Increasing the Effectiveness and Efficiency of SOA Through Governance

2008 SOA Governance Survey Report

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1. EXECUTIVE OVERVIEW

SOA is an important architectural direction that’s impacting IT organizations from top to bottom. As more and more companies move toward implementing services-oriented architectures for new (or existing) solutions, IT organizations have to learn how to deploy, manage and update SOA-based infrastructures effectively and efficiently. That’s where SOA governance comes in.

A new survey conducted by ebizQ finds that SOA governance is critical to any SOA strategy. SOA governance provides organizations with the processes, policies and solutions/technologies that can help to manage increasingly complex SOA deployments in an effective and efficient manner.

The survey, covering 118 companies, reveals that most organizations believe that SOA governance is a critical part of their SOA strategy, with 49% believing that without governance their SOA plans will fail.

There is never a wrong time to begin implementing and enforcing SOA governance. Whether an organization is planning to go down the SOA path or has already started their SOA efforts, SOA governance makes sense for continued maturation of their SOA. Respondents to the ebizQ survey had a range of SOA deployments, with over 35% having services deployed across multiple departments, locations or companies—a relatively mature SOA environment.

The survey also revealed that organizations are moving to implement SOA governance solutions to address specific business and technical needs. In fact, good governance strategies can have wide-ranging impact on the IT environment, but they can also help IT organizations define, measure, justify and communicate the value of SOA solutions, providing opportunities for closer coordination between business and IT.

SOA is about change. Organizations need to incorporate ways of managing change in SOA environments, whether those changes are applied to new services, existing services, consumers of services, or the environment itself. The survey finds that the two most important accomplishments organizations wish to gain from SOA governance are 1) gaining traceability of the connection between services, business objects and business functionality and 2) being able to trace the relationships and dependencies that connect services to each other.

In terms of SOA governance, the survey also shows that the progression of organizations beyond a focus of managing service components through registries and repositories to more automation through policy management and SOA monitoring parallels their progression down their SOA implementation paths.

Designing and implementing SOA solutions with a governance strategy in place increases the effectiveness of the SOA solution and provides a more manageable long-term approach to increasing the agility and efficiency SOA brings to the business.
Research Method

During the months of April and May 2008, ebizQ hosted a 22-question online survey on SOA and governance strategies. The survey was open for eight weeks, and was promoted to ebizQ members through its Website, newsletters and email communications. Respondents to the survey were given the option of entering into a drawing for a free GPS unit. In addition, all survey participants that requested were provided access to a white paper containing the survey results.

A total of 118 companies responded to the survey. Analysts from ebizQ performed survey data analysis.

Overview of Respondents

Over 33% of the respondents to the survey were enterprise architects. Roughly 17% were IT managers or executives. Another 15% come from the business side as executives, department managers or analysts, while 22% were developers, system integrators, enterprise integration specialists and IT consultants. The remaining 13% of respondents were a combination of system administrators, security analysts, DBAs, managers of security and other.

Respondents came primarily from the U.S. and Canada (67%) and Europe (16%) with their companies representing a wide range of industries and sizes. 42% were from large enterprise organizations (companies with greater than 10,000 employees). Over 27% came from mid-sized enterprises, with 1,000–9,999 employees. The remaining respondents (about 31%) were smaller companies up to 999 employees.

The top five industries represented include computer services and consulting companies, followed by manufacturing, government agencies, insurance, and financial services. Chart 1-1 depicts the respondent breakout by industry. The ‘other’ category aggregates industries with a representation less than four percent.

Chart 1-1 - Survey Respondents by Industry
2. STATE OF SOA GOVERNANCE MATURITY

As organizations progress toward SOA production deployment and SOA maturity, the need for SOA governance magnifies. The survey revealed that over 35% of the organizations responding had services deployed across multiple departments, locations or companies—a relatively mature SOA environment. More importantly, the research also revealed many organizations believe that without governance, their SOA projects will fail. Such a response helps explain why over 65% of companies responding plan on deploying SOA governance within the next year.

Based on the results of this survey, the state of service oriented architecture deployments is reasonably advanced. Close to 20% of the respondents had business-to-business or cross-enterprise SOA deployments, while 16% had internal services deployed across multiple departments. That’s over 35% that have multiple services deployed across departments, locations or organizations, indicating the evolution of SOA toward mainstream adoption. Close to 50% of the remaining respondents had pilot SOA solutions, SOA solutions under development or SOA solutions deployed within a single department. (See Chart 2-1).

