the implementation of SOA governance processes, with specific reference to such aspects as SOA policy management and enforcement, registry/repository and metadata management, statistical and key performance indicator (KPI) data collection, the governance of services in the cloud, monitoring and management, applications and services life cycle management, and interoperability with other SOA governance technologies.

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

- **Advanced enterprise service bus (weight: low):** Features and capabilities to support capabilities, such as reliable communications between on-premises, B2B or cloud endpoints through a variety of protocols; strong external partner community management; support for internal proprietary and B2B standard messages; and security, including in-flight and at-rest message encryption and DMZ-based reverse proxy servers.

- **Orchestration (microflow, service composition and straight-through process) design and execution (weight: standard):** 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 workflow is not required).

- **Message/data schema/mapping (weight: low):** 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 message from one format to another.

- **Adapters (weight: low):** Features and capabilities to support adapters for packaged applications, database management systems (DBMSs), message-oriented middleware, application servers, transaction processing monitors, standard and proprietary application-to-application (A2A) and B2B protocols, cloud/software-as-a-service (SaaS) application programming interfaces (APIs) and other application and technology environments.

- **External partner community management (weight: low):** Features and capabilities to support external partner community management, which facilitates the provisioning, configuration and master data management 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-style tools, campaign/program life cycle management, and role-based task delegation and tracking.

- **Architectural consistency (weight: standard):** Initiatives, patterns, features, capabilities and standards to support integration and architectural coherence of the vendor 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 components; as well as support for "pluggability" standards such as OSGi).

- **Openness and interoperability (weight: standard):** Features and capabilities to support inter- and-intra-application communication and federation between 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 the vendor's application infrastructure offering.

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

A detailed description of the other Completeness of Vision criteria can be found in Section 2.3.1 of the "Magic Quadrants and MarketScopes: How Gartner Evaluates Vendors Within a Market."

In addition to the evaluation of released or imminent product features, the products' road maps were also taken into account in all Completeness of Vision ratings. Such road maps are subject to change, but they still reflect the current vision of the vendor's business and engineering leadership.

Leaders

Leaders combine insightful understanding of the realities of the market, a reliable record, the ability to influence the market's direction, the capability to attract and keep a following, and the capacity to lead. A Leader has the proven ability to deliver on its vision and to support its customers through

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 (October 2010)	

periods of stability, as well as periods of change. Leaders control most of the market's business activity, and are the primary influencers of market evolution.

A Leader, however, is not always the best choice for a particular user's project. A focused, smaller vendor can provide excellent support and commitment to individual mainstream customers, especially when geographic or vertical-industry specifics are of importance. With some notable exceptions, Leaders are typically large vendors with long-term industry records. They represent safe choices, but they are not necessarily the state-of-the-art vendors in every aspect of the technology suite, or the leaders of industry innovation. Some are also known to be mostly focused on their larger customers, leaving the rest of the installed base with less-than-stellar support or pricing options.

In this relatively conservative market, leadership is earned through a well-established record of execution and vision. It also requires the stability and reliability of a proven vendor — such qualities include a long-term presence in the market and, as a result, leaders are typically the largest vendors in the market. However, longevity alone does not make a leader (as this quadrant clearly shows); Leaders may not be first to adopt some breakthrough innovations, but they retain the agility to not fall behind the market in new directions.

Challengers

Challengers excel in their ability to attract a large user following, but owe that ability to a relatively narrow focus on a particular use pattern or user type, or to their past accomplishments. Challengers excel in their chosen patterns, and can

be the best choice for a subset of users, although they lack some capabilities for the requirements of other users. These vendors are typically more conservative, and rarely offer competitive innovation, although their support of market fundamentals is well-proven.

A well-established market presence is one prerequisite for leadership in this market, and understanding and adoption of multifaceted market requirements is the other. A vendor that builds a successful business serving a subset of project categories or technical project requirements, but ignores some significant areas of market growth (industrywise, geographywise or use-pattern-wise), is likely to be rated a Challenger.

Visionaries

Visionaries are innovators that offer emerging technologies or are invested in addressing the limitations of the dominating vendors. Some will eventually grow to become market leaders or will be acquired by them. Others will limit their target markets to focus on their core competencies and will become niche players, or they will grow to be challengers. Some will exit the market. Visionary vendors exhibit a lack in their execution record 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 this market, Visionaries invest in market-leading technologies, patterns and best practices for new, service-oriented business projects. These could be cloud computing, advanced forms of XTP, advanced forms of SOA (event-driven and federated) or breakthrough levels of productivity, platform independence or user interaction. They invest in new software development and the composition of new and old software. Relatively new to the market, Visionaries are a lot smaller than Leaders and Challengers. Being substantially smaller in size than market leaders, Visionaries are not able to advance in every aspect of the complex technology of this market. As a result, the relatively narrow focus of their investments keeps Visionaries behind Leaders in the total vision rating.

Vendors often begin as Visionaries, and when their vision becomes established, the vendor will not advance the vision, but will shift the focus to execution with customers. Often, this results in vendors transitioning from the Visionaries quadrant to the Challengers quadrant, as the ability to execute improves and the scope of the vision over which they can execute narrows, relative to the competition.

Niche Players

Niche Players operate well in a vertical industry, a geographic segment or other specialized market segments, such as serving the installed base of a particular application. They are specialists in their areas, and may represent the optimum choice for some projects or some IT organizations, offering specialized expertise, focused support practices, flexible terms and conditions, and greater dedication to a particular market segment and its customers.

Some of the more insightful cloud platform players, for example, begin to compete for the mainstream enterprise application projects. Typically, their investment in SOA capabilities is limited (so far), which renders them Niche Players until their vision extends beyond primarily meeting the cloud-computing challenges. The potential for these vendors is high, but success will depend on the breadth of their market understanding and their ability to execute. Projects that consider the cloud-computing specialty important should look seriously at the specialists evaluated here, as they not only understand cloud computing, but also qualify, even if with limitations, for some mainstream systematic, SOA-style application projects.

Some Niche Players look to grow their businesses to challenge Leaders. Others discover innovative solutions that attract interest beyond their target market segments, and emerge as Visionaries. However, most Niche Players focus on serving their market segments and customer bases, and generally limit their ambitions to maintaining their segment excellence.

Vendor Strengths and Cautions
Compuware

The evaluation of Compuware's position in this Magic Quadrant is based on the functionality provided by the Uniface Application Platform Suite release 9.4 family of products (released in March 2010), which includes the Uniface View portal product (providing front-end container capabilities), the Uniface development and runtime environment (supporting modeling, back-end container and ESB capabilities) and Uniface Flow for service orchestration and workflow.

