



Effective SOA governance.

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“With the widespread adoption of SOA, the challenges associated with SOA projects are emerging. SOA governance isn’t optional—it’s imperative. Without it, return on investment will be low and every SOA project out of pilot phase will be at risk.”

—Paolo Malinverno
Gartner, Inc.¹

Realizing the promise of SOA

Flexible, modular business processes require flexible, modular information technology (IT) infrastructures. Service-oriented architecture (SOA) represents the latest step in the evolution to modular systems. It defines services as repeatable business tasks, and business processes are a series of services snapped together like building blocks. SOA is an architectural style that makes this possible. Businesses that use effective SOAs can respond faster to market opportunities and get more value from their existing technology assets. More details on SOA can be found at ibm.com/soa.

There are, however, impediments to successful SOA deployments. In their recent market strategy report, “Five Ways the Rise of IT Governance Will Change How Enterprises Buy IT,” Summit Strategies surveyed North American IT enterprise users of emerging technologies. The survey asked how well investments in emerging technologies such as virtualization, SOA and Web services fulfill business and IT goals. According to Summit’s research, barriers to achieving business and IT alignment include:

- *“Cultural challenges related to making consistent decisions based on accurate, credible data;*
- *Inability to engage business sponsors in a way that is effective and forward looking, as many business/IT decisions focus on resolving specific, immediate pain points rather than aligning on long-term strategic goals; and*
- *Difficulty in tracking and evaluating the performance of IT projects in a coordinated, accountable manner.”²*

Therefore, CIOs are recognizing the need to align business and IT in meaningful and measurable ways—ensuring both the business and the IT organizations are pursuing the same goals. An SOA helps with this alignment, but effective governance is needed for organizations to fully realize the promise of SOA.

Defining SOA governance

To better understand how SOA governance fits within the context of overall corporate governance, it is first necessary to define each concept separately.

Governance

There are two fundamental aspects of governance. The first aspect involves the processes established by an organization to determine who is empowered to make certain decisions. The second aspect includes the mechanisms and policies that are used by the organization to measure and control the way those decisions are implemented. Together, these aspects form a governance framework.

Governance is usually viewed as an executive function while the execution of the governance framework is the responsibility of managers. For example, governance determines the decision rights for how much the enterprise invests in technology. IT management is responsible for deciding the actual amount invested in a given year and the areas in which the money is spent.

IT governance

IT governance aligns IT activities with the goals of the organization as a whole. This subset of governance includes the decision-making rights associated with IT investment, as well as the policies, practices and processes used to measure and control the way IT decisions are prioritized and executed.

SOA governance

Adoption of an SOA raises new issues both in IT decision rights and in measurement and control. IT organizations must consider which operation is best suited to deploy different services under varying conditions and be able to monitor that the services are in fact enhancing the business value.

Why SOA?

Many companies are spending more money on integration and maintenance of existing business capability than on innovation and creation of new capabilities. Studies from industry analysts all point to this common business problem. SOAs help companies focus on innovation.

How do SOAs work?

SOAs use connections with well-defined, standards-based interfaces to help companies build flexibility into their IT systems. One approach to SOA leverages existing systems to reconfigure the functions delivered in large applications into reusable building blocks called services. Another approach is to use new business logic. And a third way is some combination of the two. These approaches make it easier and faster to adapt IT environment to changing business conditions.

What are the benefits of SOAs?

SOA allows end-to-end, cost-effective and scalable solutions customized to business goals, timetables and priorities. Companies use SOA as a way of increasing business flexibility, serving their customers better, leveraging existing IT-related investments (e.g., people, processes and information) and capturing new revenue streams.

SOA governance is an extension of IT governance that focuses on the life cycle of services and composite applications in an organization's SOA. Deploying an SOA frequently serves as a catalyst for an organization to start thinking about improved corporate and IT governance and how to best implement SOA governance practices.

Applying SOA governance

SOA governance can enable organizations to maximize the business benefits of SOA, which can include increased process flexibility, improved responsiveness and reduced IT maintenance costs. It also mitigates many of the business risks inherent in SOA adoption by establishing decision rights, guiding the definition of appropriate services, managing assets and measuring effectiveness. The four business scenarios presented below demonstrate how SOA governance addresses common challenges.

Establishing decision rights

An SOA initiative can be derailed if there is no governance framework in place to clearly identify roles, responsibilities and decision rights. Consider the situation where a company is divided into different profit centers, each with its own IT organization and infrastructure. A good example would be a large insurance company offering a variety of services such as home, life and auto insurance, where each line of business operates autonomously. Minimal technology standards have created very diverse environments that don't interoperate.

This company is facing increased competitive pressure. The lines of business want to improve customer service by standardizing the way each interacts with the customer. They envision a one-stop shopping experience for the customer to fulfill home, life, auto and other insurance needs.

