software AG

Best Practices for SOA Governance User Survey

SOA Governance Survey

Summer 2008

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INTRODUCTION

Over the past several years, and in the last year in particular, questions regarding service-oriented architecture (SOA) have shifted from "why" to "how." As the results of this survey will show, there is widespread interest in SOA. This is not entirely surprising although the magnitude of the interest may raise a few eyebrows.

Having made some level of commitment to SOA, organizations are now grappling with the "how" question. This is particularly true of SOA governance due to the central role that it plays in the management and success of these initiatives. As many have noted with the authors' concurrence, "governance is what distinguishes SOA from just a bunch of Web services."

Within this report, SOA governance is defined as the process of ensuring and validating that services and other artifacts within a service-oriented architecture continually meet established expectations for performance, quality and reliability. For many, service lifecycle management is an equally appropriate term for this discipline as it underscores the reality that a series of integrated activities spanning the entire lifecycle are often required to preserve and maintain the vitality of these services.

Due to the early stage nature of the governance market, many unanswered questions exist as widely adopted and disseminated best practices are only beginning to emerge. During this evolution, users are often left to struggle independently with issues like:

- When should I first implement governance?
- What should my governance strategy encompass?
- Who should be actively involved with governance?

This survey was designed to help answer these questions and to provide much-needed guidance towards the path of successful adoption. In doing so, it focuses on identifying and quantifying the approaches and models for implementing SOA governance that are being adopted in the field. Users can take advantage of these real-world benchmarks. For example, what should be maintained within a repository and how to avoid significant trial and error when addressing common challenges and requirements.

An important caveat is that some principles of SOA governance can be considered universal truths today. Others are still emerging with different responses suitable for different scenarios. The results of this survey are not intended to provide the sole answer for every possible situation nor should this report be described as an all-inclusive roadmap. Rather, these findings are meant to provide users with a reasonable starting point for defining their organization's unique governance strategy. Building upon these widely adopted best practices, organizations can more quickly and confidently zero-in on the most appropriate approaches for their unique circumstances.

BEST PRACTICES FOR SOA GOVERNANCE USER SURVEY

Enterprise customers of Software AG were invited to participate in the survey over a ten-day period in April/May 2008. The survey received 176 qualified responses with duplicate entries filtered out of the results.

Overall, the majority of the respondents were from large enterprises with revenue greater than $1B (figure 1). As a matter of fact, the largest percentage of respondents overall were from enterprises with annual revenue of $5B or greater.

Responses were drawn from fourteen distinct industry sectors with no market representing more than 16% of the responses (figure 2). This diversity is significant as it helps to ensure that the results were not heavily skewed to the interests of a specific industry.

On an antidotal basis, these responses also tend to contradict the conventional wisdom that adoption is principally concentrated in a handful of markets, such as financial services and telecommunications. As the research will show, this is not the case.

Taken as a whole, the results of the survey reveal three developments:

- SOA has "crossed the chasm"
- Governance plays a key role in creating sustainable, enterprise-wide implementations
- Users recognize that better governance is needed to institutionalize and automate needed SOA processes and best practices

In summary, an early majority is emerging and they are bringing forth a number of best practices for minimizing the risk and increasing the payback of SOA adoption.

Figure 1: What is the size of your organization in terms of annual revenue?

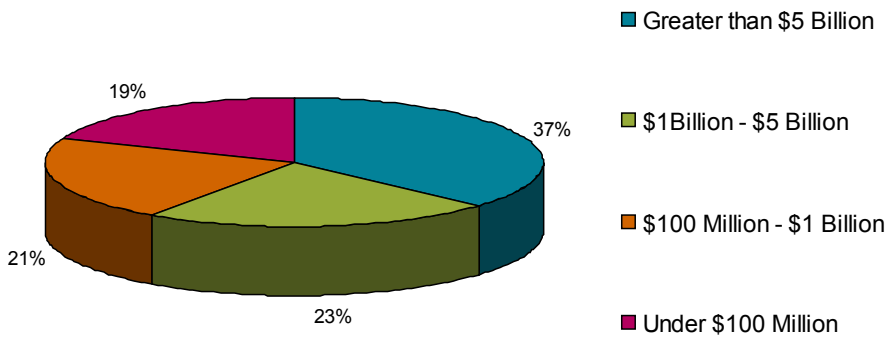
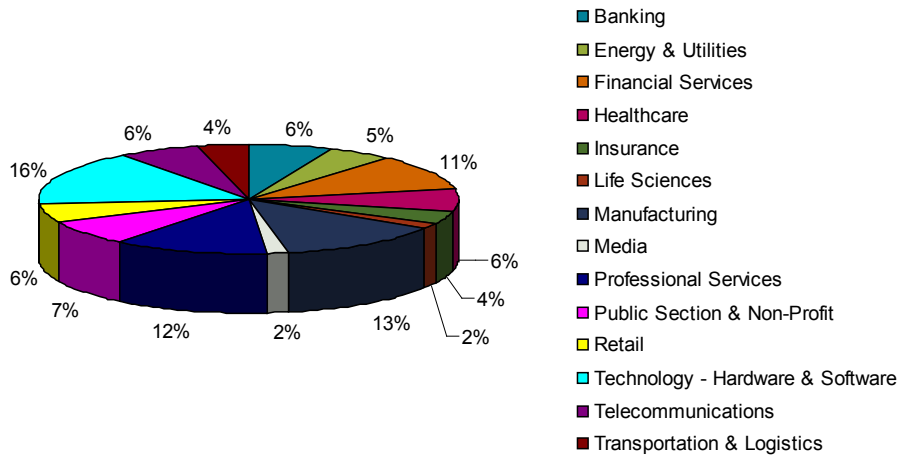


Figure 2: What is your organization's primary focus?



SOA HAS CROSSED THE CHASM

First popularized by Geoffrey Moore, "crossing the chasm" speaks to the process of bridging the gap separating unique, individual needs from a mass market. For end users, the emergence of this broader and more replicable market is significant as it also marks the establishment and adoption of the common standards and more consistent processes associated with a mass market.

In terms of the survey audience, it's impossible to argue that SOA hasn't crossed the chasm with over 90% having made some commitment to its adoption (figure 3). Furthermore, a clear majority are active in their adoption with either specific projects underway or a full-fledged SOA already implemented.

