Executive summary

Learn from others who have travelled here before you

This white paper is for SOA leaders about to embark on an SOA adoption program. It includes a handy checklist infused with questions to help get your SOA off the ground and flying smoothly—without the trial and error of SOA early adopters who have travelled here before you.

Experience with SOA has led to three conclusions:

1. SOA reduces the hidden cost of bad architecture
2. SOA requires an actionable and measurable plan
3. The time for SOA is now

1. SOA reduces the hidden costs of bad architecture
Many CEOs believe that their IT organization is holding them back. This feeling is the direct result of an overly complex and inflexible system estate; in short, bad architecture. Bad architecture is a function of its size and growth into dozens of factions and the decentralized and short-term logic that drives IT decision-making. We are learning from successful SOA adopters that IT organizations are almost constantly battling “blood loss” from a thousand cuts—and that successful implementations often address some of these high costs.

The results of SOA successes are showing a powerfully revitalized technology function that promotes and aligns to business goals. Instead of being viewed as “holding back” the organization, technology becomes an integral part of the business culture. The quickest victories in SOA involve reversing some of the most expensive hidden costs of bad architecture. Costs of bad architecture are often hidden in the following ways:

- Costs incurred after projects are declared a “success”
- Costs created by one group, but paid for by another
- Cost of redundant systems and organizations
- Cost of inter-organizational conflict and lack of trust

These are the hiding places for many hard costs that include:

- System outages: cost of lost business
- Maintenance costs: personnel, software and hardware cost
- High cost of integration: no re-usability creates many more point-to-point integrations
• Inflexible IT systems: cost of lost opportunities to the business
• Risks of generating new code vs reusing: cost and risk of software bugs
• Changes are slow and error-ridden: cost of time-to-market
• Support responses are slow and infuriate customers: cost to brand value
• Angry business users: cost to trust and business relationships
• Long time-to-market for new products and services: cost of lost opportunity
• Redundant systems: cost to support and maintain redundancy
• Redundant software projects and platforms: cost to support
• High level of system management complexity: cost and risk of errors
• Poor scaling and customer onboarding processes: cost of customer and partner integration
• Lack of data security and quality: risks and costs of regulatory noncompliance

Often, such costs are hidden as “extraordinary” events. The connection between failed architecture and these individual costs is often disconnected.

Successful SOA adoption often consciously identifies these costs and creates systems that coordinate across organizational boundaries. The redundancy, costly, slow and unreliable integrations are replaced by more agile and re-usable service capabilities.

2. SOA requires an actionable and measurable plan

IT organizations are filled with winners and losers. Despite the inefficiency of the status quo, the complexity can often be hiding a system that benefits one subgroup over another even if the enterprise as a whole suffers. Any attempt to change the status quo will collide with these inequities, and those who benefit from things as they are will resist change.

In this way, SOA adoption can sometimes trigger active resistance as the IT organization fights to restore equilibrium. SOA adoption disrupts the status quo in order to enable equilibrium to be reformed in ways that benefit the whole organization.

The kind of leadership that drives towards the benefit of a subgroup over the benefit of the enterprise as a whole is essentially “tribal” in nature. Good resources for understanding this concept include the “SOA Adoption for Dummies” book as well as a book called “Tribal Leadership” by Dave Logan et al.

The market environment is difficult

Despite the strong need for SOA, adopters find themselves in an increasingly hostile environment for SOA that includes:

• Anne Thomas Manes’ famous “SOA is Dead” Gartner blog post
• Budget and staff cuts
• IT and corporate leadership focused on short term benefits
• “Tribal warfare” between IT groups
• Impatient business users looking for a “quick fix”
• Funding models that support further architectural degradation

Pilots heading out into stormy weather have to consider the safety of their aircraft, routes, crew and passengers as they plan their journey. This paper is designed to provide a “pre-flight checklist” to ensure that SOA “pilots” can launch their projects with confidence.

3. The time for SOA is now

Gartner, Inc. publishes research called “hype cycles.” This research tracks trends in technology adoption and indicates when technologies are overhyped and when they finally reach a state known as the “plateau of productivity.” Prior to this state, a technology trend goes through a phase they call the “trough of disillusionment,” a state where the technology reports from the early adopters come in and some of the weaknesses of the technology become clear.

SOA has passed through this stage and is now at the Plateau of Productivity, where mainstream adoption begins to take off. These adopters get the chance to work with matured technology products and all of the lessons learned by the early adopters.

1 Source: Gartner Hype Cycles, http://www.gartner.com/technology/research/methodologies/hype-cycle.jsp
Introduction

The purpose of an SOA "pre-flight checklist" is the same as in aviation—it’s to ensure the safety of your journey into service oriented architecture. Take a moment to scan through this document and be sure you can check off all the boxes.

