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Services Oriented Architecture: Revisiting Reuse

System reuse can save money and developer talent—if you approach it right

By David Baker, Chris Curran, and Claudio Di Nella

In this recessionary environment the purveyors of Services Oriented Architecture (SOA) tools and services continue extolling SOA as a way to improve the IT team's efficiency by reusing software and services. However, forthcoming research by Diamond Management & Technology Consultants and the MIT Sloan School of Management's Center for Information Systems Research (CISR) confirms that cost-conscious CIOs are right to be skeptical. Our survey of 128 IT executives found that, on average, firms saved $2.1 million from software reuse, but spent an average of $4.9 million on their SOA initiatives. Here are thoughts on how to reverse that equation.

The complete CISR briefing, *Reuse and SOA: Recalibrating Expectations* (Vo. VIII, No. 3A) will be available in March 2009. However, the preliminary findings and our experience in helping clients improve the performance of their IT function provide actionable insights on how to get the greatest value from SOA investments.

The fact is many companies are simply not getting the cost benefits from SOA that they expected at the outset. Not surprisingly, cost savings increase with the number of services in production, and with the percentage of software reuse. However, we have found that cost savings alone is not enough to justify SOA—the real benefit comes from improved business agility that is enabled by having greater architectural maturity. Developing and reusing a small number of strategic services is the best way to capture value from SOA initiatives.

The Diamond/MIT CISR research found that the firms that derive the greatest benefit from SOA have a strategy, use tools more effectively, and have more years of experience with SOA. These firms are more satisfied with their results, achieve better cost savings, and do a better job of planning for shared use.

However, the business case for software reuse is still unproven and firms generally spend more on the effort than they recoup. Developing and reusing a small set of strategic services may be the best path to value, but firms will need to track results in order to justify the investment. Developing a solid plan ahead of time, including how you will recoup your investment in a service (and SOA generally) before you build it can help firms derive maximum value.

The greater the architectural maturity of the firm, the higher percentage of software reuse, but mature firms also have fewer
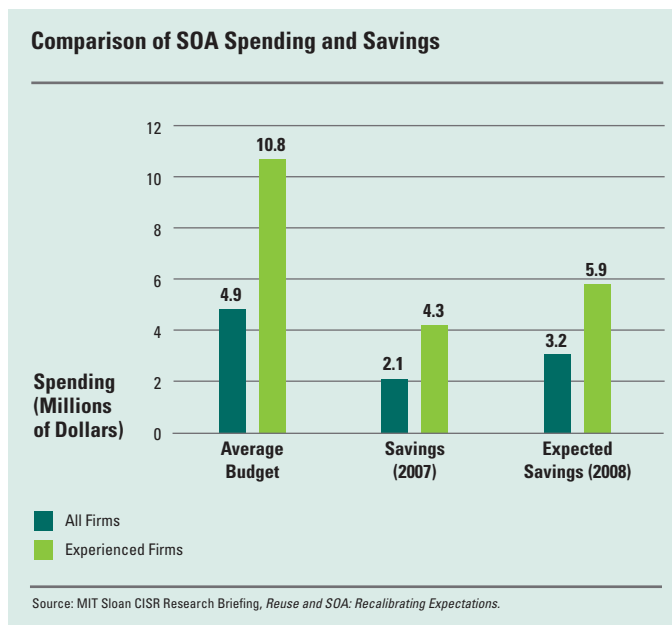

Comparison of SOA Spending and Savings

Source: MIT Sloan CISR Research Briefing, *Reuse and SOA: Recalibrating Expectations.*

Figure 1

services. (More mature firms also tend to use IT management tools more effectively, which helps get maximum value out of any development initiative.) We found that less is more—companies that are most successful use a focused approach to encouraging adoption.

