EXECUTIVE SUMMARY

The interaction platform began as an architecture pattern enabled by service-oriented architecture (SOA), a common way to factor an application front end from the back-end services it uses, supported by frameworks and infrastructure. During 2005 a number of events moved packaged applications and services, application infrastructure, frameworks, and tools into closer alignment with this pattern. However, only a few major vendors are explicitly positioning products as interaction platforms, with the rest embedding those capabilities in broader application platform suites. Despite this low-key market status, organizations with requirements for rich clients, multichannel business processes, composite applications, collaboration, and other capabilities of interaction platforms should align architecture and purchasing plans with this trend to ensure the best fit of platform and tool strategy to meet these needs.

THE INTERACTION PLATFORM: STILL MORE A PATTERN THAN A PRODUCT, BUT . . .

Application infrastructure capabilities get productized when they are so widely used by customers that they can be economically packaged together. Yet the range of design patterns for user interaction that can be implemented using an interaction platform is so broad that the market has not yet coalesced around a common set of capabilities that are universally recognized as an interaction platform — although the largest application platform vendors, especially IBM, Microsoft, Oracle, and SAP, provide all the capabilities of an interaction platform today to varying degrees. However, for vendors like Adobe Systems and BEA Systems with strategies more focused on interactions, interaction platform capabilities are easier to trace in the packaging of their platforms and tools. Either way, this architecture pattern is gaining critical importance for enterprises with the most extensive interaction-related application requirements.

Industry Events In 2005 Reflect Industry Movement Toward The Interaction Platform

There were a number of important industry developments during 2005 that increased the alignment of all the major application and platform vendors with the interaction platform architecture pattern:

- Adobe acquired Macromedia. Although creation of an interaction platform was not the only reason for this deal, it was one of the primary motivations. Adobe doesn't provide the platform on which underlying application services or transactions execute, but it provides a rich set of interaction-related capabilities for building rich collaborative multichannel user experiences across many platforms. Whether focused on the Web, the desktop, mobile clients, or other interaction
contexts, enterprise customers and independent software vendors can base an entire interaction strategy and architecture around the interaction platform from Adobe — the future union of LiveCycle Designer and Macromedia products.

- **BEA Systems acquired Plumtree Software.** More significant than the acquisition is BEA’s choice to brand Plumtree assets as AquaLogic. Launched in mid-2005 as a vehicle for BEA to enter new markets distinct from its transaction-processing roots, the AquaLogic brand was first used on BEA’s new enterprise service bus (ESB). The unifying theme of all the products in the AquaLogic series is the integration of heterogeneity, whether of back-end services or data from many different platforms — not just WebLogic — or of the front-end integration of user experiences using AquaLogic User Interaction. The latter is even more explicitly positioned as an interaction platform than Adobe’s products, because of the greater emphasis in BEA’s messages and strategy on the role of SOA in knitting together front-end interactions with back-end application and data services through an ESB.

- **IBM and Microsoft continue to build out interaction platform capabilities.** IBM launched its companywide (as opposed to Lotus-specific) Workplace brand and strategy in 2004, and made progress in 2005 on the Workplace road map. Key developments included the acquisition of PureEdge Solutions, adding an e-forms capability to Workplace that had previously relied on IBM’s partnership with Adobe, and the delivery of Notes/Domino 7.0, which tightened — but did not complete — integration of Domino applications with the new Workplace client. IBM also showed progress in delivery of new developer tooling for Workplace, built on Eclipse, using the Eclipse Rich Client Platform to good effect.

Most of the major new interaction capabilities on Microsoft’s road map will arrive in 2006, but early exposure in 2005 of Windows Vista and its Windows Presentation Framework, Atlas tools for Ajax, and the new user interface of Office 12, show that Microsoft will maintain and even extend its leadership in providing rich user experiences. Microsoft also added considerably to its collaboration capabilities with the acquisition of Groove Networks, and made some headway in the portal market with SharePoint Services. The most interesting interaction-related developments around SharePoint are still in the future with Office 12, which provides a seamless way for Web parts to integrate into user experiences on the desktop. Office 12 also extends its capabilities for use as an interaction platform, a client for integration of back-end services into an integrated user experience for information workers who spend most of their time in Office applications.