An SOA is the recommended approach to unifying the customer experience across the lines of business. However, it cannot be implemented by IT architecture and development alone. The lines of business need to be involved to help answer the following types of questions:

- *Who owns the data and is there agreement to allow the service access to the data?*
- *Who should fund the shared service? Who owns it?*
- *Who's responsible to fix it if it breaks?*
- *How is the business going to motivate the separate lines of business to reuse enterprise assets and shared business services?*
- *Who makes a decision on whether a service can be accessible to other applications?*

SOA governance also helps the company establish the shared IT policies, processes, architecture and infrastructure to provide a consistent look and feel across each of the lines of business. Much of this decision making effort involves working with people to agree on common standards for shared processes.

Defining appropriate services

Governance issues can impact the approach to development. Suppose a bank decides to expand into new geographies that have different regulatory requirements. An SOA is critical to successfully implementing this strategy because it allows shared reusable business services to be bundled or unbundled as required to enable compliance in each geographical area. Effective SOA governance will help to answer the following types of questions:

- *What are the potential applications (service consumers) that will reuse this service?*
- *What are the common business services that are needed?*

- *What services already exist and are candidates for reuse?*
- *Which services can be shared and under what rules and circumstances?*
- *Which policies and standards can be factored as common across the geographical regulatory jurisdictions?*
- *Which are separate?*
- *Can the differences be isolated to maximize consistency while still being compliant?*

With SOA governance, the bank can explicitly establish—and communicate—the policies that need to be enforced. These decisions can then be consciously built into the development process used to create applications and services. Because an SOA allows policies to be isolated from the code, the bank is able to tailor the services by geography, yet still lower overall development costs by maximizing component reuse.

Managing service assets

SOA governance issues also arise when dealing with systems in place. For example, faced with increasing competition, and in an effort to increase customer satisfaction, a large retailer institutes a new billing policy that charges customers when an order is shipped. This replaces the old policy that charged customers when an order was placed.

The development team finds it hard to determine which applications and other services are impacted by this change. But facing an implementation deadline, it forges ahead, making changes to those it knows about, and puts the new billing policy into production. Unfortunately, another line-of-business application was using the previous versions of the services that make up the billing policy. This causes unpredictable outages, customer complaints and revenue losses. Although each line of business adopted SOA, they also implemented their own unique billing policy solutions, making it difficult to deploy a company-wide billing policy.

The organization was successful setting up the governance arrangements to enable service reuse, but it failed to institute a process by which services are versioned and updated within the shared infrastructure. It also failed to establish mechanisms for monitoring who used the services. Such ineffective asset management can lead to service proliferation and derailment of the reuse strategy. And without the ability to assess the impact of changing a service asset, unanticipated breakage can negatively impact the business.

Key governance issues that must be addressed in this kind of scenario include:

- *How do we organize the shared business services and other enterprise assets so they can be effectively reused at a later date?*
- *Who is allowed to change a service reused by others?*
- *Who is using a given service?*
- *Who needs to approve the change?*
- *Who will be responsible for funding changes if we need to upgrade the infrastructure to meet specific performance or availability requirements at a later date?*

SOA governance can help the retailer to ensure services are effectively reused, updated, and tracked within the shared infrastructure. It can help the retailer understand the impact of change across the organization from both a business and technical point of view and how to better plan for and implement those changes.

Measuring effectiveness

The fourth scenario is an example of the importance of a feedback loop within the SOA governance mechanism. A large telecommunications organization embraced an SOA strategy in order to improve staff productivity and lower costs. In keeping with that strategy, the Commercial division development team made existing functionality available as services. However, no processes were put in place to measure the SOA's effectiveness in achieving specific business goals.

Difficulties arose when the Residential division of the company launched a new offering. They reused an existing customer information retrieval service currently owned by the Commercial division. After the new offering was deployed, the increased usage slowed response times for every application using the service. It also increased the Commercial division's costs. Unfortunately, because appropriate monitoring tools were never deployed, there was no way for the Data division to charge any other division for service usage.

With the proper monitoring in place, together with agreed-upon measurements, an organization can properly anticipate increased needs due to increased volume of business, as well as more accurately determine the true cost of a service.

SOA governance helps companies build successful systems comprising services from multiple organizations by making sure that all parties agree on:

- *Performance goals*
- *IT architecture standards for performance metric gathering and monitoring capability*
- *Service level agreements*

Building an effective SOA governance framework

Governance maximizes the value of SOA in aligning business needs with IT direction. Activities needed to establish, maintain and enhance an effective SOA governance framework are depicted in Figure 1 as a life cycle consisting of four phases: plan, define, enable and measure.

