



WebSphere software

WebSphere story: The value of SOA and integration

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Introduction

In today's competitive business environment, the flexibility to respond with speed to any customer demand, market opportunity or external threat is more important than ever. Rigid IT infrastructures have been responsible for restricting business agility time and time again. For years, business-minded IT leaders have sought ways to support ever-changing business models by rapidly and cost-effectively modifying their IT infrastructures. Leading companies are making IT decisions that support the goals and processes of the business itself, turning IT into a strategic enabler rather than an inhibitor of business agility.

Bridging the gap between business goals and IT goals is not easy. It's much easier to count servers and measure response times than it is to scrutinize the business design behind the technology architecture. But that is exactly how business success is achieved—through deliberate and informed alignment of business and IT goals and processes. If the business needs are not driving the IT decisions, then the IT investment is not necessarily serving the business model and may not be improving business returns.

A survey of 170 major U.S. companies and IBM's largest customers showed very clearly the value of aligning business and IT goals. Within each industry studied, companies that made the most progress integrating business processes and infrastructures both internally and with their suppliers, customers and other external sources saw a 15 point growth in earnings compared to companies who had not taken this journey. They had higher return on investment and higher price-earning ratios than their peers. These companies understood their business at a fundamental level and were able to identify the relationships between the business processes and the IT requirements.¹

More and more companies are realizing the value of a service oriented architecture (SOA) to help achieve this business integration success. By 2006, more than 60 percent of enterprises are expected to consider SOA as a guiding principle in designing mission-critical applications and processes. By 2008, analysts predict that SOAs will enable organizations to increase code reuse by more than 100 percent.²

SOAs and advances in IT integration technology—along with the continuous refinement of standards—are helping the IT industry reach a new inflection point. With the right approach, IT can deliver a complete set of operational solutions to achieve a superior business model that meets the sophisticated needs of today's businesses. IBM WebSphere® software is part of that solution.

A recent survey shows that “63% of respondents agree SOAs are driven by the business, whereas previous IT architectures were driven by IT.”

– Cutter Benchmark Survey ²

The basics of integration and SOA

Companies have invested a significant amount of resources into their IT infrastructures and look to maximize the value of existing resources in delivering new IT solutions to meet business needs. Integration is key to delivering flexible, efficient IT solutions. Put simply, integration is the connecting or combining of different components within the IT architecture. Businesses can integrate applications, information, processes and interfaces. Of course, the key to successful integration is for the business needs to drive the integration decisions.

This flexible, modular-based approach to integration can be enabled through a service oriented architecture (SOA). What is an SOA? It starts with services—repeatable business tasks such as checking customer credit and opening new accounts. Service orientation is a way of looking at your business as linked services, and realizing the outcomes that these linked services bring to your business. An SOA is an IT style that supports service orientation and has reuse at its core. Within an SOA framework, composite applications—as a series of integrated services—support a business process built on an SOA.

In today's fast-paced business environment, you need business processes that are subject to daily changes versus yearly changes. Why act now? Every day, globalization demands greater flexibility. Industry standards and best practices have been established, while a large volume of services—as well as mature, integrated software—is now available. And a more integrated environment can help reduce business costs. Based on IBM customer experience, reusable assets can cut costs by up to 20 percent. What's more, SOA can help increase your company's flexibility and responsiveness—crucial elements needed to achieve On Demand Business.

IBM delivers the breadth of capabilities required to model, assemble, deploy and manage an SOA. Core to developing, deploying and running an SOA is the flexible integration of IT assets, enabled by IBM WebSphere software.

The case for integration and SOA

Companies have begun to realize the value of integration and SOAs in meeting today's business demands for flexibility, responsiveness and cost savings. In many companies today, IT environments have become complex and can present obstacles that keep businesses from realizing their potential. But taking a holistic approach to IT as an enabler of business agility can help make a strong business case for integration and SOA. Through integration and SOAs, the WebSphere product family can help your organization:

- *Reuse existing IT assets. With today's imperative for cost savings, a business case for building an IT solution from scratch simply can't be made. But by finding ways to connect to existing assets – across platforms – you can harness their value and incorporate new technology around them.*
- *Share information effectively. The right applications and the right people need to have access to the right information at the right time. This may require structural changes, such as removing the information silos that exist in the architecture. It may require establishing new relationships and connections between the disparate components. The goal is to open up the architecture so the information can flow smoothly.*
- *Address the sources of inflexibility. Despite great technological advances, IT can be the bottleneck to flexibility and responsiveness – two core requirements that are critical in order to compete in today's dynamic global marketplace. As businesses grow, they add more and more layers of complexity to the architecture. Flexibility needs to be built into the design itself and concepts such as SOA need to be incorporated into every project to provide flexibility for today and the future.*
- *Remove the inefficiencies and redundancies from processes and applications. Inefficient operations can be a significant burden, and redundancies add unnecessary complexity and increase the potential for error. Both can hurt the bottom line. A service-oriented approach to integration can help identify and address ineffective uses of resources and automate processes where appropriate. It can also help you anticipate efficiency issues as you move forward.*
- *Ensure access to reliable data. Sound business decisions and strong business relations rely on data that is accurate, accessible and up to date. Having data in multiple locations that is updated on varying schedules is a costly way to do business and unfortunately is all too common. Today's business environment requires consolidated information sources and improved accessibility to real-time data.*
- *Provide end users with effective interfaces. Customers, suppliers and other stakeholders need to be able to access information quickly and easily, and they need to have consistent experiences for every interaction, regardless of the channel. With a more holistic approach to IT, you can enhance and standardize this user experience.*
- *Reduce the costs associated with maintenance and development. Maintenance is an important and necessary part of the product life cycle. But chronic application rewrites and custom development can generate substantial financial costs and waste valuable time. By improving flexibility and the reuse of software assets by opening the architecture, you can eliminate many of these costs, making the best use of your time and money.*

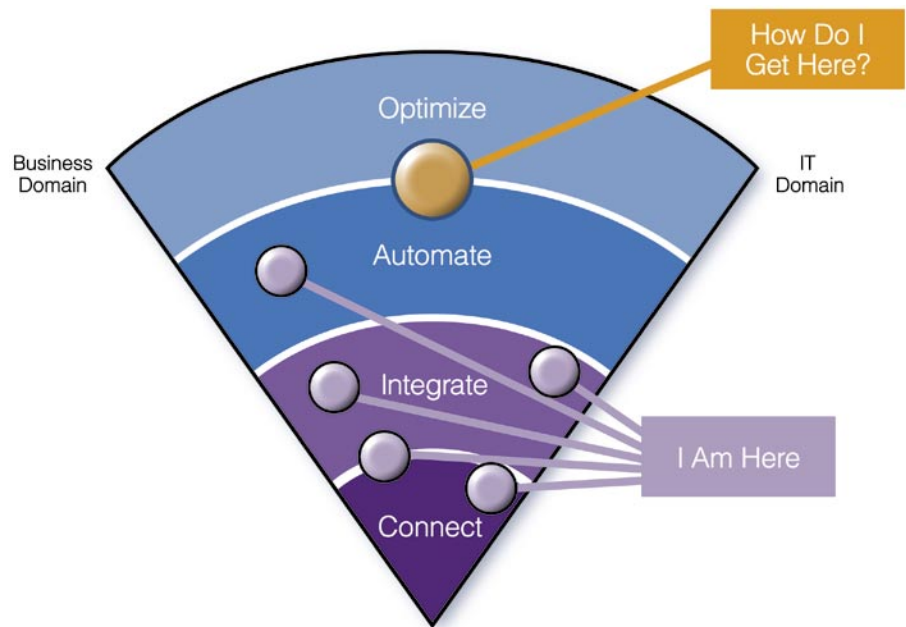
One company that has realized the benefits of SOA is Standard Life, a financial services company with US\$248.4 billion in assets under management and over 7 million customers around the world. Wanting to invest in a solution that would promote reusability, Standard Life implemented an SOA that allows the IT team to reuse existing code. This framework has reduced the amount of new code that needs to be developed, reduced errors, improved time to market, and improved the quality of the applications. With the SOA, the IT team can now support three times as many applications with the same number of staff. As a result of the implementation, Standard Life has seen a savings of £2 million (US\$3.8 million) over the past three years.

Evolution, not revolution

Implementing an SOA with WebSphere is not a revolutionary experience. It's not an event that takes place overnight. It's an evolutionary process. It's a step-by-step movement from where you are today to where you want to be in the future, allowing you to achieve real business results with each step.

At IBM, we have developed an adoption model for navigating the implementation of a flexible IT environment through an SOA. It is a customized integration plan designed to help your business evolve based on your business goals and on the processes that are specific to your business and industry.