- **SAP and Microsoft began to deliver on the promise of Mendocino.** When the collaboration code-named Mendocino was first announced in April 2005, it was not much more than a great demo. However, later in the year as real code has shipped, albeit in prerelease form, salient details are coming out that show that this is truly an innovative element of the interaction platform strategies of both companies. In SAP’s case, Mendocino is one of a broader class of rich
clients that the company will provide to expand its user-experience footprint and capabilities — with Adobe Macromedia Flex also playing a role in providing rich clients in 2005. In Microsoft's case, Mendocino is an interesting experiment that shows the power of the internal architecture on which it is built — which is actually a more general-purpose tool set for building next-generation user experiences. This tool set will see expanded usage in Microsoft's own Dynamics application suites as they evolve.

These are not the only industry events of significance to the evolution of interaction platforms, but they are the most important — and represent most of the major players in the platform wars. Yet most of these vendors do not make use of interaction platform concepts in positioning or marketing their products. The key factor that drives this choice is need: Companies like Adobe and BEA that need to stand apart from the pack in highlighting their roles as interaction platforms find it useful to position in this context, whereas the leaders in the broader application platform wars — IBM, Microsoft, Oracle, and SAP — do not need to highlight that distinction as strongly. But even the general-purpose platform vendors typically show a box on their “marketecture” charts labeled “interactions,” and place in that box products for portals, rich clients, and sometimes mobility.

Interaction Technology And Architecture Also Evolved Significantly In 2005

There were several key developments in 2005 in the interaction technology and architecture landscape that drove significant innovation and market development:

• **Ajax is the poster child for richer user experiences.** Although the core technologies of Ajax are not new, and had been used before in a similar way, Google's usage of Ajax for things like the Google Maps UI drove it from a discussion topic for developers to being a hot topic for marketers and PR pros hyping Web 2.0. Google Maps and Gmail, and other uses of Ajax like Yahoo's email client and BEA's Adaptive Portlets, represent real innovation, and show the potential and the degree of pent-up demand for richer user experiences on the Web. Speculation on its significance got out of hand by late 2005, with whole new business models being hung on this peg — but can it bear the weight? Yes, but only if the concepts are generalized to an interaction platform, which delivers not just raw technology for richer UIs, but also support for collaboration, multichannel business processes, and more. Ajax itself is not as significant as the shift in platform dynamics it represents.

• **Adobe responds to Ajax, with limited impact so far.** Adobe (Macromedia) points out that there is not really much difference between JavaScript and its ActionScript, and highlights other similarities of Flash to the things developers like about Ajax — as well as the things Adobe does better, like multichannel. The company also rightly observes that the real key to developer benefits is great tooling, and has made good progress in improving its developer tools — to the point that they outstrip other tools being used for Ajax today. But the ecosystem growing up around Ajax is driving rapid innovation on multiple fronts, and so far Adobe's marketing has done little to move the needle on developer perceptions of Flash, which are often based on older
uses of the technology. Still, Adobe wields strong technology assets, and has the potential to regain its momentum as the primary cross-platform and multichannel interaction technology — but only if it alters developer perceptions.

- **Microsoft has a winner in Windows Presentation Framework.** As we have already observed, when Vista ships it will bring a powerful weapon to bear that will enable Microsoft to capture more share in rich experience land. However, as long as Microsoft remains committed to its Windows-centric approach, this will still leave room for a cross-platform dominant alternative.

- **Digital Business Architecture defines the interaction platform context.** Although SOA has been the primary driver of the interaction platform pattern, in 2005 Forrester defined Digital Business Architecture as the connective tissue of multiple architecture domains, including SOA. The interaction platform is explicitly built into the structure of Digital Business Architecture as the Pervasive Interactions domain. This represents a shift in the way architects think about designing interactions, from design a user interface for an individual business function, to design the right way to connect your business services to the physical world of users, devices, and objects. This shift places the interaction platform in a crucial role as a key enabler for this longer-term architectural vision: to enable IT solutions to act in a unified and consistent way to deliver rapid business change.

- **Interactions don’t just come from people.** Digital Business Architecture also highlights the importance of maintaining the broadest possible perspective on the many forms that interactions can take. Rather than limit one's understanding of interactions to things that people do, recognize that interactions are much broader, including sensors, devices, RFID readers and middleware concentrators, and any other front-end element that can interact with back-end services. The growth of RFID implementations in 2005 makes it increasingly clear that interactions are also the source of events which flow through the SOA infrastructure, to be handled by the right processes and services.

**Interaction Platforms Share The Stage With The Information Workplace**

The interaction platform is defined based on a broad range of usage scenarios, applicable to customers, employees, and other users of many different kinds working in many different contexts. As such it does not assume too much about the nature of the applications the users will need to execute, other than their requirement for the services of the interaction platform. However, look at most business processes in the enterprise and you will see that some of the users participating in these processes are information workers — and they have additional requirements beyond what the interaction platform is normally intended to provide.

