

ZAPTHINK ZAPNOTE™

JACKBE PLATFORM FOR ENTERPRISE MASHUPS

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Abstract

Mashups are collaborative compositions of online capabilities within rich user interfaces, while *Service-Oriented Business Applications* are declarative compositions of Services within the context of a Service-Oriented Architecture implementation. Today, these two concepts are merging into the *Enterprise Mashup*, a governed, secure composition of Services within a rich user environment.

For the vision of the Enterprise Mashup to become a reality, however, enterprises require sophisticated tools that not only enable the creation of such mashups, but also their effective governance and management. Emerging platforms that provide such capabilities, such as the JackBe Presto REA Platform, provide for these advanced governance, scalability, loose coupling, and rich user interface capabilities necessary to empower business users to use, and eventually create, their own Enterprise Mashups.

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The Rise of Enterprise Mashups

The forty-year history of distributed computing has followed a pendulum, swinging from centralized computing (mainframe timesharing), to decentralized (client/server), and back to centralized (Web/n-tier architectures with thin browser clients). Now the pendulum is swinging back to decentralized IT, with the emergence of advanced, collaborative, and richly interactive Web-based applications under the Web 2.0 banner, making possible an array of new opportunities.

One clear indication that the pendulum is swinging toward decentralized control of IT is the rise of Rich Internet Application (RIA) technologies like Asynchronous JavaScript and XML (Ajax). On the one hand, such technologies provide rich user interfaces that maximize a user's productivity, and also satisfy the desire to decentralize computing so that a user can gain access to the widest range of IT capabilities at the lowest possible cost. These two forces have traditionally been at odds because rich client interfaces, until recently, have only been possible in certain limited scenarios in which the business logic and computing resources were combined with the interface.

However, a new class of presentation layer is now emerging that can take advantage of a broader set of capabilities than traditional Web sites can. This RIA provides a user experience that is similar to client/server applications, with a rich graphical user interface, responsive performance and highly interactive functionality, but with the low cost of delivery of the Web. Users will increasingly demand the ability to present a rich variety of data and business logic to a dispersed audience without sacrificing either the economics of the Web or the rich user experience that traditional client/server applications provide. As a result, such RIAs empower certain power users to build applications for a much wider variety of purposes than traditional applications are able to address.

Rich user interfaces alone, however, do not provide enterprise-class capabilities that IT and business managers alike require in the business context. In fact, it is the combination of RIA technologies with the loosely coupled Services that Service-Oriented Architecture (SOA) enables that deepens the value proposition of these technologies in the enterprise context. To address the core business drivers of agility and user empowerment, organizations must bring together rich interface capabilities and business Services to build, evolve, and share RIAs in collaborative environments—a new type of composite application becoming known as an *Enterprise Mashup*.

According to Wikipedia, a *mashup* is a Web site or Web application that seamlessly combines content from more than one source into an integrated experience. It's important to realize that what SOA offers to Web 2.0 is the loose coupling between the providers and consumers of Services. Loose coupling means that businesses can change how they consume Services without having to make changes to the implementation of those Services, and vice-versa. Most of today's mashups care little about loose coupling. For example, if Google changes the implementation or location of their Service interface, then developers of the various mashups that depend upon one of Google's Services would have to update their mashups. However, if the mashup is an *Enterprise Mashup* in that its creator intended it to solve a particular

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business problem, then tight coupling between provider and consumer software is a serious concern. The last thing a business wants is to leverage mashups for a core business purpose, only to find that they fail capriciously depending upon the whims of the creators of the underlying Services.

Mashups that meet business needs, therefore, will require SOA, and the governance infrastructure necessary to guarantee loose coupling. Without that loose coupling, mashups are little more than toys from the enterprise perspective. From the business perspective, however, mashups represent a new class of user-centric capabilities that enable a broad range of new uses for software, including the collaborative, social capabilities at the core of Web 2.0.

In fact, as the focus of enterprise architects implementing SOA shifts from providing Services to consuming them, ZapThink predicts the growth of a diverse set of business-centric approaches to building, evolving, governing, and maintaining Enterprise Mashups. One of the reasons why Enterprise Mashups are so compelling is because enabling business users to assemble Services, and thus create new applications, in flexible, innovative ways, within the context of a governance framework, has broad, untapped business value.

