# Chapter 45
# Service Oriented Architectural Principles for Interoperable and Secure E-Government Frameworks

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## ABSTRACT

*The objective of the chapter is to analytically examine the materialization towards the transformational government. It presents the case of implementing an innovative Local Government Access Framework, LGAF, deployed for the Central Union of Municipalities and Communities of Greece. The LGAF integrates almost two hundred and fifty government services in many different domains of the public administration, implementing peak XML technologies, worldwide standards and specifications. The chapter presents an advanced interoperable and secure large scale e-government framework built for Greek LGOs, and provides insights to critical success design factors that should be established in order for the provided services to gain end-users' acceptance and allow the coordination and alignment of business processes and information architectures that span both intra- and inter- public organizational boundaries.*

*Keywords: transformational government (t-Gov); interoperability; privacy; trust; SOA; SaaS; business process management; t-Gov adoption and diffusion; public administration; enterprise integration; content management; web 2.0.*

## INTRODUCTION

Local Government Organizations - LGOs hold a respectful share in contributing to economic growth and wealth of societies (Moon, 2002; Irani *et al.*, 2005). Delivering fully executable public, national and cross-border electronic services through LGOs has increasingly become a political priority (Kling, 2000). Beyond the core administrative and democratic activities, health, education and security are among the service branches adding public value and creating the right environment for prosperous economies. The local government structures are believed to be the essence of participatory democracy since it is through local government that citizens come into direct contact with their elected government, as the power flows from national to local government (Stamati and Martakos, 2010; Koussouris *et al.*, 2008). Thus, LGOs desks are in many countries an active point of transactions between the government and the citizens.

Although the term transformational government only emerged the last five years, a number of LGOs have already been involved in web related activities. With the emerging popularity of the Internet, various European regions, prefectures and municipalities began to experiment with it to transform their external dealings with the citizens (Ho, 2002; Tan and Pan, 2003). Similarly, Greek local public authorities, through the implementation of e-government initiatives, attempt to transform their stereotypical image of being bureaucratic and inflexible to a new image of being customer oriented and efficiency conscious (Devadoss *et al.*, 2002; Mecella and Batini, 2001). Such investments are often inspired by the promised benefits of greater customer satisfaction, better efficiency, improved effectiveness and reduced bureaucracy (Devadoss *et al.* 2002; Fountain, 2001).

The motivation by LGOs to reduce administrative costs and enhance the provided services to citizens, businesses and general community, has been a driving force for LGOs to build real interoperable and secure systems, enterprise information architects and to define fundamental principles, strategies and policies in designing, implementing and maintaining large-scale, scalable, extensible and high-administrative government solutions (Irani *et al.*, 2005; Carter and Bélanger, 2005). However, such progress is hindered by difficulties connected to design and implementation. Today's e-Government deployments can resemble a patchwork of incompatible information and communications technology solutions rather than flexible and reusable assets that would provide essential building blocks of services for end-users (citizens and employees of LGOs).

Therefore effective guidelines, principles and policies should be established in order for LGOs to accelerate their entrance in the digital society, strengthening their fundamental structure and enhancing the collaboration of the public sector (Stamati and Martakos, 2010). These will allow the coordination and alignment of business processes and information architectures that span both intra- and inter- organizational boundaries. They will enhance the collaboration of public and private aware organizations in critical issues such as workflows, decision-making and business transactions. The vision behind the integration of new and more advanced governmental frameworks is extremely ambitious and therefore also very attractive to any LGO interested in truly improving the effectiveness of its IT enterprise.

The chapter presents an interoperable, secure, privacy-aware, scalable, and high-administrative framework, called *Local Government Access Framework - LGAF* (LGAF project, 2009), deployed for the *Central Union of Municipalities and Communities in Greece* (www.kedke.gr), and outlines the main insights regarding the critical success design factors that need to be adopted when integrating large-scale, user-centric e-Government solutions. The aim of LGAF is to fulfil common goals and benefits such as, to increase intrinsic interoperability, security, federation, vendor diversification options, business and technology

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