MarketScope for Ajax Technologies and Rich Internet Application Platforms

Ajax technologies and rich Internet application platforms are moving from the early adopter phase of market evolution to midstage, enterprise-level adoption.

WHAT YOU NEED TO KNOW

This document was revised on 14 January 2010. For more information, see the Corrections page.

- Rich Internet application (RIA) technology can be either a stand-alone platform that is usually integrated with existing application development platforms, or an extension to an existing server-centric platform.

- Ajax is pervasive in the consumer space of public high-end websites, and its adoption is now growing beyond the early adopter segment (technologically aggressive organizations) to the middle-adopter tier.

- Most enterprises are not early adopters, and remain in the wait-and-see stage for adopting "heavy RIA" technologies, holding off until the technology matures and until their preferred large IT vendor (whether it's Microsoft, IBM, Oracle, or SAP) delivers a technology that is "digestible" (able to be absorbed by the current IT staff, skill set and technology environment). In the coming years, this trend will favor server-centric platforms, rather than purely client-side approaches.

- Success in Ajax and RIA deployments depends more on a user-centered design/ development process than on choice of technology; unfortunately, most organizations follow processes that are technology-focused and metrics-blind, and will find return on investment (ROI) elusive.

MARKETSCOPE

The Ajax/RIA sector, broadly speaking, is a set of technology offerings oriented to meeting the needs of application development teams to build systems that deliver a rich and responsive user experience. The focus of buyers in this market is on technology, despite Gartner's long-standing advice that success in presentation-oriented development projects results more from a user-centered design process than from adding a new layer of technology. In the Ajax/RIA sector, the focus of buyers is not just technology, but technology that is different from the traditional server-centric platforms to which they are accustomed. The need, as perceived by prospective buyers in this market, is often not precisely articulated, but is generally for a tool, technology or platform that delivers a "better" user experience. In this context, "better" refers to an experience that is visibly different than what's produced by the existing platforms, which have resulted in legacy applications that are perceived to be drab and difficult to use.

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What the typical organization seeks to replace is a legacy platform — either client/server (such as PowerBuilder, Visual Basic or Oracle Forms) or Web (plain HTML with "islands of interactivity" based on Flash, Java or ActiveX). Unfortunately, all too often, adding new technology to an organization that has a dysfunctional process results in a degraded, rather than an improved, user experience. The eventual result is often not known, because having an immature process means that appropriate metrics are not collected. Therefore, the organization cannot objectively determine whether there is an improvement in the effectiveness of the user experience. The case can be made that organizations would get better results by focusing on a better design process, or on more effective use of the presentation capabilities already included in mainstream server-side platforms, which have evolved to include Ajax and RIA features. This consideration is beyond the scope of this research, which focuses on an emerging but cohesive set of buyers and sellers that comprises the Ajax/RIA market (see "Top 10 Mistakes in User Experience Design Projects").

As is characteristic with any emerging market, there are often diverse players and approaches, and plenty of "apples versus oranges" comparisons possible, due to differentiation in features and approach. The argument has been made by some vendors with products in this space that the notion of a cohesive Ajax/RIA market is an illusion, and that this is not a market anymore than there is an "HTML market" or an "XML market." The proposition is that all of these (HTML, XML, Ajax, RIA) technologies are enabling technologies for one or more distinct markets.

While this perspective has a certain validity, Gartner has chosen to do a MarketScope in this area because this situation meets two key aspects of a market:

- First, a community of buyers that is willing and able to buy, and that may reference each other (or, alternatively, third-party advisors) in making a buying decision.

- Second, a community of sellers that competes with each other for the buyers' attention and commitment.

The market is at the stage where there is a high degree of fragmentation and diversity. Not all sellers compete with each other, and not all buyers have identical needs. Nevertheless, Gartner has received enough inquiries for guidance in product/technology selection, and has seen enough competitive face-offs (such as Adobe Flex versus Microsoft Silverlight, or Backbase versus Nexaweb Technologies, or Adobe AIR versus Microsoft Windows Presentation Foundation [WPF], or Ajax versus "heavy RIA" in general), that the broad outlines of the market are visible (see "Navigating the Ajax versus 'Heavy RIA' Dilemma"). Within this

market are segments, such as the fissure between enterprise RIA and consumer-oriented Ajax. But this fragmentation is no different than in other early stage markets — for example, the portal market, where vendors were initially strong in either external-facing or internal-facing deployments, but not in both.

As the Ajax/RIA market matures and consolidates, a small number of large vendors will grow even larger by encompassing broad-based approaches, acquiring smaller vendors and/or taking market share away from second-tier choices. As that happens, the fault lines that fragment the Ajax/RIA sector will fade.

The center of gravity in the market will shift in the direction of server-integrated, platform-centric approaches, and away from the client-centric, server-neutral trend that has been in place in recent years.

Market/Market Segment Description

The Ajax/RIA sector can be segmented in two ways: in terms of buyers and in terms of sellers.

Looking at the market in terms of buyers, these fall into the following categories:

- **Enterprise legacy platform replacement:** Enterprises seeking a presentation-centric development platform and toolset that will replace aging or obsolete legacy applications built with earlier generation of tools, such as Oracle Forms, PowerBuilder or Visual Basic. The needs of this class of buyers center on developer productivity, platform compatibility, skills compatibility, vendor support, and vendor longevity.

- **Public-facing enterprise sites:** These sites represent the external Web presence for Global 1000 organizations. The need for this class of buyers is for broad reach to a mass audience. This is best achieved through browser-independent implementations, server-neutral client-side technology, a small client footprint, easy updates, etc. Beyond these core requirements, there are the enterprise requirements listed above.

- **Stand-alone, consumer-oriented websites:** The top 100 websites and smaller stand-alone Web properties that aspire to be the next Facebook or Google. Buyers in this class have strong technical staff, and many have built their own Ajax frameworks and RIA tools. Their needs are for broad reach and browser independence, similar to high-end enterprise sites. A key difference is the need for compatibility with server-side frameworks — often neither .NET nor Java, but for Linux, Apache, MySQL, PHP (LAMP)-based Python or Ruby (none of which is prevalent in enterprise-scale deployments).

- **Independent software vendor (ISV) differentiators:** ISVs have followed the technology shift in the 1990s from client/server to the Web, and are now seeking to differentiate their offerings from similar Web-based competitors. Compared to the average enterprise, the buyers in the ISV class have a strong in-house engineering staff and mature user experience design teams and processes. These buyers can more easily absorb and exploit Ajax and RIA technology offerings, whether open-source Ajax or broad-scope RIA platforms.

To meet the needs of these different market segments or classes of buyers, there is a diverse collection of sellers: technology vendors, quasi-vendors, and open-source toolkits (not affiliated with a conventional vendor). The offerings are as follows:

- **Community-oriented, open-source Ajax toolkits:** These noncommercial, free and open-source toolkits include Dojo, Prototype/script.aculo.us, jQuery and MooTools. These have seen wide adoption, primarily outside the enterprise, with a significant minority of top 100 websites now using one or more of these, often as a supplement to custom-built Ajax (see "It's Official: Open-Source JavaScript Has Displaced Closed-Source Offerings").

- **Vendor-centered, open-source Ajax and RIA technology:** Open-source toolkits affiliated with a small commercial vendor (e.g., Isomorphic Software, Backbase, JackBe, Ext JS, MB Technologies, Laszlo Systems). The vendor is usually targeting the enterprise sector because the top 100 websites rely on either custom-built technology or open source.

- **Commercial Ajax and RIA product offerings:** These started out as closed-source packages targeted toward the enterprise market, and many remain that way; however, some have since become open source, at least partially. Tibco Software's General Interface (GI) is a prime example, and Laszlo is one of the earliest. Adobe is a more recent entrant in that it has open-sourced its Flex SDK (but not its Flex Builder tool). Microsoft has open-sourced its Ajax Library and Silverlight Toolkit.

- **Broad-scope RIA platform plays:** Offerings are from Adobe, Microsoft, IBM and Sun Microsystems. These enterprise-oriented vendors offer industrial-strength platforms and tools that go beyond basic Ajax capability. Market adoption of RIA frameworks has been low in the past due to the emerging stage of market evolution, and in some cases to the immaturity of the technology. This is changing as the technology matures and the market broadens.

