Extended Abstract

A Method for Selecting SOA Pilot Projects

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Abstract

Many organizations are introducing Service Oriented Architecture (SOA) as part of their business transformation projects to take advantage of the proposed benefits associated with using SOA. However, in many cases organizations don’t necessarily know on which projects introducing SOA would be of value and show real benefits to the organization. In this paper we outline a method to help organizations select from a set of candidate projects those which would be most suitable for SOA. The method is based on identifying a set of benefit and risk criteria, investigating each of the candidate projects, mapping the information collected from the projects to the criteria and then selecting the most suitable project. The paper outlines a case study where this method was applied in a large Australian government organization to help them select pilot projects and develop an overall strategy for introducing SOA into their organization.

Keywords: Service-oriented Architecture, Project selection criteria.

1 Introduction

Pilot projects play a key role in the introduction and successful adoption of SOA within an organization. In the initial stages, the pilot can assist in risk management and help validate the proposed transformation roadmap. Later, the pilot helps explore and guide deployment as the roadmap unfolds and the transformation moves from concepts to practice. Piloting must be part of and live within a much bigger living and evolving ecosystem where technological, business and political change is an accepted and welcomed feature.

In all these stages a well constructed pilot project selection and evaluation method can act as a spotlight. It illuminates the benefits and risks of candidate projects in the context of the maturity and capability of the organization and environment as a whole. Perhaps more importantly; it can be used to challenge, define and clarify the transformation roadmap and strategic SOA direction. In a recent engagement with an Australian Government department we developed a pilot selection method to help the organization choose between a number of projects and we developed an overall piloting strategy for the organization. This paper gives a brief overview of the method and the conference presentation will give the details of the method and the case study where the method was applied.

2 The Pilot Selection Method

In developing the Pilot Selection Method we developed a pilot metric framework which was based on IEEE 1061-1998 Standard for a Software Quality Metrics Methodology (Fig. 1) [1].

Fig 1: Pilot Metrics Framework

The framework consists of four levels:

1. Criteria Level – which are normally expressed in customer’s terms and can measure either benefits and risks;
2. Contributing Factor Level – which are factors that are obtained by decomposing criteria into key considerations;
3. Sub-contribution Level – which are sub-factors that are contained by decomposing each contribution into measurable attributes;
4. Direct Metrics – which are the direct metrics associated with each factor and serve as the...
quantitative and qualitative representation of a contribution factor.

When the method is applied we asked a set of questions that examined each of the criteria through the various levels. The metrics and the detailed responses to the sub-contributing factors are obtained through interviewing different stakeholders within the organization. The results are aggregated and abstracted to enable the criteria to be mapped onto an ordinal scale from 0 to 5 which are then presented in a radar graph.

3 Case Study

The set of criteria that we used on the case study with the Government department include the following:

- **Benefits**
  - Good pilot preparedness;
  - Is a sustainable investment;
  - Builds SOA capability and capacity;
  - Validates architecture and IT Operations; and,
  - Validates technologies.

- **Risks**
  - Underlying systems not being SOA compatible;
  - Mismatch with governance maturity;
  - Mismatch with SOA maturity; and,
  - Other evaluated risk factors

When we applied the method we interviewed stakeholders from the various candidate project areas, the sponsoring group that has overall responsibility for the introduction of SOA and other technical groups.

4 Examples of the Results

When the detailed questions were put to the stakeholders, information was captured that we later aggregated and abstracted to get the mapping onto the ordinal scale. From the mappings radar graphs were produced which shows the outcomes for each of the criteria. Examples of the radar groups for 2 of the candidate projects are shown in Fig. 2 and Fig. 3. In the radar graphs the upper portion relates to the benefits of undertaking the project and the lower portion refers to the risks involved in undertaking the project. In Fig. 2 is can be seen that there are some benefits from undertaking the Procurement Management Service as a pilot but there are a lot of risks involved as well. One of the main reasons for this is that there is a very large amount of work involved in the project and if it could have been decomposed, then some pieces of the work may have made better pilots. In Fig. 3 there are many benefits in choosing the Authoritative Records Management Service as a pilot and there are not many risks associated with it.

5 Conclusions

Our method for pilot selection has provided the organisation a very useful set of benefit-related and risk-related criteria and results that help them make an informed decision on its piloting strategy. We are planning on extending the selection method to other areas such a pilot selection in the Cloud Computing area. Further work with the same Government department is looking at evaluating the effectiveness of the pilot.

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References