

# THE SERVICE-ORIENTED APPROACH: GETTING STARTED

Embracing a **service-oriented architecture** is crucial to any company hoping to build a competitive edge—but where do you start? Developing a clear strategy to address each step in the SOA life cycle is the key to success.

**E**nterprises today face significant IT-related challenges that, if left unaddressed, could have a major impact on how well they compete in the marketplace.

For one thing, IT resources and budgets can't keep pace with the changes required to meet new business demands. Enterprises increasingly are expected to respond more quickly to customer demands, and at the same time ensure security, data integrity and regulatory compliance.

Many companies are also constrained by their current IT architecture, which doesn't support the level of flexibility needed in today's rapidly changing business environment. Furthermore, many enterprises have a lot of intellectual capital tied up in older, legacy systems. Much of the IT expertise today is focused on these older systems rather than on newer Web-based technologies.

## The Move to SOA

A growing number of enterprises are addressing these and other challenges by moving to a service-oriented architecture (SOA). An evolution in distributed computing, SOA is an architectural concept that defines the use of services to support a variety of business needs.

In a service-oriented environment, organizations make resources available to

participants in a network as independent services that can be accessed in a standardized way. Services are defined using a description



language, and they have invokable interfaces that perform specific business functions. Each interaction within a SOA environment is independent of all other interactions as well as the protocols used by different devices. Because systems interfaces aren't dependent on any single platform, any client device running any operating system in any language can use a service.

SOA is becoming more widely accepted as enterprises learn about the benefits of the architecture. Stamford, Conn.-based research firm Gartner, Inc., predicts that 80 percent of software development projects will be based on SOA by 2008. The firm,

in a special report released in June that named SOA as one of the five hottest technology topics of 2005, said SOA and other technologies will drive a fundamental change in how applications are built and delivered.

"[SOA] is emerging in the marketplace as a vehicle for organizations to bring business objectives and IT together," says Framingham, Mass.-based research firm IDC. The organizations that are introducing SOA into their enterprises "are driving dynamic business, and in turn, are achieving significant real-time results," IDC says.

Indeed, many experts agree that adoption of SOA can lead to some significant benefits. One of the biggest potential gains is that organizations can see dramatically reduced integration costs. SOA provides a standardized approach to integration that avoids the pitfalls of historical, proprietary integration solutions. With a service-oriented architecture,

## JUMP-START YOUR SOA STRATEGY: ADVICE FOR CIOs AND IT LEADERS

- Determine the need for an SOA or services-based application in your organization, taking into account the current and future requirements of the business. Once the need is established, get buy-in for an SOA adoption from C-level executives and business managers.
- Create a strategy that addresses the different steps in the SOA lifecycle, and develop an SOA center of excellence staffed with technology and business people who will help select standards and products to build the SOA environment.
- Adopt SOA in a phased approach, beginning with a low-risk application before expanding to other applications, across business divisions and ultimately to an enterprise SOA infrastructure.
- Report regularly on SOA developments and successes, to keep people in the organization and key business partners aware of progress. Share "lessons learned" among development and implementation teams to avoid duplicating mistakes and to repeat successes.
- Measure on a regular basis the results of the SOA adoption, in terms of added business value for the organization.

applications already know how to work together so there's less translation involved and therefore less development time needed.

## TOP 5 BENEFITS OF SOA

1. Reduced integration costs
2. Improved business/IT alignment
3. Extension of existing IT investments
4. Faster time to assemble new applications
5. Lower IT maintenance costs

### Slow Adoption

Despite these potential benefits, the implementation of SOA to date has been relatively slow. A survey by *CIO Insight* magazine in June 2005 showed that one-third of the more than 300 companies surveyed are still evaluating or tracking service-oriented architecture technologies, and 25 percent said they have no interest in SOA.

Why the slow adoption of SOA? One reason is that many organizations lack the proper skill sets needed to make the move from traditional architectures to a service-oriented one. SOA is still relatively new, and as with any new technology there will be a shortage of skills in the early going.

Another reason for the slow adoption is corporate politics and bureaucracy. It takes time—particularly in large organizations that have multiple layers of management—to reach agreement on such a major shift in architecture. Some managers naturally want to cling to familiar architectures that have been in use for years.

Then there is the lack of budget. SOA requires an initial investment for the development of the portfolio of services and deployment of SOA infrastructure, and many companies continue to keep tight controls on IT spending.

Finally, there is a lack of SOA governance policies and mechanisms in place. Organizations need documented policies and enforcement mechanisms for securing and managing services in order for their SOA deployments to be successful.

The bottom line is that the move to SOA represents a significant shift in architecture, and many organizations simply don't know where to begin. But given the real benefits a SOA implementation can yield, it behooves CIOs and other IT executives to champion SOA adoption within their organizations.

### Embracing SOA: The Life Cycle Strategy

The key to a successful SOA adoption is putting in place a

strategy that addresses the different steps in the SOA life cycle. The components of the SOA life cycle include:

- **Development of services.** The building and deployment of Web services and service-oriented applications.
- **Integration of services.** The integration of a portfolio of reusable services to exchange information between applications.
- **Orchestration.** The combination of Web services in orchestrated steps to create seamless process flows and rapidly develop composite applications.
- **Security.** Securing the SOA environment through service authentication, encryption and authorization management.
- **Management.** The deployment of services must be supported via a services directory. This component also includes the management of service-level agreements.
- **Access to services.** Access can be via a Web portal, desktop client or wireless mobile device.
- **Analysis of services.** The monitoring of services, events and business processes across the IT infrastructure.

### Middleware for SOA

Once the SOA adoption strategy is mapped out, it's time to evaluate solutions based on how well they address the

requirements of each phase of the SOA life cycle. Because service-oriented architectures obtain many of their core services from the mid-tier, middleware is the critical enabler in an SOA environment.

Indeed, middleware tools and services can help organizations address each phase of the SOA life cycle, with the end goal of creating a service-oriented environment that will position them to respond to business change rapidly and effectively. Today's middleware solutions range from application development and integration tools to identity management, collaboration and business intelligence (BI) reporting. These vital business services, enabled

by middleware, allow companies to support business expansion, deliver greater insight into business issues and reduce exposure to risk.

Oracle Fusion Middleware is an example of a comprehensive middleware product family designed to implement the complete SOA life cycle, including products for service development, integration, security, management and monitoring. Today, there are over 26,000 companies worldwide actively using various components of Oracle Fusion Middleware.

The benefits of moving to a service-oriented architecture are clear, as a growing number of organizations are discovering. At those enterprises that are still using older architectures, CIOs and other IT leaders need to explore service-oriented technologies and put in place an SOA life cycle strategy. ■