Who should read this paper?

Anyone seeking to understand more about SOA adoption and the risks and challenges of adoption can benefit from this paper.

To use the checklist, it will help if you have a specific SOA program in mind, and in the best-case scenario, you will be using the checklist prior to embarking on this program. Some job titles that might correspond with such SOA leaders include:

- Enterprise architect
- IT vice president
- CIO

An SOA leader can be anyone who takes responsibility for the adoption and development of SOA in your organization. This paper will also be of interest to anyone who is hoping to learn more about the challenges and concerns of SOA leaders.

Much like the pre-flight checklist on an aircraft, it may help you to find a “co-pilot” in your organization to go through this exercise. In going through this process, you can talk about each of the checklist items and hear the reassuring word “check” that tells you all systems are “go.”

When to use this checklist?

This paper is a “pre-flight checklist” and as such, it should be used to assess organizational readiness before embarking on a program to adopt SOA.

Ideally, this checklist would be used after:

- Understanding what SOA means to your organization
- Making a commitment to an SOA strategy

However, it would be equally ideal if this checklist were used before:

- Making organizational changes such as forming an SOA competency center
- Determining technology requirements for your SOA system
- Launching any internal “marketing” efforts around SOA
- Pursuing funding for SOA-related projects

Of course, this checklist can be used at any point in the SOA adoption life cycle, as it can alert SOA leadership to any outstanding issues. Although operator error is responsible for most SOA failures, the timeframes for responding to problems tend to be measured in days rather than seconds.
Pre-checklist checklist

SOA flight school

Before we embark on the pre-flight checklist, we would like to address a short list of SOA adoption topics to ensure that SOA leaders are conceptually ready for the challenges of SOA adoption.

While this paper is no substitute for the plethora of available research and resources, this short list of key SOA concepts should at least ensure that the major content areas have been given adequate consideration prior to beginning your checklist process. Think of it as a “pre-checklist checklist.”

What other resources are available?

This paper is not intended to be a comprehensive guide on SOA adoption and governance. To learn more about these topics, please consult the free e-book “SOA Adoption for Dummies” sponsored by Software AG at www.softwareag.com/resources.

0.1 SOA defined

There are many popular definitions for SOA out there. In general it’s a best practice to pick one, such as the OASIS SOA Reference Model definition and see how it fits your organizational goals and challenges. By creating agreement about these core definitions within your SOA leadership you can establish shared understanding and alignment. Services differ from applications by maintaining a generalized interface that promotes multiple rather than single intended uses. A service generally separates its interface from the implementation and can be called (invoked) from any location. Depending on the adoption scope, SOA may involve structured relationships between providers and consumers, often referred to as contracts.

0.2 Mediation and loose coupling understood

SOA is an architectural perspective in which distributed capabilities are viewed as services. This style of architecture involves a host of best practices and patterns developed over many implementations. One critical pattern is referred to as “loose coupling.” Loose coupling (as opposed to tight coupling) is a core architectural principle of SOA, and it describes an organization of IT capabilities where components can be assembled and recombined flexibly and dynamically. Loose coupling enables services to be composed, mashed up, orchestrated into processes and otherwise dynamically be combined into new forms in order to support business variation. Mediation is a key enabler of loose coupling that interposes a broker between the service provider and consumer.

0.3 Business service (coarse) granularity understood

Another key distinction made in SOA is the split between technical services and business services. In most cases, organizations already have hundreds or even thousands of technical services, which are “finely grained” (they represent small chunks of functionality). A best practice for establishing business agility and re-usability of services is to manage “coarsely grained” business services within a registry repository (in some cases referred to as a business service repository).

0.4 SOA adoption scope understood

The scope of SOA adoption is determined by the number of “tribal” groups involved. When only one group is involved this is typically referred to as an SOA pilot. When several involved groups can be separated by function (e.g., developers, quality assurance, IT operations management) this is referred to as an SOA life-cycle scope. This is typically managed within central IT or a single business unit. An intermediate scope is when there are service consumers that belong to other business units or even external organizations. Other intermediate states include sharing across two IT groups that each have separate service life cycles (for example, an ERP group and a Java® group). Enterprise SOA is an even more expansive scope of adoption wherein multiple business units (and in some cases central IT) are involved in sharing services. The largest scope of adoption is “multi-enterprise” in which multiple organizations are federated in a way that allows them to share services.
0.5 Service life cycle understood

Since there are many pre-existing life cycles in the enterprise including the Software or System Development Life Cycle (SDLC), it is important to distinguish between SDLC and the service life cycle. The outputs of the traditional SDLC are technical services. The outputs of the service life cycle are business services. The service life cycle mainly consists of a set of stages that enable technical services to be combined and to acquire interfaces that enable them to be used in a business context. One useful rubric for determining if you have a business service is to find out if the service provides a function that can easily be explained to a business person. Instead of terminology such as “updating a set of database records,” a business service will have a description such as “address change.”