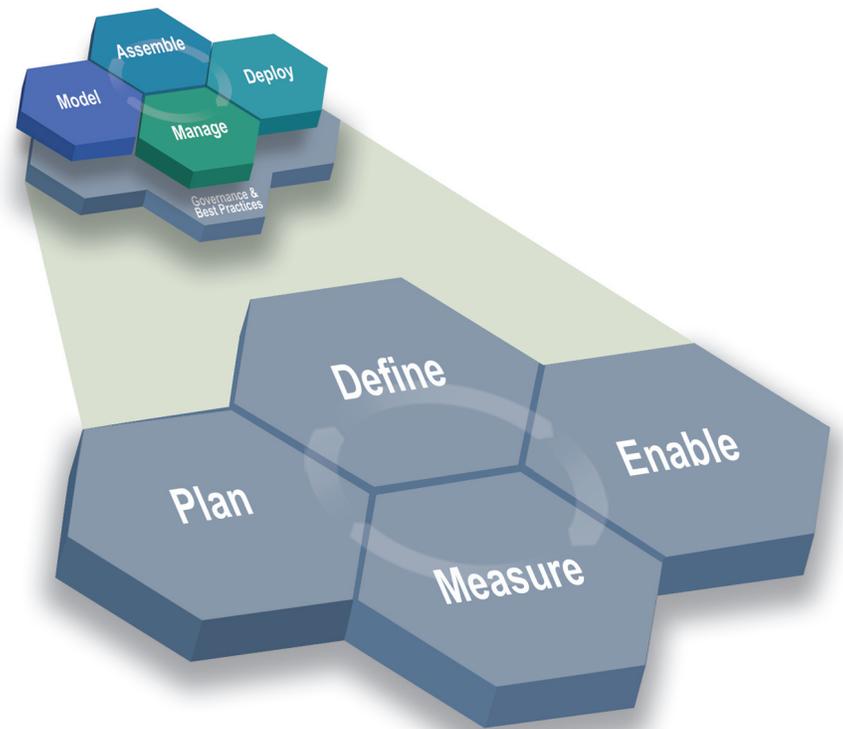


Figure 1: The four phases of building an SOA governance framework

Plan

The planning phase of building an SOA governance framework focuses on understanding the overall scope of the governance opportunity within the organization and identifying areas for improvement. This phase includes:

- *Committing to a strategy for SOA in the context of the overall business goals and IT strategy*
- *Explicitly determining the level of IT and SOA capabilities*
- *Articulating and refining the vision and strategy for SOA*
- *Reviewing current governance capabilities and arrangements*

Most of these activities are people-centric and involve extensive collaboration. The required interaction can be simplified with sophisticated business modeling tools, as well as collaboration tools such as instant messaging, e-mail, Wiki, dashboards, calendaring and role-based portals.

Define

Once the opportunities for improved governance are identified, business and IT people can work together to define and modify the current governance arrangements and mechanisms. New approaches to creating policies should be agreed on at this time. Other important governance decisions and mechanisms created during this phase may include:

- *Establishing or refining an SOA Center of Excellence*
- *Defining any additional capabilities required, such as upgrades to the IT infrastructure*
- *Conducting staff training on an ongoing basis*
- *Agreeing on policies for service reuse across lines of business*
- *Putting funding mechanisms in place for encouraging this reuse*
- *Establishing mechanisms to guarantee service levels*

Why IBM for SOA governance?

The promise of SOA and SOA governance is great. However, navigating the governance landscape without adequate experience and expertise can be difficult and expensive. Creating, implementing and deploying an SOA governance framework requires hands-on experience and proven enterprise-scalable software. You need a partner you can trust, one that deeply understands your specific industry and has extensive real-world SOA governance experience. In other words, you need IBM. An SOA leader, IBM can help you:

- *Understand how SOA governance can help you meet your business goals*
- *Define and refine your SOA governance framework*
- *Implement the framework with industry-leading IT products*
- *Educate your teams on best practices related to SOA governance*

Regardless of where you are in the SOA adoption process or what your future SOA and SOA governance plans may entail, IBM can work with you to implement a SOA solution that provides return on investment at each stage.

These mechanisms and SOA governance decisions can speed the process of translating business design into IT design during the assembly phase of an SOA project.

Enable

Solutions to governance needs are put into action during this phase of establishing the SOA governance framework. These solutions may include deployment of new or enhanced governance arrangements. It is likely that communication mechanisms and education mechanisms will be rolled out to entrench the new governance arrangements within both the business and the IT decision-making communities. Governance activities within this phase influence how SOAs are deployed by enabling the policy enforcement infrastructure.

Measure

During this phase, governance arrangements and mechanisms that were identified in the Define phase and deployed in the Enable phase are monitored. Activities occurring in this phase help ensure that the goals of the new governance framework are in fact being realized. If not, there is an opportunity for the business to refine and enhance its governance effectiveness by initiating a new cycle to enhance the SOA governance framework.

Conclusion

As SOA initiatives become more widespread, business and IT decision makers are finding that more robust business and IT governance capabilities are necessary to make coordinated decisions across increasingly interdependent business and technology domains. That is the business value of SOA governance – making the promises and benefits of SOA a reality.

To learn more

Visit ibm.com/soa/gov for more information on how IBM can help you with SOA governance.



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¹ "Service-Oriented Architecture Craves Governance," Gartner, Inc., Paolo Malinverno (January 2006).

² "Five Ways the Rise of IT Governance Will Change How Enterprises Buy IT," Summit Strategies, Mary Johnson Turner (December 2005).
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