Obviously, there is potential bias in the sample audience as they are a subset of Software AG customers. However, this shouldn't be overstated or used to discount the results. SOA evangelism and messaging is primarily focused on larger organizations with complex integration requirements and significant application portfolios. In other words, this is arguably a fairly representative sampling of the current SOA target audience.

It is also noteworthy that this interest in SOA spans all industry sectors with no apparent laggards. More specifically, only one industry reported that more than 15% of its constituents had "no plans to adopt" SOA. Even in this case, the total was only 33% amidst a comparatively small sample size for that industry.

Respondents also reported considerable satisfaction with their progress to date as less than 10% were explicitly unhappy with their results so far (figure 4). In terms of those having made a definitive assessment, satisfaction with SOA beats dissatisfaction by a four-to-one margin.

In terms of maturity, those with the most progress in their adoption, i.e., that reported they've implemented an enterprise SOA, also reported higher levels of satisfaction. For those at this highest level of maturity, approximately two-thirds were satisfied with the remainder reporting that it was "too early to tell."

Of course, strong drivers are needed to support and justify this level of interest and satisfaction with SOA. In terms of our survey audience, several factors emerged as being clearly significant (figure 5).

In general, these top drivers – better agility, integrate the business and improve business processes – point to a greater focus among users on strategic business transformation versus IT optimization alone. The one exception is significant interest in reuse, which is commonly viewed as an IT focus.

A number of responses also suggested that users characterize their adoption maturity as moderate. This is clearly evident in the split in adoption patterns between planning, project implementation and enterprise implementation as the top two choices correspond with more moderate levels of adoption (figure 3).

Figure 3 - What statement best describes the state of your SOA implementation?

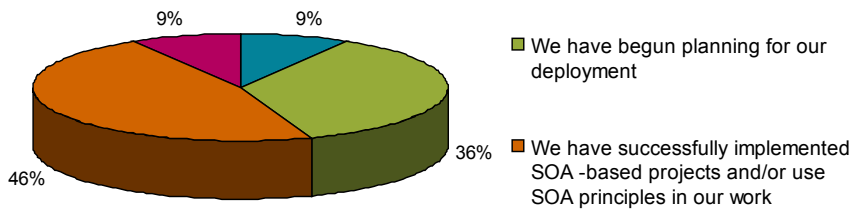
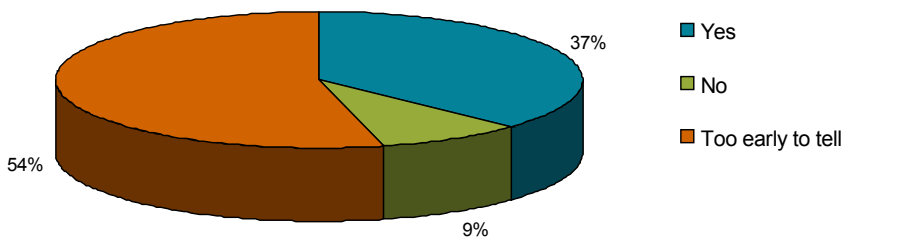


Figure 4 – Has your implementation met your expectations to date?



This is also clear when one looks closer at the scope of their adoption. For example, nearly 95% have Web services in production, but only 32% have more than fifty (figure 6). Not surprisingly, enterprises with revenue greater than $5B led the list of organizations with more than one hundred Web services in production.

Likewise, external use of Web services – exposing them to customers, suppliers and partners – is often viewed as another measure of maturity. Underscoring this correlation with maturity, only a small minority (19.5%) had exposed more than a quarter of their existing services externally (figure 7).

In this example, variations attributable to company size were minimal. This may reflect the diversity of actors within an extended value chain – a tier 1, tier 2, tier 3 supplier and so on – with each having an equal need to communicate with one another regardless of size.

Overall, this data suggests that enterprises are committing to SOA for all of the right reasons and are generally satisfied with their results to date. However, few implementations can be characterized as enterprise-level at this point. SOA has undoubtedly crossed the chasm, but we're still far from SOA becoming mainstream.

Figure 5 – What are the driver(s) behind your organization's adoption of SOA?

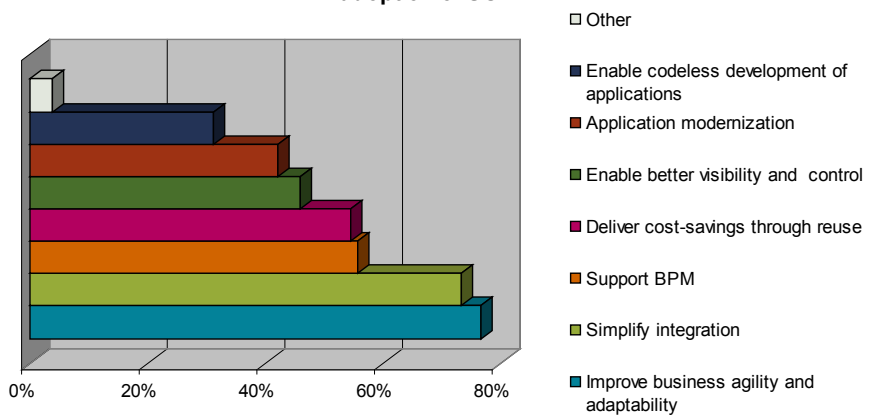


Figure 6 – How many Web services do you use in production?

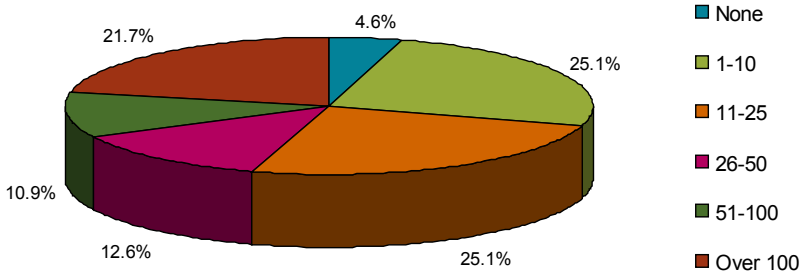
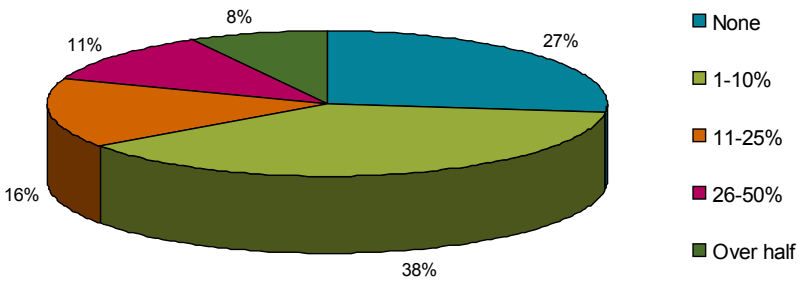


Figure 7 – What percentage of your Web services are exposed externally?