0.6 SOA governance understood

SOA governance is perhaps the most challenging topic for SOA. The core of governance is the understanding that siloed applications, platforms and data are perpetuated by organizational “tribes.” As such, these different tribal groups need to be made accountable to one another through policies and contracts. One very important segmentation is the relationship between service providers and service consumers. These are often characterized by detailed service level agreements. Another critical governance segmentation is to document the dependencies and externalities that cross organizational boundaries in the service life cycle. Through enforcement of these policies and contracts at all stages of the life cycle, a new way of harmonizing IT and business requirements emerges.

0.7 SOA infrastructure requirements understood

Each SOA program will have different requirements, and the introduction of infrastructure components may be staged to lessen the initial impact to budget and solve problems such as establishing strong ROI in the earliest projects in your SOA program. Quick wins establish credibility for SOA programs, which can span many individual projects. Analysts, vendors, industry events and case studies can provide good background materials to help you determine the appropriate requirements and sequencing for these components. Infrastructure components most frequently seen in SOA implementations include SOA governance infrastructure such as registry repository (or business service repository), runtime service management, service monitoring consoles and a variety of related components such as Enterprise Service Bus (ESB), Business Process Management Suites (BPMS), enterprise architecture modeling solutions and data integration infrastructure.

0.8 Relationship of SOA to data understood

Many organizations separate data management people from the application integration group and further separate application development. In larger organizations, there is a separate Enterprise architecture group that may or may not include security. These historical silos fail to recognize the proper relationships between technical service infrastructure and business services. In order to create meaningful business services, it is often necessary to ensure that data trapped in silos, incompatible formats and with disparate but related meaning (semantics) must be reconciled. Depending on the number, complexity and ownership domain of the data sources, lightweight approaches such as schema management may be sufficient, but to establish enterprise-wide unification of customer records or product information across many data sources, it may be necessary to apply Master Data Management (MDM) techniques.

0.9 Security and regulatory requirements understood

These concerns are frequently held in specialist organizations. But it is important to understand these requirements ahead of time to ensure that there are no surprises down the road. Regulatory compliance is an inescapable reality of IT today, as well as meeting the security requirements of your organization to meet its obligations to its customers, partners and other stakeholders. Since regulatory compliance is such a universal requirement, it can be used as a driver for reusable services. In the case of one financial services company, the access interface to key geospatial information was provided through a business service interface—information needed in order to comply with underwriting regulations, this service was a significant driver of re-usability for that organization.
0.10 Relationship of SOA to BPM understood

Yes ☐ No ☐

In some organizations, services are re-used in the context of information portals or “mash-up” composite applications. Other organizations support re-use in a Business-to-Business (B2B) context. But one significant pattern of service re-use is the composition of services into business processes. This usage pattern is common enough that even if your organization is not initially committed to BPM, it is important for SOA leaders to understand that these use cases may be the source of future funding and SOA-related projects. Many successful first SOA projects are related to BPM, although there are many associated with MDM, legacy modernization, B2B or integration challenges.

SECTION SUMMARY of 10 POINTS

☑ Checklist 1 – Leadership and stakeholders:
your pilot and crew

Before embarking on SOA, it’s important to inventory your people, the most important component of any SOA implementation. Successful SOA adoption requires careful alliances and in some cases holding off SOA skeptics until business results can be delivered. This section helps you ensure that you’ve evaluated your people and considered any people-related issues.

1.1 SOA leadership team identified

Yes ☐ No ☐

In the early stages it’s a best practice to keep the list of SOA leaders to a small number. These highly visible champions need to be both business and technology savvy and be as happy working with Microsoft® Excel® as with technology tools. Enterprise architecture experience including The Open Group Architecture Framework (TOGAF®) or Zapthink LZA certification is a plus, although not an absolute necessity. If you’re hiring in to this role, look for successful SOA program experience.

1.2 Leadership succession planning initiated

Yes ☐ No ☐

Disaster Recovery (DR) programs ensure that unexpected changes to key IT systems do not derail the business. SOA programs can develop a similar dependency on key people. As SOA programs expand in scope these people can be located in multiple geographies, use multiple platforms, and participate in multiple projects that can span months or years. Key stakeholders can change during that time, including program sponsors, participants, competency center representatives and members of key service provider or consumer organizations. Individuals can retire, get promoted, fired or otherwise change their relationship to your program. Work with Human Resources to understand succession plans and develop your own contingency plans.

