Chapter III

Automating Governmental Cross-Agency Processes Using Web Service Orchestration: A Gap Analysis

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Abstract

In response to the demand for better service provisioning, governments from all over the world are looking for technologies to automate their cross-agency processes. This chapter investigates the applicability of Web service orchestration for the automation of governmental cross-agency service delivery processes by investigating a case study of a business counter. Our case study shows that Web service orchestration using BPEL4WS is a feasible technology for automating governmental cross-agency service-delivery processes, but also shows a gap between the capabilities of Web service orchestration technology and the organizational arrangements needed for automating the processes. We identified three organizational issues that at least need to be addressed before governments can profit fully from the advantages of Web service orchestration technology: (1) ensuring correct and in-time execution of business processes; (2) information sharing; and (3) responsibility and accountability.
Introduction

As an increasing number of governmental service-delivery processes involve multiple (semi-) autonomous agencies, a huge challenge for governments from all over the world is designing their cross-agency processes. This is caused by the inherent structure of public administration and by the need to become more customer-centric. First, the fragmented nature of governments (e.g., Wimmer, 2002) causes the activities that make up a single, atomic governmental service, for example, a liquor license, often involve several governmental agencies. Under the influence of governmental reforms, such as New Public Management (NPM) (e.g., Hood, 1991), governments became more decentralized, leading to more departments, agencies, or even external parties involved in service-delivery processes. An example is a liquor license, which includes tasks to be performed by several municipal departments, the fire department, the justice department, and the police.

The second main reason for cross-agency processes is the aim to reduce the administrative burdens, or “red tape,” for citizens and businesses and to become more citizen centric (e.g., Cabinet Office, 2000; Dutch Government, 2003, 2004; Ongaro, 2004). The clients of the government, citizens, and businesses expect the public sector to increase their attention on customer service, just as businesses have done in response to the rise of Internet technologies (Donnelly, Wisniewski, Dalrymple, & Curry, 1995; McIvor, McHugh, & Cadden, 2002). This requires governments to rethink their service offerings, for example, start the joint offering of a permit to build a house and a permit to tear down the old building in place. Several (semi-) autonomous agencies working together to reach a common goal, here to deliver a service, is often called “joined-up government” (Ling, 2002; Pollitt, 2003).

Crucial to the improvement of governmental service delivery and the reduction of administrative burdens is the automation of cross-agency service-delivery processes. To offer seamlessly integrated services, the service-delivery processes of the different subservices should be coordinated. The cross-governmental collaboration in the delivery of services to its citizens is getting more and more attention and is one of the main issues in national e-government strategies (Accenture, 2005).

A promising technology that offers many advantages to the problem of automating cross-agency processes is Web service orchestration (Gortmaker, Janssen & Wagenaar, 2004). Web service technology is based upon the notion of a service-oriented architecture (SOA), an architectural paradigm according to which application functionality is not provided by large monolithic information systems, but is instead created by using relatively small-grained components which can be invoked as Web services. SOA provides the ability to register, discover, and use services, where the architecture is dynamic by nature. Web service orchestration coordinates Web services by means of a process flow in which the Web services are invoked according to a predefined sequence. Automating cross-agency business processes using Web service orchestration offers flexibility in business processes, so changes in law can be supported quickly. Moreover functionality encapsulated in components can be reused in various business processes and investments in legacy systems can be leveraged (Gortmaker et al., 2004).

The objective of this chapter is to investigate the feasibility of Web service orchestration technology for the automation of cross-agency processes, based on a case study of cross-governmental service-delivery processes at a business counter. First, we present an
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