Strengths

- The recent establishment of Uniface as a semi-independent business unit within Compuware will favor a focused technology, sales and marketing strategy for the Uniface product set, which was, until recently, just one of the many products in the wide Compuware portfolio.

- With estimated 2,500 direct customers and approximately 10,000 indirect customers contracted via its value-added-reseller (VAR) channel, Uniface provides a proven, widely supported, developer-productivity-focused, mature technology platform supporting demanding business-critical application projects. However, only a relatively small number of users take advantage of Uniface in the context of systematic SOA application projects.

- The Uniface technology road map addresses key SOA application-enabling technologies (e.g., enhanced support for rich-Internet clients) in the short term, and emerging requirements (e.g., multitenancy and cloud deployment) in the long term.

Cautions

- Despite the renewed focus on the Uniface product following the establishment of the Uniface business unit, Uniface is still little known outside of its loyal customer and partner bases, due to the proprietary nature of the technology platform and because Compuware pursued few brand-awareness investments during the past several years.

- Despite planned evolutions toward support for multitenant cloud architectures, Uniface technology evolution is very conservative and primarily driven by the installed-base needs, rather that by the desire of staying on top of technology evolution.

- The Uniface Flow and View products have small installed bases, if compared with the core Uniface platform. Overall, the product technology proposition lacks support for key SOA application standards (such as SCA, OSGi, BPEL) and capabilities (such as SOA governance).

E2E Technologies

The evaluation of E2E Technologies' position on this Magic Quadrant is based on the functionality provided by the E2E Bridge release 5.0 (released in May 2010). The product provides a full set of integrated capabilities, including those required for supporting systematic SOA-style application projects.

Strengths

- E2E Bridge is an innovative platform that combines ESB and orchestration capabilities on top of a high-performance, highly scalable, proprietary application server platform also providing Ajax-based, front-end container capabilities.

- The product supports a highly productive and completely model-driven (BPML and UML) development and execution environment (based on a proprietary "UML virtual machine") that does not require any form of coding for the back-end or the front-end of SOA-style applications.

- The core E2E Bridge back-end container has been proven in approximately 200 real-life deployments (in about 70 clients), supporting, in some cases, demanding application development requirements.

Cautions

- E2E Technologies is a relatively small company headquartered in Switzerland, with limited R&D and marketing investment capabilities. It heavily relies on partners for sales operations outside of Central Europe.

- The E2E Bridge product has low brand awareness outside of its home geography.

- The Ajax-based front-end container and the relevant modeling environment have been made available only recently (as a release 5.0 feature) and have still minimal real-life production deployments.

Engine Yard

Engine Yard xCloud and AppCloud are Ruby on Rails APaaS offerings that provide basic capabilities for SOA-style application development. The company has experienced strong growth, and boasts more than 1,700 paying customers running applications on its APaaS.

Strengths

- Engine Yard xCloud's architecture, which supports JRuby and is based on extending the shared-hardware multitenancy offered by Terremark's VMware-based vCloud with management tools for Ruby applications, is appealing to enterprises that are not ready to make the leap to a Ruby-only environment with finer-grained multitenancy capabilities or that would prefer to retain more control over the configuration of the runtime environment.

- Engine Yard is the most visible corporate supporter of the open-source Ruby community, employing a large number of contributors to key projects like Rubinius, Rails, JRuby and Ruby itself. Besides giving the company access to industry-leading Ruby talent with which to improve its platform, Engine Yard's profile within the Ruby community enhances its credibility with developers and provides an additional revenue stream (Engine Yard offers paid support for JRuby, even for nonusers of xCloud and AppCloud).

- Rather than create its own infrastructure for SOA-style application development, Engine Yard depends on gradual improvements to Rails to extend support. For example, in a Rails application, every action generates a RESTful Web service that can be consumed by other applications. Additional capabilities such as asynchronous event processing are available to Rails users through various RubyGems (RubyGems are command-line-installable packages that enhance an application's capabilities, and they are considered part of the configuration of the application).

Cautions

- While Engine Yard's customer base is significant in the emerging APaaS market, it is relatively small when compared with the penetration of leading on-premises application middleware products, and it is used infrequently for high-complexity SOA projects focused on integrating operational systems and requiring robust governance and repository capabilities.

- Engine Yard xCloud and AppCloud have limitations in their support for the development and governance of modular, SOA-style application development. For example, while RESTful interfaces are easy to generate with Rails, in order to separate the interface from its implementation, custom coding is required, and Engine Yard offers no management tools for evolving them separately.

- Ruby is popular with Web 2.0 startups and is gaining traction with independent software vendors (ISVs). Gartner client inquiries reveal it to be an intriguing option for opportunistic applications. However, it is not yet at the enterprise "tipping point" and is rarely used for systematic application projects.

Fujitsu

Fujitsu's position on this Magic Quadrant is based on the functionality provided by its Interstage family of products, which includes Interstage Application Server v.9.2, Interstage Business Application Server v.9.2, Interstage Interaction Manager v.9.1.1 for container requirements, Interstage Service Integrator v.9.2 supporting core ESB requirements, Interstage Business Process Manager v.11.0, Interstage Business Process Manager Analytics v.11.0 and Interstage Studio v.9.2 for orchestration and advanced ESB capabilities and SOA modeling capabilities. CentraSite v.3.1, Interstage Application Development Cycle Manager v.10.1 and Systemwalker (e.g., Service Catalog Manager v.14), Fujitsu's system management software family, support SOA governance needs.

Strengths

- Interstage is a strategic and track-record-proven offering of Fujitsu's service and infrastructure business, with a large installed base. It offers one-stop-shop, vertically integrated solutions (from hardware/network to application) and targets large-scale, complex/heterogeneous, mission-critical SOA application deployments that demand advanced QoS throughout the whole system stack.

- Fujitsu's application life cycle management strategic initiative is differentiating through the integration of the application/service development/deployment capabilities provided by Interstage and the management features offered by the Systemwalker family via the CentraSite metadata-management technology. Its goal is to provide users with an integrated and comprehensive environment for development, deployment and management of SOA-style applications.

- Fujitsu's application server has a track record to support one of the most demanding transaction processing environments (e.g., stock exchange trading) with its in-memory technology.

- Fujitsu's business process management (BPM) technology is one of the key strengths for modeling and composition. Fujitsu leverages it as a strategic initiative to drive the company's business growth, putting emphasis on its process discovery and analysis capabilities, including in emerging cloud services.

