Research Report

Implications of Service-oriented Architectures in the German Banking Industry – A Case Study

CURRENTLY THE REALIZATION OF SERVICE-ORIENTED ARCHITECTURE (SOA) IMPLEMENTATION IN THE GERMAN BANKING INDUSTRY VARIES, WHEREAS SOME ARE IN THE ADOPTION PHASE AND SOME ARE ALREADY IN THE SOA OPERATION PHASE. THIS ARTICLE FOCUSES ON SPECIFIC IMPLICATIONS CONCERNING THE SOA READINESS AND THE SOA MATURITY OF GERMAN BANKS AS WELL AS THE ROLE OF SOA IN THE CONTEXT OF M&A SCENARIOS.

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Introduction

Service-oriented Architecture (SOA) as an architectural paradigm has gained importance in the financial industry. With the help of SOA, banks and financial service providers are able to implement flexible and agile business processes (Schulte et al., 2007). A recent survey, the SOA Check 2009, highlights the following three major goals for SOA implementation: increased flexibility, business process optimization, and time-to-market (Martin and Eckert, 2009). 37% of the interviewed companies state that they plan a SOA implementation and 47% state that they have already implemented a SOA, whereas the remaining 16% do not plan to implement a SOA. From the companies which already have a

SOA, 17% state that they are in the planning phase of a companywide SOA, and 25% have started a companywide SOA implementation. Already 58% of the companies are in the implementation phase or have already implemented a companywide SOA. This highlights that a SOA may have one specific SOA maturity level indicating the progress of SOA implementation.

Together with IBM Global Business Services GmbH, Cluster 2 is conducting a case study in which three different research objectives are analyzed and evaluated. The research objectives are: SOA adoption, SOA operation, as well as the consequences of SOA during Merger & Acquisition (M&A) conduction. Furthermore, the

SOA readiness and SOA maturity of German banks with a special regard to SOA Governance will be analyzed and evaluated.

Research Objective

The focus of the case study is to assign the levels of SOA implementation in German banks to the already existing SOA maturity Model (Johannsen and Goecken, 2007). This approach includes the following three major research questions:

1. How are SOA adoptions in the German banking industry implemented?
2. How appropriate are SOA operations in the German banking industry?
3. Which consequences does the adoption of SOA imply during M&A conduction?

The answers to those questions help to understand how SOAs in German banks are implemented, why it is done in which way, and to which extent. Furthermore, an evaluation of the impacts a SOA has in the context of the financial industry including both competitive advantage and cost reduction is supported.

SOA adoption, SOA operations, and *SOA during M&A conduction* represent the three research objectives of SOA implementation in banks which are mostly derived from SOA Governance issues. These parts are summed up in the research framework as depicted in Figure 1, serving as foundation for the questions which have been used for the personal interviews.

SOA adoption as the first research objective comprises three subtopics: *conformance, real-*

ization, and implementation. In the first subtopic *organizational, procedural,* and *technological* conformance issues are discussed: the company's organizational structure and adjustments of responsibilities, the progress of process documentation, process analysis, and process optimization as well as the maturity of technology. The second subtopic discusses *roadmaps* and *motivations* for a SOA adoption as well as *challenges.* Furthermore the degree of SOA experiences, a bank acquired on its own, and the influences of external consultants are discussed. The degree of *standardization,* representing the ratio between the self-developed SOA solutions in the IT departments and the parts that are bought from external IT providers as well as the determination of the procurement of *external services,* is discussed in the third subtopic.

SOA operations as the second objective of the research framework emphasizes SOA *Life Cycle Management* as well as *practical experiences.* In order to differentiate between banks with high and those with low service-orientation, it is investigated to which extent processes are implemented with the usage of services and how many services already exist. *Life Cycle Management* comprises five issues being derived from SOA Governance which are adapted to the banking industry. The conformity between goals of the IT and goals of the management are subsumed in the subtopic *alignment.* Furthermore, *performance management* tools for business critical services, *value contribution* of each service as well as *service selection* processes are investigated. Moreover,

security issues for purchasing services from external providers and third parties are subject of the study. The second subtopic *practical experience* focuses on the suitability of daily use of services in the banking industry dealing with *competitive advantages* and *challenges* that may occur due to the operation of services.

Due to the increasing importance of M&As in the German banking industry in the third research objective SOA *during M&A* both the *architecture* and the *success* of SOA during M&A conduction are analyzed. This implies the

analysis of the impact of a flexible architecture on the ease of integrating both parties. Also generic questions such as how a SOA influences a M&A conduction and how a forthcoming M&A influences SOA are evaluated.

