THE MIDDLEWARE [R]EVOLUTION

Service-oriented architectures are poised to transform business by enabling more flexible and agile IT infrastructures. The key change agent in this transformation is middleware.

An enormous amount of ink has been devoted to the topic of service-oriented architectures (SOA) over the past few years. Like any idea touted as "the next big thing," SOA has been put through the wringer by analysts and pundits, had its tires kicked by the technical gurus, and had its claims of business-changing abilities challenged by the financial folks. So how has SOA fared?

Surprisingly, unlike many "big ideas" to come before it, SOA has emerged (mostly) victorious from these battlegrounds. Now, it is fairly universally accepted that businesses will need to transform their client/server infrastructures into services-oriented setups to stay competitive. Indeed, the focus of IT has shifted from a technology-centric approach to a flexibility-driven approach measured in time-to-delivery and ability to change.

SOA embodies this new approach. Unlike client/server systems—characterized by tangled webs of tightly coupled integrations that are expensive to maintain and update—SOA is based on loosely coupled services whose interface exists independently of the implementation. Services can be built, used and reused based on changing business need, and easily integrated across heterogeneous platforms.

Says market researcher IDC, "The challenge posed in today's complex and volatile business atmosphere is to create an IT environment designed for the unknown, with detailed business policies and rules abstracted from fixed functional and operational capabilities. It is the ability to deliver these abstracted capabilities that underlies the strength of SOA."

SOA Business Benefits

So what's the payoff? As IT professionals and their business counterparts can tell you, such a major shift in a company's technical infrastructure must be driven by its ability to produce quantifiable business benefits—or it's highly unlikely that the project will get funded.

Early SOA implementations have shown a number of benefits, enabling companies to:

- Respond to business change more quickly and efficiently
- Use and reuse existing IT assets more effectively
- Enable greater consistency and accuracy across business processes
- Simplify application integration efforts
- Reduce risk and streamline compliance

Yet even though most corporations realize the benefits, SOA adoption has been sluggish at best. Why the disconnect? The bottom line is that changes of this magnitude require strategy, and many corporations understandably don't know where to start.

Getting There with Middleware

The technology requirements of SOA combined with the need for accelerated change and increased flexibility from line-of-business managers put middleware squarely on the agenda of today's IT strategists. That's right—middleware.

How did middleware evolve from necessary evil—proprietary plumbing that glued disparate systems together—to one of the most strategic areas of IT and business today? Enter SOA. Service-oriented architectures get many of their core services directly from middleware, including critical security functionality, deployment and management capabilities. You'll also find business intelligence, content and collaboration tools, as well as portal capabilities that allow connections to customers and partners enabled at the middleware level.

The convergence of these critical business services at the middleware layer is reflective of the mid-tier's strategic position within the enterprise. The broad range of capabilities offered by today's middleware products enables companies to:

- Support and accelerate business expansion
- Deliver greater insight into business issues and drivers
- Reduce exposure to risk and support governance initiatives

Using these tools within a standards-based SOA environment, corporations can leverage data in more strategic ways to deliver accurate, actionable information to business decision-makers when and where they need it.

It's not difficult to see why selecting the right middleware solutions should be among the top priorities of CIOs and other technology decision makers.

Suite Advantage

The fact that SOA is such a hot topic can be both a blessing and a curse for technology strategists. SOA's popularity means that many vendors are paying close attention to it, so products abound. But while choice is certainly good, it can also make difficult decisions even more complex and confusing as the number of vendors hawking SOA solutions continues to grow.

Analysts at IDC offer the following insight: "The complexity of implementing multiple point-to-point middleware products drives IT developers and their management towards 'suites' that can do it all more easily" (Worldwide and North America Application Deployment Software Forecast Update, August 2005).

When viewed in terms of business and operational needs, this strategy makes sense. The process of picking so-called "best of breed" products from different vendors is not only time-consuming, it's far from foolproof. As many IT managers know, a vendor's claims of interoperability are never truly validated until the product is deployed. And when the process involves the systems and data that keep the business running, mistakes that cause downtime can be highly damaging.