GOVERNANCE PLAYS A KEY ROLE IN CREATING SUSTAINABLE, ENTERPRISE-WIDE IMPLEMENTATIONS

As suggested earlier, pundits have long declared "governance" as an essential component of strategic and sustainable enterprise SOA. However, is this perspective shared by users?

An overwhelming percentage of respondents (over 90%) view governance as significant with 54% calling it "critical" (figure 8). In terms of their own maturity around SOA governance, most respondents found their current approaches in need of improvement (figure 9).

Not surprisingly, those with the most mature enterprise SOA implementations report that they also have the best SOA governance practices with 80% of these users calling their approaches "mature" or "adequate." Conversely, those at the SOA planning stage report that their approaches are either "insufficient" or "non-existent" by a similar margin (77.7%).

What appears clear from these results is that governance and SOA maturity are tightly intertwined. With the vast majority of enterprises at the early stages of their SOA journey, it's not surprising that most need to improve their governance practices.

In terms of how they define SOA governance, users are emphasizing the need for a holistic, lifecycle approach. For example, when asked to choose between design, run, and change-time governance as representing their most important governance process, a majority replied that "they're all of equal importance" (figure 10).

When asked to explicitly define SOA governance, users split somewhat evenly between "set of technologies," "subset of IT governance," and "distinct organizational methodology" (figure 11). However, a slightly different picture emerges when the responses are viewed in terms of maturity of governance practices (figure 12).

What's clear in Figure 12 is that the role of technology alone within SOA governance diminishes dramatically as the level of maturity increases. That's not to imply that governance technology isn't important; rather, these findings most likely reflect the reality that experienced users are more aware of the need to address the people, process AND technology requirements of SOA governance.

Figure 8 – How important is governance to SOA strategy?

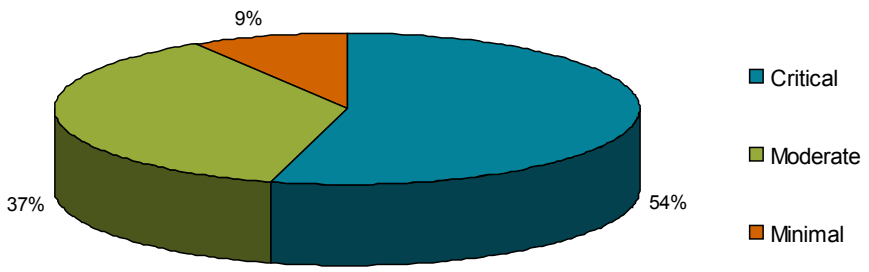


Figure 9 – How would you rate your current approach to SOA governance?

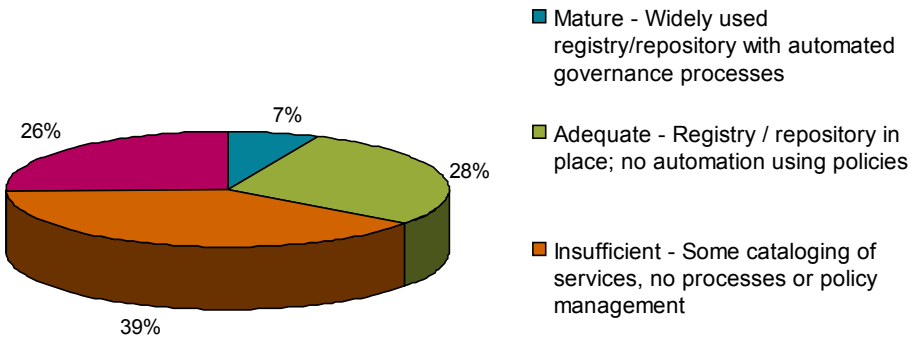


Figure 10 – Which are the most important governance processes?

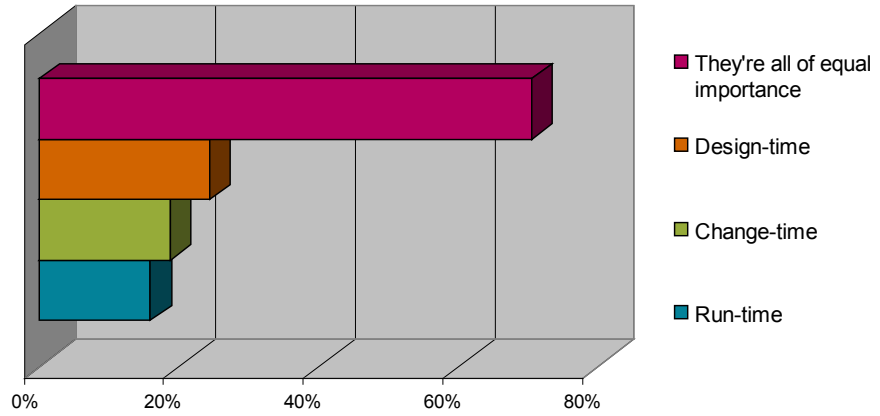


Figure 11 – How do you define SOA governance?

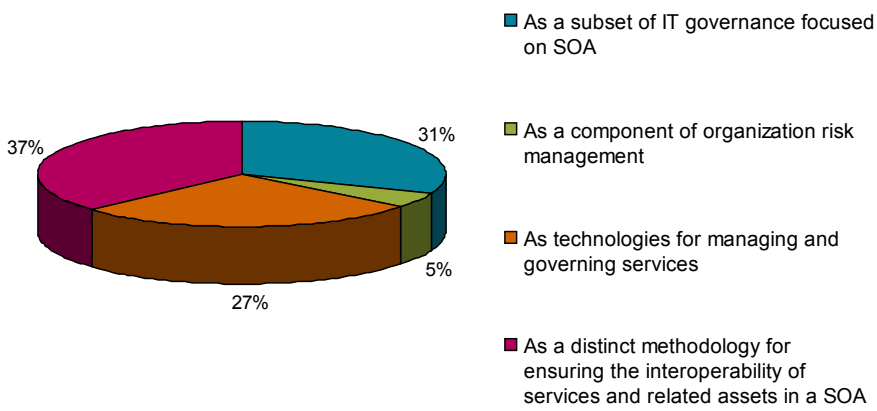


Figure 12 - How do you define SOA Governance?

