

## Chapter XVII

# Collaborative Enterprise Architecture for Municipal Environments

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### ABSTRACT

*E-government evolves according to strategic plans with the coordination of central Governments. This top-down procedure succeeds in slow but sufficient transformation of public services into e-Government ones. However, public agencies adapt to e-Government with difficulty, requiring holistic guidance and a detailed legal framework provided by the Government. The setting up of common Enterprise Architecture for all public agencies requires careful analysis. Moreover, common Enterprise Architecture could fail to cover the special needs of small or municipal agencies. The chapter uses data from various major e-Government strategies, together with their enterprise architectures, in order to introduce a development model of municipal Enterprise Architecture. The model is based on the experience collected from the Digital City of Trikala, central Greece, and results in “Collaborative Enterprise Architecture”.*

### INTRODUCTION

Governments worldwide are investing heavily in e-Government, according to ambitious strategic plans aimed at friendlier and more effective public

Administrations. The strategic plans define the political targets for e-Government, such as “time and cost savings for citizens and public Agencies” (Cap Gemini Ernst & Young, 2003) and “the development of a citizen-centered, results-oriented

and market-based public Administration” (Federal Enterprise Architecture, 2002). Moreover, strategic plans set the technological standards that will be followed during e-Government evolution, such as “openness, usability, customization and transparency for public portals” (Gant and Gant, 2002) and “interoperability between e-Government systems” (UK Cabinet Office, Office of the e-Envoy, 2002).

Strategic plans are being implemented according to the “top-down procedure” (Anthopoulos, Siozos and Tsoukalas, 2007), meaning that Governments define the primary targets and assign their implementation to central authorities, while e-Government target groups (citizens, enterprises, civil servants) are not involved in the design procedure. Top-down strategic planning defines policies and targets, but not methods and principles for e-Government. Information and Communication Technology (ICT) vendors have provided solutions for e-Government and for digital service execution that are mainly eCommerce-based applications, transformed and parameterized to public Administration methodologies (Lawry, Albrecht, Nunamaker and Lee, 2002).

The application of the strategic plan on the public Administration is a difficult procedure, since various Authorities did not participate in the “top-down” strategic planning, they do not know planning extensions and they are not aware of the upcoming changes. Distributed and local authorities require the existence of controlling procedures and of specific legal frameworks in order to adopt changes. Central Agencies defined by Governments are assigned strategic planning implementation, change management and the application of common technical standards in separate e-Government projects.

However, central supervision lacks functions (Peristeras and Tarabanis, 2004) that could establish common standards for interoperable, usable and accessible e-Government projects. The Enterprise Architecture (EA) is a “tool” that can establish standardization in e-Government

projects. EA is the “bridge” that joins strategic plans and their implementation (Federal Enterprise Architecture (FEA Group), 2005). Moreover, according to (Adigun and Biyela, 2003), the EA documents the elements that make up e-Government in a form that can be understood by its stakeholders (for example politicians, political parties, councils, heads of departments etc.). EA can assist central e-Government supervisors in understanding and combining technical standards and political aspects.

Each strategic plan is now accompanied by a centrally defined EA that can supply all e-Government projects with common standards and operation principles. However, central EA has to deal with problems similar to the ones that central strategic planning faces (Anthopoulos et. al., 2007): “smooth transition” of the public Agencies from traditional procedures to e-Government, change acceptance by all target groups, and the treatment of individual, local and peripheral needs.

The purpose of this chapter is the introduction of the “Collaborative Enterprise Architecture (CEA)” that can be applied in local, state or peripheral governments and Agencies. CEA is the result of: a) the experiences of the strategic plans that are being implemented by central Governments, such as those of the US, the UK, Canada, Germany and the European Union. All have followed the “top-down” planning procedure for e-Government and they have resulted in specific EAs for the public sector. b) The experiences extracted by the implementation of the metropolitan e-Government environment in the Digital City of Trikala, central Greece (Anthopoulos and Tsoukalas, 2005), where the “bottom-up” planning procedure (Anthopoulos et. al., 2007) was followed. Municipal area environments and individual Agencies can follow the “bottom-up” planning procedure for e-Government, and their implementation model can be common. The resulting “Collaborative Enterprise Architecture” combines the “bottom-up” planning method, major EAs and groupware tools.

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