

Chapter 1

Service Elicitation Method Using Applied Qualitative Research Procedures

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ABSTRACT

This chapter introduces QSE, the Qualitative Service Elicitation method. It applies qualitative research procedures in service elicitation. Service engineering practice lacks lightweight methods to identify service candidates in projects with tight schedules. QSE provides a systematic method to analyze requirement material in service-oriented systems development with a feasible effort. QSE uses the procedures of the grounded theory research method to elicit service candidates from business process descriptions and business use case descriptions. The chapter describes the method with examples and a case study.

INTRODUCTION

For enterprises, the promise of service-oriented computing is to rapidly create low-cost applications out of reusable and loosely coupled services (Cherbakov, Galambos, Harishankar, Kalyana, & Rackham, 2005). This promise is tempting, as the radical business process redesign projects are risky and expensive (Jarvenpaa & Stoddard,

1998; Sarker & Lee, 1999). Service-oriented computing can provide a way to make great changes in smaller portions by componentizing both the business and the IT and by incrementally building on top of existing assets (Bieberstein, Bose, Fiammante, Jones, & Shah, 2006; Cherbakov et al., 2005). Transforming an enterprise into a service-oriented one is a complex task and the role of IT is no longer supportive, but has often a key role in the change. Alignment between the business and IT is the key towards a service-oriented

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enterprise, and the implementation of the services should be prioritized to support the incremental transformation of the enterprise. (Bieberstein et al., 2006; Cherbakov et al., 2005)

In this chapter, we propose Qualitative Service Elicitation, QSE, a new systematic method to be used in service elicitation. QSE provides practical means to prioritize and identify reusable service candidates in an enterprise context. The method is presented with an example of how to apply it in a sample project. The method is also tested in a real world project, and a case study of the project is provided.

THE CHALLENGE OF SERVICE ELICITATION

The service oriented approach differs fundamentally from the conventional development paradigms in the key concept of dynamically accessible services. The scope and performance of services are under constant development to support an increasing number of consumers. Components and objects do not provide this kind of run-time flexibility. Likewise, traditional requirement engineering practices do not support service composition nor do they encourage the identification of reusable services. (Papazoglou, Traverso, Dustdar, Leymann, & Kramer, 2006; Van Nuffel, 2007; Zimmermann, Schlimm, Waller, & Pestel, 2005)

Papazoglou et al. (2006) have listed the main challenges of the service-oriented engineering domain in their research roadmap. Novel approaches are required in service engineering to address the current challenges and to provide sound methods that allow enterprises to design and deploy services more efficiently while adapting to the changes matching the rate and pace of the business.

The QSE approach addresses some of the challenges identified by Papazoglou et al. (2006). For example, QSE supports the refinement of

service compositions and links the compositions to service candidates identified in the projects. Similarly, QSE provides practical means to build an enterprise level service catalogue, which can be used in gap analysis. Additionally, the catalogue provides a ground for refining the right granularity of the services. The method itself does not provide automation in the analysis, but provides systematic procedures for the analysis, thus helping to reduce human errors. To enable systematic analysis, we have taken ingredients from research methodology. We believe service elicitation by nature much resembles qualitative research.

The identification of services has been studied for some time and various methods already exist, but they focus on specific areas and the elicitation of specific types of services. A survey by Ramolli et al. (2007) lists ten different methods with varying coverage of the SOA project life cycle. Arsanjani (2005) classifies the SOA approaches into six categories: business process driven, tool-based MDA, wrap legacy, componentized legacy, data driven and message driven approaches.

The existing approaches can be used to elicit certain types of services, but fail to provide a generic solution. SOMA combines features also from other disciplines, but it can be seen more as a collection of methods than a single method (Arsanjani et al., 2008). QSE borrows elements suitable for top-down analysis from several of the approaches above. QSE is a top-down analysis method, which starts from business process descriptions and digs down to the essentials of the service candidates with the help of business use cases. Elements from the existing process driven, data driven and message driven methods have been included in QSE.

QSE is meant only to analyze business processes, not to design them. Completely different approaches, such as The MIT Process Handbook (Walker, 2006), are needed for designing business processes.

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