Choosing one middleware provider speeds implementation time and results in fewer integration headaches, as all products in the suite are engineered to work together. Suites also cost less to manage, since technical staff don't have to learn multiple management interfaces or figure out how to turn data from many sources into usable information. The more skill sets can be reused, the lower the overall cost of deployment and ownership.

Finally, a single-sourced solution can reduce time and resources required for change and patch management—a growing concern for IT leaders. Again, since the changes emanate from the same source, interoperability issues decline and testing and validation cycles are shortened.

One vendor that purports to offer a complete middleware solution is Oracle. Oracle Fusion Middleware is a comprehensive family of products designed to address integration challenges while laying a foundation for developing, deploying and maintaining a service-oriented architecture. In keeping with the strategic nature of middleware solutions, Oracle Fusion Middleware helps organizations deliver on multiple strategic initiatives including customer acquisition and retention, mergers and acquisitions, and corporate compliance.

One Step Ahead?

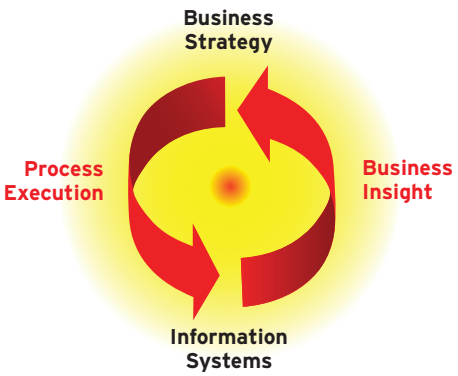
Oracle makes a number of claims about its middleware products. First, it describes Oracle Fusion Middleware as "comprehensive." An examination of the product family shows that it includes tools for application development, integration, identity management, collaboration and business intelligence reporting, among others.

Second, the company calls Oracle Fusion Middleware "hot-pluggable." Typically a term used to describe capabilities of hardware such as memory or hard drives, hot-plug in this context means that Oracle's middleware products can be integrated with middleware products and databases from other vendors. Oracle asserts that its products interoperate with middleware technologies and business applications from IBM, Microsoft and SAP, as well as non-Oracle J2EE runtime, tools, messaging and security components.

Finally, Oracle claims reduced risks with Oracle Fusion Middleware. Scalability, availability and security are must-haves for business and IT managers as companies continue to increase reliance on systems and information to support day-to-day business operations. With its grid computing initiative, the Oracle product family inherits additional scalability, availability (24x7x365), and computing efficiencies that can be leveraged across any enterprise's mid-tier. Oracle's identity management solution provides the critical security functionality such as provisioning, single-sign-on and federation capabilities for Oracle and non-Oracle applications.

THE FUSION EFFECT

Expertise in both process and information management are central to Oracle's corporate and middleware strategies and solution delivery. The convergence of process and information enriches insight into business activities and also accelerates and optimizes enterprise efficiencies. These advantages are critical as leading organizations seek to align IT efforts with business strategies. Several benefits ensue:



- Streamlined business and IT operations
- Accelerated and optimized decision-making
- Reduced corporate risk and business disruption
- Enhanced ability to react to change and manage costs

Plan to Succeed

The road to a successful SOA deployment may be rocky, but companies can take certain steps to smooth out the bumps. When mapping out an SOA strategy, remember:

- **Business priorities rule.** Gather key stakeholders including the CEO, other senior executives, as well as IT and LOB managers and figure out how a SOA can help meet business goals.
- **One step at a time.** A "big bang" approach to SOA adoption is not only disruptive and painful, it's unnecessary. Move slowly yet deliberately by creating a service framework around existing applications.
- **Think ahead.** The SOA foundation needs to support the business beyond next week. Interoperability must be considered early on when building services, because those services will be used for many different projects.

With proper planning and due diligence, companies can gain significant benefits from a service-oriented architecture today and in the future. ■