

**3 THINGS
BUSINESS DECISION-MAKERS
NEED TO KNOW ABOUT SOA**

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Anyone even peripherally exposed to business media that touch on enterprise application technology has seen the term service-oriented architecture (SOA) bandied about in advertisements and articles. Major enterprise applications vendors are using the term SOA as a marketing buzzword and are indeed moving their product offerings in directions that deliver the flexibility and total application cost reductions that SOA can offer. But given the central role that SOA is playing in information technology, it is important for professionals involved with specifying and purchasing enterprise applications to get beyond a buzzword level understanding of what SOA is and what it is not.

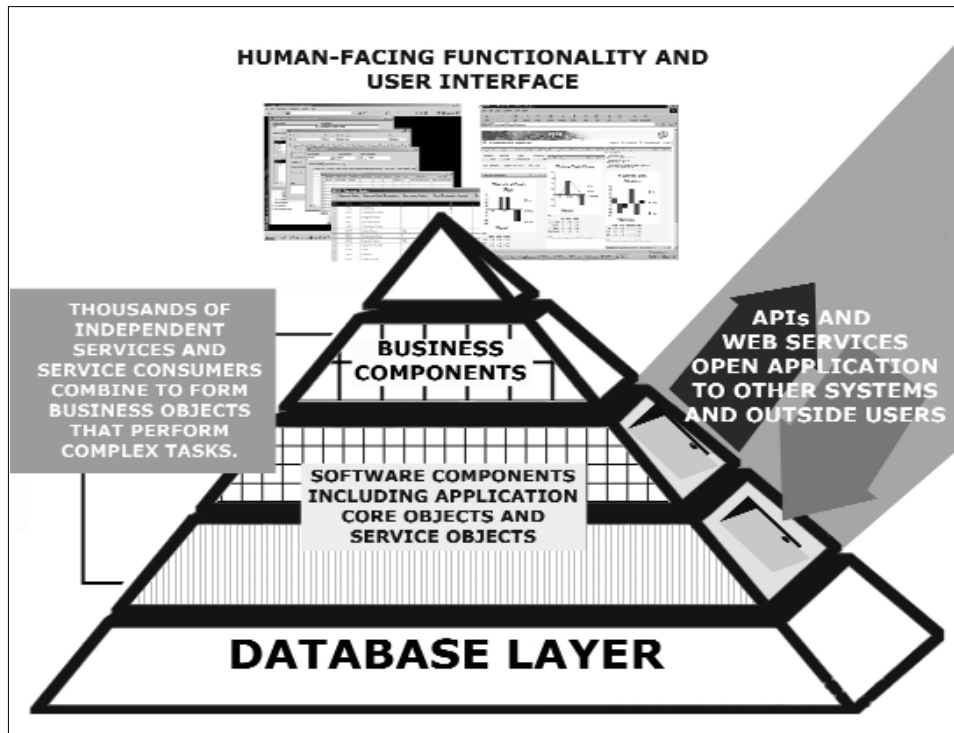
SOA essentially implies an application architecture made up of loosely coupled “services” (for example the various software features that are used in creating and processing a customer order), and service “consumers” (other services that need to create customer orders, for example). Most business software applications can, of course, create customer orders. But a business application that is made up of services allows one to easily “rearrange” the processes that create the need for a customer order, and how that customer order is created. This process tends to be very rigid in non-SOA applications.

An SOA-based application architecture works in much the same way as your Web browser as it accesses functionality through the public Internet. Regardless of whether you are using Internet Explorer®, Netscape®, FireFox® or Opera, or what version of those browsers you are using, you can still access information and interact with systems on the Web. The relationship between Web sites, databases, java applets, and other executable files on the Internet and your browser is loosely defined. Web site functionality may change without affecting the rest of the Web or your browser.

