Choose Your Next SOA Implementation Step Carefully

In our interactions with Fortune 2000 companies, two central messages are becoming clear. First, many companies began accepting a vendor marketing message in approximately the 2003 timeframe. This marketing message focused on how implementing an Enterprise Service Bus (ESB) was the path to achieving successful Service-Oriented Architecture (SOA) implementations. In some cases, the marketing message went as far as to say SOA = ESB. While an ESB certainly provides many capabilities useful to a successful SOA implementation, it doesn’t provide all required capabilities. Some ESB products are also based on a vendor proprietary implementation strategy that makes it difficult for the ESB to interoperate with other vendor SOA infrastructure products. Second, in an environment where mergers and acquisitions (from both a business and product vender perspective) are commonplace, multi-vendor product interoperability is an important aspect of IT strategies and budgets. Few companies can afford to replace major portions of their IT infrastructure because one division uses different vendor SOA products than another division. These budget pressures are placing an increasing emphasis on multi-vendor product interoperability and federation of SOA capabilities across the enterprise.

For companies that have implemented an ESB but no other SOA infrastructure capabilities or have made large investments in a multi-vendor environment, the essential question is “what is my next investment to increase our overall SOA capability?” Answering this question wisely is very important because a wrong decision could be very difficult and expensive to correct later. So what are the parameters that allow an organization to choose their next step wisely? The best way to answer this is to start with a reference architecture. Simply stated, a reference architecture is a template solution for an architecture that consists of a set of common (or commodity) capabilities and their interfaces. The key phrase in this definition is common capabilities and their interfaces.

For a SOA infrastructure, example common capabilities are: metadata services, data services, security, service registry/repository, enterprise service management, messaging, data/protocol adaptation, and orchestration. Regarding the interfaces, there are essentially three ways to approach them.

1. They can be defined by product vendors. However, this typically leads to unique definitions and a lack of interoperability with the interfaces provided by other vendor products.
2. They can be defined by your organization. However, this approach also typically leads to unique definitions and a lack of interoperability with the interfaces provided by other products.
3. They can be defined by open standards bodies such as OASIS or WC3. Many of these standards exist today, and they are commonly referred to as the WS-* standards. Essentially, these standards allow for the specification of a highly reusable, web services based reference architecture that promotes platform independence, data sharing, and multi-vendor product interoperability.

Open Standards offer a wise next-step strategy. The diagram below is a visualization of an open standards based SOA Reference Architecture using standards from OASIS, W3C, DMTF, and others.
Open Standards Based Reference Architecture Diagram

The square boxes in the diagram are representative of the common (or commodity) SOA Infrastructure capabilities required by a highly robust, enterprise SOA infrastructure implementation. By using the WS-* open standards, (e.g., WS-Metadata Exchange, WS-Security, and WS-Management) an open standards based reference architecture is achieved that provides interoperability in a multi-vendor environment. Thus, a high degree of reuse is obtained and vendor lock-in is prevented. This characteristic is very important to enterprise SOA implementations for five reasons:

1. It allows for the definition of enterprise level design patterns that specify how to perform standardized integration and implementation of multiple vendors and/or open source products. In the ideal case, the design pattern utilizes both the WS-* based machine-to-machine interfaces as well as JSR-168/WSRP compliant portlets. Thus, both machine-to-machine and human user interfaces are provided. Additionally, whenever possible, the portlets perform all interactions with the backend vendor and/or open source products via the WS-* web services. In many cases, the JSR-168/WSRP portlets also provide access to user interfaces provided by the vendor and/or open source products. This type of design pattern approach is especially important when a heterogeneous set of multi-vendor products is in use across multiple groups/divisions within an organization.

2. It provides the proper standards and web services mechanisms to enable reuse and federation across multi-vendor and multiple SOA implementations.

3. It provides the proper standards and web services mechanisms to incrementally add the next SOA infrastructure capability without creating a vendor lock-in situation.

4. It provides web services for data exchange utilizing data formats based on open standards such as XML.
5. It provides a web services based approach to both design and runtime governance. Specifically, the web services provided by the Services Registry/Repository component can be composed with the web services provided by the Enterprise Services Management component. Thus, by using BPEL orchestrations, composite web services, or a web application, design and runtime governance can be efficiently implemented and consistently enforced.

Seros believes, as do a growing number of industry experts, that an open standards based reference architecture is the foundation for enabling an agile SOA environment that meets the needs of the dynamically changing business environment. Many Fortune 2000 companies along with the Department of Defense are building such a blueprint with either internal or consulting resources. This approach allows your organization to focus on providing SOA infrastructure as commodity capabilities accessible via standardized interfaces across your enterprise. In this way, your next SOA step as well as specific vendor and/or open source product choices can be made much more rationally. These choices will now align with your organizational business objectives that could include driving down the overall cost of IT infrastructure. In fact, you will be “choosing wisely” because you have taken large steps to avoid specific vendor/product lock-in while remaining flexible to changes in the vendor/open source market place, technology, and underlying software platforms. Ultimately, you will have made the wise decisions that are critically important to obtaining the business leverage and return on investment a SOA foundation provides.

Seros has already implemented many of the capabilities shown in the Open Standards Based Reference Architecture Diagram with a set of vendor and open source products. The Seros solutions can be provided at a fraction of the cost and time your organization will invest to create this same capability. Give us a call at 703-841-5977 for a demonstration and more information.

To learn more about Seros, please visit us on the Web: www.seros.com.

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