For most organizations, SOA governance comes as a logical (if not always fully fleshed out) step in an evolution toward SOA. Thus it makes sense that the survey finds that a majority (66%) of the companies responding had individuals directly involved in SOA governance activities—from creating SOA governance policies to evaluating tools to being responsible for SOA governance. 31% of the respondents were investigating SOA governance. That’s a staggering 97% of organizations surveyed actively looking at SOA Governance for their SOA efforts.
Most analysts agree that SOA Governance is critical to achieving success and realizing the benefits of SOA. Not surprisingly, organizations also believe that SOA governance is a critical component of their SOA strategy. In fact, 49% believe that without governance, SOA will fail, while another 44% have identified it as required and important. (See Chart 2-2)

![Chart 2-2 – Importance of SOA Governance](image)

However, the survey also reveals that it’s important to consider not just whether to use SOA governance, but also when. Applying governance early in the lifecycle can prevent problems later when the cost to fix such issues is at least four times greater. Respondents to the survey agreed, with a full 85% of the respondents indicating its best to address governance at the SOA planning or design stages, rather than waiting until development or deployment time.

Although a large majority of those surveyed indicate SOA Governance is essential, adoption and implementation of SOA Governance is still in the early stages. A majority of respondents are in the exploring and planning phases but expect to have SOA governance solutions deployed within 12 months (over 67%). (See Chart 2-3).

![Chart 2-3 - Status of SOA Governance Implementation](image)
As this portion of the survey shows, a majority of organizations believe SOA Governance is essential to their success with SOA. With almost all organizations surveyed (97%) actively involved in or investigating SOA Governance, it’s obvious that SOA is picking up steam and organizations are under pressure to keep it under control. With 85% of organizations believing that its best to address SOA Governance at the SOA planning and design stages, it’s also clear that organizations see the advantage of starting early with SOA governance.

3. GOVERNANCE DRIVERS AND CHALLENGES

Organizations believe that SOA governance is a key component of IT and business alignment and SOA best practices. Major obstacles identified involve a combination of education, communication, and coordination, with cultural resistance and insufficient skills topping the list of greatest challenges with SOA governance. In addition, a relatively large number of respondents (34%) specified that they were not able to track the results of their SOA governance initiatives, while 50% replied they could only partially track the results—findings that we believe should lead organizations to focus more on coordinating their SOA and SOA governance efforts. As one might expect, the major sponsors of SOA governance activities were primarily IT-related roles, such as enterprise architects, CIOs, and IT management.

Of course, organizations don’t simply decide to implement SOA governance because they think it’s a good idea. They’re actually moving to implement SOA governance solutions because they believe such solutions will address specific business and technical needs.

To gain a better understanding of exactly what challenges are driving organizations to deploy SOA governance, we asked survey respondents to rank their key SOA governance drivers. The majority of drivers were IT focused, such as using SOA governance to help implement best practices within an SOA environment, reducing risk in SOA transformations and obtaining real-time visibility into SOA services. But it is important to note that the 2nd most important driver for SOA governance is one with a direct business connection—a desire to foster greater business and IT alignment.

![Chart - Key Drivers for SOA Governance Initiatives](image)

The business and IT tend to speak different languages. The business often has a hard time translating business matters into something IT can understand and vice versa, IT has a hard time getting the business to understand the IT ramifications to what they need. However, good SOA governance can help both IT as well as the business. As chart 3-1 highlights, good governance can have wide-ranging impact on the IT environment, but it can also help IT organizations define, mea-
sure, justify and communicate the value of SOA to the business. This enables closer coordination between the business and IT and provides the business with the visibility they need to make better decisions.

It’s also important to call out two of the drivers toward the bottom of the list. Although they did not score as high as the number one driver (the desire to implement best practices) 42% and 34% of the respondents selected demonstrating measurable ROI for SOA, and tracking and communicating the progress of an SOA implementation, as important drivers for their SOA governance initiatives. It’s important to call these out because they demonstrate that SOA governance can be used to help organizations crystallize and measure the value of SOA deployments, as well as provide a context for an on-going dialog with non-IT personnel. This can lead to better investment decisions to get more precise focus on where the business will gain the most impact.

If an organization is going to invest in SOA governance (or any other initiative, for that matter), it’s generally important to be able track that investment and the subsequent results and/or progress. To understand how well (or poorly) organizations were doing this, we asked them in a separate, but related question, if they were able to track the results of their SOA governance efforts. Unfortunately, 34% said no—a remarkably large number, considering the importance of SOA governance to the successful deployment of SOA solutions. On top of that, exactly 50% said they could only partially track the progress of their SOA efforts. Only 16% replied that they could track the progress and results. Given the importance the respondents gave to demonstrating ROI and tracking results, this is an alarming gap in ensuring their SOA Governance efforts are having an effect.

The flip side of the key drivers for SOA governance initiatives are their key challenges. For many organizations, implementing SOA can be difficult enough, but trying to include SOA governance adds another (albeit an important) consideration for the overall success of the project (as we’ve already seen in previous responses).

