

SOA freedom

An interview with IDC's Sandra Rogers

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NO ENTERPRISE IN TODAY'S HIGH-PRESSURE WORLD WOULD turn its back on a proven, accessible way to simultaneously cut costs and boost efficiency. This is precisely the allure of the service-oriented architecture (SOA) approach to solution design, and it explains why SOA is generating so much interest across the industry spectrum.

But are there hidden risks in this much-vaunted approach? What should enterprises watch out for? And if they want to initiate an SOA project, where do they start? To gain insight into the SOA phenomenon, *24x7* turned to an expert: Sandra Rogers of International Data Corporation (IDC). In the following interview, she discusses the pros and cons of SOA for the enterprise.

24x7: *How do you define SOA?*

Sandra Rogers: SOA is an architectural approach to applications and solutions that promotes layers of abstraction. It is a way of designing, implementing, and managing systems in a fashion that leverages dynamic calls into other elements of the system. The design focuses on creating explicit boundaries and tasks; in particular, for more business-defined functions or elements—known as “services” in the SOA model—that represent information and processes of core importance to the business.

SOA essentially abstracts the *use* of the service away from any specific *implementation* of the service. In other words, when you are designing an application or a solution, you don't necessarily need to know the location or explicit system configurations and formats of the data; you simply call the service, which then performs its function, whether retrieving information or handling a specific task. In theory, changing the underlying elements of the system in this way, including data structures, should have little or no impact on the consuming solution that is calling the service.

24x7: *What challenges do enterprises face in constructing an SOA environment?*

SR: Beyond technology considerations, some the biggest challenges lie in changing behaviors and skills. Gaining consensus regarding the overall information and process definitions that will be adopted across the enterprise can

certainly be a challenge, so the incremental approach is where most organizations have had good success in implementing change.


One of the biggest issues in designing any system is getting the requirements right. For SOA, it's learning how to change some developers' predisposition to hard-coding explicit use-case logic in favor of designing optimal services that are independent of specific implementations or applications. Some CIOs note that in the past, business often got into the game of saying: “I need this data from this system to do this process.” The concern instead should have been about clearly stating the business objectives and letting IT design the most effective solution.

Some are now finding that the SOA approach, once embraced, helps to facilitate more effective design by creating building blocks that let both parties talk the same language. With this foundation, IT can construct the optimal solution. And with the use of standardized components and services that characterize an SOA environment, the IT group no longer needs to create a unique solution every time a new need arises, becoming more flexible and responsive to business needs.

24x7: *Why is SOA generating so much interest these days?*

SR: One of the primary areas where SOA is generating so much interest is in how it can help enable enterprises to address change more readily. Businesses need the ability to adjust quickly to dynamic market conditions. Enterprises are now global and partner relationships are becoming increasingly complex. Entities within the value chain need to share processes—and the information that enables those processes—faster and more flexibly to maintain competitive advantage. And they need to create a foundation that they can work with on an ongoing basis, rather than solving discrete needs one at a time. Plus they need to address the continued pressure on IT organizations to reduce costs.

SOA is an evolutionary approach from a technology point of view, but it can represent a revolutionary change in the way enterprises approach system design. It often involves organizing, funding, and sourcing IT activities in

A photograph of two men in dark suits walking away from the camera on a busy city street. They are walking on a crosswalk. In the background, there are tall buildings, a yellow taxi, and a traffic light. The scene is brightly lit, suggesting daytime.

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a different way. We've been heading in this direction for a while with overall trends toward centralization, consolidation, and shared services, combined with the increasing levels of access and reach of Web-based systems. But when it actually comes to adopting SOA—going from “this is nice to use in certain instances” to making a more holistic adjustment in how an enterprise addresses IT—I believe it can be more groundbreaking in some cases.

24x7: Can SOA leverage existing systems and applications?

SR: Many companies are exposing legacy systems and information as SOA services to be consumed by front-end systems, often choosing to “wrapper” the applications and source data to leverage them as services. We're also seeing many companies concurrently revamping their first generation of Web-based applications to achieve a more dynamic environment.

The whole idea behind SOA is to leverage a variety of different system capabilities as services, and serve them up to new consuming solutions. The biggest issue is whether the infrastructure, management, and integration of existing systems allow for that kind of flexibility. How readily those systems can fit into this environment depends largely on their inherent design.

A basic SOA implementation may be undertaken using existing systems and applications. However, creating the appropriate levels of policy control, visibility, and monitoring capability typically involves the addition of some newer technology and increased levels of abstracting code to become more configurable.

24x7: How would you summarize the main benefits and risks associated with SOA?

SR: Organizations are finding that SOA does make it possible to leverage resources and implement change more effectively, and to help drive consistency across the

enterprise—including the ability to apply policies and guidelines that allow for better governance. There are efficiencies in terms of time to market and reuse linked to cost savings in development efforts and IT resources, especially as the enterprise comes to rely less on a hard-coded system. Business benefits can include everything that a more integrated system enables, including clearer and more effective alignment of IT capabilities with business goals.

