Assessment of SOA Adoption Feasibility

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DM-0000148

Assessment of SOA Adoption Feasibility for *<Organization>*

*<SMART Team Members>  
<Date>*

## EXECUTIVE SUMMARY

*This Executive Summary should summarize the findings of the SMART-AF assessment, and if the assessment is feasible, should briefly indicate the essential strategy for the organization to follow. This section is what will be read by the real decision-maker, and as such, it is important that it be written for that audience.*

*First section: Simply state the “yes” or “no” of whether to adopt SOA.*

*Second section. Summarize the rationale or the assessment, and briefly summarize the implications of each element of the rationale for future activities.*

*Third section Describe specific details on how the adoption and introduction of SOA concepts into the organization’s systems development processes and environment should be accomplished. Potential topics include:*

* *Considerations of business processes: how much re-engineering, what kind of process change or improvement, how SOA adoption will assist in this, what SOA adoption cannot provide*
* *Precisely how the organization is considering SOA usage (e.g., development and usage of internal services only, usage of external services only, etc.)*
* *If migration of legacy systems is recommended, which might be the optimal services and which legacy will provide the capabilities*
* *If acquisition of new capabilities from new services is recommended, which services and which capabilities*
* *Considerations of infrastructure*

*Fourth section: summarize the cost factors that will accompany the migration to SOA environments. It should be the widest notion of cost, i.e., if migration of some legacy system is anticipated, “cost” should also include the extent of that legacy system’s downtime (and unavailability for present users); it should also make note of costs that the organization has not considered..*

## Introduction

*The opening paragraphs of this section will describe the overall content of the document. It should begin with the statement that the report is an output of the SEI’s Service Migration and Reuse Technique - Adoption Feasibility (SMART-AF) conducted for <org> on <date>. It should follow this up with a one sentence description of SMART-AF and how the contents of this report are the findings from SMART-AF. The contents (each section) of the report should have a one-line introduction. For example, this section could look like:*

This report is the outcome of an initial investigation into service-oriented architecture (SOA) adoption within <organization> that took place on <dates>. The investigation employed the SEI’s Service Migration and Reuse Technique – Adoption Feasibility (SMART-AF) to help <organization> establish the feasibility of SOA adoption and create a high level strategy to introduce and adopt SOA concepts into <organization>.

The following section describes the current SOA-relatedknowledge and activities within <organization>. Section 2 highlights the major findings from SMART-AF and provides rationale behind the feasibility of <organization> to move to an SOA environment. Section 3 provides the next steps for <organization> based on the positive <or negative> conclusions of the investigation.

Appendix A provides a brief description of SMART-AF.

1. Use of SOA in <Organization>

*This section describes the history, if any, of SOA usage within the client organization. It should also include any courses taken, consultants that have made presentations on SOA, and internal initiatives taken, including the one that led to the SMART-AF engagement.*  *This section also describes any current SOA-related activities. It also names the current champion(s) for SOA adoption, including whoever was responsible for sponsoring the SMART-AF engagement. If there is technical expertise on SOA present in the organization, this section should provide specific detail, e.g., names, positions, nature of expertise.*

# Major Findings and Rationale

*This section contains two major items: the bottom-line finding on whether it is feasible for the organization to move toward SOA, and the rationale for this finding (i.e., whether the conclusion is positive or negative). Note that regardless of whether the finding is positive or negative, the rationale will contain both positive and negative elements, since there will inevitably be some factors that point in the opposite direction from the bottom-line finding.*

*This section must provide sufficient detail on the essential conclusion so that the champions of SOA can use this section to make a convincing case to their superiors within the organization.*

# Next Steps

*If the bottom-line conclusion is positive regarding SOA adoption, this section should contain recommendations about strategy, as well as a description of general issues, such as the need for ongoing championship, for realism regarding funding and cost issues, for high-level advice on the suggested pace of migration, as well as caution about regarding SOA as a “silver bullet.” The specific items on the Adoption Issues List should be expanded in this section..*

*However, if the bottom-line conclusion is negative, this section is more difficult to define in the abstract. For instance, there are many conceivable rationales for a negative conclusion:*