The various features in an SOA-based application environment are relatively self-contained and are not overly reliant on the entirety of a system to operate. In IFS Applications, for instance, a single functional module like a work order could easily run with or without the presence of various other application features with which it might interact. This degree of functional autonomy allows individual portions of an application to be changed or updated relatively easily and less expensively

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than would be the case when an application environment is constructed with large, monolithic blocks of code. With SOA, application vendors can more rapidly bring new and updated functionality to market, and end-user organizations can implement that functionality faster and with less disruption of their business systems. The most advanced SOA-based enterprise software allows for easier and much faster implementation and upgrades and can be rolled out for a customer in phases, reducing disruption caused by a big-bang implementation. During a time when technology is advancing so rapidly that it is hard to keep up, the advantage of SOA is obvious.



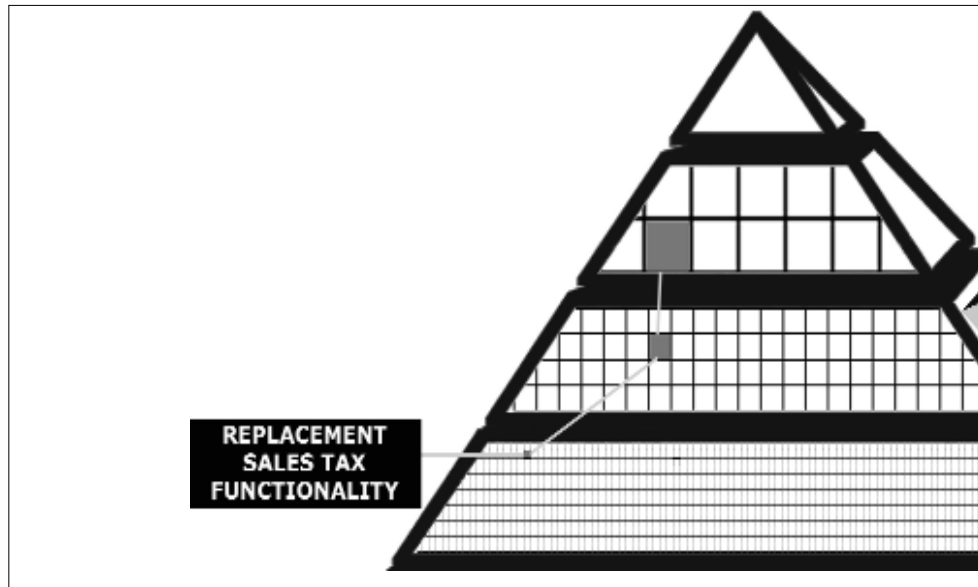
Given the increasing importance of SOA, these three salient ideas will help you make informed decisions when it comes to your company's enterprise applications.

Granularity, granularity, granularity

Those are perhaps the three most important words when it comes to evaluating the effectiveness of SOA in any enterprise applications architecture. For SOA to deliver value, the software features that make up the system must be numerous and small. Small, component-based features can be brought online gradually, eliminating the cost and stress of a large-scale implementation that comes with a less-granular, monolithic technology stack.

A granular approach focusing on smaller, componentized features united by

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SOA also allows your enterprise applications to evolve with your business. Markets, technology, regulation and individual enterprises change gradually over time. But large, monolithic enterprise applications are more difficult to upgrade, and as a result, have trouble changing at the speed at which 21st Century businesses tend to move. In a worst-case scenario, a company's needs would change so drastically that an enterprise application would need to be replaced in its entirety.

Imagine that you need to change the way sales tax is calculated in your enterprise application. In a traditional, monolithic application, you would need to build this new functionality into your application stack, following a process that would be slow and costly. In an SOA-based system you could use your SOA framework to "reach across" to another sales tax module, either internally or across the Internet. That module could provide the up-to-date tax methodology. By separating this functionality from various other portions of your enterprise software that need to incorporate tax calculations, your SOA-based application makes better use of system resources. Perhaps more importantly, it becomes relatively simple for your enterprise system to evolve to accommodate changing regulation or business models. You or your application vendor can "swap out" these tax-related portions - or perhaps just a portion of the tax-related application features - in favor of updated functionality.

System architects regularly debate exactly how granular or how "coarse grained" services should be. Coarse-grained services tend to be easier to construct but can return an enormous amount of unnecessary data when queried by service consumers. To deliver rich functionality, "fine-grained" services require construction of a great

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many individual services integrated into each feature, which can be time consuming and challenging. IFS provides fine-grained functionality that offers the agility and flexibility for which our customers are looking. This fine-grained functionality is the foundation of a true SOA.