Cautions

- Fujitsu's software business still highly depends on hardware/service business activities in the context of a "one-stop-shop offering," which makes Fujitsu's software relatively slow to evolve against highly advanced leading vision/business model and technology implementations (the dilemma: innovative versus stable).

- Fujtsu's Interstage has been putting emphasis on operational capabilities for a "cost-effective and predictable" offerings, ahead of the leading edge innovation. With some exceptions (such as OSGi and XTP), this applies even to the company's new cloud-computing offerings.

- Fujitsu's Interstage market penetration is relatively lower versus other leading players outside Japan. To further promote Interstage, Fujitsu puts most of its consolidated resources in the U.S. market to advance just its cloud BPM service offering.

Google

The evaluation of Google for this Magic Quadrant is based on the functionality of Google App Engine (GAE), which includes v.1.3.5 of the App Engine SDK for Java and Python, which supports v. 2.6 of Python and Version 6 of the Java Virtual Machine (JVM). The evaluation also considered Google's road map and emerging capability found in the Preview release of GAE for Business.

Strengths

- The Google brand name has led to broad adoption among developers compared with other cloud platforms. Gartner estimates that more than 200,000 developers have built 100,000+ applications, that reach 100 million-plus users over a 30-day period. These are mostly opportunistic, tactical applications developed outside the enterprise sector, but provide a strong foundation for future growth in enterprise.

- Google's technology portfolio provides a robust and scalable foundation that can reach hundreds of millions of users. This technology is related to that on which Google's primary consumer-facing properties are built, a platform that exceeds the capabilities of almost all competitors in terms of scalability, security and robustness.

- Google uses standard and popular technologies such as Python, Java, Eclipse IDE, Django, Java Data Objects and Java Persistence API, as well as its own Google Accounts for user authentication, BigTable for schema-less, scalable data persistence, and so on.

Cautions

- Along with most other APaaSs, GAE has gotten relatively low adoption in the enterprise sector, compared with infrastructure-as-a-service (IaaS) offerings such as Amazon Web Services (AWS). In the case of GAE, this is partly due to developer lack of familiarity with Python, the late entrance of Java, and a set of operational constraints and thresholds that limited the "headroom" of individual applications.

- Neither the Python nor the Java versions of GAE provide direct support for systematic development projects that use SOA in a rigorous, managed fashion (i.e, for SOA-specific governance, monitoring, testing, configuration management and so on). However, GAE provides developers with the means to easily build a large number of small, independent applications that can interoperate with low overhead, yet still have strong isolation between the apps. This approach aligns well with the principles of SOA.

- The initial releases of GAE were hobbled by a set of interlocking quotas and thresholds (bandwidth, disk, request timeout, etc.) that made it hard to predict operational behavior and associated cost. Google has steadily relaxed the quotas and thresholds, and recently introduced App Engine for Business to address operational and pricing concerns — with subscriber-based pricing, as well as improvements to the quota system. As of this writing, that offering is still in "preview" mode.

Heroku

Heroku offers a Ruby on Rails APaaS that provides basic capabilities for SOA-style application development.

Strengths

- Heroku has grown rapidly to almost 85,000 applications, but Gartner estimates that 95% to 99% of these applications are using only the free version of the platform. As interest in Ruby on Rails has grown, Heroku has benefited from the increased attention of developers on social, mobile and real-time data capabilities.

- Heroku provides simple deployment and scaling mechanisms through its management API, alongside an advanced architecture that implements shared-operating system (OS) multitenancy. This architecture also supports asynchronous processing via "worker" threads, simplifying the process of creating multithreaded Web applications.

- Heroku includes a visionary cloud service brokerage feature that allows the company to form a partner ecosystem. This feature allows third parties to sell services for consumption by applications deployed to Heroku through an app-store mechanism. Add-ons were launched in late 2009, and after a slow growth phase, there are now 20 add-ons available. Heroku has just launched a public API so that third parties can deploy, and developers can subsequently integrate, new add-ons more rapidly.

Cautions

- While Heroku's story is significant in the emerging APaaS market, the company is small compared with traditional on-premises application middleware, and it is used infrequently for high-complexity SOA projects focused on integrating operational systems and requiring robust governance and repository capabilities.

- Heroku has limited support for the development and governance of modular, SOA-style application development. While RESTful interfaces are easy to generate with Rails, in order to separate the interface from its implementation, custom coding is required, and Heroku offers no management tools for evolving them separately.

- Heroku's shared-OS multitenancy and cloud service delivery provides more guardrails and productivity for developers, but it also greatly limits the degree of flexibility customers have when deploying applications, compared with traditional application middleware offerings.

Hitachi

Hitachi's position on this Magic Quadrant is based on the functionality provided by its Cosminexus family of products, which includes, uCosminexus Application v.8.5, uCosminexus Developer v.8.5, uCosminexus TP1/Server Base v.7, uCosminexus TP1/Server Base Extreme Transaction Platform v.7, uCosminexus Batch Job Accelerator v.8, uCosminexus Stream Data Platform v.1 and uCosminexus Portal Framework v.8.0.For supporting core ESB requirements, the Cosminexus family of products includes uCosminexus Service Architect v.8 and uCosminexus Service Platform v.8. And for orchestration and advanced ESB capabilities and SOA modeling capabilities, it includes uCosminexus Service Architect - WorkCoordinator v.8 and uCosminexus Service Platform - WorkCoordinator v.8.

Strengths

- Cosminexus (the brand name of the product family) is a strategic and large-installed-based, mission-critical proven product family that enables Hitachi's public infrastructure business (e.g., transportation, electricity, etc.) and solution businesses (such as for financial and telecom industries), which demand large-scale, complex, heterogeneous, mission-critical SOA application deployments, with very strict and advanced QoS (virtually nonstop requirement) as a whole.

- Hitachi Cosminexus has a long-term track record in offering super-high-end QoS transaction capabilities by offering stable/reliable full-garbage-collection-proof JVM, XTP (uCosminexus TP1/Server Base Extreme Transaction Platform), batch-based large data processing (Batch Job Accelerator), and real-time (in-memory) large and complex stream-data processing (Stream Data Platform).

- Hitachi Cosminexus offers an automatic operation capability, such as one operation for start/stop of applications deployed over a virtual server with multiple physical servers, based on its strong monitoring capability, and will offer enhanced features for automatic operation, including troubleshooting/performance-tuning in a virtualized environment.