- **Nonproduct offerings from commercial vendors:** These are technology packages from commercial vendors that are released as open-source or free software, but not as a product (and with no plans to productize). Adobe Spry, Yahoo YUI, Google Web Toolkit (GWT), and Microsoft Ajax Library (formerly codenamed Atlas) are examples here.

- **Collections of visual components morphing into frameworks:** These come from a group of small but long-lived vendors of aftermarket components. Offerings may be delivered with source code, but the licenses are not open-source. Vendors include Infragistics, DevExpress, ComponentArt, Dundas Data Visualization, ComponentOne and Software FX. These vendors offer a mix of horizontal infrastructure enhancements (add-on components for WPF and Java), stand-alone frameworks (competing directly with Ajax and RIA frameworks), and vertical microproducts (geographic information system [GIS] and charting components).

Inclusion and Exclusion Criteria

A MarketScope is intended to address the needs of Gartner customers in evaluating product offerings and vendor relationships in an early to midstage market. A market, as stated earlier, is a community of buyers and sellers. An implication of the term "community" is that many of the participants (although by no means all, or even necessarily a majority) are aware of each other, and often use that knowledge in formulating buy-side decisions, as well as sell-side competitive strategies. The aspects of a market, therefore, include buyers, sellers, decisions, information about products and services, and, ultimately, transactions that have an economic aspect (where economic value is used in the broadest sense of an incentive, reward or medium of exchange).

Markets that have a significant mix of open-source offerings function not just through the mechanism of monetary exchange, but also through the "elegant currencies" of recognition, trust and nonmonetary incentives.

Because the mix of Ajax and RIA products and technologies in this MarketScope includes many offerings that are not commercial products, alternative inclusion criteria are needed to reflect the reality of market decisions, where prospective organizations are choosing from among:

- RIA platforms, such as Adobe Flash/Flex, Microsoft Silverlight or IBM Lotus Expeditor

- Free, nonproduct offerings from commercial Web giants, such as Google GWT, Yahoo YUI, Microsoft Ajax Library or Adobe Spry

- Community-based, open-source packages, such as jQuery or Prototype

- Vendor-centric open source, such as Ext JS

- Commercial products from RIA specialist vendors such as Backbase or Nexaweb

Therefore, the criteria must be a mix of traditional and nontraditional attributes, which include the following:

- **Revenue:** Ajax or RIA-related annual revenue of at least $5 million.

- **Geographic presence:** Offices in more than one region, such as North America, Asia and Europe.

- **Vendor presence:** Stability and longevity.

- **Market acceptance in one more of the following sectors:** Top 100 websites, Global 1000 companies, Web 2.0 startup ventures, ISVs and system integrators (SIs), and the small or midsize business (SMB) market.

- **Ecosystem activity:** As evidenced by marketplaces, aftermarket offerings, community forums, books, seminars, and partner and channel activity (IT services firms, SIs, distributors, Web interactive agencies and advisory firms).

- **Gartner client interest:** Indicators of interest by Gartner end-user clients include the number of inquiries to analysts via the Gartner call center or at Gartner conferences via one on ones.

These criteria allow disparate products to be included: commercial products from enterprise-oriented vendors, as well as nonproduct offerings and community-based open source. The MarketScope, therefore, includes vendors/packages such as:

- Backbase, which is a company with over $10 million in revenue, market acceptance in enterprise deployments and partners.

- JQuery, which is a community-based open source in use by the top 100 websites and the subject of technical books available in mainstream bookstores.

- Infragistics and Magic Software, which are enterprise-oriented vendors with over 10 years in the market and about which Gartner clients have posted inquiries.

The inclusion criteria were analyzed in a spreadsheet with a dozen attributes: vendor strength (RIA-related revenue, vendor longevity and partners), market share (among enterprises, ISVs, high-end websites, and Web 2.0 ventures), and product attributes (Gartner client interest, product features and ecosystem activity). Points were allotted based on strength in these attributes, and vendors or offerings that exceeded a composite threshold value were included.

Numerous vendors did not meet the inclusion ranking threshold, so we provide a comprehensive list of vendors in this space (see Note 1). Examples of vendors and offerings that are not included in this MarketScope analysis are MooTools, jMaki, Software FX, Dundas, AJS and Echo2.

Rating for Overall Market/Market Segment

Overall Market Rating: Positive

Although the market has been around since the first commercial products were introduced in 2002 and 2003, it is still in a relatively early stage of evolution, especially with regard to the market segment relating to enterprise RIA platforms. This enterprise RIA segment is a key aspect of this MarketScope because it is of primary interest to Gartner clients, and because it has strong economic implications that will drive the rest of the market over time.

Therefore, it is important to understand what is meant by "enterprise RIA platform market segment." A key aspect of defining this segment is the idea of "significant platform commitment" — as opposed to pilot projects or "one of a kind" tactical projects. Tactical projects are much more numerous than the strategic platform commitments.

The market has gone through various phases, which Gartner identifies as follows:

- **1998 to 2002: Embryonic phase** — with demonstrations of technology, such as Desktop.com, but no commercial products.

- **2002 to 2004: Nascent phase** — with a handful of products introduced by pioneering vendors such as Backbase, GI, JackBe, Laszlo Systems and Macromedia.

- **2004 to 2008: Early adopter phase** — which can be broken down further:

  - **2004 to 2006:** Year of Ajax (about 24 months), in which over 100 open-source toolkits proliferate.

  - **2007 to 2008:** Year of Adobe Flex (about 18 months), in which Flex gains dominant share among early adopters in the enterprise RIA segment.

- **2009 to 2012: Early majority phase** — in which enterprises make strategic commitments to Ajax and RIA technologies. Some of these initiatives are client-centric RIAs, leading to intensive conflict between Adobe and Microsoft, while other initiatives are based on extensions to server-side platforms (such as .NET, Java, LAMP, and cloud-based platforms).

- **2012 to 2017: Platform-centric phase** — in which client-side technologies become more closely unified with server-side platforms, and customers gravitate to their favored major platform vendor (for example, IBM, Microsoft, and Oracle).

Gartner estimates that the vast majority of Global 1000 companies have experimented with Ajax or RIA technologies from more than one vendor. These include technologies such as Ajax on the one hand, and WPF on the other, and Adobe Flex and Microsoft Silverlight in the middle. There are about 100-plus vendors and toolkits covering the broad spectrum of technology choices, which range from lightweight Ajax to extended browser (Flash, Java, Silverlight) to outside the browser (AIR, WPF, Expeditor, JavaFx). However, in terms of market adoption, very few organizations have made a strategic platform commitment. Note that a platform commitment does not have to be an enterprisewide monoculture; it just has to go beyond a single isolated project. Most large enterprises have more than one platform in place (i.e., both Java Platform, Enterprise Edition [Java EE] and .NET), even for nonlegacy projects. Also note that the depth of technology use can vary within an implementation, from a superficial "coat of Ajax paint" to bone-deep rip-and-replace with RIA.

A MarketScope is a lens intended to provide as clear a view as possible of a market landscape to the "average" Gartner client. However, the nature of the task is such that, to the extent that an

organization differs from the norm, the lens will represent a distorted view (or, alternatively, one can say that each organization needs its own level of astigmatic correction to reflect its priorities). More specifically, an organization that is heavily aligned with one vendor or another will view the market through a lens that is Microsoft-centric, IBM-centric, Oracle-centric, etc. Gartner has observed that, in practice, large organizations tend to have multiple vendor alignments, despite nominal allegiance to one primary vendor.

A second challenge in this process is that the MarketScope lens is focused on vendors and not on products. In the case of smaller vendors, the vendor-centric view aligns perfectly with a perspective centered on products. However, larger vendors offer more than one product. Microsoft is the extreme example here, with many significant choices of products and technologies that relate to the presentation aspects of an application, from WPF to ASP.NET Ajax to Silverlight, plus a half-dozen other choices. Adobe also has multiple offerings, ranging from open-source Spry to Flex to AIR. Other vendors, such as Oracle and IBM, are in a similar situation. There are also vendors that started out with Ajax or RIA offerings, but have since shifted market emphasis to some other product category (for example, JackBe and Laszlo), but still market their original products.

The vendors in this MarketScope only have one product entry each. In the case of multiple products, the evaluation aggregates the product mix, and gives proportionately greater emphasis to the package that is of core interest to Gartner clients that are end-user organizations.