Architect involvement and software lifecycle methodology were cited by research respondents as the most valuable practices in realizing value from SOA. In contrast, funding approaches and services reuse incentives were among the least valued and least used, which is unfortunate because they were also cited as the biggest obstacles to SOA adoption. The funding issues stem from the tradeoffs between short-term costs (and who will be the first business process to pay) and the long-term benefits, to everyone who reuses the services, but not necessarily in the same proportion as those who paid for them. Other barriers include lack of design and development skills among the IT staff, organizational silos, competing priorities, technical issues, and lack of control over a myriad of vendors.

If you are seeking to get more value out of your SOA program, ask yourself these questions:

1. Do you have a clearly defined SOA strategy? If not, you could roughly double your amount of software reuse by developing one. The process often uncovers missed opportunities.

2. Do you use SOA practices effectively? If not, using them more consistently could triple your software reuse.

3. How long have you been using SOA? We found that there is a steep learning curve. Companies with more experience—four years or more—derive the greatest cost savings and greater reuse rates.

4. Do you have conflicts about where the funding will come from? Resolving funding issues up front helps avoid conflicts that will delay, and add additional cost, to SOA initiatives.

Diamond's client experience has proven that companies can get more value out of SOA by following these steps:

• Know how you will recoup your investment in a service before you build it.

• Aim for fewer, larger services.

• Centralize responsibility for building and reusing services.

• Implement a rigorous project management and systems methodology.

• Fully understand your firm's architecture maturity and plan accordingly.