Base Question	**Mature** – We have a widely used registry/repository with automated governance processes using policies	**Adequate** – We have a registry/ repository in place to help with cataloging and collecting meta-data; some governance processes are in place, but no automation using policies	**Insufficient** – Some cataloging of services outside of a true registry/repository, no governance processes established, and no policy management	**Non-existent** – No SOA governance at all
(Did not answer)	0.0%	0.0%	1.4%	4.4%
Subset of IT governance	41.7%	32.0%	33.3%	22.2%
Risk Management	0.0%	6.0%	4.3%	4.4%
Set of technologies	8.3%	22.0%	26.1%	37.8%
Distinct organizational methodology	50.0%	40.0%	34.8%	31.1%

As a matter of fact, users identified a number of technologies, as opposed to just one or two, that were "needed" for effective SOA governance (figure 13).

In doing so, they also underscored their focus on embracing a more comprehensive approach to SOA governance. In terms of actual practices, users demonstrated a similar focus on the entire service lifecycle (figure 14).

While there are some discrepancies, which are most likely related to levels of maturity, it appears that enterprises that are actively using policies are doing so throughout the lifecycle.

In answering one of the most common questions regarding SOA governance (When do I start?) users repeatedly emphasized that there isn't a specific threshold. Rather, they noted that governance should be a critical component from day one. For example, when asked how many services are need to justify governance, a majority responded "0" as good architecture requires strong governance from the start (figure 15).

Figure 13 – Which tools are needed for SOA governance?

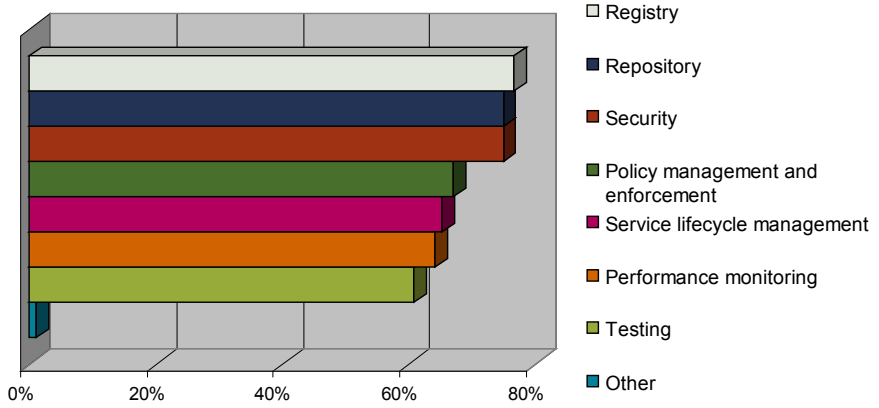


Figure 14 – What types of policies do you currently use to govern your SOA lifecycle?

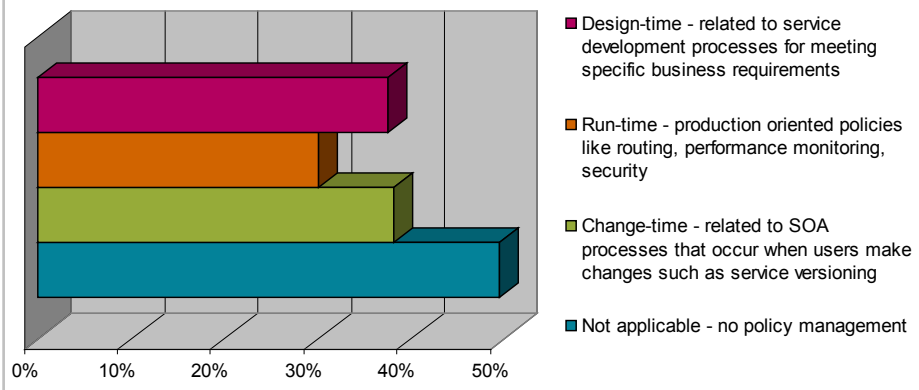
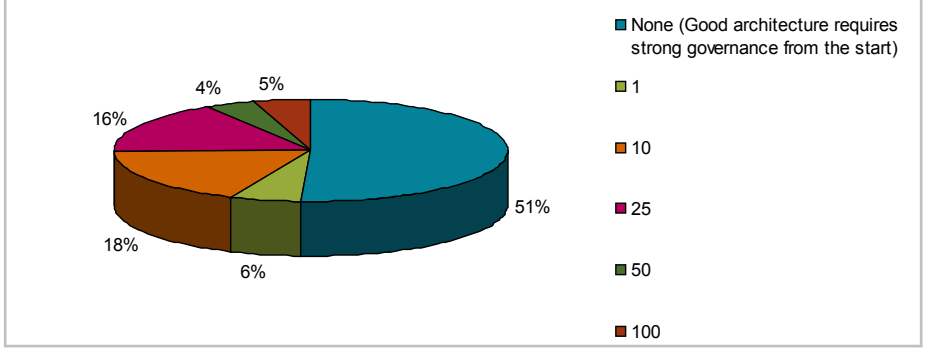


Figure 15 – How many services do you need before formalizing your SOA governance strategy?



Likewise, they gave a similar response (0) when asked the number of developers required to justify a formalized governance program (figure 16). Arguably, the responses for "1" could be added to the "0" total as well. Even among those who felt there was a specific threshold, many suggested that this threshold was quickly reached with just ten developers.

Switching the focus to the number of service consumers did little to change the results as the need for SOA governance from day one was once again the overwhelming choice (figure 17).

With users giving business-driven reasons for adopting SOA, it's not surprising that they noted the need to comply with business demands as one reason for implementing SOA governance. In fact, the need to comply with service-level agreements (SLA) was cited as the top criteria to consider when formalizing your SOA governance strategy (figure 18).

Figure 16 - How many developers involved in SOA-related activities do you need before formalizing your SOA governance strategy?