Cautions

- Hitachi uCosminexus needs to enhance its SOA governance capability more (e.g., policy enforcement feature, etc.) to compete against leading products.

- Hitachi's investment focus has been kept on reliable/stable/cost-effective operation aspects of the company, rather than on innovative features directly affecting its SOA services (such as service component architecture [SCA]).

- Hitachi's front-end container strategy lacks support for more-dynamic composition technologies (such as mashups), not just integrating Web/portals with (legacy) back-end applications or Microsoft Word/Excel on client PCs.

IBM

The portfolio of products considered to assess IBM's position on this Magic Quadrant includes a variety of items belonging to the WebSphere 7 family. Among them, the most relevant are: WebSphere Portal Server and WebSphere sMash (providing the front-end container capabilities); WebSphere Process Server (WPS), WebSphere Enterprise Service Bus, WebSphere Message Broker (WMB), the WebSphere DataPower XI50 appliance and relevant tooling (such as WebSphere Integration Developer [WID] and WebSphere Business Modeler) for implementing ESB, orchestration and SOA modeling features; and WebSphere Application Server and associated extensions (e.g., WebSphere eXtreme Scale, WebSphere Vitual Enterprise, WebSphere Compute Grid, WebSphere DataPower XC10 [caching appliance] and WebSphere CloudBurst [software provisioning appliance]) for supporting back-end container requirements.

Strengths

- IBM enjoys brand recognition, global reach, market share in key application infrastructure middleware segments and "mind share," as well as a huge installed base of hardware and software products that are leveraged for WebSphere sales, including to support systematic SOA-style application projects.

- The WebSphere family includes the market-leading, widely deployed, largely supported and functionally rich front-end (WebSphere Portal Server) and back-end (WebSphere Application Server) containers, and the market leading WebSphere DataPower appliances, as well as the popular WebSphere ILOG business rules management system.

- WebSphere's progressive road map includes support for emerging standards (e.g., Java EE 6, OSGi, SCA and S-RAMP), addresses advanced usage scenarios (extreme transaction processing, event-processing, communication-enabled applications, batch and high-performance computing), introduces innovative product packaging (e.g., fit-for-purpose appliances for caching and software provisioning) and is sustained by sound marketing initiatives (Smarter Planet), focused vertical strategies for multiple industries and a proven business model.

- The IBM product offering is sustained through massive partner programs and is complemented by a range of consulting and professional service options, which provide comprehensive methodologies for systematic SOA application projects across IBM Global Business Services and IBM Software Group.

Cautions

- Some users have experienced problems in getting WPS and associated products (e.g., WID) to meet their requirements — even with IBM resources involved.

- The implementation of large-scale SOA application projects may require the acquisition and deployment of a large number of products, including WebSphere Portal, WebSphere Application Server, WebSphere ILOG JRules, WebSphere Business Modeler, WID, WPS, WebSphere ESB (WESB), WMB, WebSphere Service Registry and Repository and WebSphere Business Monitor, as well as IBM Tivoli technology for monitoring and management. This makes IBM's offering primarily suitable for the most complex requirements and often creates the need for a significant amount of professional services and support to deploy the products and get initial SOA applications up and running.

- IBM's foray into open-source, back-end application containers through the WebSphere Community Edition (CE; a Java EE application server based on the Apache Geronimo

technology) never achieved significant industry support and adoption. Despite some notable deployments in large organizations, WebSphere CE was never able to emerge as an industry-recognized alternative to the most popular open-source, Java-based application servers.

- Some of IBM's back-end container extensions (e.g., WebSphere eXtreme Scale) have smaller installed bases than their competitors orhave a relatively low number of production deployments (e.g., WebSphere Compute Grid, WebSphere CloudBurst and WebSphere DataPower XC10). Therefore, users should validate these products in their specific deployment scenarios (e.g., through a proof of concept) before committing.

InterSystems

InterSystems Ensemble is an integrated application development, deployment, composition and integration platform built on the company's Cache object and relational database. The DeepSee extension to Ensemble supports business analytics.

Strengths

- InterSystems is a strongly leading application, integration and data platform provider in the international healthcare industry. Large numbers of healthcare solution providers and other ISVs standardize on InterSytems' platform technologies. The company's entry into the electronic health record exchange market with HealthShare and TrakCare maintains the company's leadership as the healthcare industry changes worldwide.

- InterSystems offers an advanced, well-integrated technology suite, including a dual-mode (object-oriented and relational) database (Cache), rich internal support for event processing in the Ensemble platform, a highly productive model-driven programming model, a portal builder, a uniquely rich collection of application and protocol adapters (especially for the healthcare industry), high-productivity application development tools, multilayer business process orchestration tools and business analytics (packaged separately, but integrated with Ensemble).

- The company is making steady progress in introducing its products in new vertical markets (including financial, telecommunications and government), beyond its traditional healthcare space (although healthcare remains the majority of its business).

- InterSystems is a strong, growing and profitable private business with no debt, and a growing worldwide presence.

Cautions

- Although SOA interoperability is well-supported, the SOA-style application modeling, tracking and governance are limited. The company mostly relies on partnerships for this functionality. The existing support of SOA is largely focused on support of Web services — revealing a limited vision of the scope of this core architecture pattern.

- Although it partly uses Java, the otherwise nonstandard programming model requires additional training, and results in nonportable software, useful only inside the InterSystems environment.

- InterSystems is still not well-known as a platform vendor for new business applications outside the healthcare vertical industry.

- InterSystems' future innovation road map is not well-articulated and is mostly focused on meeting new requirements of the healthcare industry. There are no publicly committed plans to respond to the cloud-computing, social-computing and other new emerging industry trends.

LongJump

The LongJump Enterprise Application Platform (LEAP) v.7.1 is suitable for the development of data- and process-driven applications that require integration of existing services and the generation of workflows and automated data policies. LEAP is offered as a multitenant APaaS or licensed as an on-premises cloud-enabled application platform (CEAP). The CEAP can also be delivered in single-tenant form. LongJump is a division of Relational Networks.

Strengths

- LongJump's metadata-driven visual application construction environment is highly productive. The platform's shared-everything multitenant, Java-based architecture is visionary for a cloud player. LongJump applications are generated visually, but can be extended with Java, and automatically generate RESTful Web services for consumption by other applications.

- LongJump's multifaceted sales strategy is visionary, because it gives companies the option to choose between cloud and on-premises delivery. Furthermore, the LongJump CEAP is optimized for ISVs, incorporating application marketplace capabilities.