Gartner clients that are accustomed to Magic Quadrants (and not MarketScopes) should note that MarketScopes present results in a coarse-grained, one-dimensional ranking (levels 1 through 5, which are labeled "Strong Negative," "Caution," "Promising," "Positive" and "Strong Positive"). This is different than the high-resolution, two-dimensional position in a Magic Quadrant. The MarketScope labels may not capture the nuance of a vendor's ranking, including the important notion of directional movement. To illustrate, two vendors ranked at the midpoint in the scale (Level 3) both carry the label "Promising;" however, in one case, the vendor has declined from Level 5, and the other has ascended from Level 1. Also, the coarse-grained ladder consists of only five steps, which might obscure the fact that a vendor near the top of one level may have more in common with vendors at the next level than with lower-ranked vendors in the same level, due to truncating high-resolution numerical analysis to fit low-resolution "buckets." Therefore, it is important to consider all aspects of a vendor's evaluation:

- Written description and analysis of each vendor

- Bullet-point items listing positive and negative attributes

- Ranking level

Table 1 lists the evaluation criteria associated with traditional commercial vendors. Table 2 shows additional criteria that apply to this MarketScope. These criteria are unchanged from last year's MarketScope. What have changed are the weighting factors. The previous MarketScope had a mix of weightings (low, standard, and high). This year all weights are even (standard) with the exception of Overall Viability, reflecting the priorities of midstage adopters, which often value vendor longevity over product-centric attributes like technical architecture.

Table 1. Evaluation Criteria

Evaluation Criteria	Comment	Weighting
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.	standard
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.	standard
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.	high
Sales Execution/Pricing	The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support and the overall effectiveness of the sales channel.	standard
Market Responsiveness and Track Record	The 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.	standard
Source: Gartner (December 2009)		

Table 2. Additional Evaluation Criteria

Evaluation Criteria	Comment	Weighting
Market Adoption	Market presence and market traction in key segments, enterprise sector, top 100 websites, Web 2.0 startup ventures, and ISVs.	standard
Ecosystem Activity	Developer community, resources for support and training, marketplaces for goods and services, books published by mainstream trade press, blog commentary, etc.	standard
Market interest	Inquiries posted to Gartner by end-user organizations, references and positioning by competitors.	standard
Technology architecture and road map	Direction should align with Gartner's view of evolving market requirements, including areas such as declarative specification of layout and behavior, code refactoring and maintenance tools, designer/developer workflow, integration with server-side platforms, interoperability with tools and platforms, etc.	standard
Source: Gartner (December 2009)		

Evaluation Criteria

Besides the above, there are additional criteria that can apply to noncommercial initiatives (such as community-based, open-source projects), as well as commercial ventures (see Figure 1).

Vendor Product/Service Analysis

Adobe

Adobe has multiple presentation-related technologies that Gartner clients consider and evaluate, These fall under the Flash Platform, including Flash Player for inside the browser RIA, Adobe AIR for RIA outside the browser, Adobe Flex Builder and the open-source Adobe Flex framework, as well as complementary technologies, such as Adobe Spry (lightweight open-source Ajax toolkit), server-side technologies, such as ColdFusion and LiveCycle Data Services, and hosted services, such as LiveCycle Collaboration Service. The rating in this MarketScope incorporates all of these to varying degrees, but largely centers on the Flash platform technologies.

Adobe is a company based in San Jose, California, with $3.5 billion in revenue and 6,000 employees, best known for its products addressed to the audience of creative and multimedia professionals: Photoshop, Acrobat, Premiere, Illustrator, etc. Adobe acquired Macromedia in 2005, and incorporated its flagship products and technologies, such as Flash, ColdFusion, Dreamweaver and Flex. Adobe Flex, released in 2004, represents the evolution of the Flash platform into the enterprise and ISV application development sector. Flex 3 is the third generation of this RIA platform, released in February 2008, along with Adobe's outside-the-browser technology, known as AIR. Adobe's Flex 4 was originally scheduled for release in 2009, but it is now planned for a 2010 release as a result of extensive changes to the Flex component model. These changes are designed to support a cleaner separation of presentation and business logic than was possible in prior editions.

Positives:

- A product that is both modern (new technology) and mature (track record in successful deployments in enterprises, public sites and ISV product offerings).

- A vendor that is not too small (i.e., not vulnerable to downturns in any one product line), but not too large (i.e., still agile enough to meet dynamic market requirements).

- A technology that is not too heavy (i.e., still fits inside a browser, with a small footprint), but not too light (i.e., it is more powerful than Ajax), while offering outside-the-browser capabilities with AIR.

- Near-ubiquitous adoption of runtime (97% of Internet-connected devices).

- Dominant market share in the emerging category of enterprise-oriented RIA frameworks, as well as strong presence in ISV and top 100 Web sectors. Partnerships with ISVs include large powerhouse vendors such as SAP, as well as smaller, more vertically focused vendors like salesforce.com. Relationships with SIs include large global delivery companies such as Accenture and Deloitte.

- Technology that is largely independent of server-side platforms supporting Java, PHP, .NET and legacy technology stacks through an efficient service-oriented access layer (this aspect can also be a negative, depending on the context).

- A recognized brand name and good reputation in Web and design fields (although not as much in enterprise-class software).

Figure 1. MarketScope for Ajax Technologies and Rich Internet Application Platforms

	RATING				
	Strong Negative	Caution	Promising	Positive	Strong Positive
Adobe					x
Backbase				x	
DevExpress			x		
Dojo				x	
Ext JS			x		
Google				x	
IBM				x	
ICEsoft Technologies			x		
Infragistics			x		
Isomorphic Software			x		
JackBe			x		
jQuery				x	
Magic Software			x		
MB Technologies			x		
Microsoft					x
Nexaweb Technologies			x		
Oracle				x	
Prototype/script.aculo.us				x	
Sun Microsystems			x		
Telerik			x		
Tibco Software			x		
Yahoo				x	

As of December 2009

Source: Gartner (December 2009)

- Potential synergies with the Web analytics business unit Omniture, acquired earlier this year by Adobe, including possible instrumentation of the Flash and AIR runtimes and Flex framework, enabling optimization for high-value capabilities.

- Thought leadership in understanding and marketing user experience design, including interaction design and visual design.

- Strong market penetration in the consumer space, and growing acceptance by mobile-device manufacturers like Research In Motion (RIM) and with 19 out of the top 20 device manufacturers.

Negatives:

- Although Adobe is not a small vendor, it is smaller in capitalization, resources and channels, than Web giants such as Google and IT giants such as Microsoft, IBM, Oracle and SAP. It is, therefore, vulnerable to direct competition and possible acquisition.

- Adobe technology consists primarily of server-independent point solutions, which is a negative for some organizations that want a homogeneous platform (i.e., a more tightly integrated blend of server and client-side technologies). There is sufficient affinity with the Java platform, however, which tempers this negative in that context.

- Despite broad market acceptance for Adobe flagship products and technologies, such as Adobe Reader and Flash, the company lacks significant market footprint in "big IT" — centralized IT infrastructure.

- Although Flash is pervasive and Flex leverages standards such as JavaScript (the standardized version known as ECMAScript), enterprise developers with skills in the Flex and Flash platforms are not numerous when compared to other Web technologies, such as JavaScript or .NET; in addition, the ECMAScript-based language ActionScript is unique to Flash, so developer skills in that area cannot be transferred to non-RIA projects.

- The Flex 4 schedule has been extended to implement better coexistence between the new "Spark" component model and the older model.

- As with other pervasively deployed Internet technologies (such as Internet Explorer), Flash has historically been the target of many successful security exploits. However, Adobe has always acted quickly to fix them, and launched a new secure product life cycle several years ago.

Rating: Strong Positive

Backbase

Founded in 2003, Backbase is one of the pioneering vendors in the commercial Ajax sector. The company is based in Amsterdam, the Netherlands, with offices in San Francisco. The core team has remained together since the founding stage. The company has, over the years, evolved a mature and powerful Ajax framework that includes a library of client-side controls, a visual development tool, and server-side integration. On top of this, Backbase offers add-on products for portal-centric solutions, rich Web forms, and collaborative scenarios. The company's marketing emphasis is on external-facing scenarios, such as self-service and e-commerce websites that need to have broad reach and a high user experience impact.

The current version of the Ajax framework is 4.4.1. The Rich Portal product, released in June 2008, is at v.4.1. On top of this are customer engagement applications for cobrowsing, chat, analytics integration, split A/B testing and multivariate testing, forms, and product search.