Perhaps the most effective approach you can take is to define your SOA strategy and identify opportunities for reuse across the organization and then build an integrated plan that maps to your firm's level of architecture maturity and capabilities. ∎
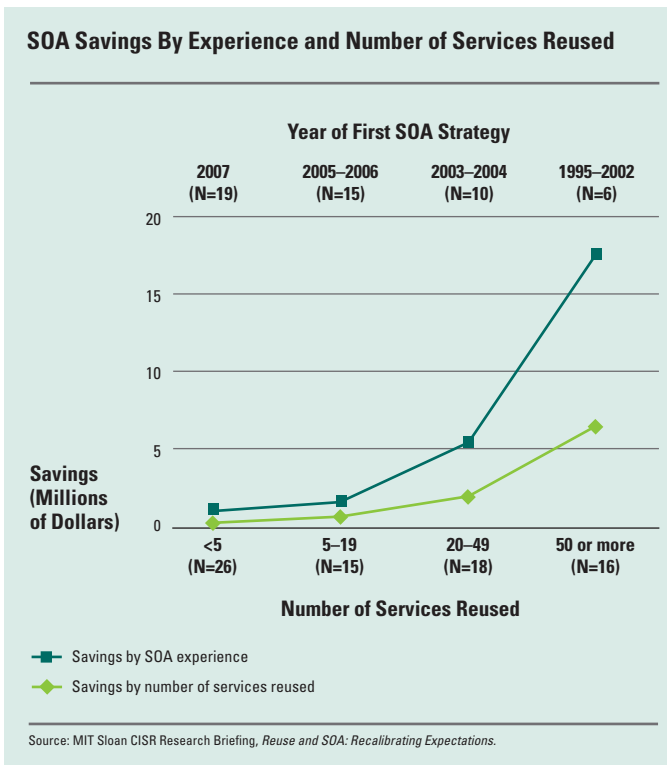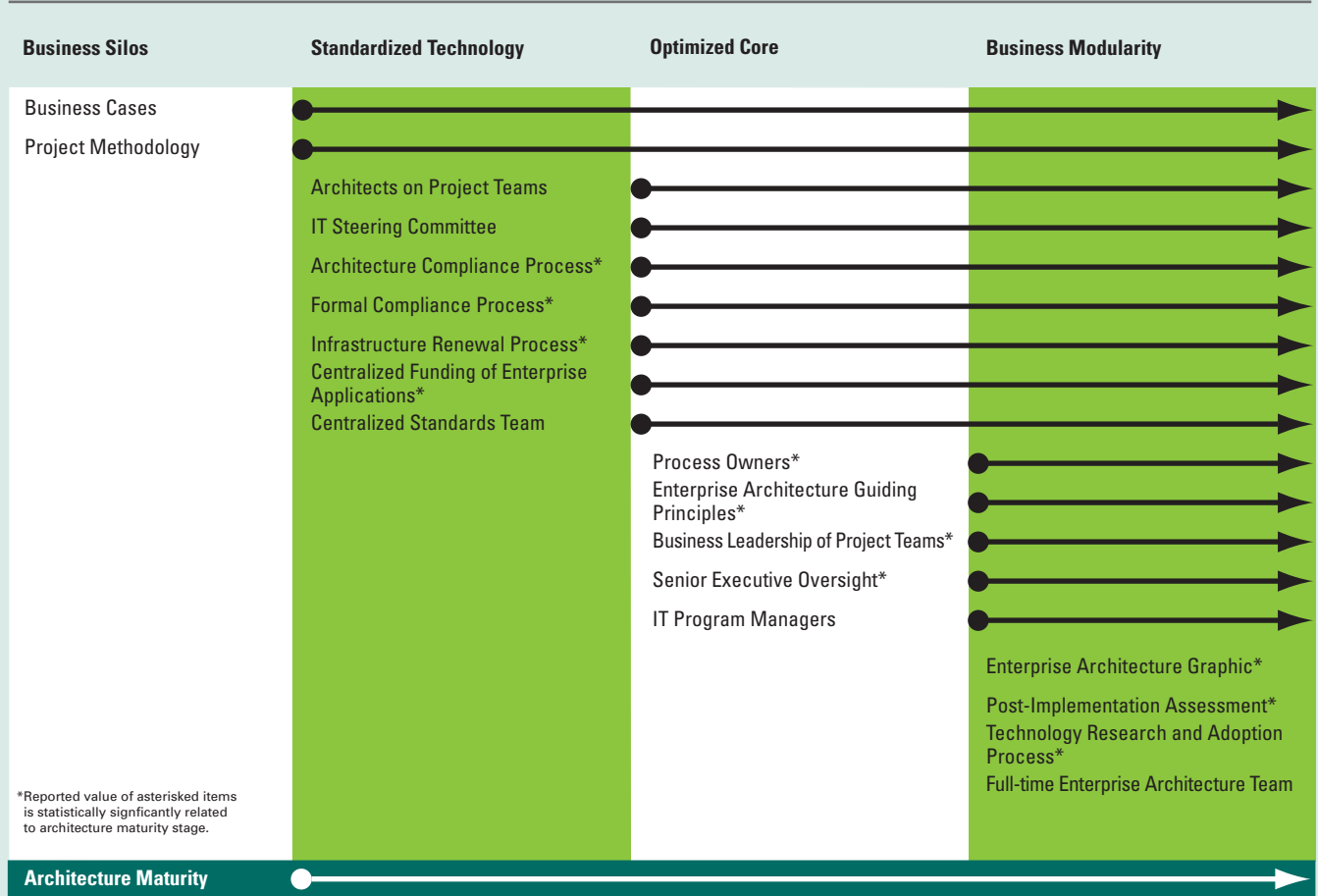

SOA Savings By Experience and Number of Services Reused

Source: MIT Sloan CISR Research Briefing, *Reuse and SOA: Recalibrating Expectations.*

Figure 2

Management Practices Evolve as Architecture Matures

	Business Silos	Standardized Technology	Optimized Core	Business Modularity
Business Cases	●————————————————————————————————————→			
Project Methodology	●————————————————————————————————————→			
Architects on Project Teams		●————————————————————→		
IT Steering Committee		●————————————————————→		
Architecture Compliance Process*		●————————————————————→		
Formal Compliance Process*		●————————————————————→		
Infrastructure Renewal Process*		●————————————————————→		
Centralized Funding of Enterprise Applications*		●————————————————————→		
Centralized Standards Team		●————————————————————→		
Process Owners*				●————————→
Enterprise Architecture Guiding Principles*				●————————→
Business Leadership of Project Teams*				●————————→
Senior Executive Oversight*				●————————→
IT Program Managers				●————————→
Enterprise Architecture Graphic*				
Post-Implementation Assessment*				
Technology Research and Adoption Process*				
Full-time Enterprise Architecture Team				

*Reported value of asterisked items is statistically signficantly related to architecture maturity stage.

