

Web Services:

The Executive's Guide

This Executive's Guide introduces Web Services from a business perspective. With a minimum of technical jargon, you will learn what Web Services are, and what you need to do to take advantage of them. In addition, you'll learn the critical role that you – as a business manager – will play in bringing Web Services to your business.

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Super Technology or Alphabet Soup?

If your business depends on the latest technology, you've probably heard about Web Services. Unfortunately, you commonly hear two types of descriptions of Web Services. One description seems to be a new crop of acronyms to learn: XML, WSDL, UDDI, WSI, ebXML, etc. The other story is the familiar prediction of a new super-technology that will somehow change everything in your business.

The "super-technology" predictions are especially confusing. In today's business environment, smart managers are naturally cautious, especially about new technology hype. What's worse, there are a lot of different predictions about Web Services: are they a new technology for application integration, business transactions, or consumer-oriented communications? Or are they all of the above?

This Executive's Guide introduces Web Services from a business perspective. With a minimum of technical jargon, you will learn what Web Services are, why they are important to business, and what you need to do to take advantage of them. In addition, you'll learn the critical role that you – as a business manager – will play in bringing Web Services to your business. This Guide concludes with a handy summary – the Ten Secrets of Web Services Success.

What's the Real Story?

Web Services are important. And yes, the alphabet soup is pretty confusing – not only confusing, but still evolving. However, if your business relies on enterprise applications, Web Services should be on your radar. Despite the hype, they may fundamentally change the way your business works.

Web Services are not mysterious. They're enterprise applications, much like the ones you use today. The difference is that they use languages and protocols based on a universally accepted

standard called XML to function more intelligently. Unlike typical applications, however, Web Services literally describe themselves to the outside world – telling what functions they perform, how they can be accessed, and what kinds of data they require. In a nutshell, Web Services are applications that do a better job of communicating – with devices, with people, and most importantly with each other.

What Do Web Services Do?

As we said, Web Services are really just applications, so fundamentally they do what your applications do today. However, the way they do things is different. Consider three things that Web Services are especially good at:

Integration: In most large organizations, the data and logic of one application are basically useless to other applications. When an application and its data are isolated from other applications, we often say that they are in “silos.” In some of the most technology-savvy companies today it is not unusual to find a billing application that cannot ask a shipping application whether a delivery has been made. Application integration is one of today’s most important business problems – one that can typically cost millions of dollars to resolve. In contrast, Web Services are better at sharing data and functions. The result is that the “silos” come down, and previously isolated systems can talk to each other, presenting enormous opportunities for improved business performance.

Access: Web Services are especially good at providing access through different interfaces. A Web Service can have a dedicated client application, but it can also be readily accessed through browsers, wireless devices, voice-activated interfaces, and so on. Best of all, adding new access methods is much simpler than with a traditional application. For this reason, Web Services are especially useful when an application requires multiple access methods. For example, if an inventory application can be accessed and updated through a Web portal, a wireless device, or

even a customer's Web page, the business can accomplish more with its inventory system and data.

Flexibility: One of the most important innovations in Web Services is “machine-to-machine communications.” This means that a Web Service can ask another Web Service to do something, and that Web Service can ask another Web Service to do something, and so on. In fact, many Web Services are really just aggregations of other Web Services. This can lead to some very complex situations, but it's fundamental to the promise of Web Services: in the future, all your information technology, and that of your business partners, can be called upon to respond to new customer needs and new market opportunities.

Future Perfect?

As we said at the beginning of this guide, you hear a lot about Web Services today, but you don't see many of them in real life. Actually, the Web Services in use today tend to be behind the scenes, so on the surface you don't see any obvious difference in enterprise applications. More advanced Web Services standards are still emerging, and many important technical details are still being defined. For this reason, although Web Services promise to build bridges linking different companies, most companies today are first implementing Web Services internally. Also, the most significant commercial Web Services products for individual users – such as those being developed by Microsoft – are either brand new or still in development.

Some of the most valuable Web Services in use today are used to integrate enterprise applications within a company's firewall. In the future, Web Services will extend outside the firewall, to help define networks of business partners, and facilitate communications among businesses, their customers and suppliers. Web Services will specify methods for exchanging money, goods and services, so that enterprise applications can behave more intelligently, enabling more efficient, more profitable business interactions.

Smart managers are cautious about any technology that promises a perfect future, but is hard to pin down in the present. Certainly there is a lot of hype about Web Services, but there is also a benefit in the present tense: Web Services present a common denominator among scores of different hardware architectures and platforms. They have been adopted aggressively by the developers of every major business technology platform, including Microsoft, IBM, Sun and Oracle. Their promise for the future makes them a smart investment in the present.

Web Services ROI

We've emphasized a number of things about Web Services. First, they're applications, much like the ones your company uses today. Second, they're better at doing a number of things, such as integration, access, and aggregation of functions. Finally, we've seen that Web Services are not yet widespread in the industry, so you haven't missed the boat yet.

The question we must address, however is this: what business value do Web Services really offer? Perhaps in the future Web Services will be everywhere, but right now, you need to understand their importance to your organization. The return on your investment will depend on how well you identify an opportunity for Web Services, and how well you implement them. Much more than your choice of vendor, your choice of business strategy will determine whether your initial experience with Web Services is successful.

Your role in setting a Web Services strategy

This is where your role will be most important. Web Services are a powerful technology for integrating business systems and processes, but they only pay for themselves when they are used to build a better business. Take a look at your organization. Do you have business processes that traverse discrete organizations, processes and software applications? Could you do a better job of providing a consistent, integrated experience for your customers? What about your interactions

with other businesses? Are they primarily manual processes, or can your systems interoperate without redundancies and human interventions?