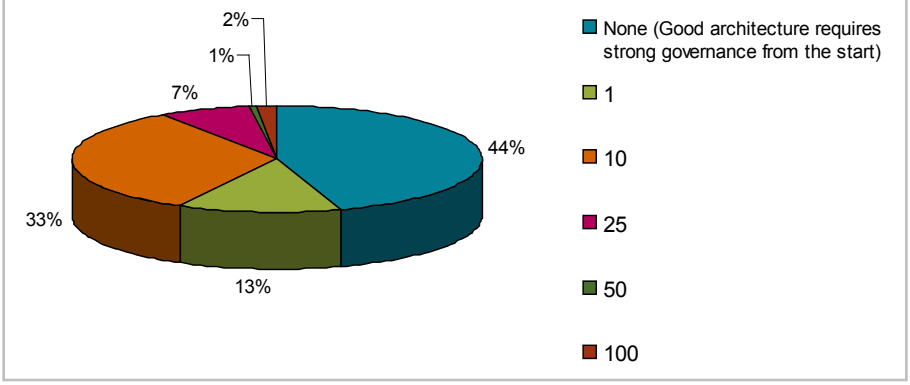


Figure 17 – How many service consumers are needed to justify institutionalizing your SOA governance strategy?

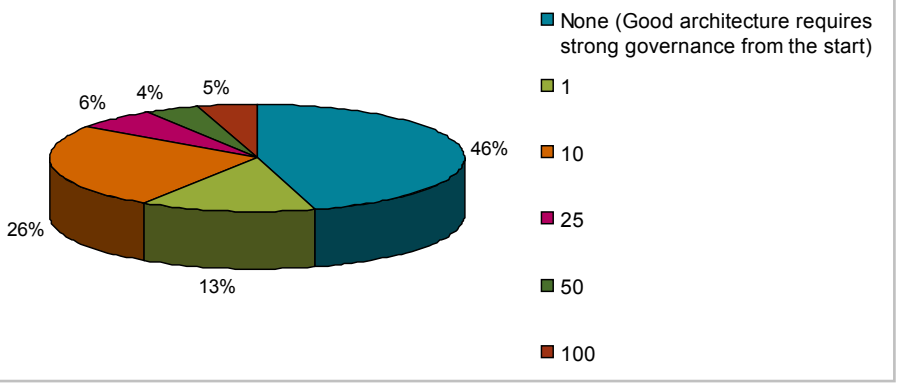
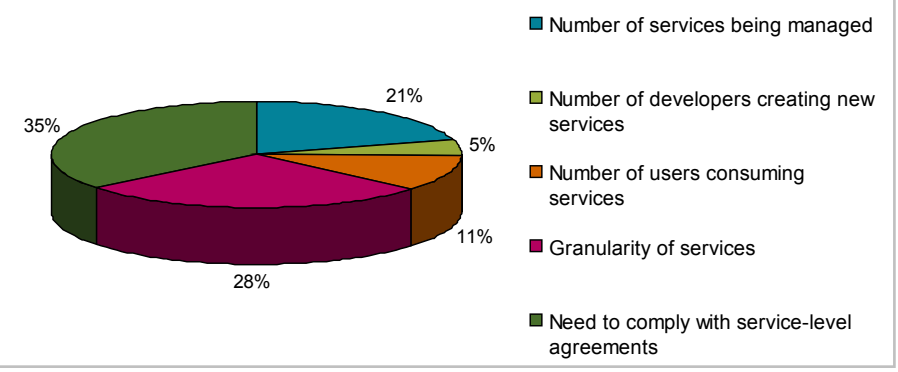


Figure 18 – What is the most important criteria to consider when formalizing your SOA governance strategy?



Likewise, a majority responded that the need to comply with SLAs or meet specific key performance indicators (KPIs) has directly influenced their decision to formalize their SOA governance strategy (figure 19). When the "Not Applicable" responses are factored out, the margin is a noteworthy 2.5 to one.

Two other findings are worth discussing here. Despite the diversity of standards available, few have emerged as "must haves" for SOA other than WSDL and SOAP, according to our respondents (figure 20).

Clearly, SOAP and WSDL are viewed as essentially synonymous with SOA, and UDDI is considered very important as well. This is despite many arguments to the contrary that SOA is more than just Web services. Beyond that, few standards appear to have attracted a broad number of adherents. These results may reflect the lack of maturity for many of them as well as the confusion created by the emergence of so many specifications.

Figure 19 - Has the need to comply with service-level agreements (SLAs) and/or key performance indicators (KPIs) influenced you to institutionalize your SOA governance strategy?

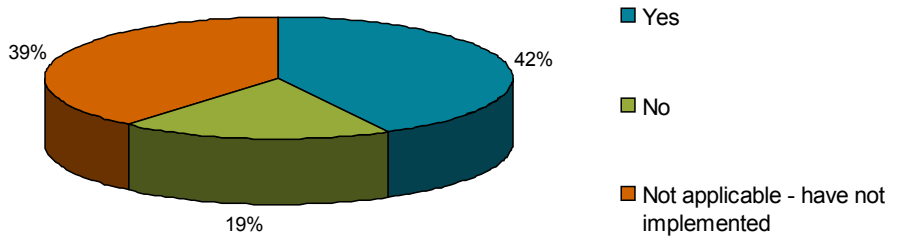
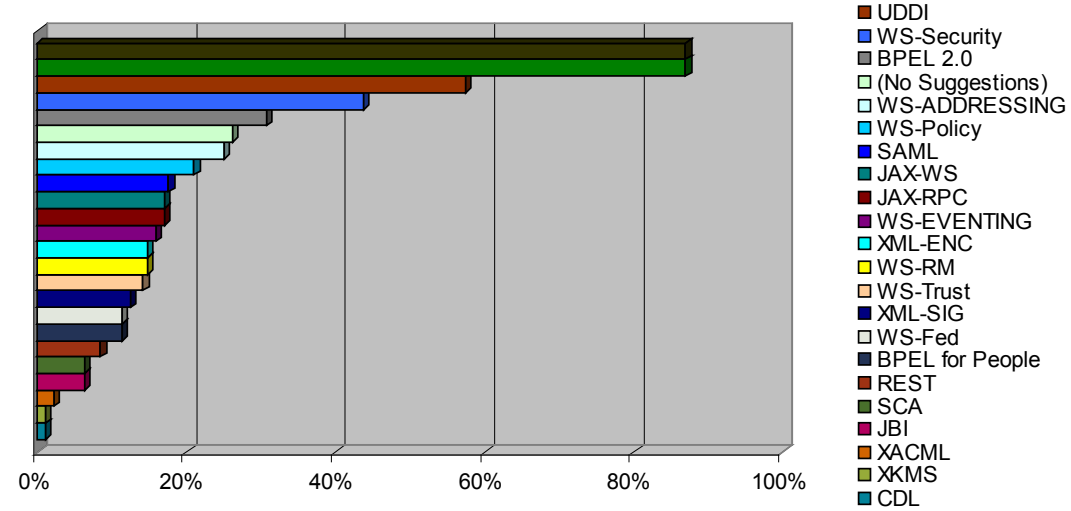


Figure 20 – What standards do you believe are critical to SOA?