- Relational Networks has demonstrated expertise in the pharmaceutical, financial services, healthcare, and federal government sectors, and its SaaS business in these areas are able to contribute revenue to the ongoing research and development efforts associated with the LongJump platform.

Cautions

- While LongJump is experiencing rapid growth, its relatively small installed base presents a challenge for enterprises interested in acquiring technology only from large, established vendors.

- While platforms that store application code as Java or another common language offer some degree of portability, LongJump's advanced shared-everything multitenant architecture is based on metadata, and, as such, LongJump applications are not portable to other runtimes. The platform's requirement that customers use MySQL is an additional limitation to portability.

- LongJump offers limited systematic SOA capabilities, because service interfaces generated by LongJump are implicitly linked with application functionality.

Magic Software Enterprises

Magic Software Enterprises is a vendor of development and middleware technology. UniPaaS RIA was evaluated for this Magic Quadrant, as it is the development and execution platform for building applications. This platform technology has powerful proven capabilities, but is stylistically quite different than the latest tools and is supported by a relatively small company.

Strengths

- Magic Software Enterprises has an easy-to-develop platform with substantial support for various nonfunctional requirements built in, and is emerging as a highly capable CEAP.

- The company has an excellent framework for developing RIA applications using a simplified programming model, and the framework has been shown to be highly productive and to fit well in many organizations.

- Magic Software Enterprises has a global network of partners that has been growing, mostly VARs delivering prebuilt applications developed with uniPaaS. This network enables broader support than company size would dictate.

Cautions

- The company's technology has its own idiosyncratic user style and metaphor, which are helpful to users of other Magic Software Enterprises capabilities, but are unusual to mainstream Java and .NET developers.

- Organization size and brand awareness are challenges to expanding into new markets and gaining new customers, as customers must invest in skills that are not readily available.

- Focus on midsize organizations and applications, and limited proof points for high-scale applications, make Magic Software Enterprises less attractive for large applications.

Microgen

Microgen is a solution vendor that has had success delivering applications to the financial services and digital media markets, and developed a set of general-purpose application infrastructure products. For this Magic Quadrant, the products evaluated include Microgen Report Manager and Microgen Aptitude v.3. Aptitude is a business process manager that provides the orchestration models and mechanisms, a set of model-driven development tools and various content templates.

Strengths

- Microgen is a stable company with substantial footprint in European financial services and digital media.

- Microgen has a service and support community with deep financial services expertise.

- The company has a proven platform on which its own application solutions are based, and an aggressive and visionary use of models and model-driven development.

- Microgen has easily customized application frameworks for common tasks such as accounting and risk management.

Cautions

- Financial services and digital media depth does not extend to other industries.

- Microgen's process model metaphor is attractive, but unique implementation may present interoperability challenges with other process-based solutions.

- Microgen's brand awareness outside of London-based financial services is low, and skills and services are not easily available outside of this market.

Microsoft

Most of the Microsoft application platform technology is integrated and packaged with the Windows Server OS. These technologies include .NET framework and ASP.NET, Internet Information Server, Windows Process Activation Services, Windows Server AppFabric and others. Management is offered through a separately priced Microsoft System Center. In recent years, and especially in its most recent release, Microsoft SharePoint has become a platform in its own right for developing front-end, user-facing applications. Windows Azure (including Windows Azure AppFabric and Windows Azure SDK) now represents a cloud alternative to the on-premises Microsoft technology platform, although the content of the Windows Azure offering continues to evolve and does not exactly match the Microsoft on-premises platform technologies. SharePoint Online is a growing cloud alternative to the traditional SharePoint product, allowing some degree of in-cloud application development without relying on Windows Azure.

Strengths

- Microsoft has a massive presence and a proven reputation with mainstream software developers, resulting in a broad use of Microsoft development languages and tools across industries and geographies. This establishes a large skills availability in the market and thus lowers the costs of success for IT projects.

- The increasingly strong technical performance of Microsoft application platform technologies exceeds market perceptions; the recent addition of XTP and management capabilities (Windows Server AppFabric), as well as strong support of security, added in recent years, further strengthen Microsoft's enterprise computing fit.

- The company made a strategic commitment to cloud computing ahead of its main enterprise rivals (IBM and Oracle), giving it an advantage in building the mind-share and technical expertise for this rapidly emerging business. The preferred design model of Web and Worker roles in Windows Azure platform context encourages SOA-style application design.

- Microsoft application platform technologies are deeply integrated with the Windows OS family, potentially improving the overall performance and availability of the technology stack underlying business applications.

Cautions

- The architectural vision of SOA is affected by the late-start support for SOA and is still mostly manifested by support for Web services as a communications method. This limits Microsoft's support for SOA-style business modeling (although the recent addition of UML in Visual Studio is a step in the right direction).

- The fundamental SOA-enabling technology is incomplete (although the most recent releases indicate improving understanding of some SOA requirements) — a production repository for services and SOA modeling (beyond Universal Description, Discovery and Integration [UDDI]) may be years away following the recent ending of the "Oslo" project. Support for events is mostly isolated in BizTalk and is only beginning to be exposed to the main .NET design patterns, and Windows Communication Foundation supports SOA-style interactions, but it is a low-level middleware, making the SOA software design a highly technical undertaking, despite the recent improvements for some simpler data-access patterns.

- Although continuing to steadily improve, Microsoft's business model and company culture are still not entirely well-suited for conservative, high-end enterprise IT, which is characterized by its long sales cycles, dependence on long-term account relationships and intolerance of discontinuities.

- All software is available on the Windows OS family only (although the software is interoperable with other platforms), limiting prospects' platform options.

NEC

NEC's position on this Magic Quadrant is based on the functionality provided by its WebOTX family of products, which includes WebOTX Application Server v.8.3, WebOTX SIP Application Server v.8.12, WebOTX Parallel Stream Monitor v.8.1, WebOTX Portal v.8.2 and WebOTX Batch Server v.8.3 for container requirements.

For core ESB requirements, the WebOTX family provides WebOTX Enterprise Service Bus v8.3. And for orchestration and advanced ESB capabilities, it provides WebOTX Process Conductor v.7.1 and WebOTX Developer v.8.3.

Strengths

- NEC has been demonstrating its capability to implement new advanced standard features, such as JBI, ahead of other players (e.g., Java EE 5) in its application infrastructure family of WebOTX, which is a strategic and track-record-proven piece to support NEC's service and infrastructure business. WebOTX targets large-scale, complex/heterogeneous, mission-critical SOA application deployments.

