

## ZAPTHINK ZAPNOTE™

### BACKBASE AJAX-BASED RICH INTERNET APPLICATIONS

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#### Abstract

Users today increasingly demand more from their online user experiences. Gone are the days of static web pages and poor interaction; today's new mantra is Rich Internet Applications. Combining real-time user interaction with rich user interface capabilities, Rich Internet Applications leverage increasingly sophisticated browser-side technology to enable users to interact with online, distributed applications as if they were on their own machine. Increasingly, companies are looking to Flash as well as Asynchronous Javascript and XML (AJAX) based technologies to make their RIA wishes come true.

Pioneering the field of AJAX-based rich internet applications is BACKBASE, a software vendor that aims to simplify the way that RIAs are built, deployed, and consumed. The company aims to simplify RIA development by extending the already well-known HTML and web development approaches and technologies, making it a simple step for developers to extend today's Web interfaces to be tomorrow's Rich Internet apps.

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## The Emerging Rich Internet Application

Over the course of the last ten years, the Internet has evolved from a simple means for exchange of email and simplistic Web pages that offered little more than online documents and brochure-ware to an extremely rich and complex set of interactive applications, communications, and collaboration. Today's Internet users expect their online experiences to behave more interactively and enhance their day-to-day productivity. As a result, they have come to demand more from the Web interactions. In place of stateless Web interactions that offer only a cheap imitation of the interactivity we've come to expect from our desktop operating systems, a new breed of Web application is emerging – the Rich Internet Application.

Generally, RIAs are capable of providing advanced capabilities for user interaction, including windowing features and data navigation controls like buttons, check boxes, radio buttons, toggles, windows, palettes, as well as powerful rich-media component objects like animated sprites, multi-track sound, and movies. RIAs can integrate local and remote sources of data and business logic, taking advantage of standards-based, Service-oriented approaches to integrate all the content, communications, and application interfaces it can physically access.

However, what is most important is that RIAs loosely couple presentation from application logic, allowing developers to change server-side logic without breaking the usability of their applications. The rich client, like the standards-based Web thin client, can be truly loosely coupled and thus enable independent innovation of the business logic and the user interface to that business logic. As a result, RIAs make ideal Service consumers in a Service-Oriented Architecture (SOA). As a result, ZapThink predicts that rich clients will supplant portals as the primary Web-based user interface to Web Services and Service-oriented functionality in the enterprise by the end of 2007.

There are really only two major technologies on the market today that are credibly addressing the needs of RIA solutions: Flash-based technologies, like those offered by Macromedia and Laszlo Software, and ones that leverage browser-based technologies, especially asynchronous Javascript and XML (AJAX). For the purposes of this ZapNote, we will explore one particular vendor's approach to building an AJAX-based RIA that can also serve as an excellent Service consumer.

## BACKBASE Rich Internet Application Platform

With offices in the Netherlands and soon in the United States, BACKBASE is pioneering the space of AJAX-based rich internet applications with their eponymous BACKBASE RIA software products. BACKBASE software enables users to quickly create highly interactive Rich Internet Applications through the use of an XML-based language that is embedded within ordinary HTML-based applications. As a result of leveraging existing HTML technologies, interfaces developed with the product are visible in most of today's web browsers without requiring any additional plug-ins or client-side libraries. Furthermore, the use of XML embedded within the context of HTML allows developers to continue using their existing web development environments without switching to a different editing system for rich internet apps.

The cornerstone of the BACKBASE system is their client-side presentation engine that runs natively in the web browser and is automatically and transparently loaded into the browser. The engine is a 30-kilobyte JavaScript module that initializes a so-called Single Page Interface (SPI). In a SPI any part of the screen can be refreshed dynamically, without the need for a complete page reload. Within a Single Page Interface model, User interface designers can utilize a huge amount of freedom to create the most optimal human-computer dialog.

BACKBASE applications are developed in the company's own BXML declarative interface language. BXML consists of about 85 tags and over 200 attributes that can be freely mixed with DHTML. With this approach BACKBASE software enables users to quickly create highly interactive Rich Internet Applications by extending their existing DHTML-code with Rich User Interface declarations (BXML-tags). As a result of leveraging existing DHTML technologies, the product functions in most of today's web browsers without requiring any additional plug-ins or client-side libraries. Furthermore, the use of XML embedded within the context of DHTML allows developers to continue using their existing web development environments without switching to a different editing system for rich internet apps.

The BACKBASE Presentation Client transforms the "B-tags" into the web browsers DOM (document object model) that takes care of the real-time rendering of the User Interface. The B-tags specify layout such as windows, panels, and tabbed navigation, allow for user interface themes and skins, enable menus, trees, sliders, and other UI controls, and allow users to add client-side interaction behavior and forms manipulation. BACKBASE developers also can create their own B-tags and custom client controls, which are exchanged within the BACKBASE developer community.

