

Research Report

IT Organization as a Limiting Factor for the Success of Service-Oriented Architectures

A RECENT SURVEY SHOWS THE IMPORTANCE OF DEDICATED GOVERNANCE STRATEGIES FOR MANAGING SERVICE-ORIENTED ARCHITECTURES IN BANKS. IN ORDER TO IMPLEMENT NOVEL GOVERNANCE STRATEGIES, THE EXISTING IT ORGANIZATION HAS TO BE ADAPTED ACCORDINGLY. THIS REPORT PRESENTS ENHANCEMENTS OF CLASSICAL IT ORGANIZATIONS.

Julian Eckert
Michael Niemann
Achim Schäfer¹

Nicolas Repp
Marc Billeb¹
Ralf Steinmetz

Introduction

The implementation of Service-oriented Architectures (SOAs) induces novel requirements in various domains of banks and other financial service providers. Especially for IT Governance, current SOA approaches often lack proper support. This fact is confirmed by the results of the latest SOA Check 2008, in which enterprises of different sectors in Germany, Austria, and Switzerland participated (21% of the participants were from banks and financial service providers [Martin and Repp, 2008]). These results confirm the importance of a dedicated SOA Governance strategy for all industries. 66.67% of the surveyed banks and financial service providers already implement a SOA Governance strategy or

will implement one in the near future (83% over all industries). Actually, 50% of the banks and financial service providers participating already use dedicated SOA Governance strategies (49% over all industries).

Results from a joint research project of EFL and PricewaterhouseCoopers AG WPG, Financial Services, show that a consequent adaption of IT Organization is mandatory for the implementation of SOA Governance strategies of banks and financial service providers. This article focuses on the core elements of an extended organizational structure concerning SOA Governance. We identify additional requirements for a SOA-capable IT Organization and analyze differ-

ences in the corresponding software and service lifecycles. Thereafter, additional organizational roles based on these results are introduced.

Corporate and IT Governance

Corporate Governance includes methods and instruments necessary for the management and monitoring of enterprises [Rüter et al., 2006]. IT Governance, as a part of Corporate Governance, defines the IT requirements and environments for enterprises and covers the principles and concerns of Corporate Governance which apply to IT. IT Governance defines processes and actions that result in decisions which adequately consider risks.

In order to efficiently realize decisions according to governance strategies, an appropriate organizational form for the IT is required. Decision-making authorities, roles, and responsibilities have to be defined. Those roles and responsibilities have to be documented and followed, especially at the interface between business departments and IT.

Towards a SOA-capable IT Organization

IT Organizations form the foundation for the realization of principles and actions defined by an IT Governance strategy.

According to Melzer et al. (2005) classical, i. e. historically grown IT landscapes and their respective IT Organization are mostly organized according to the IT systems or departmental structures [Liebhart, 2007]. In contrast, in

order to take full advantage of SOA the organizational structures of the IT department has to be aligned along business processes. Here, business processes can be subdivided into service compositions following the SOA paradigm. Following a classic organizational approach, crossorganizational processes are hard to implement and maintain due to the complexity of existing system interfaces.

Organizational structures have to cope with the fact that parts of existing business processes now can be more easily outsourced to external providers due to the reduction of interface complexity.

In particular, a SOA-capable IT Organization has to consider the following aspects:

- Overall architectural strategy to improve reuse of services and to avoid service duplication
- Contract & Service Level Agreement (SLA) management with third party providers
- Ensuring accountability and compliance of own and third party services, e.g., by extensive monitoring
- Trust and security in [crossorganizational] business relationships

SOA-aligned IT Organization

Typically, existing IT Organizations are aligned to a software lifecycle consisting of several phases. Considering a SOA implementation the IT Organization still follows this lifecycle, even if the phases differ in content (as depicted in Figure 1). Both design and development phases have to be customized in order to fit

to SOA peculiarities. Apart from design, the selection of third party services also has to be supported. This implies the procurement of the selected services during the development phase instead of new service development.

Although, the phases in a service lifecycle appear similar to their software lifecycle counterparts, they have to meet different requirements. Therefore, the existing IT Organization has to be extended with additional roles (as depicted in Figure 2).