Architecture Maturity ○——→

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Figure 3

Approach for Developing an SOA Plan

Model Current State and Prioritization → Assess Business Capabilities and Pseudo Services → Plan SOA Rollout → Schedule SOA Rollout → PMO Project Plan Alignment

Key Activities

• Develop bottom-up prioritization model • Inventory legacy interfaces • Rank interfaces for each domain	• Identify business capabilities that will be delivered • Identify pseudo services based on architecture design • Review list of pseudo services with Domain Tech Leads	• Model Complexity and Demand • Map Consumer and Interfaces	• Develop Services Delivery Schedule • Ensure alignment	• Align SOA with integrated plan • Manage cross-project dependencies

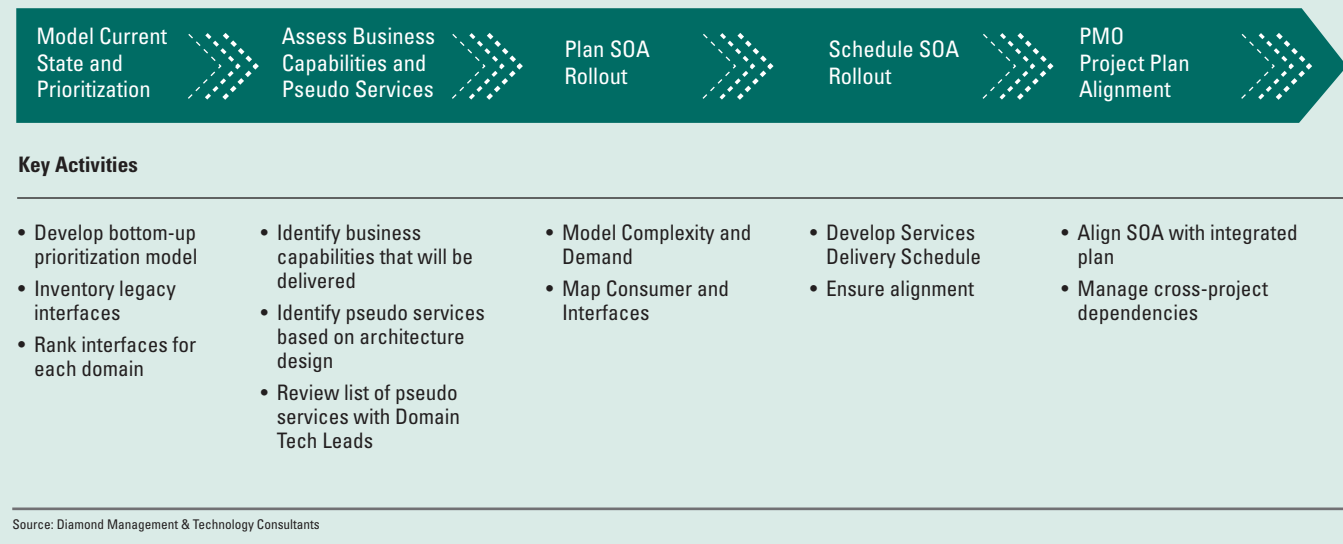Source: Diamond Management & Technology Consultants

Figure 4

For more information, please contact:

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About Diamond

Diamond (NASDAQ: DTPI) is a management and technology consulting firm. Recognizing that information and technology shape market dynamics, Diamond's small teams of experts work across functional and organizational boundaries to improve growth and profitability. Since the greatest value in a strategy, and its highest risk, resides in its implementation, Diamond also provides proven execution capabilities. We deliver three critical elements to every project: fact-based objectivity, spirited collaboration, and sustainable results. To learn more visit www.diamondconsultants.com.

Diamond is proud to be a Research Patron of the Center for Information Systems Research at the MIT Sloan School of Management.

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