IBM SOA Adoption Model



The IBM SOA Adoption Model is a step-by-step framework that can help you plan for and reach your business integration goals.

You start by leveraging the IBM SOA Adoption Model to determine your current state, or readiness level, by taking stock of where you are right now. Then you define the end state, again based on your specific business needs. Finally, you develop the plan for getting to an end state that is defined based upon your business needs and objectives. The plan should be divided into logical incremental projects designed to achieve strategic and demonstrable business results along the way.

The next step in the process is to bring in the appropriate components of the IBM WebSphere portfolio to help you execute on the adoption model. These WebSphere-based solutions are driven by your business goals, processes and requirements. Using integration solutions from WebSphere, you can model business processes and evaluate them to ensure they are meeting business needs. This allows you to really understand the interaction between all of the components of the business. And with the information that is produced, you can look at these processes in new ways. You may decide to modify them—to introduce best practices or leverage other business models. You may also identify other changes that would help optimize your business.

After taking the time to focus on the business side of the equation, modeling the processes and optimizing them, you are in a much better position to take the next step: the IT design plan and implementation. The functionality and capabilities of the WebSphere product family enable the implementation of IT solutions that are:

- *Flexible: They can easily be adapted to meet changes to processes or business requirements.*
- *Componentized: They are made of discrete pieces that can easily be replaced or rearranged.*
- *Scaleable: They can easily be scaled up to meet increased demands.*
- *Consistent: Their interfaces are standardized across all channels.*
- *Reusable: Their components can be used again in a different configuration.*
- *Interoperable: They enable easy information exchange between applications and/or resources.*
- *Modular: They can mix and match, add or remove, business processes and infrastructure.*

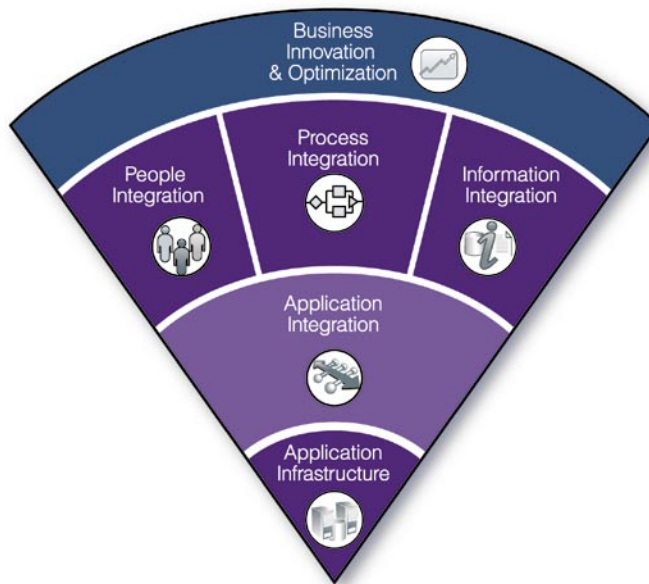
Where you start depends upon the current state of your IT environment and business needs. Some businesses start at the basic level by connecting their assets in order to foster reliable and flexible information flow. Some businesses are ready to begin integrating applications and systems. And some businesses have already started to automate the business processes and align IT with the business goals. There is no “one size fits all” in this process, which is why the IBM SOA Adoption Model is so important.

Once the IT design plan has been implemented, the evolutionary process does not end there. To see the greatest benefit from these efforts, you need to create a feedback loop. Using dashboards to monitor key performance indicators, you can complete the cycle and realize the process optimization and innovation enabled by the IT design. But this time you will have the benefit of business metrics gathered during production.

WebSphere in action

WebSphere software enables responsiveness and flexibility through a set of integration and infrastructure capabilities. These robust capabilities are connected in an open, flexible way that enables customers to realize the value of an SOA. With SOA as the framework, WebSphere integration and infrastructure capabilities are designed to help improve flexibility and achieve operational excellence, while maximizing the value of existing IT assets. Business integration capabilities from WebSphere software support customers at every stage along the journey to an optimized, flexible operating environment.

Integration and infrastructure capabilities of IBM WebSphere software



IBM WebSphere software has specific capabilities that can help you improve your business flexibility throughout SOA adoption.

Connect: WebSphere software delivers application infrastructure capabilities that can provide a robust, security-rich, scalable foundation on which to run your business and enable the reliable and flexible flow of information between diverse applications and systems.