In terms of what should be maintained within a repository, a similar consensus is apparent (figure 21).

Arguably, WSDLs and XML Schemas represent the core of the repository with additional documentation and associated Policies achieving critical mass as well. The consistent scores for Process Models, Service Contracts and Business Object Definitions suggest that they were often viewed as being equally important and equally required.

USERS RECOGNIZE THAT BETTER GOVERNANCE IS NEEDED TO INSTITUTIONALIZE AND AUTOMATE NEEDED SOA PROCESSES AND BEST PRACTICES

In addition to identifying emerging best practices for SOA governance, the survey also uncovered several red flags pointing to potential challenges on the horizon.

In terms of key inhibitors to more widespread adoption, users identified the lack of needed skills, the complexity of their current IT environment, the lack of business support and the difficulty in quantify ROI as key challenges (figure 22).

Figure 21 – What SOA-related assets do you or will you need to catalogue in the registry/repository?

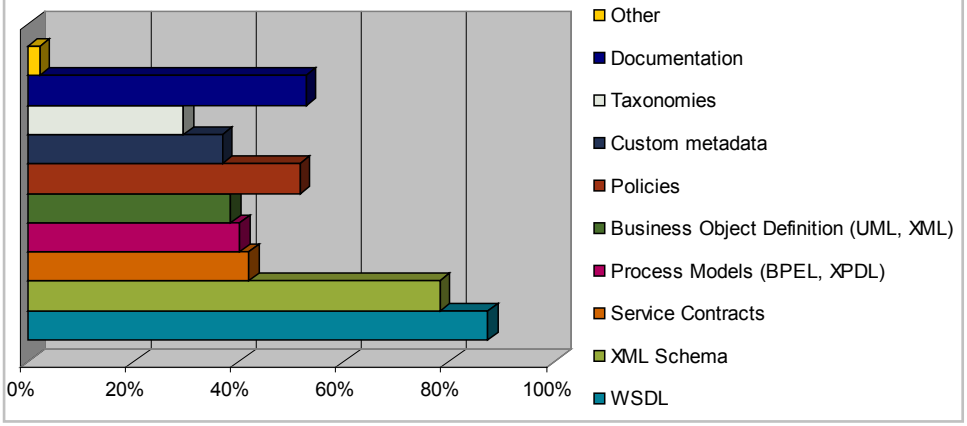
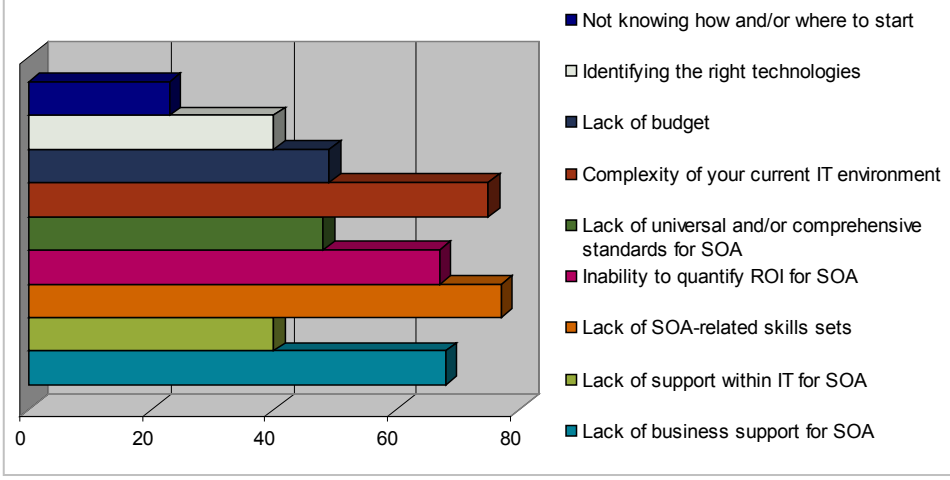


Figure 22 –What are the major inhibitors that you've faced to date in your SOA adoption?



The data suggests that users are challenged in making an effective business case for SOA (ROI/lack of business support) and that they also lack the right experience for tackling SOA (skills/complexity) from an IT perspective. What's interesting here is how SOA governance can be used to help overcome both of these challenges:

- As SOA governance is effectively a more disciplined approach to managing SOA-related assets, it also works to produce the metrics needed to evaluate performance and justify investments. For example, knowing the full extent of service usage – who's using it, how often, for what – can be used to create more effective business cases.
- At the same time, SOA governance technology is increasingly focused on simplifying adoption via automation of common tasks, the use of template-driven governance processes, and the inclusion of pre-defined best practices. This can help to overcome the skills and complexity gap.

Building upon this last point, it is also noteworthy to report that the core resources for SOA governance – IT support, funding, tools and standards – appear to be comparatively accessible. In other words, the infrastructure for success with SOA is available as the most critical challenges confronting enterprises relate to change management issues.

As just one example, current and forecasted investments in SOA are comparatively modest (figure 23, 24).

Figure 23 – How much would you estimate your organization spent on SOA-related software and services in 2007?