On the road map is a transition to open source for the free Community edition of the Ajax framework, reflecting the realities of the Ajax marketplace. The Rich Portal will be the area of strategic growth for Backbase, tapping into an emerging trend of lightweight, client-side, portal-like software infrastructure (Adobe Mosaic).

Positives:

- Well-designed, full-featured Ajax product in a maturing market.

- Small agile vendor that understands the market, especially for external-facing sites.

- Vendor has achieved a certain track record and market penetration in the enterprise sector, as well as among public sites, compared to other closed-source alternatives.

- Vendor is well-positioned in the emerging category of lightweight, client-side portal frameworks.

Negatives:

- Commercial product is at a disadvantage in certain scenarios when competing with free open-source commodity packages.

- Small vendor with limited resources and limited brand recognition.

Rating: Positive

DevExpress

DevExpress was founded in 1998 to serve the Borland Delphi and C++ aftermarket and has since become a key player in a cluster of aftermarket vendors that sell visual and business components for Microsoft-related presentation platforms, such as WPF, ASP. NET and Windows Forms. DevExpress competes directly with Infragistics and Telerik (vendors also covered in this MarketScope), as well as with other vendors in this market niche (ComponentOne, Dundas, Telerik, Janus, Software FX, Xceed, GrapeCity, Sharp Library, ComponentArt, Divelements, SpringSource, Syncfusion). Many of these companies play complementary roles for their host platforms by filling the gaps in the control sets for Silverlight, Windows Forms, etc.

The DevExpress product line includes over 200 products, from control libraries for Silverlight, WPF and WINForms to integrated development environment (IDE) productivity tools to an object-relational mapping tool. Most DevExpress products ship with source code, as is customary in this category, but are not open-source licensed. One form of packaging is by annual subscription, which ranges in price (for the first year) from $800 to $2,000 (for DXperience Universal).

One way in which DevExpress differentiates itself from competitors is that it provides eXpressApp Framework (XAF), a cross-platform application framework that can target both Windows Forms and ASP. NET (and, in the future, WPF). Although XAF competes with Microsoft, the bulk of the product line is complementary. DevExpress has introduced controls for the Silverlight Platform, including its Rich Text Editor, DataGrid, and UI Layout and Management Component.

The ecosystem around DevExpress includes a 600-page book for developers published by Wrox Press on ASP. NET programming with DevExpress controls.

Positives:

- Solid line of components, and a framework that allows developers to develop both browser-based and outside-the-browser applications.

- Small vendor that has survived for a long time in the shadow of Microsoft.

- Loyal customer base has adopted component products on a tactical basis.

Negatives:

- Small company in a crowded aftermarket sector whose framework-level product now competes more directly with Microsoft.

- Customers view the company's products as tactical and complementary, rather than strategic and self-contained.

Rating: Promising

Dojo

Like Prototype, Dojo is a pioneer in the category of community-based, open-source Ajax toolkits. The company was created in 2004 by people associated with Informatica, Jotspot and Renkoo. The toolkit is available under either a Berkeley Software Distribution (BSD) or an Academic Free License (AFL) license, and is the most influential Ajax package by virtue of its early entrance into the sector, the community that rose around it and the support of major vendors such as IBM, Oracle, BEA Systems (before it was acquired), Sun Microsystems and Laszlo Systems.

The Dojo toolkit now consists of a layered portfolio of technologies, starting with a 26KB core that provides an event model, an object model and facilities for animation, communication and debugging. On this core is Dijit, a component framework and library of user controls (menus, trees, calendars). Then there is DojoX, an extensibility mechanism that supports server push (Comet), offline mode (Google Gears), a unified vector drawing model and third-party extensions (such as dojo.E from Nexaweb). The Dojo portfolio includes support for accessibility and internationalization, and some performance management capability. Version 1.4 of Dojo was released in early December 2009.

Dojo's most direct "competitors" are other leading community-based, open-source packages, such as Prototype/script.aculo.us, jQuery and Yahoo YUI. An important differentiator for Dojo is its package system and build tools, which support large-scale teams (as in enterprise development projects) building voluminous code bases over time. One recent change to the Dojo project has been the departure of Alex Russell, a co-founder and key contributor since 2004, moving from SitePen (a consultancy closely aligned with Dojo) to Google, where Russell will be involved in non-Dojo projects (although continuing to serve as president of the Dojo Foundation). Russell continues to contribute to Dojo projects outside of his "day job."

Positives:

- Early position, strong influence and high visibility in the category of open-source Ajax.

- Support from major vendors, including IBM and Oracle. Dojo is a corporatewide standard at IBM, supported across 30 products.

- Early adoption and track record in some major sites, such as AOL Mail and MapQuest, as well as some Web 2.0 ventures. Also, Dojo is used for mobile Web development in Project Ares from Palm.

- Package system enables code bases to scale in size.

- Dojo Foundation also supports other projects, such as CometD, OpenRecord and DWR.

Negatives:

- No vendor is strategically committed to the success of this project (an attribute that can also be viewed as a positive). However, IBM is a strategic player that can sustain Dojo over the short term and midterm.

- Perception of slowed momentum relative to newer toolkits (jQuery, MooTools), although Dojo had two major releases in 2009.

Rating: Positive

Ext JS

Ext JS v.3.1 is a JavaScript library from Ext JS that was created as an extension to the Yahoo YUI toolkit. The author of Ext JS, Jack Slocum, is chief architect at Ext JS, a commercial venture founded in 2006 around this JavaScript library. The package is available either under a commercial license or under the General Public License (GPL) v.3. When using the open-source license, developers are obligated to release applications that incorporate the Ext JS library as open source also. Ext JS has seen steady growth in adoption since its initial release in 2006, and the company reports that roughly 10% of its paying customers are enterprises. The Ext JS site has more than 100,000 registered members (an increase of roughly 50% since the 2008 edition of this MarketScope). The company says it has 10,000 customers. Last year, the company introduced Ext GWT (now at V 2.1), a separate product that extends GWT with richer Java/JavaScript capabilities.

Positives:

- Library has good reputation for the quality of its components, which were initially a supplement to Yahoo YUI, but are now self-contained and can optionally interoperate with other Ajax frameworks.

- Ext JS is a commercial vendor with an awareness of enterprise needs and the application life cycle. It's gaining visibility and market traction in the enterprise sector.

- The company reports strong year-over-year revenue growth, a good indicator of growing penetration beyond the open-source market.

Negatives:

- Ext is a small private vendor competing with commoditized open-source toolkits that have thriving communities.

- Adoption of Ext JS and Ext GWT is centered primarily on SMBs, with only a moderate footprint in the enterprise arena.

- Company has been criticized for multiple changes to its software license, from BSD (in YUI Ext) to Lesser GPL (LGPL; in Ext JS 1.0) to modified LGPL to GPL3 — the latest, which some observers think is too restrictive and results in an unwanted "viral" effect. However, there are enterprises that won't choose open source in any form, and instead prefer a commercial license.

Rating: Promising

Google

Google is clearly one of the Web's largest and best-known companies, with over 20,000 employees, $21.7 billion in annual revenue in 2008, and $5.8 billion in earnings before taxes. In the Ajax/RIA space, Google offers GWT and the recently introduced Google Closure tools.

GWT is a tool intended to leverage the skills of the server-side Java programmer who does not know JavaScript (a very different language than Java). Developers write code in Java, which gets translated by the system to JavaScript for client-side deployment. Google has built a sophisticated technology to allow developers to debug and profile at the Java source level, without having to descend to inspecting machine-generated JavaScript code. GWT can take advantage of the optimization capabilities of a statically typed language (Java), compared to the more difficult challenge posed by dynamically typed languages (JavaScript).

GWT supports development in Internet Explorer (IE), WebKit and Firefox. GWT is server- and IDE-neutral, allowing Java developers to work with their favorite IDE. There is a plug-in for Eclipse, and there is third-party support for NetBeans and IntelliJ. The GWT browser plug-in allows developers to work in Java without first compiling to JavaScript. For some time, a sticking point among developers regarding GWT has been that Google itself did not use GWT in its flagship applications (Gmail, Maps, Docs) — instead, a JavaScript-based approach was used, rather than GWT's Java-centric approach. However, Google Wave, an innovative real-time collaboration and messaging application (currently in beta) with a rich user interface (UI) is built using Java on the server and GWT on the client side. GWT is used by AdWords, a mission-critical application, as well as emerging offerings such as Google Health, Latitude, Moderator, and Profiles.