1.3 List of stakeholders created

Yes ☐ No ☐

Beyond the core list of leaders, organizational stakeholders will need to be identified. This can be organizational or thought leaders from other groups. Depending on the scope of adoption you will need to select from an ever-expanding pool of people. This is a larger list than the list of people invited to your competency center meeting and should include funding sources, business leaders, and potentially customers, suppliers, finance, and all aspects of IT.

1.4 Funders identified & approached

Yes ☐ No ☐

Some of the most critical individuals in your SOA adoption program are your funders. Funding sources are varied, but in many cases they are aligned to project objectives. Part of identifying funders includes developing presentation materials sufficient to convince these funders of the long-term viability and purpose of your program. If you don’t have your funders your founders will flounder.
1.5 External experts identified  Yes  No
A broad-based list of different experiences is valuable at an early stage of your program. Include experiences of both success and failure and incorporate the knowledge from both. These can be either available at the beginning, such as reference checks, case studies and training experts to advisors and consultants who can be on call throughout your program.

1.6 External implementers identified  Yes  No
SOA analysts and pundits are frequently heard to say “SOA is something you do, not something you buy.” This is a truism regardless of whether we are talking about buying products or buying professional services. One experienced CIO said “We don’t want a Microsoft SOA; we don’t want an SAP® SOA—we want our own SOA.” This applies to both vendor-SOA as well as consultant-SOA. Any sufficiently large organization will have many—even hundreds of consultants—but it’s important to understand their role as implementers and to ensure that they do not have undue influence on the strategy.

1.7 Skeptics identified  Yes  No
Some of the most significant influencers may be SOA naysayers. These may be people both inside your organization as well as external advisors and analysts. Some of these individuals are hard to spot, but may fit the pattern of passive resisters, sarcastic commentators or openly hostile critics. Since successful SOA adoption calls for changes in organizational behavior, it’s important to ensure buy-in from all affected parties. One strategy for identifying people resistant to the idea is to study your organization’s representation at internal SOA events. The groups that don’t send representatives may require further evangelism and a better understanding of the purpose of the program.

1.8 Internal SOA event planned  Yes  No
Either an official “kick-off” meeting or preparatory meeting—this event is an important tool both to assess organizational interest and attitudes as well as develop consensus on key goals and metrics for SOA adoption. Such an event can include external speakers, pundits, experts, case studies and other sources of inspiration. The goal of such a meeting is not to propagate hyped expectations, but rather to bring together the team members who will be implementing SOA life cycle and leadership changes and to help to develop shared goals, understanding and commitment.

SECTION SUMMARY  ____ of 8 POINTS

☑️ Checklist 2 – IT environment “as-is” and “to-be”: weather conditions
Before embarking on any journey, pilots assess the weather and environmental conditions and forecasts. In a similar fashion, it’s important to assess any environmental conditions that may impact your SOA adoption program.

2.1 Current organizational attitude towards SOA assessed  Yes  No
Whether using online surveys, assessments, informal discussions by the water cooler or other means, it’s important to understand current organizational attitudes towards SOA. Several organizations have renamed their “SOA” programs in an effort to “rebrand” them, as they recognize that SOA is an architectural necessity, but the negative hype can get in the way of successful adoption. In addition to maintaining a pre-flight check on these attitudes, it is a best practice to monitor this sentiment on an ongoing basis. One experienced architect maintains a set of behavioral adoption metrics including attendance at internal SOA events from each of the involved groups.
2.2 Organizational knowledge of SOA assessed

Whether through formal assessment or informal means such as an onsite “SOA master class” or SOA “book club,” having a common language and understanding of the knowledge level of SOA participants is key to creating and maintaining momentum for your SOA program.

2.3 SOA education/training plan formed

Some form of certification can be helpful—whether an external certification such as Licensed ZapThink Architect (LZA) or a TOGAF certification from The Open Group, this can serve as a clear indication of people who have all the necessary background to participate in your SOA effort. Internal training and certification, vendor-based product training and SOA classes can be part of a qualification process. Maintaining documentation about who has accomplished what certifications or even read certain books can be helpful to establish organizational norms.

2.4 Funder’s career goals/timeline known

At an analyst conference, one CIO presenter was heard to brag about slashing hundreds of millions of dollars from the company’s annual IT budget, and spoke of his “100 day plan” to turn around corporate IT. Both the larger goals and the timeframes are key to understanding the adoption strategy. Top-level executives looking for short term success and radical cost cutting will require paths towards SOA that accommodate those plans. Timeframes to project ROI will have to correspond accordingly as well as the net effect of SOA-related projects. If the funder is not a CIO but a business leader, having a strong knowledge of not only their business objectives and timeframes, but their personal career aspirations will only help you. If possible develop an informal context such as dinner or a golf course to help build trust and understand these motives better.