- WebOTX Parallel Stream Monitor is a key strategic product to embody NEC's XTP vision, which has demonstrated its capability mainly in the telecom industry, along with WebOTX Application Server, which provides intelligent transaction capabilities for mission-critical scenarios (such as priority queue control, multiprocess/multithread processing and auto-process-recovery with failure/stall detection/monitoring on container/process), and WebOTX Batch Server to process large data based on Spring.

- NEC's WebOTX Portal is a key piece for front-end integration capabilities, which will support JSR 286 in v.8.3 (to be released in the first half of 2011), to enable event-based interaction between portlets. It also enables easier mashups among multiple portal sites, back-end applications and NEC's collaboration product (StarOffice), along with enhanced security and management capabilities (e.g., single sign-on [SSO], user resource management, etc.).

Cautions

- NEC's XTP capability influence needs to be extended to broader industry segments (especially outside the telecom industry), both inside and outside Japan.

- NEC needs to expand its loyal partners (ISVs and third-party SIs) to support WebOTX both inside and outside Japan.

- NEC lacks investments on advanced features, such as SCA and OSGi.

- NEC's WebOTX brand recognition and installed base are very limited outside of Japan.

Oracle

The evaluation of Oracle's position on this Magic Quadrant is based on the functionality provided by the Oracle Fusion Middleware (OFM) 11gR1 family of products (released between July 2009 and June 2010), which includes the Oracle WebLogic Suite (Oracle WebLogic Server, Oracle Coherence, Oracle WebLogic Real Time, Oracle WebLogic Operations Control and other components) providing Java EE-based back-end container capabilities; Oracle SOA Suite (Oracle Service Bus, Oracle BPEL Process Manager, Oracle Business Rules, Oracle B2B, Oracle BAM, and other components) supporting ESB and orchestration requirements; Oracle WebCenter Suite (Oracle WebCenter Services, Oracle WebCenter Spaces and other products) providing front-end container capabilities; and the Oracle JDeveloper modeling and development toolset.

Strengths

- OFM is a large and fast-growing business that positions Oracle as the second largest application infrastructure middleware vendor in the market, according to Gartner 2009 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 OFM in a large number of cases to support large and business-critical SOA application scenarios.

- OFM provides a comprehensive, integrated (e.g., Oracle JDeveloper common development toolset, Oracle Enterprise Manager common management environment, common Oracle Metadata Services, common Oracle Service Infrastructure) and feature-rich application infrastructure offering that also provides leading technologies to support systematic SOA application requirements, such as the market-leading Oracle WebLogic Server Java EE application server (deriving from the BEA Systems acquisition) and the advanced Oracle Coherence distributed caching platform.

- The OFM road map addresses key SOA application-enabling technologies (e.g., event enablement across the stack, advanced "SOA inside," multipersonality — e.g., Java EE, Spring, and Scala — back-end container) and emerging requirements (e.g., support for mobile applications).

- The combination of Sun Microsystems' hardware and OFM components into the Oracle Exalogic Elastic Cloud "integrated system" potentially enables Oracle to address even the most demanding systematic SOA application needs, including in SaaS and PaaS scenarios.

Cautions

- The relentless pace of Oracle's acquisitions in the packaged applications and application integration middleware markets (e.g., BEA Systems, Sun Microsystems and AmberPoint) requires further technology integration work and poses migration and upgrade challenges to pre-acquisition product users.

- Oracle's front-end container strategy is still inconsistently executed in some situations. At times, the Oracle sales organization prefers to push the proven, but in maintenance-mode, Oracle WebLogic Portal inherited from BEA Systems, rather than the strategic Oracle WebCenter offering.

- Despite significant adoption, the OFM 11g R1 product set requires more proof points about its use in complex and large-scale, real-life deployments.

- Some Oracle clients are experiencing licensing and pricing issues when upgrading from previous versions to SOA Suite 11g R.1, due to the change in the underlying application server (from Oracle Internet Application Server to Oracle WebLogic Suite) that may imply higher licensing costs.

Pramati Technologies

Pramati's position on this Magic Quadrant is based on the functionality provided by its Pramati family of products, which includes Pramati Enterprise Application Server 6.0, Pramati Standard Application Server 6.0, Pramati Micro Application Server (for desktop and device deployment) and Pramati Cloud Application Server (for container requirements).

Strengths

- Pramati offers three kinds of application servers — Pramati Enterprise Application server for large-scale, on-premises deployments; Pramati Micro Application Server as a small footprint server with data sync capabilities for desktops and devices; and Pramati Cloud Application server Java Platform as a service on AWS for on-demand, scalable use scenario — to cover and integrate multiple application-deployment-style options and to drive Pramati's business.

- Pramati Enterprise Server supports proven transaction features for mission-critical use scenarios (especially high availability) with a reasonable price and partial SOA governance capabilities by supporting WS-Policy for policy management, security, addressing and reliable messaging services; and JAXR for UDDI-based registries for WSDL documents.

- Pramati maintains stable relationships with large SIs such as Infosys, and several major global ISVs and OEM partners who have reach to global markets. It has established its presence in the banking segment in India and is expanding its deployments in such regions as the Middle East, Southeast Asia and Africa.

Cautions

- Pramati application infrastructure offering focuses on stable products for its OEM and ISV customer use scenarios, which makes Pramati cautious to implementing advanced (not mature or stable) or competitive features (e.g., SCA, OSGi).

- Pramati's offering scope is focused on its "execution" product, then Pramati depends on a third party (e.g., partners or open-source software) to accommodate many missing features, such as modeling capability.

- Pramati's Cloud Application Server offering is limited on AWS.

Red Hat

JBoss Enterprise Application Platform is the primary technology from Read Hat that supports new application development, while JBoss Enterprise SOA Platform is the technology offering dedicated to managing SOA contexts (including an ESB and jUDDI registry). Additionally, the JBoss Enterprise Portal Platform and JBoss Enterprise Business Rules Management System are also part of the platform technology family.

Strengths

- The combination of a leading, open-source OS (RHEL) and a dominating open-source Java EE application server technology (JBoss) positions the company as a leader in important open-source enterprise infrastructure market segments.

- Advanced engineering talent and the large pool of technologies in the open-source communities allows for potential rapid expansion of Red Hat's offerings.

- The synergies between the Red Hat core OS business and JBoss application infrastructure business offer promising opportunities — especially in the cloud-computing contexts (as in the case of the recently announced JBoss PaaS).