* *Do not adopt SOA now, but keep looking at it and maybe come back in two years*
* *Do not adopt SOA because your legacy systems are totally inappropriate for migration to SOA environments*
* *Do not adopt SOA because the nature of your mission and required systems just aren’t conducive to a SOA approach*

*…and so forth. Thus, the general tone of this section will be entirely dependent on the specifics of why SOA is not a good idea at this time.*

*However, it is possible to suggest that, whatever the essential content of this section, it contain some degree of high-level recommendations about how the organization’s technology posture should move in to the future.*

1. References

[Lewis 08] Lewis, Grace A., Morris, Edwin J., Smith, Dennis B., & Simanta, Soumya. *SMART: Analyzing the Reuse Potential of Legacy Components in a Service-Oriented Architecture Environment* (CMU/SEI-2008-TN-008). Software Engineering Institute, Carnegie Mellon University, 2008.

Appendix A: The Service Migration and Reuse Technique – Adoption Feasibility (SMART-AF)

The Service Migration and Reuse Technique (SMART) is a family of techniques developed by the SEI for analyzing the potential ways in which an organization can make use of service-orientation for its software resources [Lewis 08].

SMART-AF (Adoption Feasibility) is targeted at organizations that are questioning feasibility of SOA adoption. The output of SMART-AF is set of recommendations for the organization and the elements of a SOA strategy if it is feasible. Aspects covered in SMART-AF include:

* Does it make sense to adopt a SOA strategy for the organization’s software resources?
* What value would a SOA strategy provide for the organization?
* Who within the organization is the champion (technical or otherwise) for such a move?
* How should the organization define an overall SOA strategy across the enterprise?
* Which legacy systems are ideal candidates for migration to SOA environments?
* What are characteristics of the service infrastructure that the organization should make use of?

SMART-AF consists of the seven activities presented in Figure 1.

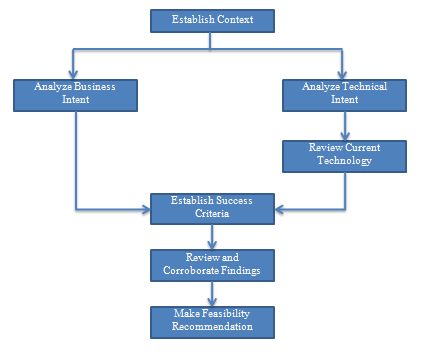


Figure 1: SMART-AF Activities

1. *Establish Context* develops an understanding of the goals and expectations of SOA adoption; the programmatic constraints, such as schedule and budget; any other efforts related to SOA; and the existing software asset base of the organization. Appropriate stakeholders and potential participants in the adoption effort are identified, together with an identification of business and operational processes that would benefit from SOA adoption. One critical element of this activity is to determine the identity of persons who are SOA champions within the organization, and the degree of SOA expertise available. The end result should be sufficient information to understand the overall context for considering SOA adoption within the organization.
2. *Analyze Business Intent* obtains detailed data about the business and process drivers for SOA adoption, the risks that SOA adoption might either create or mitigate, and such issues as cost, schedule, and resources available.
3. *Analyze Technological Intent*  obtains detailed data on potential technical barriers to SOA adoption, what benefits the organization believes will result from SOA adoption, and the current status of the organizations technology base.
4. *Review Current Technology* obtains data on the existing software resources of the organization, and the precise nature of the technical expertise in-house.
5. *Establish Success Criteria* identifies a set of success criteria for potential SOA adoption, including different sets of criteria for different stakeholders.
6. *Review and Corroborate Findings* summarizes, reviews and verifies the information gathered in the previous steps.
7. *Make Feasibility Recommendation* analyzes the information and prepares a high-level recommendation either for or against SOA adoption, the rationale for that recommendation, and a strategy for accomplishing the adoption.

The first four activities, *Establish Context*, *Analyze Business Intent,* Analyze *Technological Intent*, and *Review Current Technology*, were executed through direct interviews and presentations by <names>, <roles>, and <organizations such as sub-contractors>. Other stakeholders whose views were presented include <others>. The end product of SMART-AF is the present document, an “*Assessment of SOA Adoption Feasibility*.”