2.5 Current satisfaction with status quo assessed

As mentioned earlier in this paper, a typical IT regime has winners and losers. Looking for dissatisfaction is a good way to understand where hidden effort and complexities are being pushed. In some cases effort and complexity are traded for cost—which can be a way of masking dissatisfaction. For example, offshore or outsourced IT can be a place where complexity is buried. Since those organizations are well paid, there may not be an active sense of dissatisfaction other than the extent to which these organizations control the budget and agenda of IT within your organization. In some organizations there is a buildup of such budgetary line items to the extent that the great majority of IT cost goes to “keep the lights on.” Having a view at the complete IT budget as well as understanding your organization’s IT pain points is a key starting point for SOA adoption.

2.6 “Rogue services” audited

The majority of items in this section are about evaluating people and their attitudes. Another helpful area to audit is pre-existing services. Whether these are technical services provided by underlying systems, Web Services or other implementation type, obtaining an inventory of these assets and a clearer understanding of who is using them is essential. The term “rogue services” is used in particular to identify services that are under active use, but that have not undergone any governance and are not being managed within any well-defined provider/consumer relationship. This can include services that are bound across organizational boundaries, but without formal contracts or Service Level Agreements (SLA) and can also include services that are bound across life-cycle boundaries such as services that are offered for testing or development that are being consumed by production applications. All of these dependencies on these services need to be discovered so that they can be brought in to a governed state.

*SECTION SUMMARY __________ of 6 POINTS*
Checklist 3 – SOA “flight worthiness”: aircraft

The “flight worthiness” of your SOA program hinges upon the scope, goals and your ability to define and meet KPIs. This section can help you assess these success factors.

3.1 Adoption scope is well defined □ Yes □ No

We defined the scope of SOA adoption in the “conceptual readiness” section of this paper. But the specific scope of your program should be well understood. You may intend for the scope to expand over time, however, it is crucial that this is done in clearly defined milestones. Each scope of adoption requires a very different set of organization and skill set. One way to define the scope crisply is to identify exactly who will be involved and what changes will be required.

3.2 SOA adoption goals defined □ Yes □ No

Although goals will have to be established for each stage of adoption, a well defined set of “victory conditions” will help to motivate stakeholders and ensure that participants are well aligned. During the introductory section of this paper, we listed a large number of hidden costs of bad architecture that can be fixed through SOA adoption. One way to identify the best solution for the whole enterprise is to convert all KPIs into economic terms such as dollars or euros. Measuring the total cost of existing behaviors over the lifetime of their effects is a powerful measurement that helps underline the cost of bad architecture. In one organization, the cost of new software code was determined to be $200 per line of code over the lifetime of that code, once the cost of quality control, compliance risk, bugs, outages and maintenance were factored in. Multiplying by millions of lines of code the total cost became a clear driver for re-use in the organization.

3.3 SOA success metrics defined □ Yes □ No

Software AG has a white paper that defines KPIs for SOA based on successful customer reference cases. Reading this paper will give you plenty of inspiration about appropriate and proven success metrics for SOA adoption programs. Other best practices include ensuring that status of KPIs are publicly displayed among the parties responsible for those outcomes. In addition, aligning management incentives, job descriptions and performance bonuses to KPIs can help ensure program success. Be aware that any connection between compensation and new KPIs can lead to KPI “gaming”—generating better values for KPIs through tricks instead of adding value to the underlying processes.

3.4 Business model developed □ Yes □ No

In addition to project ROI, developing an ongoing sense of the business value of SOA for your particular program may be warranted. In addition to the success metrics defined above, a business model that establishes a value for SOA achievements like re-use can help sustain SOA programs. It may be helpful to know that a proper re-usability program will see acceleration in business value is more reusable services and use cases are brought together. Although there may be upfront costs, the ability to demonstrate acceleration of business value can be a powerful motivator for many organizations, as well as provide a benchmark for you to aspire to.

3.5 SOA initial project defined □ Yes □ No

The first project within an SOA program helps set the tone. Ensuring that this initial project aligns with organizational objectives is key. SOA projects frequently align with BPM projects, but also with legacy modernization, MDM, integration, B2B, customer interaction, supply chain, Enterprise Resource Planning (ERP) or other strategic objective. Since architectural objectives need to be met as well as business objectives, the proper sequencing of projects is an essential consideration. The first services in the registry set the stage for subsequent re-use and it’s important to ensure that there is both business value and architectural value in them.
3.6 SOA ROI defined
Project-based ROI is as much part of the IT problem as it is part of the solution. One of the problems with ROI is that it’s rarely measured beyond the scope of the project. This ensures that those responsible for architectural degradation and long-term system instability are long gone before they are made accountable for their misbehavior. Despite these concerns, ROI is a core measurement in most IT organizations and establishing both project and programmatic measurement of ROI can be a tool for both architecture and communications.