When New Zealand retailer Smiths City needed to transform its process of dispatching purchase orders to clients, it turned to IBM WebSphere for a cost-effective application infrastructure platform. The company was dispatching thousands of purchase orders a day—either by e-mail or by printing out and faxing. They wanted to implement a more secure, reliable method of connecting with trade partners, while at the same time reducing keying errors and cutting back on paper usage.

WebSphere's application infrastructure capabilities now provide a foundation upon which Smiths City's business-to-business messaging services can connect. Documents from new and existing applications can be exchanged more reliably. And overall document processing costs and error rates have been dramatically reduced. "At one time, we faxed thousands of purchase orders a day and just cutting back on all that paper has been an immediate benefit," says Sim Lee, IT manager at Smiths City. "And we don't need to reinvent the wheel—whatever we've done now for one supplier, it's quite easy to replicate for all our other suppliers."

Integrate: WebSphere software delivers application integration capabilities that enable an end-to-end integration framework or Enterprise Service Bus (ESB) that supports interoperability in a heterogeneous environment—removing barriers to building an integrated architecture powered by Web services and non-Web services applications and integration approaches.

As an example of WebSphere application integration capabilities in action, Traveler implemented an open standards infrastructure that reused core service applications and replaced custom application links with standardized connections through WebSphere software.

Traveler operates the world's largest network of airport branches and has expanded aggressively into the commercial foreign exchange industry. Focusing on small- and medium-sized businesses, the company has secured 16,000 commercial foreign exchange clients. Like many successful companies, Traveler has grown with the help of a large number of acquisitions, leading to a disparate collection of IT systems that are complex and difficult to maintain. Over time, performance began to go down and customer service suffered. They needed to integrate the individual components within the IT architecture, preferably without having to rewrite valuable legacy applications.

The results from the WebSphere-based solution were dramatic. Transaction performance improved immediately, and they've realized an 85 percent reduction in the time it takes to process foreign exchange transactions. "It's a robust, flexible platform that makes everyone—on both the business and the IT side—very excited," notes Travelex's Peter Beuken, head of IT, Commercial Foreign Exchange.

Automate: WebSphere software enables the integration of processes, people and information to help companies design, automate and manage operational business processes. It all comes together to help deliver a high performance, responsive business.

Process integration capabilities from WebSphere enable you to model and simulate business processes, integrate and choreograph processes across the organization, extend processes to partners and monitor the real-time performance of business processes. Information integration capabilities from WebSphere enable access to heterogeneous, distributed content and information as if it were in one system and the integration of structured and unstructured information for use in new and existing processes and applications. People integration capabilities from WebSphere further provide flexible, personalized interaction with business processes, applications, content and people across the organization for an enhanced, unified user experience.

Global finance leader Credit Lyonnais used process integration capabilities from WebSphere to streamline its increasingly complicated business processes. Credit Lyonnais provides corporate investment banking and asset management to more than six million clients worldwide. As the company grew, they needed to find a way to automate and consolidate key business processes in order to eliminate manual steps and improve customer service. "The scale of the business that we were experiencing was too much for our processing infrastructure, which resulted in increasing numbers of failed trades," says Dominique loos, head of operations for equity products at Credit Lyonnais.

They initially considered replacing all of their existing systems but decided it would take too long and cost too much. Using IBM WebSphere software, the company refined its pretrade-through-settlement process flows. Credit Lyonnais was ultimately successful in eliminating manual processes, reducing transaction cycle times, reducing the average number of failed trades and improving the quality of service it provides to customers.

Cirque du Soleil used WebSphere integration capabilities to help streamline business processes, deliver real-time information and provide access to information for its mobile work force. This Montreal-based entertainment company is active in 20 countries and has grown to 3,000 employees—and 180 IT applications. The company needed to find a way to integrate its application environments onto a single standardized platform, without sacrificing existing assets, so employees could use a single technology to do their jobs. They also wanted to take advantage of wireless technologies to enhance communication between the company's traveling operations and its headquarters.

Cirque du Soleil realized these goals by integrating people and processes with WebSphere software, which can help businesses optimize user interfaces so users can work more efficiently. "In a company such as ours that is nomadic and geographically distributed, the mobile technology has the potential to add value to our unique business environment," says Danielle Savoie, vice president of information technologies at Cirque du Soleil.