As an alternative to GWT, Google also offers Google Closure tools (introduced in November 2009). Closure consists of a set of JavaScript tools used in the construction of Gmail and Maps: a JavaScript compiler/optimizer, a library of UI widgets and controls, and a templating system. The Closure Tools package does not enjoy the market adoption and developer mind share of GWT.

Positives:

- Well-crafted toolkit for the Java-centric developer, incorporating end-to-end coverage of the application development life cycle.

- Leverages the Google brand and ecosystem, and has perceived vendor stability and longevity.

- GWT's prominent role in the Google Wave project adds credibility to GWT.

- GWT has matured in scope and power since its release in 2006, culminating in a v.2.0 release in December 2009.

Negatives:

- Java focus is neutral (i.e., is not compelling) to Web 2.0 developers.

- Google does not use GWT for its most visible and popular products (Maps, Mail, Apps), partly because the products predate GWT, and also because they are written in non-Java languages.

- The Google brand is positive, but not compelling, to enterprise developers.

- GWT sidesteps major trends in Java platform, such as JavaServer Faces (JSF).

Rating: Positive

IBM

IBM is one of the largest and most influential vendors in the enterprise IT sector. Like Microsoft, IBM has been projecting a marketing message for years around the concept of "rich client" or "smart client." IBM has a range of presentation-related technologies and platforms. IBM was an early force behind Ajax, Dojo and the OpenAjax Alliance. Likewise, IBM has adopted Ajax techniques in its own WebSphere portal and WebSphere Commerce Server (using Dojo and OpenLaszlo) and in many products. Included in IBM's range of offerings related to presentation are Enterprise Generation Language (EGL) Rich UI and Lotus Forms.

The case can be made that no other enterprise vendor is promoting, delivering and exploiting Ajax technology more than IBM, which has made extensive use of this technology in multiple product lines. However, using the technology within a product is different than packaging and selling the technology in a way that meets Ajax/RIA buyers' expectations and requirements. Although IBM is using Dojo in a widespread and strategic manner, in terms of the market of Ajax/RIA buyers, the perception of a strong linkage between Dojo and IBM is not widespread, and it appears that most early adopters of Dojo as a development tool use it directly, rather than through intermediaries. With regard to IBM developer tools, these have become Ajax/RIA-enabled as well, so that Rational, Notes and WebSphere developers can enhance the user experience of both existing and new applications, including mashups.

One of IBM's strategic RIA platforms is Lotus Expeditor, which can be used either as a "full stack" outside-the-browser environment based on the Eclipse Rich Client Platform (RCP) or as an adjunct to the browser for local desktop and data integration. It provides additional capabilities for offline storage (scaled-down DB2 relational database management system [RDMS]), system management, provisioning, etc. While highly configurable in nature, Expeditor can be delivered from a runtime as small as 3MB up to a 100Mb network delivery image, which can be compared (albeit in an apples-to-oranges fashion) with Ajax toolkits (including IBM-backed Dojo) that are 20Kb in size. However, the architecture behind Expeditor allows for the possibility that it may be used in browser plug-in-type scenarios as well, which would broaden its appeal substantially.

Lotus Expeditor's main competitors are outside-the-browser technologies from Microsoft (WPF and Silverlight 3) and Adobe (AIR). All of these desktop-environment offerings have been burdened by the perception of cost (hardware resource utilization)

and complexity — although Adobe AIR has gained more market traction than the others, at least in the highly visible consumer space (for example, Twitter clients, such as Tweetdeck). In the enterprise sector, the installed base of Lotus Notes, Sametime and Symphony — all built on Expeditor technology foundation — in aggregate may exceed that of AIR. All have seen slow market update relative to the meteoric growth in lightweight Ajax technologies, and compared to the more modest, but still strong growth, in the midmarket, with inside-the-browser approaches, such as Adobe Flex and Microsoft Silverlight.

IBM stands to benefit from the market shift to midlevel adopters that have strong platform/vendor affinity. (That is, organizations whose favored megavendor is IBM will increasingly adopt one of the many UI offerings from IBM.)

Positives:

- IBM has historically been a major force behind Ajax in general and Dojo in particular, and makes extensive use of Ajax and RIA in its product lines, including its server-centric developer platforms. These leave the company well-positioned if and when the market evolves to a perspective that values comprehensive, server-centric approaches (which Gartner expects to occur as mainstream users adopt).

- Expeditor is a powerful RIA framework with comprehensive subsystems to support enterprise-scale initiatives.

- Expeditor leverages Eclipse (a widely used developer tool) and Java (a dominant enterprise language and platform), and allows integration and interoperability with Ajax.

- Eclipse is used as the technology foundation for revamped Lotus Notes, Sametime and Symphony clients, which can result in synergy and in accelerated maturity of the technology.

- Expeditor has potential in browser plug-in scenarios in the future.

- Expeditor promotes optional system-level programming to augment the Ajax environment based on symmetric deployment of OSGi, which is now the underpinning of every non-Microsoft server in active development.

Negatives:

- IBM's success in using Dojo and incorporating into tools is not the same as selling RIA platforms to buyers in the Ajax/RIA market.

- The "full stack" approach used in Expeditor means a large footprint and a complex environment for developers, but the incremental, network delivery of function means enterprises can start small and grow the system as needs dictate.

- Applications for the Expeditor platform initially had to be designed as Eclipse plug-ins, which represented a design obstacle for the average application developer. This constraint has been relaxed in recent versions, which support a broader range of Web development, including HTML5.

- Although Eclipse has an extensive track record as a developer tool, it has a much more limited history as an application deployment platform (which is the way it is used in Expeditor).

- Over the years, the marketing message from IBM has changed (along with the Expeditor product name) multiple times, resulting in a slow rate of adoption.

Rating: Positive

ICEsoft Technologies

ICEsoft was formed in 2001 and is based in Alberta, Canada. The company is a small but key vendor in the category of Java-based enterprise Unix (UX) technologies. ICEsoft is best known for ICEfaces, an open-source Ajax framework for Java EE designed to provide enhanced Ajax functionality to JSF controls in a manner that is largely transparent to developers. ICEfaces is characterized by a server-centric architectural approach in which all application logic is coded in Java and executes in a standard Java EE application server environment. Speed and responsiveness are gained by pushing rendering functions to the client side, while keeping business logic on the server. Supporting this trigger-based, server-initiated rendering is Ajax Push (also known in some circles as Comet, reverse Ajax, or HTTP streaming).

ICEsoft also markets an Enterprise Push Server that provides Ajax Push capabilities for JSF applications and the Push Server (included with the open-source version of ICEfaces). The company is also developing ICEpush, aimed at packaging a real-time notification mechanism from ICEfaces with a broader range of technologies than JSF.

The company states that approximately 90,000 Java developers use this JSF framework. ICEfaces is distributed under the Mozilla Public License (MPL) open-source license; an extended version (ICEfaces EE) is licensed as traditional commercial closed source.

Outside the Ajax/RIA category, ICEsoft also markets an open-source library that allows Java programs to display and print PDF documents.

Positives:

- Strong JSF component library in the sparsely populated (i.e., with respect to competitors) JSF market niche.

- User base that is growing steadily.

- Leading-edge focus on Ajax Push design concepts.

Negatives:

- Small vendor competing, (albeit indirectly) with Oracle, a large strategic vendor with strong commitment to JSF.

- Also competing with diverse and numerous non-JSF alternatives in the broader Ajax and RIA sector.

Rating: Promising

Infragistics

Infragistics is a company formed in 2001 through the merger of a Microsoft-focused aftermarket vendor (Sheridan Software) with a Java-oriented vendor (ProtoView, founded in 1989). Infragistics has become a key player in a cluster of aftermarket vendors that sells visual and business components for Microsoft-related presentation platforms such as WPF, ASP. NET, Windows Forms and Silverlight. The primary offering in the Ajax space is NetAdvantage for .NET (debuted in 2001, with a v.2 release in October 2009). A more recent offering is NetAdvantage for Silverlight Data Visualization. Products are sold directly, as well as through channel partners, and are priced below $2,000.

Infragistics competes directly with DevExpress and Telerik (vendors also covered in this MarketScope), as well as with other vendors in this market niche (ComponentOne, Dundas, Janus, Software FX, Xceed, GrapeCity, Sharp Library, ComponentArt, Divelements, SpringSource, and Syncfusion). Many of these companies are complementary with their host platforms, by filling the gaps through visual controls (data grids) and report-oriented components.