According to our survey, the greatest difficulties that organizations are having with SOA governance involve a combination of education, communication, and coordination. In fact, it’s important to point out that respondents felt issues such as funding and executive sponsorship were less troublesome than problems such as cultural resistance and organizational barriers (see Chart 3-2), which are leading contributors to low adoption of SOA governance.

![Chart 3-2 - Greatest Challenges with SOA Governance](image)

Incentive programs is one tactic to use in overcoming adoption challenges, so we inquired if organizations had any formal incentive program in place to encourage the adoption of governance process and practices. Based on the results of the previous response, it should be no surprise that only 14% of the respondents said that they did have an incentive program.
in place to encourage the adoption of governance processes and practices, which could contribute to the high percentage of cultural resistance indicated previously. However, another 19% said such programs were in the planning stages.

Lastly, we wanted to get a better perspective on who within the organization was sponsoring SOA governance efforts. The results show that a majority of support for SOA governance comes from the IT side of the house, with enterprise architects (28%), CIOs, CTOs (25%) and IT management (19%) being the primary sponsors. (See Chart 3-3).

Chart 3-3 - SOA Governance Sponsorship

Overall, this section shows how much different aspects of creating an effective, efficient and well-governed SOA-based solution are intertwined. On the one hand, we have IT executives and architects as the primary sponsors, who want to better align their initiatives and priorities to the business. However, even though organizations have acknowledged the importance of SOA Governance to the overall success of their SOA efforts, a surprising number (84%) stated they either could not track or could only partially track the progress of their SOA efforts. Yet without adequate tracking, they will be hard pressed to be able to align their efforts with the business. Simply put, IT organizations need better visibility into results of their SOA initiatives so they can communicate the status and the results to the business, but low adoption of good SOA Governance and best practices are currently hindering them from achieving those results.

4. SOA GOVERNANCE AND CHANGE

Gaining traceability of the dependencies and relationships amongst services, business objects and business functionality is an important goal for being able to manage change in an SOA environment. In addition, the survey shows that as organizations move through the SOA deployment lifecycle, they expect to focus on different areas of SOA governance, progressing from initial investments in architectural-level design reviews and design-time enforcement procedures to more auditing, reporting, and runtime monitoring in the future. This mirrors the changing needs of managing and monitoring SOA environments as they move from design and development through to production deployment.

Perhaps more so than any other type of traditional IT architecture, SOA solutions are built on the very notion of tightly integrated, loosely coupled components. That means that changes to individual services or components can have far-reaching impact. It also means that it’s critical for organizations to have ways of analyzing the impact of changes (or potential changes) and understanding how alterations to individual services will impact the rest of the environment. That’s where impact analysis and traceability come in.
In fact, over 59% of the survey’s respondents replied that impact analysis and traceability is very important to their SOA deployment. By itself that’s not a remarkably high number, given how important impact analysis is to good SOA governance practices. What is surprising is that many of the respondents have already identified it as important for their SOA efforts. In addition, close to 34% identified it as somewhat important, while a very small portion (only 7%) said it was not important.

Change is a part of doing business today, and as such, SOA should be architected for change. Organizations implementing SOA should know and understand that effective and efficient change is almost the very essence of their SOA goals. So it’s important to understand the different challenges that organizations can face when trying to manage the impact of change within their SOA environments. In this respect, we found that most organizations are facing a very similar set of challenges—in fact the survey results show very little variability in responses, as shown in the chart (chart 4-1) below. What this shows is that all of these challenges are intertwined. If you don’t have visibility into your portfolio, you can’t track dependencies and therefore cannot accurately assess the impact of change.

Another important consideration when implementing SOA is to understand exactly what types of governance processes are needed. For example, some organizations may need to focus specifically on auditing and reporting, while others may want to focus on design time enforcement and validation of standards or automated run-time monitoring.
From chart 4-2 we can see that one of the biggest changes between what organizations are implementing now vs. in the future comes in the area of automated runtime monitoring. Of course it makes sense that organizations would be more focused (as the chart shows) initially on design-time governance issues, such as enforcement and validation or architectural-level design review. As they evolve (over time) in the sophistication of their deployments, their focus shifts to more runtime monitoring and auditing and reporting requirements.

What this section of the survey shows is the importance of change management within SOA Governance. One of the key drivers for SOA is around reuse. Without proper change management in place, the risks of reuse (when it comes to change) far outweigh the benefits. Today, organizations believe change will need to be controlled at the design level but recognize this will shift to include automated runtime enforcement in the future.

5. SOA GOVERNANCE TOOLS CRITERIA, VENDOR SELECTION, SOA SUCCESS FACTORS, AND THE FUTURE

The survey finds that support for heterogeneous and best-of-breed environments is a key selection criterion, along with a given vendor’s experience with SOA and governance. It also reveals that organizations expect to significantly increase their future investments in the areas of policy management and SOA management and monitoring. Key success factors included selecting a technology foundation, managing SOA implementation efficiently and defining the service lifecycle and appropriate checkpoints.