Case Study Conduction and Preliminary Insights

During the case study, four German banks have been interviewed which are familiar with SOA and have already implemented a number of services. The banks have been selected in a way that the case study can also cope with

M&A scenarios. However, none of them has a completely adopted SOA yet.

After conducting the interviews the evaluation of the results is not finished yet. However some major insights for each of the research objectives (Figure 1) can already be identified.

As a first insight, concerning *conformance* we can state that each of the investigated German banks possesses a higher technological maturity level than the maturity levels of organization and processes. This implies that the top management support of SOA in banks is not very high at that time and that SOA is almost always driven by IT instead of by the management. As a second insight, concerning *realization* we can state that the study shows that SOA adoption – no matter how SOA is realized – self-developed or purchased from external providers, is almost always triggered by the bank itself and not by external consultants who are merely used for implementation purposes. It is also characteristic for SOA implementation in the German banking industry that the topic SOA is more project driven than process driven at present.

As a third insight, we can state that SOA *Life Cycle Management* is implemented incompletely. Concerning the research objective *SOA during M&A*, we can state that SOA is only relevant for small M&A projects, whereas banks with little M&A experience suggest the adoption of SOA in those phases, while the ones with higher experience are discouraged since the effort for coordination and service align-

Conclusion and Future Steps

As a preliminary result, the study highlights the importance of SOA for the German banking industry. Nowadays, SOA is far away from being a hype topic. It developed towards a fundamental design principle in various areas of application. Nevertheless, there are still some major challenges to tackle.

Future steps are the analysis and evaluation of all the conducted interviews with respect to the research objectives. As a result the study should give detailed insights concerning SOA adoption, SOA operations, and SOA during M&A in order to be able to determine the SOA readiness and the SOA maturity of German banks.

References

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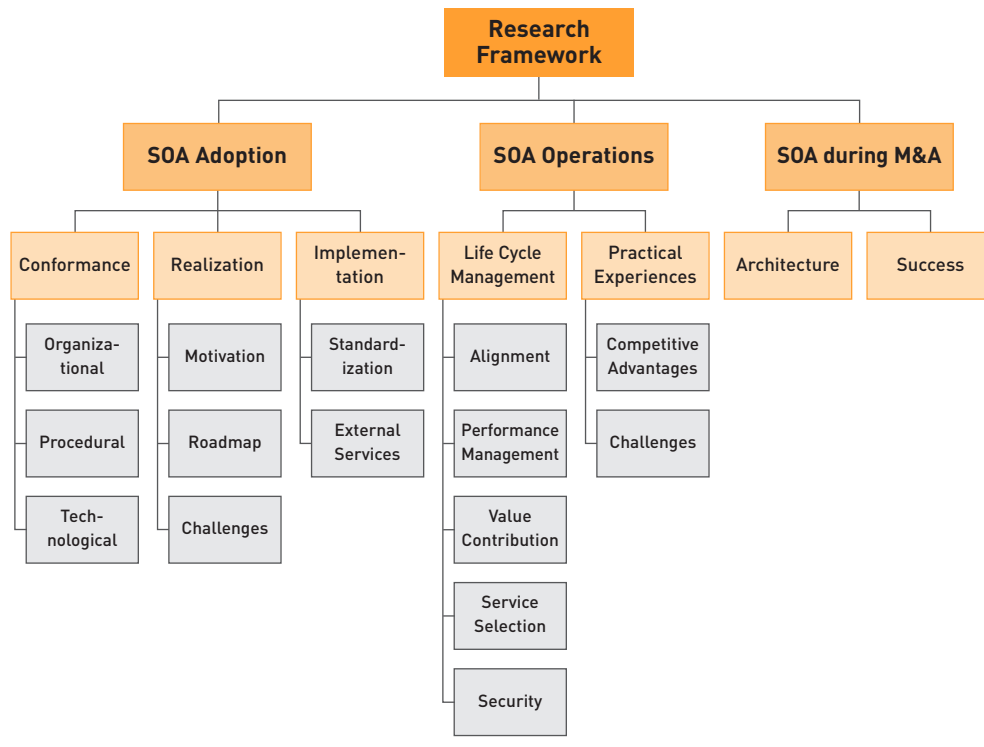
Figure 1: Research Framework