- An all-open-source offering has particular appeal to many projects, and has limited competition.

Cautions

- The strong business pressure to show revenue growth focuses top company leadership on business operations and sales, slowing down the investment and opportunity for ongoing technical innovation by JBoss engineering. Red Hat was the last of the leading application server vendors to certify compliant with Java EE 5 specification — a sign of a lack of management urgency for technical leadership.

- Limited SOA modeling, design and development tools reduce the offering to mostly technically advanced projects (although the new BPM-related projects under way will begin to address this challenge to some degree).

- Most JBoss family technologies, other than the flagship Java EE application server, have limited adoption; bundling the JBoss ESB and BPM technologies into the JBoss Enterprise SOA Platform offering reduces their visibility and adoption.

- Some of the SOA infrastructure capabilities (repository, governance) are not sufficiently complete and require additional development to be implemented, making SOA project efforts more technically challenging (although some work in the Red Hat labs promises to improve this situation over time).

salesforce.com

Force.com is the primary application and data environment (offered as a service) by salesforce.com. Its Chatter is a client-facing platform, also partly programmable and acting potentially as a front-end to the Force.com back-end. Salesforce.com also announced (in partnership with VMware) a future alternative APaaS — VMforce. Its development tools include Visualforce and Visual Process Manager.

Strengths

- Salesforce.com is a leading cloud-computing innovator and has the industry's most-utilized enterprise-type APaaS (Force.com). Some of the largest custom cloud-based applications are developed using Force.com (for example, Japan Post, Japan's Ministry of the Environment and Avon).

- The company claims to have, overall, more than 85,000 user organizations worldwide (most using its CRM offering), and although the number of users of the stand-alone, CRM-independent Force.com is only a fraction of that (estimated to be about 1,000), the technology of Force.com is inherited from the application side and retains much of its maturity and functional depth.

- The company's innovative enterprise-social collaboration platform (Chatter) offers a new pattern of cloud SOA applications where enterprise back-end applications (based on Force.com or others) participate in event-exchange with other applications and with people in Chatter social communities.

- A growing number of SI and ISV partners (including, notably, CA Technologies and BMC Software) are using the salesforce.com platform as an enabling technology for their business initiatives across multiple industries and geographic regions. Partnership with VMware is slated to deliver a Java companion platform to Force.com (VMforce), enabling traditional enterprise skills to be applied in the salesforce.com cloud environment.

Cautions

- Cloud computing is still seen as experimental, unproven technology by mainstream IT organizations with challenges in availability, security and standardization. This limits the prospective market to Type A (leading-edge) IT projects and ISVs.

- The nonstandard programming model of Force. com deters some mainstream adoption. The proposed new VMforce is designed to mitigate this challenge, but it may, in turn, limit the adoption of Force.com to a role of a cloud-enabled database, reducing the overall share of salesforce.com in cloud platform markets.

- Although much of Force.com functionality is offered via SOA-style programmatic interfaces, and the service interfaces can be catalogued in the AppExchange directory, there is limited support of SOA as a design architecture or of SOA governance. Some of the SOA application management and design must be custom programmed by the application project.

- The time of Force.com being nearly the "only game in town" for enterprise cloud projects is coming to an end: Microsoft and Google both are making steady progress in this market, and Oracle is expected to enter it in some form in the near future as well. Salesforce. com continues to be perceived as primarily a CRM application vendor (rather than a platform vendor), reducing its ability to compete against some established enterprise platform vendors entering this market.

SAP

The products considered to assess SAP's position on this Magic Quadrant belong to the SAP NetWeaver 7.1 family and include SAP Enterprise Portal, which provides the front-end container capabilities, SAP NetWeaver Application Server (supporting both Java EE 5 and the SAP proprietary ABAP programming environment) delivering the back-end container features, and SAP NetWeaver Composition Environment, SAP NetWeaver BPM and SAP NetWeaver Business Rules Management for application modeling and composition, as well as for other BPMS features.

Strengths

- The large and loyal installed base of SAP's packaged business applications provides plenty of opportunities for SAP to cross-sell NetWeaver components to SAP application clients wishing to implement systematic SOA-style applications.

- For organizations strongly committed to SAP's application strategy, NetWeaver is an obvious and compelling (primarily commercially, but also from a skills perspective) technology option for their SOA-style application projects, because of its affinity and preintegration with SAP packaged applications.

- The SAP Enterprise Portal is a leader in the horizontal portal market and enjoys a large installed base in the SAP application user community.

- SAP has a progressive vision for application composition that is primarily manifested through the SAP NetWeaver Composition Environment and SAP NetWeaver BPM products.

Cautions

- The disclosed road map for the current NetWeaver products doesn't support SAP's ambitious technology vision encompassing "in memory" computing, cloud and mobile computing. Therefore, potentially disruptive evolutions of SAP's application infrastructure technology are likely to take place during the next three to five years, thus exposing NetWeaver users to risks of discontinuities and migrations of their NetWeaver-based, SOA-style applications.

- SAP's vision and value proposition for NetWeaver are laser-like-focused on its packaged applications installed base. This generates scarce interest not only among users that have no SAP applications in place, but also among those deploying SAP packages in heterogeneous application and technology environments.

- Although many SAP users take advantage of NetWeaver components (including NetWeaver Application Server, NetWeaver Composition Environment, NetWeaver Portal and Visual Composer) to build composite SOA-style applications, very few implement brand new SOA-style Java or ABAP-based, back-end services on NetWeaver.

- SAP's strategy for SOA-style applications primarily targets composite SOA-style applications by providing users with a rich composition and orchestration toolset (via NetWeaver Composition Environment and NetWeaver Process Integration). SAP is not at all focused on promoting and evolving NetWeaver as a platform to support the implementation of new "greenfield" SOA-style applications requiring development of both the front-end and the back-end application logic.

Tibco Software

Long-standing leader in application infrastructure technologies, Tibco has evolved to offer platform technologies suitable for supporting advanced SOA-style projects, including cloud-based projects. These platform technologies include ActiveMatrix Service Grid, ActiveMatrix Lifecycle Governance Framework, Tibco ActiveSpaces, Tibco Silver and many other more-narrowly-focused application infrastructure offerings.

Strengths

- The visionary multicontainer, event-driven and XTP-enabled SOA backplane technology (ActiveMatrix Service Grid, ActiveMatrix Lifecycle Governance Framework and Tibco ActiveSpaces) is a strong foundation for attracting and supporting advanced new and composite SOA-style projects. Its support of OSGi, SCA and many other SOA and event-driven SOA standards makes Tibco's technology portfolio suitable for some of the most advanced SOA-style projects.