Governance and the Enterprise Mashup

Enterprises require a governance framework whenever users can compose Services to meet new requirements, because the governance framework provides an infrastructure for creating, communicating, and enforcing corporate policies across the organization. There are two faces to SOA governance in the Enterprise Mashup context. On the one hand, SOA governance simply means governing a SOA implementation, for example, communicating corporate policies to developers implementing Services, and giving them the tools they need to follow those policies as they assemble the various elements of the SOA implementation. On the other hand, there's a broader, more strategic definition of SOA governance: IT governance in the context of SOA. After all, it is important to implement SOA as Enterprise Architecture, applying Service-oriented principles across the entire scope of interaction between the business and IT, and thus leverage SOA to enable governance throughout the organization.

In general, the approach companies should take to prevent their employees from mucking everything up with their Enterprise Mashups, therefore, is to implement a Service-Oriented governance framework. No business would risk allowing any of its employees to assemble and reassemble business processes willy nilly, without controls in place to ensure that the resulting mashups met corporate requirements and followed corporate policies. Yet, many of today's mashups are inherently ungoverned. Indeed, that's what makes them so appealing to techies. Yet, the business must be in control of IT, and not vice-versa. As such, as companies build the sort of governed Enterprise Mashups that they require, the more business-centric their mashups will become.

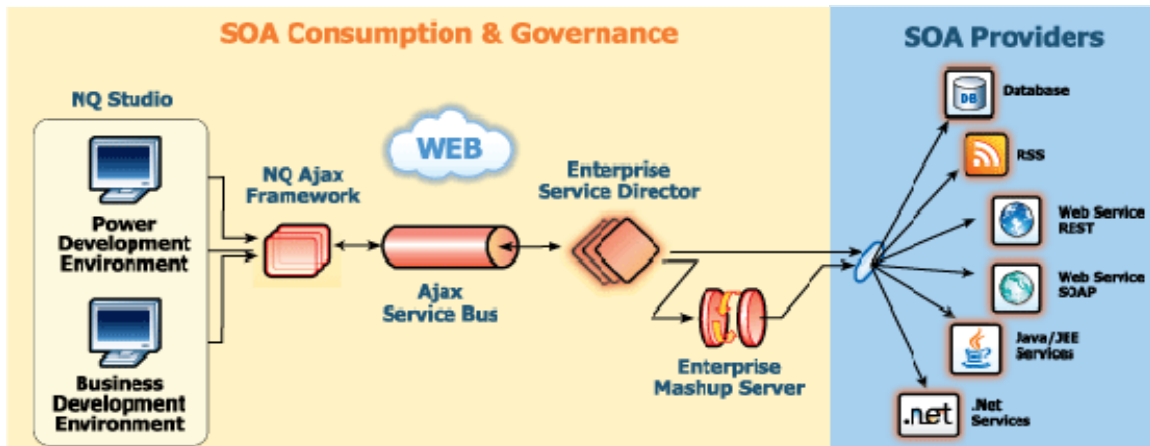
JackBe Presto REA Platform

RIAs leverage technologies such as Ajax to deliver the richness and interactivity of desktop applications but with the convenience and cost savings of running in a standard Web-based environment. While many business managers are increasingly realizing the value of RIA for consumer applications, they still struggle to bring the benefits of such technologies into their organizations in a secure, governed manner.