☐ Yes  ☐ No

3.7 SOA budget requirements defined
This needs to be done in the context of the next section, with an understanding of budget availability and competing projects. That said, starting with the hard functional requirements and adoption scope is the appropriate first step. Acquiring capabilities in a stepwise fashion can be a feasible approach as long as the complete scope of requirements is understood and that capabilities are brought on line in time to meet the milestones laid out for SOA adoption.

☐ Yes  ☐ No

SECTION SUMMARY  ____ of 7 POINTS

Checklist 4 – SOA measurements: instrumentation

Accurate instrumentation can be critical to “flight safety.” Ensuring navigational accuracy and constant feedback from coordinated systems in flight ensures that systems are working as intended and organizations are aligned and executing towards common goals.

The “measure first” paradigm is part of what Software AG calls the “performance-driven” organization. Since SOA tackles head-on the challenges of delivering IT capabilities out of a functionally fragmented value chain, aligning the organization becomes a key challenge for SOA leadership. Enterprise IT is by necessity delivered from a number of subgroups responsible for different parts of the value chain. These subgroups can be system integrators, developers, vendors, quality assurance testers, support, IT operations, architecture, or any of a number of specialized functions. Also, outside of the IT realm there are many stakeholders such as the business sponsors and service consumers, whether they are internal or external to your organization. By establishing agreements centered around measurements, you gain operational consistency and alignment in a measurable and consistent way.

4.1 New metrics are well defined
New measurements for SOA are part of the system of agreements that make SOA visible and accountable. Although trust is a key element in the consumption of services, the ability to verify the behavior of service delivery groups is key. These metrics should be defined in the context of the SOA competency center, and should be agreed upon by all affected parties. The metrics that make sense for your organization may differ from those in other organizations, but several key themes emerge when studying the industry as a whole. One of these themes is the desire to convert measurements into dollars, whether they be about re-use of services, time-to-market, agility and project delivery metrics, quality metrics or other topics. As mentioned in the introductory section of this paper, an effort to measure and document the currently hidden costs of bad architecture can drive organizational alignment as well as continued support for the program, as the leadership begins to see the scale of cost avoidance and benefit on an ongoing basis.

☐ Yes  ☐ No

4.2 Measurement system in place
Of course simply agreeing to new metrics does not ensure success. Developing a mechanism for measuring on an ongoing or operational basis is key. Business metrics may be driven out of a business activity monitoring or process intelligence system. IT operational metrics can be driven from a service management console or from the mediation system logging environment. Finally, life-cycle metrics can be derived from the registry repository. These systems should propagate metrics and reports in a way that ensures that there are both organizational and individual incentives and accountability.

☐ Yes  ☐ No
4.3 Accountability system in place

Of course the ability to analyze and measure overall system behavior, including the human and machine components, is key to SOA success. However, simply agreeing on them in the context of the SOA competency center may not be enough to drive organizational transformation. Transforming the behavior of the organization requires tying the measurement system to individual motivational structures such as job titles, job descriptions, job performance evaluations, bonuses, organizational reporting structure. It also may require organizational motivation such as tying the metrics into budget planning, resourcing, organizational reporting structure, chargebacks and other such tools.

**SECTION SUMMARY ** of 3 POINTS

---

**Checklist 5 – Funding model: airports**

The initial and ongoing funding and executive sponsorship are essential to program success. In this section we evaluate the major considerations for this topic.

**5.1 Budget availability understood**

Although in some cases, budget can be redistributed based on a strong business case around cost reduction, in most cases SOA projects will require budget allocation through the Project Management Organization (PMO) or whatever IT budgeting process. It is helpful to understand the total annual discretionary spend and the role of this project or program in that context. Once these figures are determined, an appropriate staging and sizing can be applied to ensure that your SOA program requirements can align with the funding timetable and quantities.

**5.2 Budget amount documented and justified**

The total budgetary request should be understood. In most cases this requires a solid understanding of the deployment footprint and infrastructure requirements in order to appropriately size your implementation. This sizing can impact licensing cost of software and hardware cost. Be sure to include potentially hidden requirements such as disaster recovery, multicore and high availability deployments, and enough capacity to accommodate the envisioned use cases. These numbers will have to align with project ROI and business benefit. The justification will have to align with funder goals, depending on the source of funding.