For information workers, interaction technologies are most likely to be experienced in the context of an information workplace. Many of the core technologies across these two architecture patterns are the same, although the information workplace places greater emphasis on authoring, workflow,
and collaboration for documents. The key to understanding the relationship between the two is to examine business processes where both come into play. Consider the example of a business-to-business (B2B) sales process, and the interaction technologies that may be used at each stage (see Figure 1).

- **The vendor creates product information.** Expert employees will use applications built for this purpose — probably by an ERP vendor. The need to combine forms-based information with rich content will favor an interaction platform to enable a composite application, integrated with ERP, master data management, and enterprise content management services. *Example: product information creation for electronic components, with many options and configuration constraints.*

- **The OEM supplier and systems vendor negotiate the contract.** Negotiators will use a contract template, driven by a checklist shared by legal staff and sales, with rich content and collaboration. This will require an information workplace with document creation and management capabilities, although some steps in the process, such as approvals, may use more mundane interaction platform technology for mobility. *Example: OEM electronics component supplier negotiates a contract with a systems vendor to provide a series of new disk drive components to be used in computing systems.*
• **Product catalog data is entered into the system.** This process will use interaction platform-based composite applications for creating and managing rich content integrated with structured product data, with an information workplace for creative artwork, catalog layout, and composition. Catalog maintenance will be reduced in cost by deep integration of data and content, so that changes in product data can automatically be reflected. *Example: the electronic systems product catalog includes content and data for a print catalog, as well as the constraints of the online product configurator.*

• **Customer researches products on Web.** All of the rich content and data created in the previous steps now pays off in rich user experiences for customers, speeding customers’ process of finding, configuring, and buying the right products to meet their needs. These experiences will be much easier for the systems vendor to deliver on a sustained basis across multiple channels, using an interaction platform. For some customers this process will involve collaborative design, with onshore, offshore, and vendor engineers and designers all participating in a distributed information workplace. *Example: a customer configures and buys a system including components from the OEM supplier, with the process seamlessly integrated with contract manufacturing.*

• **Orders submitted to the vendor via Web, phone, or EDI.** An interaction platform will support the delivery of rich user experiences across multiple channels, deeply integrated with back-end application services for rapid order fulfillment. Phone orders may be handled by contact center agents using an information workplace, integrated with the same interaction core technologies, employing the same integration infrastructure, and integrated with the same back-end services. The requirement to support offline operation is ongoing, enabling occasionally disconnected users to participate fully and seamlessly in widely distributed business processes. *Example: orders flow from the online system via a service bus to the OEM supplier, and ultimately the contract manufacturer.*

• **Products are shipped to the customer.** This is not really the end of the business process; it’s just the jumping-off point for many other processes, including field service, where interaction platform and information workplace technology will improve margins and customer satisfaction.

**The Interaction Platform Is Key To Most SOA Implementations Today**

Whether vendors choose to highlight their products this way or not, the integration of capabilities in an interaction platform is a key element of the strategies of all the major application and platform vendors. Customers that get involved in building out their own architecture will see this directly, as choices for application platforms are increasingly driven with interaction requirements in mind. Other customers will experience this trend indirectly, through user experiences delivered by composite applications and information workplaces provided by application vendors. Either way, the interaction platform is a reality today, which will only grow more significant with time, with the expanding implementation of SOA.
RECOMMENDATIONS

BUILD YOUR SOA STRATEGY TO REFLECT INTERACTION PLATFORMS

The need to support the usage scenarios enabled by interaction platforms and information workplaces varies between industries and companies. But the pace of IT innovation brings the need to support collaboration, multichannel processes, rich user experiences, content integration, etc. to more and more industries and companies every year. Examine your current and future potential for these requirements to drive priorities for incorporating interaction platform concepts into your SOA strategy.

ENDNOTES

1 Adobe entered the world of rich content by completing the acquisition of Macromedia on December 5, 2005, combining Adobe's commanding PDF presence with Macromedia's dominance in Flash media. This purchase not only positions Adobe against Microsoft in the race for rich clients — ranging from the desktop to mobile phones and PDAs — but also enhances Adobe's chances of success in the enterprise by providing a Web application development platform that includes a rich-client interface. See the April 19, 2005, Quick Take “Adobe Buys Macromedia: A Perfect Alignment Of Content, Documents, And Web Applications.”