One vendor who is providing key technologies to meet those needs is JackBe. The *JackBe Presto REA Platform* combines Ajax-based Web applications with Services in the context of SOA. The platform enables organizations to consume the Services to create business solutions by effectively combining Ajax user interface technology, Web connectivity, and

loosely coupled Services, along with security, reliability, scalability and governance, which enable Enterprise Mashups. This new class of solution, which JackBe refers to as the *Rich Enterprise Application (REA)*, empowers business users to assemble *ad hoc* business activities into reusable applications in response to changing business requirements. The Presto REA platform provides for loose coupling between consuming applications and the underlying Services, and integrates with existing data assets. Presto also provides for the reliability and scalability of REAs, as well as governance capabilities that IT and functional managers can administer. The Presto REA Platform is illustrated in the following figure:

JackBe Presto REA Platform



Source: JackBe

At the core of the Presto REA Platform is the *Presto Enterprise Service Director*, which provides the proper context for Enterprise Mashups by ensuring reliable levels of governance when consuming existing Services. Companies register Services, track policies, and measure Service utilization and performance in the Director. This core component of Presto also provides Service access authentication, authorization, and governance through Service policies. All governed Services are available at both development and runtime based on specific governance policies.

The *Presto Ajax Service Bus (ASB)* then ensures secure, reliable communication between REAs and Service providers, and supports a range of interaction models including request/response, once-and-only-once delivery semantics, as well as push-style events within the standard browser environment. The ASB is also a place to register Services, track policies, and measure Service utilization and performance. Since the platform extends existing browser and server capabilities, the ASB requires no installation in order to provide its reliable interaction, even in environments of problematic network connections. Organizations can deploy the ASB on the Service consumer as well as in a clustered environment on the server to enhance scalability, throughput, and availability. The ASB works in a distributed, fault-tolerant environment under heavy load, while ensuring interactivity and responsiveness for system users.

In order to assist in the development of Enterprise Mashup and REA solutions, the JackBe platform includes *Presto NQ Ajax Framework* and *NQ Studio*, offering an Ajax framework with multiple development environments. There are two versions of NQ Studio: NQ Studio for Business Units, which provides a browser-based *Business Developer Environment (BDE)*, a domain-centric environment that enables business users to integrate activity-based applications into user-centric applications. The NQ Studio for Power Developers offers the Eclipse-based *Power Developer Environment (PDE)* for advanced users that not only require composite application development leveraging Ajax, but also the ability to provision the correct components and services on the BDE on behalf of the business units. Thus,

developers can leverage the BDE and PDE's seamless access and binding to Services within a fully governed environment.

The final piece of the JackBe platform is the *Presto Enterprise Mashup Server (EMS)*, which serves as a runtime environment for optimizing business activities by empowering users to mashup existing Services and data into new and customized activities and views. Examples of such mashups might include transformation and merging of disparate data sources in a tabular environment, orchestration of Services into processes, and the combination of internal Services with publicly available ones. Based on Web Services and SOA, the EMS doesn't require any proprietary extensions or features to integrate and compose with existing enterprise Services and applications. Furthermore, the application composition occurs on the server rather than delegating this responsibility to the browser-based client, further enhancing security, performance, and governance.

The ZapThink Take

The RIA marketplace is taking corporate IT shops by storm, and such enterprises will require enterprise-class tools to be successful with their Enterprise Mashup initiatives. The business user centric, collaborative vision for Enterprise Mashups is clearly a vision in which enterprises will require both greater maturity of the tooling as well as improved architecture and governance approaches in order to place the responsibility for mashup creation into the hands of business users.

The business case for such Mashups is clear: the business requires increasing levels of capability and flexibility from IT. IT can no longer dictate to the business what capabilities it will provide. Instead, the dynamic needs of the business continue to drive IT to provide better value, increased agility, and more powerful tools for business users to leverage in their day-to-day work.

Over time, Enterprise Mashups will place the responsibility for applications into the hands of a wide range of business users, but in the short-term, mashup creation will largely be in the hands of IT developers, whom the business calls upon to create, manage, and evolve such mashups. JackBe realizes that sophisticated tooling must empower this transitional role of IT in the creation of Enterprise Mashups. JackBe's Presto REA Platform is also able to support organizations that are ready to dip a toe into empowering business users to create mashups on their own. Since business users are quite comfortable with tools like spreadsheets and email clients, there's no reason to believe that power users won't be able to take advantage of the capabilities of the sort that JackBe provides.

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JackBe Features

JackBe Presto REA Platform

Overview:

The JackBe Presto REA Platform offers Ajax-based, Service-oriented, governed, and secure composite applications that enable Enterprise Mashups.