Infragistics differentiates itself from DevExpress by supporting a wider range of platforms, including JSF. Infragistics has been slightly behind DevExpress in producing a comprehensive framework, rather than a loosely connected set of large components. In March 2008, Infragistics introduced Aikido, which is built on the Microsoft ASP. NET Ajax Library and provides a layer of additional components. In October 2008, Infragistics repackaged its product line to smooth the transition for its customers from WINForms and ASP. NET to the Extensible Application Markup Language (XAML) platforms (WPF and Silverlight).

Positives:

- Solid suite of components across all Microsoft UX technologies. Specialized vendor that has survived for a long time in the shadow of Microsoft.

- Loyal and long-standing customer base.

Negatives:

- Small company in crowded aftermarket sector.

- Many customers view the company's products as tactical, not strategic.

Rating: Promising

Isomorphic Software

Isomorphic Software is based in San Francisco and was founded in 1998. The company has two product offerings in the Ajax/RIA sector: SmartClient (now at v.7.0, released in May 2009) and Smart GWT (v.2.0 released in December 2009). The two product lines share a common Ajax engine and have feature parity. The Smart GWT offering allows Ajax development in Java via GWT, and achieved about 90,000 downloads in the first three months after release. Both products target enterprise Web applications and application modernization scenarios, and allow incremental upgrade of legacy Web applications.

Both products are offered in a free open-source version under the LGPL license, as well as under a commercial license. The free versions include a library of over 150 UI components intended to compete with UI components offered by other server-neutral UI technologies, such as Ext, Dojo and Flex. Commercially licensed editions introduce Java-based, server-side capabilities, such as data binding, data validation, and transaction handling. Commercial editions also include Visual Builder, a screen design and mockup tool with wizard-driven data binding tools.

ISVs that use the SmartClient technology include Intuit and Informatica. Enterprise customers include J.P. Morgan and Blue Shield.

Isomorphic recently introduced Visual Builder OEM, which allows an ISV to ship a modified and customized version of Isomorphic's Visual Builder that allows end users to customize and extend the ISV's product.

Positives:

- Broad, multifaceted, but cohesive, framework and component library.

- Steady market traction with ISVs and enterprises.

Negatives:

- Small company competing in a crowded sector against larger established IT platform vendors and commoditized open-source packages.

Rating: Promising

JackBe

JackBe is one of the pioneering vendors in the commercial Ajax toolkit category with its Presto Enterprise Ajax Framework, but the company has refocused on enterprise mashups and uses its Ajax Framework primarily as a complementary technology. JackBe offers a comprehensive Ajax Framework and toolset for building rich Web applications. JackBe's marketing efforts are directed at the mashup sector, and JackBe has collaborated with erstwhile competitors Kapow Technologies and Adobe, as well as with a range of technology implementation firms to form the Open Mashup Alliance (OMA; see "Open Mashup Alliance Needs More Support to Create Standardization"). The OMA is dedicated to expanding the role and profile of mashups within the enterprise; as the founding member of

the OMA, JackBe contributed all the alliance's current technology assets. JackBe's mashup technology is UI-neutral, supporting RIA frameworks based on Ajax, Flex and Silverlight.

Positives:

- Well-designed, full-featured closed-source Ajax library and framework targeted to the enterprise sector.

- Growing network of system integration partners and other vendor relationships.

- The Presto Enterprise Ajax Framework offers a graphical development environment, a feature lacking from most open-source libraries.

Negatives:

- In the Ajax category, the closed-source product is competing with commoditized open-source technologies.

- Small vendor with limited resources and brand recognition.

- Although Ajax is an enabling technology for the included presentation tier of its Presto Mashup Server products, it is not strategic from a revenue standpoint.

Rating: Promising

jQuery

One of the most prominent community-based, open-source Ajax libraries is jQuery, initially authored by John Resig in January 2006, and with v.1.0 released in August of that year. The package has since grown rapidly in visibility and influence, through a mix of elegant coding techniques, well-written documentation, and broad industry adoption by vendors such as Microsoft, Oracle, and Nokia.

The package is about 100kb uncompressed (30kb packed), available under either the MIT or the GPL v.2 license.

Positives:

- Elegant architecture with well-written documentation and small footprint.

- Support from Microsoft and Nokia.

- Adoption in high-visibility websites such as Fandango, Twitter, Bank of America, Amazon, Netflix and Dell.

- Ability to coexist with other toolkits, such as Prototype.

- Starting to gain traction in the enterprise sector.

- Support in a range of open-source projects, including WordPress, Drupal and Joomla.

Negatives:

- Competing in a dynamic space with other evolving toolkits (YUI, Dojo, MooTools, Prototype).

- Not as full-featured as other (larger) Ajax libraries.

Rating: Positive

Magic Software

Magic Software is based in Israel and has been in existence for more than two decades. In the 1990s, its main product was a fourth-generation language (4GL) system that won awards for its high productivity. The company's focus is now an application-platform-as-a-service (APaaS) offering called uniPaaS, with v.1.8 released in October 2009. This is a Web-based multitenant RIA that uses a declarative rule engine to deploy to a range of targets, including pure HTML, as well as browser-plug-in-based and .NET-based clients for both desktop applications and Windows Mobile applications. The primary adopters have been midsize to large enterprises and ISVs.

Positives:

- Vendor has been a longtime player in the application development sector.

- Supports multiple client targets, including .NET, Java and HTML, for both desktop and mobile-device deployment.

- Supports on-premises and multitenant hosted deployments.

- UniPaaS provides an end-to-end platform for developing applications with graphical user interfaces, including server-side business logic and RIA client behavior.

- UniPaaS can be licensed for on-premises use, but it is also available as an APaaS.

Negatives:

- Small vendor with little global penetration in the enterprise sector.

- Commercial vendor competing with rapidly evolving open source, now competing with Microsoft, as well.

- Enterprise clients may prefer a point solution that integrates with existing technology investments to a complete server and client stack.

Rating: Promising

MB Technologies

MB Technologies (MBT) is based in Warner Robins, Georgia, and was founded in 2002, with a development center in Sweden. MBT's main Ajax/RIA product is Bindows, an Ajax framework. Additional related products include a framework for data visualization, a JSF-compatible library of Ajax components, a library of vector-based Ajax-enabled gauges, and a visual editor for developing Ajax-based smartphone applications.

Bindows 4.0 was released in February 2009. Earlier versions date back to 2004. The framework is offered on a per-developer basis under a commercial license that includes source code, plus a per-server deployment license. Websites that are free to the public do not have to pay the per-server deployment fee. Intranets are licensed separately.

The framework is entirely client-side, and supports a declarative XML-based description format for defining applications, which is compiled to JavaScript at development time. The framework includes support for browser-based vector graphics, as well as basic animations.

Bindows is targeted to the enterprise market but also has some ISV adoption (for example, Information Builders' WebFOCUS and Oracle Hyperion). A longtime differentiator since the early versions of Bindows has been its support for Section 508 accessibility compliance. This is still a key part of the Bindows' market message.

Positives:

• Full-featured framework with declarative XML definition format and support for object-oriented JavaScript.

• Strong commitment to accessibility compliance.

Negatives:

• Small vendor competing with mature open-source products and large platform vendors.

• Accessibility differentiator has eroded over time as competitors have added this capability.

Rating: Promising

Microsoft

Microsoft has been articulating a message to developers about "smart client" and rich UI technology for much of the past decade. The company has many different technology offerings in this category, including WPF, Windows Forms, Silverlight, Common UI Application Block, Prism Composite UI framework, the Microsoft Ajax Library (which has a client-side aspect and an ASP. NET server-centric aspect) SharePoint Web Parts, and Microsoft Office as a developer platform. This list does not include legacy presentation technologies and platforms that are still in production, such as Visual Basic and Win32 GDI.

Silverlight has rapidly growing mind share that has already had an impact in the market and that Gartner expects will continue to grow into strong market share. Although customer interest is currently centered on Silverlight, it is worth noting that many Microsoft-centric organizations already have a capable platform for enterprise Web applications in the form of ASP. NET, which offers the Microsoft ASP. NET Ajax Library (formerly Atlas) as a way of delivering an enhanced user experience. For many organizations considering Silverlight for straightforward enterprise applications, building on ASP. NET might be a more pragmatic and cost-effective choice. On the other hand, development teams building applications that need to display digital rights management (DRM)-protected content or extended offline mode will choose Silverlight. Of course, technology choices are not always mutually exclusive, and hybrid scenarios may represent the optimum way to balance priorities.