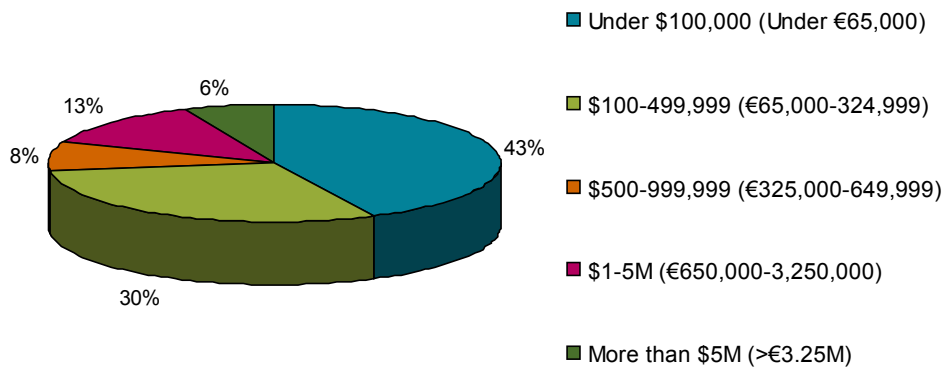
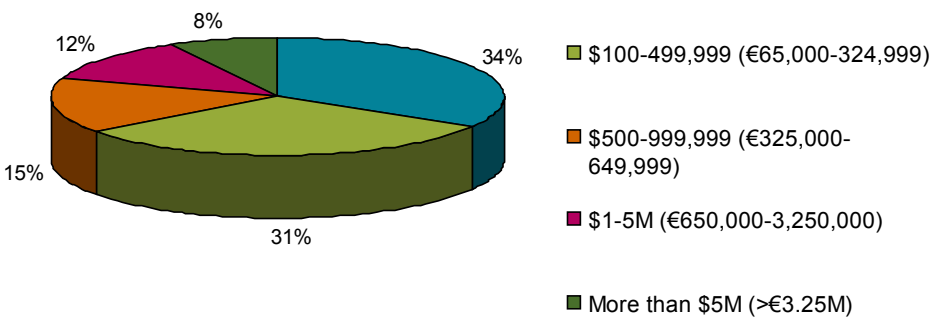


Figure 24 - How much would you estimate your organization will spend on SOA-related software and services in 2008?



It's important to remember that these respondents did not indicate significant budget constraints (figure 22). Furthermore, our survey audience consists primarily of very large enterprises with a majority having revenue of $1B or greater. Therefore, one should assume that these budgets represent sufficient funding.

The survey also found that a majority of respondents have or are planning to implement an SOA Competency Center or Center of Excellence (figure 25).

Pundits have long argued that Competency Centers/Centers of Excellence are important to achieving sustainable success with SOA and this is supported by the survey findings. For example, half of the respondents who reported that they were satisfied with their results to date also reported that they had an SOA steering committee in place. Conversely, no one within the dissatisfied audience reported having an SOA steering committee in place.

Another striking fact was the lack of direct CIO involvement within these SOA steering committees (figure 26).

This is noteworthy on several accounts. First, it may suggest that SOA isn't viewed as strategically within IT as many have been led to believe. Secondly, it suggests that achieving SOA's goal of improving IT's alignment with the business may be difficult as the individual most responsible for this activity, the CIO, is not actively involved with their enterprise's SOA initiative(s). Finally, this lack of engagement by IT's "chief salesperson" to the business may explain the challenges that some users experience in making the business case for SOA.

Figure 25 – Do you have an SOA steering committee in place?

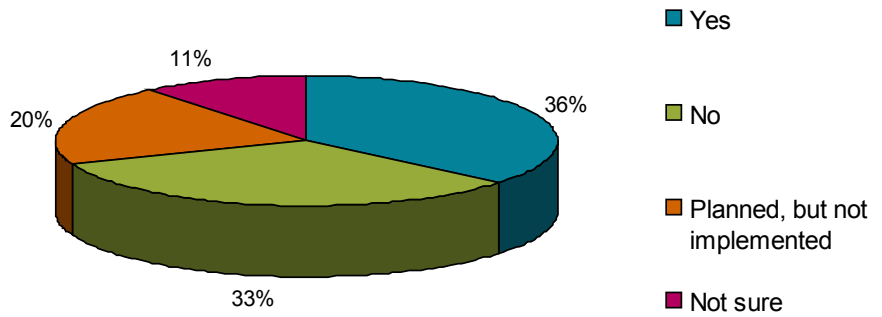
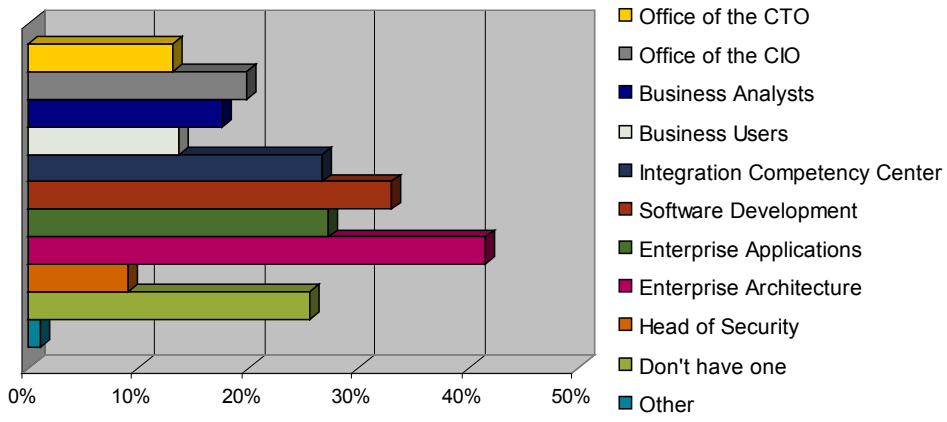


Figure 26 – Which internal organizations are represented within your SOA steering committee?



One could also argue that this lack of broadly-based internal support inhibits SOA's ability to serve as a cross-enterprise paradigm for improving business agility. Based on these responses, it appears that SOA's influence is somewhat limited to the enterprise architecture discipline.

Finally, only a small percentage of users are able so far to effectively chargeback for SOA-related development costs (figure 27). This is an important concern for those hoping to justify their SOA initiatives on the basis of traditional return-on-investment valuations.

On the plus side, most users are tracking their development costs. However, only a handful have reached the point in which they are "billing" for these services. This could reflect the relative lack of maturity in SOA adoption or the difficulty in creating a business case for SOA using traditional project methodologies.

When asked how they expected to fund their SOA initiatives in the future, a similar picture emerged (figure 28).

While the percentage of users that expect to chargeback for SOA-related development costs has increased, a majority still say that they either plan to fund from general IT funds of simply don't know. Few expect to receive dedicated funding for SOA. This may suggest that "SOA" will soon simply be "IT" (e.g., no longer a distinct discipline, but rather, the mainstream approach to application development), or it may suggest that few have planned long-term about the sustainability of their implementation.

This confusion was also evident when users were asked to describe their policies for service-enabling new application development (figure 29).

While no single approach predominates, it appears that organizations are actively assessing the value of SOA within their forward-looking development activities. Furthermore, the significant focus on "formal assessments" and "budget" demonstrates increasing rigor in the SOA evaluation process. This is a positive note to end the survey.