Optimize: WebSphere software capabilities also support companies that want to take a holistic approach to transforming and managing their businesses by aligning strategic and operational objectives with business activities and supporting IT services. Business innovation and optimization solutions from IBM combine market-leading software, industry expertise and best practices to enable you to better monitor, manage, analyze and take action—so you can make smarter decisions, gain competitive advantage and achieve greater performance results.

With IBM's assistance, Fireman's Fund Insurance Company is transforming its property and casualty insurer's application, development and maintenance software into an infrastructure that could reduce the number of major applications by 70 percent while improving customer service. To do this, Fireman's Fund needed to consolidate multiple existing systems for policy administration and billing, many with areas of functional overlap. The company decided to take a holistic approach to transforming its infrastructure by shifting its IT operations to an SOA environment that will consolidate costly, redundant applications.

In addition to using WebSphere software as an architectural platform, Fireman's Fund is relying on IBM's insurance industry expertise and best practices to integrate with industry standards delivered in an SOA. The flexible architecture and resources combine to allow Fireman's Fund to link new IT investments directly to business objectives, such as quickly improving, simplifying and releasing new products to independent agents nationwide. "This move to SOA will directly match our IT resources to our business needs," says Fred Matteson, chief information officer for Fireman's Fund. "Our new operating model will differentiate us in the marketplace by making our technological connections with customers the smoothest in the industry."

The IBM value add

IBM is uniquely positioned to deliver on the potential value of integration and a flexible SOA through our commitment to delivering supporting products, our extensive experience and skill sets, our accumulated knowledge of best practices and our expansive supporting partner community. IBM provides comprehensive integration and application infrastructure capabilities that help you improve the flexibility of your IT environment through an SOA, while maximizing the value of your existing IT investments.

IBM is committed to the SOA concept and adoption model. IBM is a leader in SOA adoption with more than 300 SOA engagements to date. We are continuing to develop adoption model boilerplates that capture IBM's deep industry knowledge and experience. And we have developed a number of "get-started tools" for SOA, including the online SOA self-assessment and the hands-on SOA Jumpstart workshop. We are also committed to SOA education and training—both internally and for our customers and IBM Business Partners.

IBM is committed to strong open standards leadership. IBM has the industry's most comprehensive Java™ 2 Enterprise Edition™ (J2EE) and open standards-based integration infrastructure. Our software supports more than 80 operating system configurations and we have more than 1,000 developers involved in open source software projects. With IBM, you have the ability to integrate J2EE and the non-Java world via a common Web services model.

IBM is committed to further delivering the spectrum of capabilities required for an SOA. This includes service-oriented application development tools from IBM Rational® software and services management and security products from IBM Tivoli® software. And IBM continues to round out the WebSphere product family, having invested US\$5 billion in technology acquisitions.

What's more, IBM is committed to the development and continuous improvement of the WebSphere product family, to further our ability to fulfill our customers' integration and infrastructure software needs. In addition to continuously enhancing our broad integration portfolio, we've also developed hundreds of pre-built connectors and integration accelerator products, to help customers get started quickly.

IBM is distinguished by the expertise of its people, both in development and in services and support. IBM has accumulated a comprehensive knowledge base and a suite of best practices. Through our industry experiences implementing integration projects and SOAs with the WebSphere product family, IBM has learned the value of focusing on business and IT in tandem, of leveraging small incremental wins to prove value and gain experience and credibility, of establishing good governance and of having the right level of expertise and skills.

IBM has over 6,700 developers working on SOA and Web services, and WebSphere software has served the needs of over 87,000 WebSphere customers.

IBM's focus on business and services orientation

WebSphere has long been equated with “application server,” but it has grown far beyond that. The “WebSphere story” is a story of business—ensuring that IT serves the needs of the business, not vice versa. WebSphere is about allowing businesses to integrate the things that need to be integrated to enable our customers to leverage IT to create strategic competitive advantage for their businesses. It’s about helping businesses use new technologies to optimize their processes and realize their full potential. It’s about applying an evolutionary process to move your business forward.

Learn more

For more information about the WebSphere family of products, visit

ibm.com/websphere and ibm.com/soa



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09-05
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- 1 IBM On Demand Business Impact Research Analysis, December 2004.
- 2 Cutter Benchmark Survey, "Service-Oriented Architecture: Excitement, Value and Confusion," August, 2004.