Example: an opportunity for Web Services

Consider the various business processes that take place in the manufacture and sale of a personal computer. Note the distinction between “inside” services – functions performed by the PC maker — and third-party services that the company is effectively reselling as a part of its product.

“Inside” Services	Third-party services
• Design & product development	• Manufacturing & assembly
• Marketing, branding & advertising	• Work in progress & finished goods inventory
• Testing and product packaging	• Software licensing
• Billing	• Sales tax calculation and collection
• Product registration and support	• Payment processing & transaction security
	• Shipping & delivery

Although the PC maker no longer “makes” the PC, and many business functions are provided by third parties, the PC company “owns” the transaction with the customer. A successful business integrates its internal functions – for example, can billing and product registration be part of a single process? In addition, it focuses on core competencies rather than trying to do everything. For example, no successful PC vendor would try to manage its own shipping fleet. The key to efficiency and quality of service is the integration of all business functions into a seamless process. This integration of business processes requires integration of the applications that support these functions – even if many of those applications belong to other companies.

This is the opportunity for Web Services. The role of the business manager is to see the forest, not just the trees. Is the customer experience a seamless whole? Are redundancies and manual processes minimized? Are the various systems “speaking the same language” even if they’re

owned by different organizations? While a technology professional can navigate the alphabet soup of Web Services, the role of the business manager is to develop a Web Services strategy that produces value for customers, business partners, and the company itself. But where to start?

Step by Step

The good news is that Web Services is not a technology that requires you dive in headfirst. You can adopt Web Services incrementally. For example, you can start with a departmental project, and gradually open your Web Services to other business units, and eventually business partners. With each step forward, you can validate the key Web Services technologies, and demonstrate the business value of the Web Services architecture. Over time, you will have developed a successful Web Services operation.

Your Web Services Architecture

A final word about Web Services: even more than your current enterprise applications, your Web Services will determine the capabilities and the limitations of your business – both within your organization and in the world at large. Each Web Services decision you make will contribute to your overall Web Services architecture. Just as you can't get coffee without the cup, you can't get a Web Service without establishing some of the principles of your Web Services architecture. Be aware that even your initial Web Services projects will play a role in establishing your Web Services architecture – essentially defining how your business will operate in the next generation of enterprise technology.

This message shouldn't scare you away from Web Services. On the contrary, it should lead you to seriously think about building a Web Services architecture that best fits your organization's needs. To help you with this task, a list of the "Ten Secrets of Web Services Success" is presented below.

10 Secrets of Web Services Success

You'll learn a lot as you incorporate Web Services in your company. However, there are a few principles you should understand before you start, and it will help to keep them in mind as you build your Web Services Strategy:

- **Web Services are enterprise applications.** Web Services are applications that your business will depend on. Build and manage them with the same priorities you apply to any enterprise technology. Insist on security, quality assurance and management of Web Services throughout their lifecycle.
- **Web Services can be adopted incrementally.** Unlike some technologies, you can usually start small with Web Services. As a first step, build a new Web Service, or incorporate Web Services technologies into an existing application. You can take on more ambitious Web Services initiatives as you gain experience.
- **Building a Web Service is an architectural decision.** Building a Web Service involves making lot of decisions about how your business will operate. Don't let your Web Services architecture evolve in an ad-hoc manner. Establish your long-term objectives and business principles for your Web Services at the start.
- **Web Services are a "how," not a "why."** You must have a business purpose for using Web Services. Before building your Web Services architecture, consider your business objectives, and plan for regular review to see whether your Web Services are bringing you closer to your business objectives.
- **Web Services technologies are based on open standards.** What makes a Web Service special is its XML-based components. Fortunately, the designs of these components are specified by independent standards bodies. Stick to the standards, and you will avoid strategic dead-ends.

- **Software companies don't have all the answers.** Unsurprisingly, some software developers will tell you that you must select your Web Services technologies right now, or you risk missing the boat. First, don't rush. Second, remember that Web Services standards don't inherently favor any brand of software.
- **Don't worry about the Web Services "wars" between technology giants.** Currently there are two popular environments for Web Services: Microsoft's .Net and the Java 2 Enterprise Edition (J2EE). You'll build your Web Services on one (or possibly both) of those environments. Go with the technology that you're most comfortable with, and the one that matches the current skill set of your staff.
- **Participate in business alliances, but selectively.** Many Web Services networks will appear in the near future, and many will grow into important business forces. You will benefit by participating in the early development of these alliances. Some proposed networks will never really get off the ground. Choose carefully.
- **Web Services will change the way your people work.** Your initial projects may not have a strong impact on the roles and responsibilities of your employees. However when you start using Web Services to work more closely with your customers and partners, your business will run differently. Prepare your people for the change.
- **Inform your organization about Web Services at every level.** Your technologists need to stay abreast of the major developments in Web Services standards and technologies. At the same time, your business managers should closely follow the changing role of Web Services in your company and your industry.

About Infravio

Based in Redwood City, Calif., Infravio is the only company that provides Global 2000 enterprises with a complete platform for developing, deploying and managing Web Services. Infravio's software enables enterprises to immediately take advantage of Web Services to more easily integrate applications, both behind the firewall and externally. Infravio's model-centric, Pure XML approach makes Web Services fast, simple and reliable. You can learn more about Infravio by visiting www.infravio.com or sending e-mail to info@infravio.com.