**5.3 Budget cycle and timing understood**

Every organization has a specific funding calendar that may consist of annual funding, discretionary funding and other timetables. Understanding nuances about your organization can help to guarantee your project or program funding. Some organizations have annual budgets that you must “use or lose.” This style makes a clear strategy and time window for those seeking funding. Knowing the nuances of this process is essential. Other aspects of timing include understanding when funding is committed and whether funding can be withdrawn if projects are not meeting expectations, or additional funding can be sought based on milestones.

**5.4 Funding process understood**

IT funding events are typically the result of some form of investment committee evaluating proposals and selecting them for approval. Understanding exactly who the decision-makers are, their areas of expertise, their career goals and the kinds of timing needed for this process is helpful. Who are the decision-makers? What are the cultural norms, formats and standards associated with submitting a proposal? What are the timeframes for proposal submittal and evaluation? What are the funding thresholds that trigger special processes and at which levels of organization? Can your proposal be made to fit a specific funding category that might speed approval?
5.5 IT investment committee members/approvers profile  ☐ Yes  ☐ No
Who are the individuals who control the funding approval processes? Can you find examples of previously funded projects approved by these individuals? Getting the advice of successful proposers about what worked and what didn’t be useful. Certain buzzwords (including “SOA”) may have positive or negative undertones given the past experiences and business culture of the investment committee. Understanding the career goals and history of each participant can be useful. If there are official presentations that must be made in support of proposals, practice in front of friendly committee members ahead of time or those who know them best.

5.6 Competing projects known  ☐ Yes  ☐ No
In any given budget cycle, a number of other projects may be up for approval. Gaining insight into the other proposals as early as possible may allow you to join forces or reposition your proposal in response to another proposal. By understanding the total discretionary budget and the total number of projects and their sizes, clues can be drawn about how your project may fare in the evaluation process. Understanding the relative strengths and benefits proposed by the other projects may help you understand the competitive environment and force you to either improve your project’s ROI or other key business measurements.

SECTION SUMMARY  ____ of 6 POINTS

☑ Checklist 6 – Adoption milestones: flight plan

Of course the first project is critical, but extending the scope of adoption beyond that requires careful planning. This section allows SOA leaders to evaluate longer-range plans and the careful staging required to achieve them.

6.1 SOA milestones defined  ☐ Yes  ☐ No
One of the most significant gaps in both understanding and execution is the gap between project and program. Having an adoption road map that extends beyond the first success helps set expectations about the long-term plan and also ensures an execution focus. As adoption scope expands, the executive buy-in and organizational change management requirements expand proportionally, as well as the infrastructure requirements. Maintaining a set of milestones enables a rational “flight plan” that can help your organization “refuel” and set proper expectations for a longer journey.

6.2 Go/no-go criteria defined by milestone  ☐ Yes  ☐ No
It’s optional and perhaps difficult to have these criterion beyond the next milestone—but having a go-no go criteria at each step both creates the kind of management accountability that funding sources appreciate but also adds a level of focus to execution of your adoption program. This can be based on ROI or other KPI levels. These criteria provide a way to build commitment for future adoption stages with senior management. It’s generally expected that if you meet your performance objectives that you’ll get the green light to go forward, but creating an accountable framework helps ensure those commitments.

6.3 Organizational structures planned  ☐ Yes  ☐ No
The first organizational structures needed typically involve the establishment of an SOA competency center, with representation from all of the stakeholder “tribes.” In order to establish proper service governance, traditional roles in IT may need to be adjusted and job titles and descriptions should be considered. Service ownership and maintaining alignment between sphere of influence and accountability are the key principles. Realigning job performance review and bonuses may also be a consideration. The balance of power between central groups responsible for providing shared services and distributed groups may need to be revisited.
6.4 Organizational incentives planned  □ Yes □ No
Realigning the organization around key SOA goals such as sharing of services, customer experience and agile delivery of business capability requires an understanding of the motivations of key staff members. One experienced architect explained it by saying “If you deliver the right information to your people and treat them like professionals, they will do the right thing.” On the other extreme, IT managers have employed a technique called “management by showing the door.” Regardless of whether you plan to use a light or heavy-handed approach, understanding how to measure and change the total costs of human behavior in your IT organization is the key. Total costs should be measured and amortized across the meaningful life of the product or service. This kind of framework can help to counteract the short-term thinking that pervades many IT organizations.

6.5 Vendor product road map understood  □ Yes □ No
Whether in the area of governance interoperability or support of emerging standards, having a clear understanding of a vendor’s future product road map is essential. SOA infrastructure will have a requirement to interoperate across a wide variety of vendor “stacks” in the long run. A sophisticated reading would also include an interpretation of the vendor’s past product history, including whether the product was organically developed or acquired and the version history of any products as well as the intentions and motivations of the vendor. Does the vendor derive most of their revenue from license software or from follow-on business such as professional services? Understanding a vendor’s products, product history and motivations can help ensure a well-aligned relationship that can meet program requirements for the long haul.