The company recently released a Community Edition of their product which requires no special server-side capabilities, other than a standard web server. For commercial usage the company sells the BACKBASE Professional Edition, that provides more advanced user interaction, including stateful interactions and data-driven applications, and advanced rich client controls. This product enables functionality for integrating client and server events, visual development and connectivity to Web Services, and has a richer design environment that is fully integrated with the popular IDEs such as Visual Studio.NET and Eclipse.

To address the needs of large enterprises the company offers the BACKBASE Enterprise Edition, which offers advanced functionality for Enterprise Application Integration, SOA Integration and Platform Independent (XML-based) Development. The Enterprise Edition is targeting companies that want to create composite applications and provides an ideal presentation tier within a Service Oriented Architecture (SOA). The Enterprise Edition is available for the .NET and the J2EE platforms.

Thank you for reading ZapThink research! 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.

Earn rewards for reading ZapThink research! Visit [www.zapthink.com/credit](http://www.zapthink.com/credit) and enter the code **BACKBASE**. We'll reward you with ZapCredits that you can use to obtain free research, ZapGear, and more! For more information about ZapThink products and services, please call us at +1-781-207-0203, or drop us an email at [info@zapthink.com](mailto:info@zapthink.com).



## BACKBASE Products

### BACKBASE

Availability: Now

#### Overview:

BACKBASE offers software and services for the creation of Rich Internet Applications (RIAs). RIAs are web applications that are delivered over the Internet, but create a much richer user experience, more like a desktop application. BACKBASE is headquartered in Amsterdam, The Netherlands, and sells its products worldwide, both directly and via resellers.

#### Product Details:

- *BACKBASE Client* – Asynchronous Javascript and XML (AJAX) based rich client application that enables users to build rich, interactive Web applications and Service consumers.
- *BACKBASE Professional Edition* – Targets application developers that are looking for a visual RIA development (drag & drop) environment. This edition contains BACKBASE server-side controls for Visual Studio.NET and Eclipse that can be used like any other server-side control.
- *BACKBASE Enterprise Edition* – For enterprise application developers that require a robust, platform independent solution to create rich web-based user interfaces and composite applications. Runs on any standard J2EE application server or .NET server, and includes standard XML-connectors to enterprise application services.

#### Key Differentiators:

- *AJAX-based rich client with 30Kb one-time Javascript load library*
- *XML-based development language, embedded within standard web applications*
- *.NET and J2EE-based server-side runtimes for stateful Service and event-driven interactions.*
- *Advanced XML-pipelining for interaction between Web Services and Rich Client presentation tier.*

## The ZapThink Take

As companies shift their attention from the production of Services to their consumption, they will necessarily become more concerned about not only the discoverability, but also the usability (and reusability) of those Services. BACKBASE enables companies to create a rich presentation tier that unifies different web services into a user centric application. First, the product supports a wide range of browser types that are AJAX-capable, and second, the use of embedded tags in HTML documents simplifies the application development process. Unique in the market, the BACKBASE approach is not to replace HTML, but to extend it. The technology is fully based on open industry standards (e.g .XHTML, CSS, XML and JavaScript).

Rich internet applications will quickly come to supplant the current base of static Web applications, and web-based portals in particular. The resulting new breed of rich client offers more than either the thick or thin client approaches of the past ever have. As companies desire richer interaction between their Web Services-based applications and the users of those applications, rich client solutions will increasingly gain prominence in the enterprise. Users will increasingly demand the ability to present very large data sets to a dispersed audience without sacrificing the economics that either Web applications or the rich user experience that traditional client/server applications provide.

## BACKBASE Profile

Profile: BACKBASE	June 2005
Funding: Privately-held	
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## Related Research

- *JackBe: Radically Improving Web Application Performance By Optimizing The Client*
- *Laszlo Systems: Rich Client Capabilities Based on Macromedia Flash ZapNote*
- *The Rich Client: The New Interface for the Next Generation of Distributed Computing White Paper*
- *Macromedia Flex: Expanding to Provide Rich Client Capabilities ZapNote*
- *Curl: Pioneering Rich Clients for SOAs ZapNote*
- *You Can Never Be Too Rich or Too Thin ZapFlash*
- *Rich and Smart Clients for Service-Oriented Architectures Report*
- *NexaWeb: Rich Client for High Performance Web Services ZapNote*
- *DreamFactory - Server-Less Rich Client for Web Services ZapNote*
- *Portals and Web Services: Services at the User Interface ZapFlash*



## 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.

ZapThink was founded in October 2000 and is headquartered in Waltham, Massachusetts. 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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