Features:

- **Ajax Service Bus (ASB)** – Provides scalable, secure and reliable bi-directional consumer to provider messaging, once-and-only-once message delivery, and push-based events.
- **NQ Ajax Framework** – High performance, standards-based user interaction library with a small browser footprint.
- **NQ Studio** – Eclipse and browser-based WYSIWYG studio for developing user-driven application development and Service-oriented composite applications. Integrates with existing HTML and custom JavaScript.
- **Enterprise Service Director** – Mediates and governs communication between applications and Services. Enforces SOA consumption policies.
- **Enterprise Mashup Server** – Service-oriented, user-driven composition of Services that create custom user defined views.

Value Proposition:

- **User Empowerment** – JackBe Presto provides flexibility for business users to create and integrate *ad hoc* business activities into Service-oriented, secure, reliable, and governed solutions.
- **Service Consumption Governance** – JackBe Presto offers centralized security, governance, and access control for loosely-coupled Services.
- **Reliable Connectivity** – JackBe Presto provides reliable Service communication utilizing Web-based protocols.

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Profile: JackBe	November 2006
Funding:	Intel Capital, Darby Technology Ventures, Blue Chip Venture Company, Maryland DBED
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Employees:	70
Product:	JackBe NQ Suite (Ajax IDE and API Framework) JackBe Presto REA Platform (IDE, Framework, Mashup, Orchestration, Governance, and Performance)
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Related Research

- *Composing Services into Enterprise Mashups* White Paper (WP-0144)
- *Rich Internet Applications: Market Trends and Technologies* Report (ZTR-WS112)
- *Rich and Smart Clients for Service-Oriented Architectures* Report (ZTR-WS111)
- *BackBase* ZapNote (ZTZN-1179)
- *Laszlo Systems* ZapNote (ZTZN-1144)
- *DreamFactory* ZapNote (ZTZN-1138)
- *NexaWeb* ZapNote (ZTZN-1139)
- *General Interface* ZapNote (ZTZN-1145)
- *Macromedia* ZapNote (ZTZN-1143)



About ZapThink, LLC

ZapThink is an IT advisory and analysis firm that provides trusted advice and critical insight into the architectural and organizational changes brought about by the movement to XML, Web Services, and Service Orientation. We provide our three target audiences of IT vendors, service providers and end-users a clear roadmap for standards-based, loosely coupled distributed computing – a vision of IT meeting the needs of the agile business.

ZapThink helps its customers in three ways: by helping companies understand IT products and services in the context of Service-Oriented Architecture (SOA) and the vision of Service Orientation, by providing guidance into emerging best practices for Web Services and SOA adoption, and by bringing together all our audiences into a network that provides business value and expertise to each member of the network.

ZapThink provides market intelligence to IT vendors and professional services firms that offer XML and Web Services-based products and services in order to help them understand their competitive landscape, plan their product roadmaps, and communicate their value proposition to their customers within the context of Service Orientation.

ZapThink provides guidance and expertise to professional services firms to help them grow and innovate their services as well as promote their capabilities to end-users and vendors looking to grow their businesses.

ZapThink also provides implementation intelligence to IT users who are seeking guidance and clarity into the best practices for planning and implementing SOA, including how to assemble the available products and services into a coherent plan.

ZapThink's senior analysts are widely regarded as the "go to analysts" for XML, Web Services, and SOA by vendors, end-users, and the press. Respected for their candid, insightful opinions, they are in great demand as speakers, and have presented at conferences and industry events around the world. They are among the most quoted industry analysts in the IT industry, and their recent book, *Service Orient or Be Doomed!*, is the leading book on the business concept of Service Orientation.

ZapThink was founded in October 2000 and is headquartered in Baltimore, Maryland. Its customers include Global 1000 firms and government organizations, as well as many emerging businesses. Its analysts have worked at such firms as IDC, marchFIRST, and ChannelWave, and have sat on the working group committees for standards bodies such as RosettaNet, UDDI, and ebXML.

Call, email, or visit the ZapThink Web site to learn more about how ZapThink can help you to better understand how SOA will impact your business or organization.

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