But there are also many complexities that need to be addressed. One of the main risks associated with SOA is the potential buildup of logical dependencies and physical strains on underlying systems. The business may not realize how much use a service will get. If a whole stream of solutions and processes relies on the service, what happens if it changes, or perhaps goes down? It's essential to ensure the right kind of uptime, performance, redundancy, and failover capability to support what could become factorial use of the service.

There's also the issue of managing service life cycles. How long do you maintain different versions of a service? How do you design services for maximum business value? As services are created and deployed out into the enterprise, adequate review and control are imperative.

24x7: What platform characteristics are important in mission-critical SOA environments?

SR: I've touched on the need for continuous availability in platforms that support mission-critical SOA applications. Also essential is support for a variety of different standards. Sometimes you need to address the lowest common denominator—services that may not adhere to particular schemas and standards all the way up the stack—so you need the flexibility to address those needs.

Interoperability with other technologies is extremely important, because very few companies have just one solution provider for everything that will be involved in

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this environment. The capability to scale is essential in an SOA environment, because the use of services can expand in an exponential and unpredictable fashion. Also, the dynamic nature of this environment essentially pushes forward more real-time and event-based (asynchronous as well as synchronous) functionality.

24x7: *What are some tips for enterprises that are just starting to look at SOA?*

SR: Companies should educate themselves thoroughly on SOA. They should learn from others that have gone before, including vendors and industry peers. They need to look beyond simply coding the service to the broader architectural underpinnings. In order to build support from the rest of the enterprise, those responsible for the implementation initially target a solution that will not

only test the reference architecture and infrastructure, but also quickly prove value, demonstrating that the service can show immediate benefit and optimally be used in multiple instances across the enterprise.

An SOA environment is only as good as its implementation. Designing this environment properly means taking both a strategic top-down and tactical bottom-up approach simultaneously. Most enterprises admit that you can't get everything fleshed out before implementation or you will never move forward; however, you can't keep implementing services without an overall roadmap or blueprint.

It's also important to give yourself enough time: Give the people in IT and business the time to learn, and don't try to bite off too much all at once. It may take a bit longer to get something into production if this is the first



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time you're implementing something based on SOA, but the extra care will pay off. It's about getting the right stakeholders involved in outlining where SOA can be of greatest value to the enterprise. It's about bringing together different parts of the enterprise to help create what will be, in the long run, a more flexible environment. In our research, CIOs and IT architects often indicate how important it is to manage the expectations of the business executives.

Document early and often. Failure to keep detailed records and create shared repositories of information on the project can result in the need to play catch-up later, plus uncertainty about what has been deployed. It is essential to provide good project visibility throughout all affected parts of the enterprise, because it's really a collaborative type of scenario that you're painting.

Finally, be cognizant of the organizational impact. You're asking people to change the way in which they do systems development or business process design. Don't expect it to happen automatically, given the realities and pressures of getting something out the door every day. Strict procedures and policies may not be needed at the outset, but eventually they will be indispensable to the success of the project.

24x7: How will SOA evolve in the future?

SR: SOA has been, and will continue to be, a measured, incremental rollout. As more systems and technologies are introduced that are automatically based on SOA foundations, and especially as more packaged applications are deployed that take advantage of SOA principles, adoption rates will continue to increase.

Moving forward, I think you'll see more focus on the overall SOA life cycle. IT assets, including services, will need to be managed not only individually, but also from a composite solution and process point of view, keeping in mind that discrete assets may serve different composite views.

Most organizations today do not expect to change all of their systems into an SOA environment. Those companies that must be more dynamic, need to adjust their processes faster, and require high degrees of control, compliance, and consistency will be most driven to adopt SOA.

The ability to have a service that can be used consistently across the enterprise—created once, and maintained and supported in one place—can translate into significant cost savings. It also may not be feasible in certain instances, based on both technical and business scenarios. It's about achieving the right balance. When managed in an appropriate fashion, SOA can clearly contribute to enhancing the business outcomes of an enterprise. ♦



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perspective of marketplace trends and technology adoption to the software and IT research arenas. She is responsible for research within the Services and Software Leading Indicators program, Composite Applications coverage, and Application Development and Deployment markets. Rogers is also a key analyst on IDC's Dynamic IT research team and has received the IDC Global Fellowship Award.

During her 10 years at IDC, Rogers also served as program manager of the Vertical Markets group, covering technology usage and adoption trends across a wide spectrum of solution areas. As a senior research analyst with IDC's Applications and Information Access group, Rogers tracked enterprise application trends and vendor strategies.

Prior to IDC, Rogers held positions in IS, technology, finance, market research, strategy, and competitive intelligence, primarily for large financial and insurance organizations, and is experienced in all stages of the software development life cycle, project management, and training.