



CSC

Meaningful Cost-benefit analysis for SOA projects

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Introduction

- Paucity of meaningful cost accounting in SOA
 - Most case studies only make highly aggregated estimates
- Use of legacy work breakdown structures (WBS) is the root cause
 - SOA activities not explicitly identified, so explicit cost not tracked
- Discussion of
 - Impact
 - Cause
 - Solution

Missing Cost and Schedule data

- Knowing costs and task duration is NOT typically a problem in project management
 - Usually the problem is in estimating benefits and tracking to root causes
- Knowing cost and task duration ARE usually a problem in SOA
 - WBSs usually do not specifically identify interoperability tasks – so you don't know what they cost or how long they took
- Absence from WBS means
 - Commingling interoperability costs with development that would have happened anyway in cost and schedule reporting
 - No warning on the reports is a SOA task with dependencies is late

SOA view of world is different from traditional development

- A WBS is a tree whose leaves are the tasks that are the project
 - Concept developed at the same time as the waterfall method of development
 - One WBS per project
 - Essential input into scheduling and estimation, which in turn defines the granularity of reporting
 - In some sense the idea of ONE WBS is the intellectual underpinning of stovepipes
- SOA divides the world into services and interoperability infrastructure
 - What happens inside a service is about the same as in traditional development
 - Each new service has a SIGNIFICANT investment in interoperability to reduce future maintenance costs and delays
 - Ideally, there are a larger number of smaller projects
 - Interoperability and service development takes place at the same time

Why WBSs are really important

- Breaking down all the work into discrete tasks is good mental hygiene
- If you knew all the tasks you could ask about dependencies
- If you knew the tasks, the dependencies, and the amount of what kind of labor needed you could develop a schedule
- If you knew what people were paid you could develop a budget (not including materials)
- If you have budgets for time and cost by task, you can track actual cost and time by task
 - And if you don't cost and time is bundled into a higher-level task

WBS should reflect this dichotomy between interoperability and functionality

- **What is important should be obvious**

- (and in the WBS)

- SOA adds

- New enterprise architecture tasks of ontology and interface standard definition
 - Divides development into building interfaces and building services
 - Whole new concept of governance requiring conformance to standards

- Strong but understandable tendency to recycle WBSs

- WBSs are VERY complex for a large project
 - Architects tend to focus on having enough budget, not on fine-grained and accurate reporting
 - Project managers and schedulers often do not have an IT architecture background

SOA financial questions you **SHOULD** be able to answer

- How much money and how much time do each of the essential SOA tasks take?
- Does the cost and time needed to implement change orders go down after a target level of SOA maturity is reached? Is it a positive NPV deal?
- Now that you have tightly-defined published interfaces and fewer interfaces to maintain, did certification and accreditation costs go down?
- Are specific key SOA tasks over-or-under schedule and/or budget
 - Because SOA requires everything to go right to achieve the target, underinvestment can be a leading indicator of trouble

What are these SOA-specific tasks?

Development

- Enterprise Architecture
 - Ontology development
 - Interface standards
- Develop interfaces
 - Code web services interfaces
 - Get approval from governance
 - Map legacy to ontology if needed
- Independent test of interoperability
- Establish environment
 - Establish ESB and SLA monitoring automation

Maintenance

- Governance
 - Ontology updates
 - Interface updates
- Change management
 - Modify web services interfaces
 - Get approval from governance
 - Modify vocabulary mapping
- Independent test of interoperability
- Operate production environment
 - Monitor SLAs
 - Take enforcement actions if needed

Recommendations

- Ask development vendors to break out SOA-specific tasks in development WBS, the schedule, and the price proposal
 - Use the word “shall” in the RFP
- Ask maintenance vendors to submit WBSs which map to the development WBSs
 - Use the word “shall” in the RFP and put the development WBS in the solicitation package
 - This synchronization is needed to conduct meaningful management analyses, since the investment is in development and the benefit is in averted maintenance costs
- Task governance to work with program management and vendors to develop SOA informed management reporting that enables comparing development investments with maintenance costs

Conclusion

- Can only manage what you can measure
 - If it's not in the WBS you can't measure it
- WBS definition traditionally left up to vendors
 - But it doesn't have to be
 - Vocabulary synch important for WBSs as well
- Acquisition should worry about meaningful reporting in addition to feasibility in evaluating proposals