- The industry-leading application integration, messaging and event-processing technology suite, and the reputation of an advanced enterprise-technology vendor, create a favorable basis for Tibco to enter adjacent software markets.

- A large and loyal installed base across industries and geographic regions, as well as a large ecosystem of partners, is a helpful foundation for introducing new technologies and solutions for Tibco.

- Tibco's visionary cloud platform (Tibco Silver, including Tibbr) brings many of the SOA-enabling strengths of ActiveMatrix to cloud computing and can serve as a foundation of both cloud and hybrid SOA platforms. Tibbr extends the power of event processing to cloud contexts and social-style collaborative applications.

Cautions

- Although the company is well-regarded as an enabler of advanced SOA (especially the event-driven SOA) projects, in the large market of mainstream application development projects (new and composite), the platform technologies offered by Tibco are relatively unknown. Limited marketing, with the emphasis on new application platform capabilities resulting in slow progress in building mind share as a provider of platforms for new application initiatives.

- Tibco offerings are relatively expensive, especially considering the less-proven, built-in Java application server container (compared with the established Java EE-leading offerings), thus excluding many less-demanding mainstream projects.

- The breadth and sophistication of the Tibco product portfolio can be an overkill for smaller-scale, SOA-style application projects, although OSGi architecture allows reducing the installed footprint. Lack of a reduced-function, low-cost version of the platform technology leaves some of the potential market untapped (the cloud-based Tibco Silver may become a lower-cost alternative for some prospects).

TmaxSoft

TmaxSoft's position on this Magic Quadrant is based on the functionality provided by its application infrastructure products, which include JEUS (application server) 6, Tmax (TP-monitor) 5.0, ProWave 3.0, ProWeb 3.0 and ProFrame 4.0 for back-end containers; ProBus 5 for core ESB requirements; and BizMaster 5, in addition to ProFrame 4.0 and ProBus 5, for orchestration and advanced ESB capabilities and service-oriented modeling capabilities.

Strengths

- TmaxSoft has established and has been evolving its comprehensive application infrastructure capabilities with its offerings, including a mission-critical transaction platform (used extensively in banking and telecom vertical markets in Korea). The company is constantly implementing new advanced features, such as ProFrame, which is most popular in the banking vertical, and which now includes Enterprise Module Bus (a graphical user interface (GUI)-based service

development/composition environment module embedded in TmaxSoft's framework program) to manage services in a repository.

- TmaxSoft offers an SOA suite "model" for a single enterprise IT asset view. This includes integrated SOA application development (studio), an SOA data service for SOA-based data management across heterogeneous and distributed data sources, and an integrated governance environment, by incorporating its four frameworks (ProFrame, ProBus, ProWeb, ProWave) for a RIA solution, an ESB solution, integrated service/enterprise resource repository capabilities and transaction monitoring.

- TmaxSoft has a clear plan to support SCA, EDA and Web 2.0 (e.g., REST) across its broad product portfolio for more-dynamic and rich service interaction/integration, as well as for more support on model-driven architectures across multiple containers (front end to back end).

Cautions

- TmaxSoft's XTP features, such as distributed caching platform, are a bit behind other leading offerings.

- TmaxSoft's investment is short on OSGi or Spring, because it focuses more on operational aspects and Web 2.0 features.

- TmaxSoft's installed base is still limited (even if it is slowly growing), and the company needs to expand its partner networks to support its strong frameworks outside Korea.

- TmaxSoft is recovering from significant financial problems that plagued the company in the first part of the year, due, in part, to the severe economic situation in Korea and its impact on Korea's financial industry (TmaxSoft's primary market). The recovery plan includes a sell-off of unprofitable businesses to focus the company's efforts in the healthy application infrastructure business.

WSO2

WSO2 is a vendor that provides support for a streamlined, open-source platform for SOA applications. Products in this platform are from the WSO2 Carbon family: Identity Server, Gadget Server, Business Rules Server, Business Activity Monitor, Business Process Server, Mashup Server, Data Services Server and Web Services Application Server.

Strengths

- Lightweight open-source versions of core platform capabilities, linked via OSGi, create a highly standardized and streamlined system for WSO2. A modularized environment allows for minimal deployment footprints with substantial functionality.

- WSO2 has a range of capabilities covering most user requirements implemented in a highly coherent fashion.

- WSO2 focuses on "good enough" solutions with moderate functionality but high performance.

Cautions

- WSO2's support subscription model for open source has been difficult to scale.

- An employed development community based in Sri Lanka means a concentrated risk profile for WSO2, although involvement with broad open-source initiatives, such as Apache, limits this risk.

- WSO2's lean model means that users must sometimes add components to the suite, because existing components are designed around minimum common function.

Zend

Zend's PHP Engine is the widely used open-source distribution of the PHP language, deployed typically for website front-ends. (Note that Zend is a commercial technology provider, while PHP is an open-source language managed by an independent PHP group.) Zend also offers Zend Server and Zend Server Cluster Manager application server products aimed at enterprise-class application projects with management, clustering, caching and other advanced capabilities. The company offers Zend Studio and Zend Framework for development projects. Zend Server Community Edition is a lightweight, free, open-source version of Zend Server.

Strengths

- Broad deployment of its free PHP Engine for website development results in a large developer community and application installed base for Zend. The advanced clustering capability of Zend Server Cluster Manager allows extending the basic PHP projects to larger-scale projects and is the basis of the revenue opportunities for the company.

- There is a growing number of large Web applications based on the full Zend technology suite (including such notable customers as Bank of America and GE).

- Important partnerships (including IBM, Microsoft, Oracle and RightScale) create sales and growth opportunities.

- Zend's support of the IBM iSeries offers a market opportunity not available to most competitors.

Cautions

- Zend's focus on Web-style applications keeps it in a niche position in enterprise computing projects, and deters adoption in many SOA-style enterprise projects.

- Minimal ability to support SOA governance, XTP-style scalability, orchestration and event processing deter most systematic SOA-style projects from adopting Zend.

- Recent top leadership changes, product realignments and the new round of financing create a perception of viability challenges for the company.

- Zend's business model partly depends on upselling its technology to open-source PHP users (not Zend customers) that require advanced enterprise capabilities (management and scale), rather than on direct relationships with software projects from the start, thus leaving large numbers of PHP projects outside of the Zend customer base.

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.

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 and skills, 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 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 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 to 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.

About Microsoft

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