Chapter VII

ICT-Enabled Optimization of Government Processes

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ABSTRACT

The public sector is facing an increased service level demand from citizens and companies which comes along with reduced financial scope. Higher process efficiency as well as time and cost savings are required to cope with this challenge. However, own experience shows that reorganization projects in public administrations which are based on established generic process modeling methods can only identify limited reorganization potential for ICT support in single processes and just lead to small local improvements (Algermissen et al., 2005). Therefore, we have created the modeling and analysis methodology PICTURE. The PICTURE methodology first applies the domain vocabulary to efficiently capture the process landscape of a public organization. It then analyses semiautomatically the processes and points at business processes with reorganization potential. Thus, PICTURE creates process transparency and supports decision makers in developing a holistic ICT investment and transformation strategy for the entire administration.
INTRODUCTION

Nowadays public administrations (PA) are characterized by fragmented processes with distributed responsibilities and decentralized service delivery as well as highly specialized and poorly integrated line-of-business applications. Several factors put an increasing pressure on public administrations to transform and integrate their processes as well as to improve quality of public services. These factors comprise but are not limited to the following:

- external directives (e.g. EU, law concerning digital signatures, guidelines for electronic data exchange between public administrations, financial accounting),
- external expectations (from business organizations, society and politics, citizens, other administrations),
- and internal needs such as cost reduction, cycle times, process orientation, interfaces to other external (or international) organizations.

However, process-oriented reorganization projects have shown that especially the storage, retrieval, and transport times within processes have a great impact on the reorganization potential (Algermissen et al., 2005). Related weaknesses occur in a number of processes (e.g. media breaks in the internal mail system or paper-based archiving). As a result, cross functional ICT (Information and Communication Technology) such as workflow or document management systems promise much potential as they are created to support many processes in a standardized way.

However, decision makers in public administrations face more than one thousand public services and several thousand underlying processes which are not documented in a structured way (PICTURE Consortium, 2006). Additionally, they face a large ICT market with manifold systems providing a wide range of application areas and functions which are not transparent. Thus, it is difficult to analyze where an ICT should be used and to calculate its (positive and negative) impacts on the existing or transformed processes. These difficulties result in uncertainty and hence discourage investments.

This chapter presents an approach to exploit existing reorganization potentials in public administrations by supporting decision makers through a methodology that makes the effects of ICTs on administrative processes measurable. It supports guidance and control in transformation projects and thus enables decision makers in European public administrations to develop successful ICT investment strategies. The methodology has been developed and prototypically implemented in a web-based prototype within the EU-funded research project PICTURE (http://www.picture-eu.org). The research method used to develop the PICTURE approach corresponds to the design research paradigm (Hevner et al., 2004) and is based on the work of Takeda et al. (Takeda et al., 1990), Song and Osterweil (Song, Osterweil, 1994), and Avison et al. (Avison et al., 1999).

The chapter is structured as follows: after a brief discussion of related work in the area of public administrations, process modeling, and process analysis we present and discuss in detail the three major parts of the PICTURE approach:

- **Model** the as-is situation of processes and ICT infrastructure in a strictly end-user driven approach. This is achieved through collaborative modeling by administrative staff using pre-defined process building blocks (a detailed description of the procedure for identifying such building blocks can be found in (Baacke et al., 2009)). These ensure usage of a common, syntactically and semantically comparable terminology by all involved participants.
- **Analyze** the impact of ICT components on the process landscape in a quantitative,
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