2 The portal market vanished as quickly as it appeared by morphing into application server platforms, interaction platforms, and information workplaces. In the past four years, independents have been gobbled up by Sun Microsystems (iPlanet), SAP (TopTier), and Vignette (Epicentric). And now BEA Systems has bought Plumtree Software, the last of the portal pure plays. By adding Plumtree to its AquaLogic product line and rationalizing its two portal products, BEA adds a face to the AquaLogic product portfolio. See the August 26, 2005, Quick Take “BEA Buys Plumtree: Portal + Portal = 2 Portals?”

3 BEA Systems grew to $1 billion in sales on the strength of its WebLogic application platform. Although it was a first mover in offering a strong Java-based integration suite, WebLogic Integration, it only recently entered the ESB market with AquaLogic Service Bus. See the November 15, 2005, Tech Choices “Enterprise Service Bus Scorecard Summary: BEA Systems.”

4 IBM acquired PureEdge Solutions, a pure-play e-forms vendor known for its focus on secure, XML-based e-forms. IBM's acquisition underscores e-forms' role as a core technology for automating business processes and allows IBM Workplace customers to seamlessly integrate e-forms into back-office systems like ERP and CRM. This acquisition strengthens IBM Workplace and puts IBM in direct competition with Microsoft InfoPath and Adobe LiveCycle. See the September 8, 2005, Quick Take “IBM Scores A PureEdge In E-Forms.”

5 Microsoft has unveiled a powerful weapon that will allow it to consolidate its control of the desktop by offering tools across development tasks and roles with high levels of integration. This innovation goes by the opaque acronym of XAML (eXtensible Application Markup Language), but don't be fooled: The possibilities inherent in this technology will make it extremely important for enterprise developers, their tools, and their processes. See the November 23, 2005, Tech Choices “Why Windows Presentation Foundation Will Dominate Thick Client Development.”
Microsoft acquired Groove Networks in April 2005, increasing the velocity of Microsoft’s propulsion into collaboration platforms and the newly emerging information workplace market. Microsoft not only acquired critical collaboration technology from Groove Networks that fills gaps in its product line, but got a brilliant thinker and innovator with the addition of Ray Ozzie to Microsoft’s team. See the March 15, 2005, Quick Take “We’re Engaged!” Microsoft To Acquire Groove.

Ajax is the hot new combination of existing Web technologies that leaves the click-and-wait Web paradigm in the dust and enables sleek online apps that feel more like thick client software than Web pages — all without running afoul of the standards police. But, the hype about Ajax is unfortunately overblown: Technical limitations, missing standards, and narrow applicability make it more like a different flavor of Java applets than a complete Web revolution. See the July 22, 2005, Trends “An Ajax Primer: Don’t Fire Your HTML Crew Yet.”

Google Maps elicits a visceral response in many new users: “I’m never using MapQuest again.” However, customers’ perceptions that Google Maps is more accurate than MapQuest or Yahoo! Maps are flat-out incorrect: All three online mapping sites get data from the same source. So if the data is the same and you count out silly things like brand affinity, what is it that makes customers feel all warm and fuzzy about Google Maps? A user interface that treats them with a little respect. See the April 11, 2005, Quick Take “What’s So Cool About Google Maps?”

Today’s information worker relies on a disjointed set of office productivity, content, collaboration, and portal tools. The information workplace will be much simpler, yet richer than today’s tools by incorporating contextual, role-based information from business systems, applications and processes; delivering voice, documents, rich media, process models, business intelligence, and real-time analytics; integrating just-in-time eLearning; and fostering collaboration. Using a service-oriented architecture, the information workplace will be rich with presence awareness, information rights, and personalization and it will provide offline and online support to a plethora of devices. As this unfolds, information work will expand beyond traditional knowledge workers. See the June 1, 2005, Forrester Big Idea “The Information Workplace Will Redefine The World Of Work — At Last!”

The information workplace software platform supports information workers by providing multimodal, contextual, mobile, right-time access to content, data, voice, processes, expertise, business intelligence, and more, through the use of portals, collaboration tools, business process management, content repositories, taxonomies, search, and other emerging technologies. An interaction platform provides a number of similar services to enable composite applications to support critical business processes with rich content, context, and collaboration, often across multiple channels. Each supports critical new usage scenarios and reflects industry convergence around common platforms. As many such scenarios connect and overlap, your strategy for the information workplace and the interaction platform will need to coordinate and even converge the common elements of these platforms, especially where they support the same people or the same process. See the June 22, 2005, Quick Take “Information Workplaces And Interaction Platforms.”