It's all about Web services

One key advantage to a SOA is that it allows you to open your business processes and systems to your customers and suppliers. As you plan to implement a SOA-based enterprise application, you will want to consider how you want your application to enable communication with other systems you already use to interact with your suppliers and your customers. Different SOA-based applications use varying degrees and methods that allow this type of communication. But as you evaluate different options, be sure to find out not only how the system works for and looks to your own company's end users, but what it takes to connect the application to other systems and offer portals for external users.

Some industries, including those that supply major original equipment manufacturers (OEMs), have seen interoperability with customer systems become mandatory. This interoperability initially took the form of Electronic Data Interchange (EDI), and a modern enterprise application should easily allow for this means of direct communication with a customer. Web services builds on the concept of EDI using more modern, flexible, and interoperable data sharing standards. In evaluating SOA-based enterprise applications, it is important to ask how easily your applications can use Web services to open portals to your operation.

An important consideration in evaluating how effectively a SOA-based application will integrate with other systems is the number of application program interfaces (APIs) the application offers. An API allows an application to communicate with other applications that are being used or referenced. It is the pathway by which an application program makes requests of other applications.

A well-developed SOA-based application should offer numerous APIs designed to interface with a myriad of other systems. This allows an SOA-based application to interface seamlessly with your legacy software, and with other third-party systems you or your customers may operate.

Change and change management

Because of the loose coupling between services and service consumers, SOA-based applications facilitate change. Even so, an application provider and its customer organization must proactively consider how their product will change over time. In a selection process, it might be appropriate to ask potential vendors how an application would respond to various scenarios that could present themselves over time.

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Changing customer demands, the increasingly international nature of business, industry-specific data standards and the addition or divestiture of divisions all create new and often unexpected challenges for enterprise applications.

Do not be fooled into thinking that, just because an application uses an SOA, it will easily adapt to changing environments. An application that is essentially a large, monolithic stack of technology with an SOA scaffolding might be able to, in the immediate term, open its technology stack to outside systems through Web services. But adding functionality in the future by making additional services available is challenging. A truly SOA-based enterprise application built with small components allows you or your vendor to easily reveal services anywhere in the system or create new services to meet new, very specific needs.

Change can manifest itself in two ways. The application features may change as new functionality is added or different technology is developed to accomplish various tasks. Moreover, the methods used to connect the application features may change.

The continuous change in methods of accessing information is yet other reason to look for a highly granular SOA-based enterprise application. Well-conceived granular components will each contain metadata that will allow them to be accessed through a number of means as industry standards change, or as an application needs to communicate with various systems using divergent standards. Preferred methods for making componentized SOA features work together vary from one situation to the next and change over time. But a granular SOA application can make its functionality available through a wide variety of channels ranging from reliable messaging to various forms of XML.

The bottom line is that you will realize more of the benefits of SOA when you pick a vendor that has a strong commitment not only to granular functionality, but to an SOA built on industry standards and standard interoperability methods. During an application selection process, asking a lot of questions about the number of individual services available, the number of business APIs and plans and other elements key to SOA will help ensure you realize all of the benefits SOA has to offer.

By Rick Veague

Rick Veague is Chief Technology Officer with IFS North America, and is based in the Schaumburg, Ill. headquarters. In this role, Veague provides direction for IFS' use of Service-Oriented Architecture (SOA) and works with IFS' leading customers to leverage SOA to provide state-of-the-art ERP.

About IFS and IFS Applications

IFS develops and supplies component-based business applications for medium and large enterprises and organizations. IFS Applications, which can be implemented step by step, is based on web and portal technology. The solution offers 60+ enterprise application components used in manufacturing, supply chain management, customer relationship management, service provision, financials, product development, maintenance and human resource administration. IFS offers customers an easier, more open alternative.

IFS is a leading global business applications supplier with sales in 45 countries and more than 350,000 users worldwide. The company is listed on the Stockholm Stock Exchange (XSSE: IFS).

If you need further information, e-mail to info@ifsworld.com, contact your local IFS office or visit our web site:

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