Figure 27 – How are SOA-related development costs accounted for within your organization?

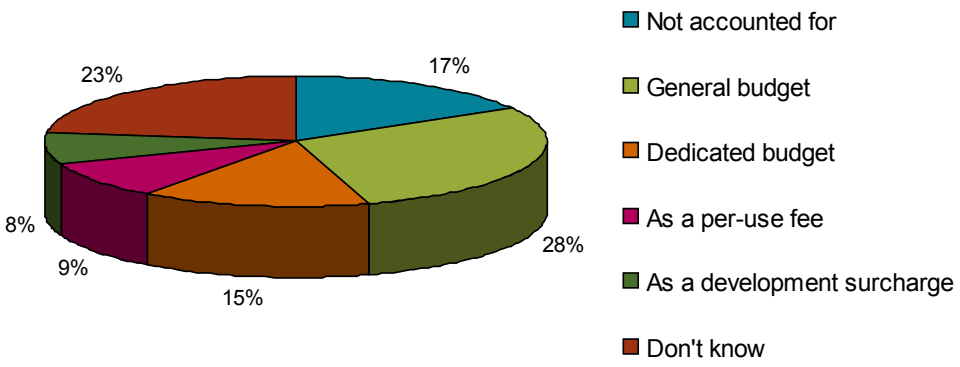


Figure 28 - How do you plan to fund your SOA initiatives?

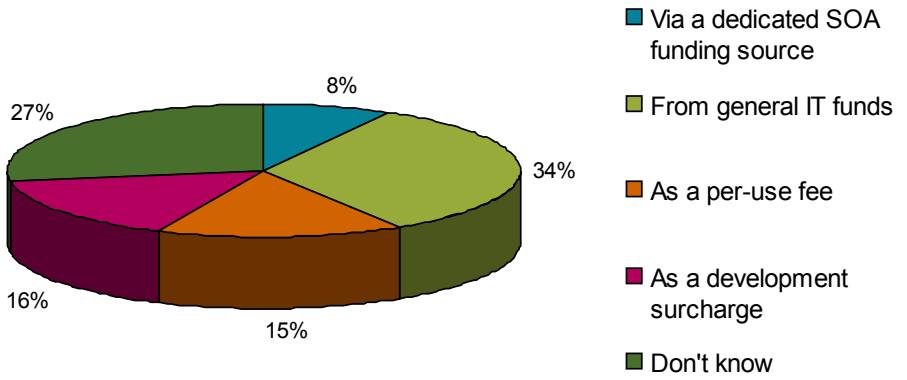
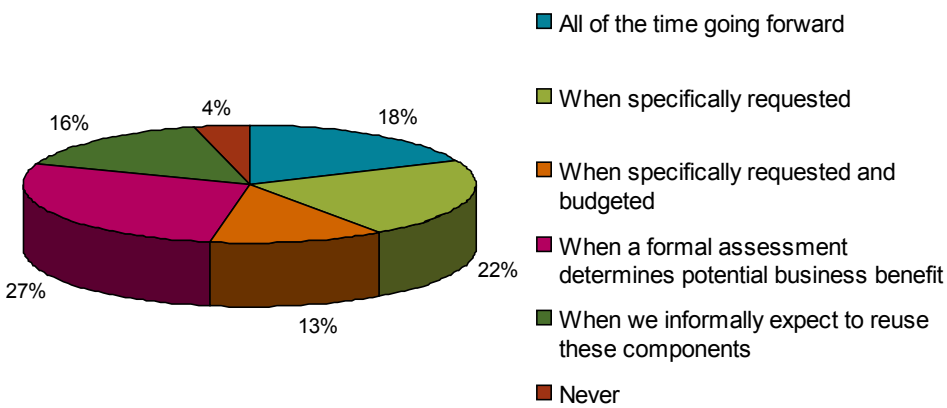


Figure 29 - Within your organization, new applications are developed as service-based applications…



CONCLUSIONS

The responses of a broad cross-section of potential or current SOA users provide clear insight into the State of the SOA Governance market in 2008.

One thing that is clear from our survey is that SOA has crossed the chasm with over 90% of our respondents having made some commitment to its adoption. While many responses indicate that users have only achieved moderate maturity in their adoption, early signs also suggest that they're generally satisfied with their results to date. Also important is the fact that more clear-cut drivers for adoption have emerged with business issues – increasing agility, integrating the business, improving processes – surpassing IT drivers in relative importance to users. Service reuse is the one potential exception.

Users also appear to recognize that governance plays a key role in creating sustainable, enterprise-wide implementations. Most users view SOA governance as important and acknowledge their need for improvement. Meeting business objectives is seen as a key driver for adoption. They are also emphasizing the need for a holistic, lifecycle approach to SOA governance from the start.

Finally, users recognize that better governance is needed to institutionalize and automate needed SOA processes and best practices. For example, users note that their key inhibitors include lack of skills, complexity and business support/ROI. At the technology level, these concerns are being addressed through automaton of common tasks, interface wizards, and the inclusion of pre-defined best practices. The results also suggested users had made little headway towards managing SOA-related cost. Here, governance technology can be used to fill the void, serving as the "general ledger" for all SOA-enabled business tasks.

BEST PRACTICES FOR SOA GOVERNANCE: AT-A-GLANCE

SOA has "crossed the chasm"

- Interest in SOA is nearly universal and spans multiple industries
- Widespread satisfaction with SOA is being reported
- Drivers for SOA adoption have become more clear-cut with business issues – increasing agility, integrating the business, improving process – having emerged as being more significant than IT benefits alone
- Service reuse is the one potential exception
- Users have achieved moderate maturity in their adoption

Governance plays a key role in creating sustainable, enterprise-wide implementations

- Users view SOA governance as important, but recognize their need for improvement
- Users are emphasizing the need for a holistic, lifecycle approach to SOA governance
- Users recognize that governance is critical from the start
- Meeting business objectives is viewed as a key driver for SOA governance

Users recognize that better governance is needed to institutionalize and automate needed SOA processes and best practices

- Key inhibitors included lack of skills, complexity and business support/ROI model
- Core resources – IT support, budget, tools, standards – appear to be in place
- Actual and anticipated budget outlays are relatively modest
- Lack of direct CIO involvement in steering committees is a glaring oversight
- Users have made little headway in accounting for SOA costs

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