Implementing SOA governance requires a mixture of technologies, policies, practices and people. From a technologies perspective, organizations are more interested in vendors that have expertise and experience than ones that have an integrated SOA platform. At the same time, we see organizations progressing the focus of SOA governance from managing service components through registries and repositories to automated policy management and SOA monitoring as their SOA evolves.
When it comes to the decision criteria for selecting an SOA governance vendor, the survey respondents were conclusive. Specifically, there were two areas that were particularly important—the support for heterogeneous/best-of-breed environments (27%) as well as vendor expertise and experience with SOA and governance (31%). The importance of the first of these responses makes sense, given the breadth of environments, applications and IT components to which organizations are assembling in their SOA. The desire to select vendors based on their SOA experience highlights the importance of best practices that experienced SOA governance vendors can bring to the table. Given that SOA Governance can often be a large undertaking in itself, it’s clear that organizations are looking to vendors to guide them in their SOA governance efforts.

Interestingly, one of the least important criteria for the selection of a SOA governance vendor is the requirement for it to provide an integrated SOA platform. Again, we would hypothesize that most organizations already believe that their SOA deployment will encompass heterogeneous systems, so that having one, completely integrated SOA platform (while nice) may be less important. (See Chart 5-1).

![Chart 5-1 - SOA Governance Criteria](chart.png)
In terms of tools for SOA governance, there was a clear preference among respondents for investing in SOA monitoring and management solutions (only 20% said they would not invest in these types of tools). The survey also highlighted how important registry and repository management is (35% have already invested in such tools) and how important policy management will become (45% plant to invest in such tools, up from 20% today). (See Chart 5-2).

![Chart 5-2 - Plans for SOA Governance Tools Investments](image)

If we look back to a previous question of key challenges, we can see that many organizations have attempted SOA Governance, but are still being met with adoption challenges. Many times this would indicate that technology has been bought in hopes of solving a governance issue, when in fact technology is just one aspect. Implementing SOA and SOA governance successfully requires more than technology. We asked organizations what they were viewing as the key success factors for SOA governance. And while the number one response (selected by 76%) was selecting a technology foundation, it was followed closely by managing the SOA implementation efficiently (selected by 64%), defining the service lifecycle and defining responsibilities. (See Chart 5-3).

![Chart 5-3 - SOA Governance Success Factors](image)

Lastly, when we asked organizations what they were going to be working on over the next six months, the respondents articulated clear directions to where they were heading. The primary focus areas included efforts to educate about SOA governance, define SOA best practices and implement policies. Below these three key objectives, organizations also planned on doing a range of other SOA and governance-related activities, from inventorying services to selecting technologies to
aligning their organizational structures. (See Chart 5-4). This makes sense given that a large majority of the organizations surveyed were still in the planning or investigation phase of SOA Governance. Clearly they would like to establish communication and education early on in order to raise awareness and increase their chances for success.

Stepping back for some perspective, the responses from this section of the survey show us that when it comes to SOA success and selecting products to support their efforts, organizations see expertise and experience with SOA Governance as well as support for diverse IT environments as key factors. It’s also clear that as organizations mature their SOA deployments, the types of SOA governance tools and approaches they expect to use will change—from an initial focus on areas such as registries and repositories to policy management and SOA monitoring.

6. CONCLUSION

For many organizations, SOA is strategic to the future of their business. Regardless of how fast they’re implementing pilot or production SOA deployments, most organizations are now realizing that some portion of their IT infrastructure will be services-based. As more and more organizations move from pilot and test SOA deployments to more sophisticated, broader-reaching production SOA deployments, the need for SOA governance moves from a “nice-to-have” to “required.” In fact, SOA governance is a key ingredient to effectively (and efficiently) managing SOA deployments. Over the long term, creating the proper SOA governance policies, processes and solutions will enable organizations to actually realize the benefits of SOA.

As shown in this primary research study, most organizations involved in SOA deployments realize the value of SOA governance (in fact 49% believe that without governance, their SOA efforts will fail).
But this study also highlighted some of the important business and technology drivers for SOA governance, including greater business and IT alignment and the desire to implement best practices. In addition, the results of the survey show how important it is for organizations implementing SOA to make sure they consider how they will manage change within their SOA environment.

Finally, the results from the report look to the future of SOA and SOA governance and revealed that many organizations will spend the next six months focused on educating and communicating the value of SOA governance within and across their organizations, as well as defining and implementing SOA governance best practices. By meeting these types of objectives, organizations should be able to put a realistic and effective service-oriented platform in place that will be able to help businesses address ever more dynamic market needs and changes.