Silverlight packages the powerful features of .NET-based WPF into a lighter-weight, cross-platform offering. It can be used for either external-facing websites or internal-facing applications. It can also be used for building applications that work inside the browser or on the desktop, and for applications that work whether the user is connected to the Internet or not — without the download of a separate runtime.

Silverlight has recently gained great visibility, has excellent potential and is experiencing strong growth. Microsoft recently announced and shipped a beta of Silverlight 4. Version 4 includes many features for media use such as webcam support, microphone support, offline DRM and live streaming (including a way to stream to iPhones). Version 4 also includes more out-of-browser support, as well as support for more browsers (e.g., Google Chrome), and manages to do all this still in a 5MB download.

Silverlight also has many features targeted at enterprise line-of-business (LOB) uses such as printing, rich text (including right-to-left display for those kinds of languages), clipboard, right click, mouse wheel support, drag and drop, and hosting HTML (and other plug-ins like Flash). One significant enhancement is the ability to compile once and deploy on Silverlight 4 and .NET 4. This will open the door for many uses within enterprises.

Silverlight continues its march toward providing more and more of the functionality of .NET, full WPF and Windows. But the difference between Silverlight and WPF is continuing to shrink. Silverlight 4 even supports multitouch, as well as more-direct hardware access.

Positives:

• Brings .NET technology to the browser in a cross-platform manner, and leverages the skills of an estimated 6 million .NET developers.

• Supported by the broad ecosystem of Microsoft service providers, SIs and ISVs, including some companies listed in this MarketScope (such as DevExpress, Telerik, and Infragistics) that provide development services, additional component libraries, frameworks, training and support.

- Support for multiple programming languages, including dynamic languages like Ruby and Python.

- Microsoft is a systematic and diligent competitor over the long-term, and the strategic emphasis on Silverlight is to continue into the future.

- Support for integrated developer-designer workflow.

- Strong development process around security, resulting in a very good track record for new deployment.

Negatives:

- Linkage to the .NET platform and tools is perceived as a negative by some non-Microsoft-centric organizations, although Silverlight has cross-platform attributes on both the development side and the delivery side.

- Microsoft still trails Adobe in installations and in consumer usage.

- Microsoft's plethora of UI-related technologies creates some developer confusion.

- Microsoft doesn't have a strong following in the Web design community. Its strength is in the enterprise development community.

Rating: Strong Positive

Nexaweb Technologies

Nexaweb, along with vendors such as Backbase, Tibco (GI), JackBe and Laszlo Systems, form the contingent of pioneering commercial vendors in the Ajax and RIA sector. Nexaweb was founded in 2000 and shipped its first product in 2001. While Backbase, JackBe and GI approached the space from the Ajax direction, and Laszlo from a Flash-based browser perspective, Nexaweb initially took a closed-source, Java-based approach. This approach has since broadened to include open-source licensing, server-side processing, and Ajax support. Applications can run either inside the browser or in a self-contained Java Virtual Machine (JVM) outside the browser. Server-side functions include an Internet messaging bus for real-time notifications.

The current product is Enterprise Web Suite (EWS), including Platform and Studio (an Eclipse-based IDE). Version 4.5 of this offering was released in December 2008. Nexaweb also sells an application modernization tool, as well as a trading accelerator that includes components for rapid construction of online trading systems. For scenarios involving incremental enhancements to websites, Nexaweb created an open-source declarative extension to the Dojo library, called dojo.E, which is in use by several enterprises for Web page/portal page enrichment. Nexaweb's declarative language is extensible Ajax platform (XAP), which is now an open-source project at the Apache Foundation's incubator.

Although Nexaweb's primary focus is the enterprise, the company also has some penetration in the ISV market segment. ISV customers include Oracle (Identity Management), EMC (ControlCenter), and SunGard (InvestarOne).

Nexaweb's recent market focus has shifted to emphasize the modernization of legacy enterprise applications (written in PowerBuilder, Visual Basic and Oracle Forms). This is achieved through Nexaweb's enhanced version of the open-source Spring framework written in Java. Nexaweb has also started to add some vertical functionality for building RIAs with EWS. The first set of development accelerators includes prebuilt electronic trading components/functionality that accelerate the process of creating Web-based, end-to-end trading applications, including low-latency messaging, a highly configurable client administration framework for banking customers, and a framework for configuring different asset classes to be traded in the RIA trading application.

Positives:

- Pioneering participant in Ajax/RIA sector.

- General architecture allows multiplatform targeting, both Ajax and Java, inside and outside the browser.

- Some penetration into the enterprise sector and ISVs.

Negatives:

- Small company with limited resources competing against giants and against open-source alternatives.

Rating: Promising

Oracle

Oracle has been in the RIA market since 2003, with Ajax-based partial page rendering capabilities. Oracle actively markets its RIA technologies today, most of which are encompassed in the ADF Faces 11g product. ADF Faces 11g is an Ajax-centric environment with over 150 Ajax-enabled JSF components. ADF Faces 11g uses a rich JSF rendering kit that renders HTML content as well as corresponding client-side components, with application logic residing mostly on the server-side, executing in the JSF life cycle.

ADF Faces 11g resonates best with the existing Oracle developer community. It is definitely a developer-centric product (versus end user). While the components can be used with any IDE or code editor, Oracle JDeveloper provides a visual and declarative environment for building applications that use ADF Faces.

Oracle has another product that builds on the RIA functionality of ADF Faces: Oracle WebCenter Suite. Oracle WebCenter Suite is Oracle's strategic portal product, and is the primary UI for Oracle Fusion Applications, Oracle's next-generation business applications. In addition to acting as a portal solution, Oracle WebCenter Suite adds prebuilt Enterprise 2.0 services and components into the RIA capabilities of ADF Faces — including functions such as

discussions, presence, tagging, enterprise search, and content management integration. Oracle WebCenter Suite includes support for Ajax components, as well as support for Adobe Flash.

Positives:

- Large vendor, and large developer community and ecosystem.

- Good collection of prebuilt Ajax components.

Negatives:

- Product is best-suited for Oracle developers, but has limited appeal for other users.

- Focus is on server-centric processing. This can actually be a positive over the long-term, as application development managers want a more consistent, managed, server-centric environment for their applications.

Rating: Positive

Prototype/script.aculo.us

Prototype is foundation-level Ajax technology that is often used in conjunction with the script.aculo.us UI library. Both are open source, are purely JavaScript and have distinct identities but overlapping communities. Version 1.6.0.3 of Prototype is the current version, first available in September 2008. It is open source under the MIT license and is available as a single source file (about 4,200 lines of JavaScript code, which weighs in at 128kb uncompressed) at http://prototypejs.org/assets/2008/1/25/prototype-1.6.0.2.js.

Script.aculo.us builds upon the core Prototype framework by adding an animation engine, drag-and-drop effects, sliders, fades, autocompletion, etc. The package has Prototype embedded, and is available as a 194Kbyte compressed JavaScript collection from http://script.aculo.us/downloads.

Major "competitors" are open-source packages such as Dojo, jQuery and Yahoo YUI. One differentiator is that Prototype is geared to the "write your own widgets" developer who is looking for a solid but lightweight technology foundation upon which to build custom components. High-profile, public-facing websites like Apple, CNN, Ikea and Gucci that want a distinct look and feel have chosen the Prototype/script.aculo.us combination.

Positives:

- One of the early toolkits to package Ajax know-how into an open-source offering.

- Strong adoption from high-traffic sites.

- Multilayer modular structure makes adoption possible in stages.

- Emerging ecosystem of training and support resources (books, communities).

Negatives:

- No vendor has become strategically committed to the success of this project.

- Not as full-featured as other larger toolkits.

Rating: Positive

Sun Microsystems

As with any large platform vendor, Sun Microsystems has a range of presentation-oriented technologies and platforms, going back to the mid-1990s and the days of venerable Java applets. Early success in client-side UI technology was slowed due to inconsistent implementations and discontinuous transitions with UI libraries (from AWT to Swing). For the past decade, Sun's Java has found success in strategic, server-side, enterprise-scale platforms (Java EE), but has not been a visible participant in client-side competitive arena, ceding the ground to Ajax toolkits and Flash-based RIA approaches.