Due to the importance of service granularity, reuse, and the avoidance of service duplication for subsequent service design, an *Architectural Board* has to be installed. It has to survey and control the requirements analy-

sis, the modeling and design process of services as well as the service portfolio management. The board has to be consulted concerning any architectural developments and adjustments. Responsibilities of the board can be divided into sub-roles, such as *Service Modelers*, which ensure the consistent design of single services concerning programming guidelines and message design by appropriate policies.

An additional role called *Service Procurement & Development* not only contains the development of services but also the purchase and integration of external services. Furthermore, versioning of SOA services assures backwards compatibility of services and the message formats. In addition, SOA-specific security aspects have to be considered during development and

Software Lifecycle	Service Lifecycle	Service Lifecycle	Additional Roles in a SOA Environment
Requirements Analysis	Requirements Analysis	Requirements Analysis	Architectural Board
Design	Design / Selection of Services	Design / Selection of Services	
Development	Procurement of External Services	Procurement of External Services	Service Procurement & Development
	Development of Internal Services	Development of Internal Services	
Quality Assurance	Quality Assurance	Quality Assurance	Contract & SLA Management
Operations	Operations	Operations	

Figure 1: Additional roles in a SOA-dominated environment

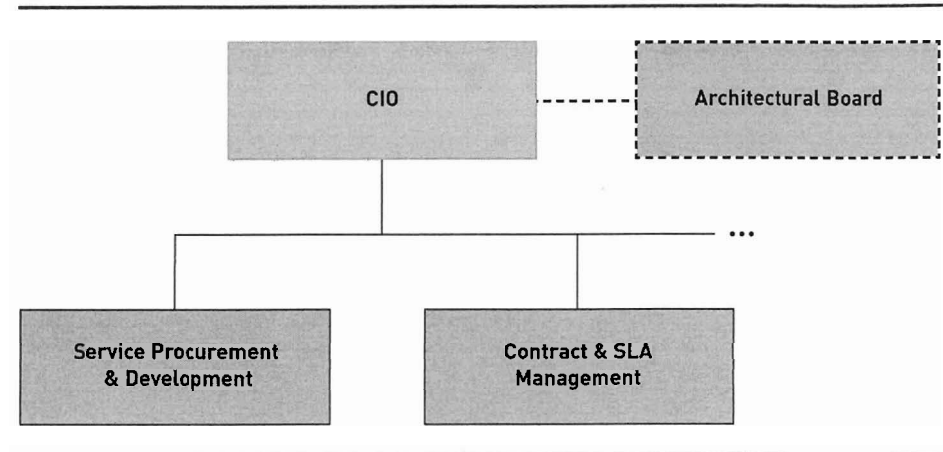


Figure 2: Enhancements of an existing IT Organization in a SOA-dominated environment

procurement. Concerning software testing, characteristics of test processes in a SOA environment are considered in particular, e.g., detailed integration and system tests.

A further role called *Contract & SLA Management* ensures the existence of policies, guidelines, and their enforcement. This is necessary due to the large amount of short term contracts with varying external partners.

Conclusion

The implementation of a SOA implies the need for organizational changes in IT departments. This article focuses on the enhancements necessary for existing IT Organizations, which comprise roles as the Architectural Board, Service Procurement & Development, and Contract & SLA Management. The consideration of SOA peculiarities as well as the introduction of dedicated roles ensure a sustainable SOA.

References

Liebhart, D.: SOA goes real. Hanser Verlag, Munich, 2007

Martin, W.; Repp, N.: SOA Check 2008 – Status Quo und Trends. it-verlag, Sauerlach, 2008.

Melzer, I.; Eberhard, S.; Sauter, P.; von Thile, A. H.; Flehming, M.; Zengler, B.; Dostal, W.; Tröger, P.; Stumm, B.; Lipp, M.; Jeckle, M.: Service-orientierte Architekturen mit Web Services. Spektrum Verlag, Munich, 2007.

Rüter, A.; Schröder, J.; Göldner, A.: IT-Governance in der Praxis. Springer, Berlin, 2006.

1) PricewaterhouseCoopers AG WPG, Financial Services