6.6 Internal and external evangelism planned  □ Yes □ No
Successful SOA implementation and adoption requires maintaining momentum and enthusiasm for the process. This can involve both internal and external “marketing” of your efforts. Industry and vendor events and publications often highlight successful end-user case studies and implementations. Leveraging these opportunities can help develop vendor relationships, funder relationships and other key connections that can help ensure the success of your program. Promoting a high degree of visibility of SOA results both inside and outside your organization can help to maintain momentum and enthusiasm.

SECTION SUMMARY  ____ of 6 POINTS

TOTAL SUMMARY: ____ OF 46 POINTS
Conclusion

Checklist complete

You may find that some of the checkboxes are either checked “no” or blank. Unlike in air travel, not every box needs to be checked in order for takeoff. The purpose of this white paper is to ensure that you’ve considered many aspects of SOA adoption before embarking on your program.

The most important factor for SOA success is ensuring both situational awareness and a framework for continuous improvement. If you study aircraft navigation, you’ll know that over 99 percent of the time, the airplane is not pointed exactly at the spot where it lands. The airplane is constantly measuring its location, direction and speed relative to its intended landing spot, and is able to make midflight corrections. This is absolutely essential to success because you never know when you will need to move to avoid other aircraft or a weather pattern. Similarly in an SOA journey, there’s no way to predict exactly the changes you will experience—because the enterprise is a complex dynamic system. Any effort to change one part of the enterprise will result in unintended consequences—establishing a connection between KPIs and organizational incentives (including bonuses, performance evaluations, organizational structure, etc.) can result in employees completely retooling their behavior and potentially destabilizing the equilibrium of today’s working system. Adaptability “in flight” requires that your SOA infrastructure provides a maximum of situational awareness combined with active policy enforcement, IT governance automation and appropriate alerts and notifications when changes are detected.

The key is to understand the need for continuous improvement in the context of SOA. Continuous improvement obviously requires optimization of IT processes such as SOA life-cycle governance. It also requires continuous alignment through both measurement and enforcement of contracts and policies. But it also requires continuous collaboration between organizational tribes including those from business and from IT. As we know, a service reduces operational complexity for the consumer by essentially hiding complexity behind the service interface. This complexity is hidden from the view of the consumer in exchange for trust. Therefore, trust is an essential ingredient to long-term adaptability and flexibility of SOA.

Trust sounds like an intangible human element that SOA practitioners can’t significantly impact. However, in the context of collaboration and alignment between the many enterprise organizational “tribes,” trust is externalized into a framework of accountability. In a small area, it’s possible for two aircraft pilots to have an explicit trust relationship—perhaps they went to the same flight school or they are good friends outside of the field of aviation. However, individual point-to-point trust relationships are not scalable. In order to manifest a collaborative environment across organizational “tribes,” trust must be externalized in a framework. Aircraft pilots don’t have an explicit trust relationship with every other pilot and air traffic controller in the world. They put their trust in the formalized procedures and processes that ensure that everywhere in the world, pilots have the appropriate skills, certifications and training, that aircraft have the appropriate instruments and that processes for ensuring flight safety will be followed. From the perspective of an individual pilot, all of these checks and balances may provide a degree of inconvenience and an impediment to the “freedom of flight.” But ultimately such regulations can enable the air traffic to scale substantially and thus deliver more passengers safely through the skies.

This checklist can help you assess your preparedness but it should not be used as an excuse for “analysis paralysis.” Software AG can help you with resources, advice, free e-books and a variety of help that can accelerate your program. Be sure to take advantage of these resources by visiting www.softwareag.com/resources.
ABOUT SOFTWARE AG

Software AG helps organizations achieve their business objectives faster. The company’s big data, integration and business process technologies enable customers to drive operational efficiency, modernize their systems and optimize processes for smarter decisions and better service. Building on over 40 years of customer-centric innovation, the company is ranked as a “leader” in 14 market categories, fueled by core product families Adabas-Natural, Alfabet, Apama, ARIS, Terracotta and webMethods. Learn more at www.SoftwareAG.com.

© 2014 Software AG. All rights reserved. Software AG and all Software AG products are either trademarks or registered trademarks of Software AG. Other product and company names mentioned herein may be the trademarks of their respective owners.

SAG_SOA_Governance_Checklist_WP_Mar14

Find out how to power up your Digital Enterprise at www.SoftwareAG.com