Sun introduced JavaFX in December 2008, which represents its attempt to play catch-up in rich-client technologies. JavaFX is a layer on top of the standard Java runtime, which adds multimedia capabilities, a declarative scripting language, and a runtime environment that supports inside-the-browser, outside-the-browser and mobile deployments.

Sun's value proposition is to Java-centric organizations that want a unified technology foundation across clients and servers. Sun claims over 500,000 JavaFX SDK downloads and 50M JavaFX desktop runtime downloads per month. Some of the early interest has translated into production sites, such as a JavaFX application for the 2010 Olympic Winter Games in Vancouver, Canada.

A countercurrent to Sun's market momentum is the uncertainty around the pending Oracle acquisition. On the road map for JavaFX is Composer, a visual layout tool for developers, and, later in 2010, an authoring tool for designers.

Positives:

- Sun's Java technology has been a mainstay of the Web for more than a decade.

- Broad ecosystem built around Java, including platform vendors (IBM), ISVs (Oracle), and many SIs and global IT services firms.

Negatives:

- Late entry into market territory inhabited by Adobe, Microsoft and other vendors.

- Uncertainty around the pending acquisition by Oracle has been an inhibiting factor in market adoption.

Rating: Promising

Telerik

Telerik, founded in 2002, is based in Sofia, Bulgaria, with offices in the U.S. and Germany, and employing over 200 people. The company competes directly with DevExpress and Infragistics (vendors also covered in this MarketScope), as well as with other small vendors in this niche of Microsoft-centric aftermarket products (vendors such as ComponentOne, Dundas, Janus, Software FX, Xceed, GrapeCity, Sharp Library, ComponentArt, Divelements, SpringSource, and Syncfusion).

Telerik's principal product in the Ajax/RIA sector is RadControls for ASP.NET Ajax. This product is a library of controls layered on top of Microsoft's ASP.NET Ajax framework. Telerik simplifies Ajax programming on ASP.NET by using a codeless drag-and-drop Ajax component that eliminates the need to manually place UpdatePanels, as is normally done. Telerik controls for ASP. NET includes Calendar, Captcha, Rating Rotator, and Tabstrip. Telerik replaces the ASP.NET postback mechanism with a full Ajax callback approach that enables the developer to support a broader range of complex user scenarios, including cross-cloud support for Windows Azure Platform and Amazon Web Services. Telerik's RadEditor for ASP.NET is a Web-based, rich-text editor that complies with accessibility guidelines for visually impaired users.

Telerik's other key product is RadControls for Silverlight, which builds on Silverlight 3 by adding 38 controls. Telerik controls for Silverlight include a RibbonBar, TreeView and Time Picker. Telerik also markets libraries of UI components for WPF and WINForms, and plans to release a full suite of components for Silverlight 4 (SL4) at the time of SL4's release from Microsoft. Additional offerings from Telerik include non-UI tools and components, such as an object-relational mapping tool, a test framework, a project dashboard and a content management system (CMS).

The company estimates that it has about 150,000 developers worldwide, about one-third of whom are enterprise developers; the rest are in small to midsize companies (including ISVs). The company's developer forum has 325,000 registered users.

Positives:

- Broad line of components across the major Microsoft UI platforms.

- Small vendor that has survived for a long time in the shadow of Microsoft and continues to grow.

Negatives:

- Small company in crowded aftermarket sector.

- Company's products are tactical and complementary, rather than strategic and self-contained.

Rating: Promising

Tibco Software

Tibco, via its acquisition of GI in 2004, is one of the earliest ISVs of any size to enter the RIA market. GI was founded in 2001 as an Ajax toolkit vendor, and Tibco has done a good job of assimilating the GI technology into the mainstream of its UX products. For example, Tibco had the first Ajax-enabled portal product on the market. Tibco GI is a mature, enterprise-class Ajax platform optimized for development and management of large-scale, browser-based applications. It includes a full-featured developer environment, as well as a complete functional testing framework and performance tools.

An interesting innovation is PageBus, a pub-sub model that allows gadgets to communicate with each other, and is the driving force behind the OpenAjax Alliance Hub initiative. Tibco continues to support the GI technology as open source, but has also continued to effectively marshal the evolution of the technology. Tibco recently migrated its open-source presence to the Dojo Foundation. In fact, the founders and lead developers of Tibco GI are still working for Tibco, five years after the acquisition. One founder left Tibco last year, but recently returned to the fold.

Positives:

- Full-featured, enterprise-class Ajax toolkit.

- Long history of providing Ajax solutions.

- Successful open-source implementation.

- Potential for some brand synergy with Tibco Tibbr, a recent innovative entry into social computing.

Negatives:

- Tibco is a integration-centric vendor. As such, Tibco GI is well-hidden in the company's product portfolio, and is equally invisible in the marketplace.

Rating: Promising

Yahoo

Yahoo is a major player in the consumer Web sector, and operates such properties as the My Yahoo portal, Flickr photo-sharing, Yahoo Mail, Yahoo Store e-commerce storefront, etc. The YUI toolkit is a free and open-source Ajax toolkit written in pure JavaScript. The package contains not just a framework and widgets, but also utilities (logger, compressor), customer support system (CSS) tools, and design patterns. Yahoo's interest in developing YUI is primarily for its own use, not for traditional software sales. It finds value in getting feedback from others who use its open-source technology. YUI v.3.0 was recently released and represents a significant improvement over earlier versions of the UI. Although YUI is used mostly in the public Web environment, interest in this package now reaches beyond public sites to the enterprise sector. A key attraction of YUI is its status as open-source software. Recent developments have made this even more attractive due to the two-way transfer of code.

Yahoo has had its share of pain and its ups and downs as a corporate entity over the past year. It is also not out of the woods. However, Yahoo YUI has been mostly immune to these travails. This is likely because YUI is open source, and because its primarily adopters have been Web-centric companies with internal resources that are less concerned about vendor viability (or, rather, measure this in the same scale as MooTools and other open-source toolkits).

Yahoo seems to be re-energized under CEO Carol Bartz, and is trying to reach out to the enterprise sector. The Yahoo team was very responsive and professional to Gartner queries for this research — an indicator that the company is not sitting still or letting things slide downhill.

Positives:

• Full-featured Ajax toolkit for the Web 2.0 developer.

• Leverages the Yahoo brand and ecosystem, including the Yahoo design pattern library.

• Multiple releases over time, with production use on MyYahoo and the Yahoo start page since mid-2005.

• Good adoption in the top 100 websites, and one of the top three Ajax libraries in the broad-scope site survey conducted by Opera in December 2008 (1 million websites surveyed via crawler).

Negatives:

• Yahoo brand lost some luster in earlier in the year, and the company has seen some staff departures and layoffs, resulting in perception of an uncertain future. This perception is tempered by recent high-profile initiatives led by new CEO Carol Bartz, including a $100 million ad campaign.

Rating: Positive

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.

Gartner MarketScope Defined

Gartner's MarketScope provides specific guidance for users who are deploying, or have deployed, products or services. A Gartner MarketScope rating does not imply that the vendor meets all, few or none of the evaluation criteria. The Gartner MarketScope evaluation is based on a weighted evaluation of a vendor's products in comparison with the evaluation criteria. Consider Gartner's criteria as they apply to your specific requirements. Contact Gartner to discuss how this evaluation may affect your specific needs.

In the below table, the various ratings are defined:

MarketScope Rating Framework

Strong Positive
Is viewed as a provider of strategic products, services or solutions:

- *Customers:* Continue with planned investments.

- *Potential customers:* Consider this vendor a strong choice for strategic investments.

Positive
Demonstrates strength in specific areas, but execution in one or more areas may still be developing or inconsistent with other areas of performance:

- *Customers:* Continue planned investments.

- *Potential customers:* Consider this vendor a viable choice for strategic or tactical investments, while planning for known limitations.

Promising
Shows potential in specific areas; however, execution is inconsistent:

- *Customers:* Consider the short- and long-term impact of possible changes in status.

- *Potential customers:* Plan for and be aware of issues and opportunities related to the evolution and maturity of this vendor.

Caution
Faces challenges in one or more areas.

- *Customers:* Understand challenges in relevant areas, and develop contingency plans based on risk tolerance and possible business impact.

- *Potential customers:* Account for the vendor's challenges as part of due diligence.

Strong Negative
Has difficulty responding to problems in multiple areas.

- *Customers:* Execute risk mitigation plans and contingency options.

- *Potential customers:* Consider this vendor only for tactical investment with short-term, rapid payback.