

## Chapter 6

# National Enterprise Architecture Framework: Case Study of EA Development Experience in the Kingdom of Bahrain

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### ABSTRACT

*Building on the belief that a positive correlation between the desired level of e-government capability and maturity and the required level of architectural maturity exists, the eGovernment Authority (eGA) of the kingdom of Bahrain embarked on a three-year eGovernment program aimed at improving service delivery to citizens through seamless integration and connected governance. In order to achieve this objective, eGA realized the need for a Kingdom-wide strategy and holistic guiding plans, and hence decided to design and develop a National Enterprise Architecture Framework (NEAF). NEAF is an aggregation of models and meta-models, governance, compliance mechanisms, technology standards, and guidelines put together to guide effective development and implementation of an Enterprise Architecture by different government entities across the Kingdom. This chapter will describe a NEAF development project success story, its objectives, and its importance to Bahrain's economic vision 2030. It describes the NEAF development lifecycle and highlights the findings and challenges faced at each stage of the project.*

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## **INTRODUCTION**

Governments around the world are leveraging advances in Information and Communication Technologies (ICT) to enhance their service delivery mechanism so as to improve citizen's satisfaction towards government as well as gain competitive advantage over other nations in attracting investments.

Building on the belief that there exists a positive correlation between the desired level of eGovernment capability and maturity and the required level of architectural maturity, the eGA embarked on a three-year eGovernment program aimed at improving service delivery to citizens through seamless integration and connected governance. In order to achieve this objective, eGA realized the need for a Kingdom-wide strategy and holistic guiding plans, and hence decided to design, develop, and implement NEAF for the Kingdom of Bahrain.

Aspirations for economy, government, and society in accordance with the guiding principles of sustainability, competitiveness, and fairness have been described in the “economic vision 2030” of the Kingdom of Bahrain. NEAF was designed and developed in alignment with this vision.

NEAF would help in managing complexity, managing IT portfolio, delivering a road map for changes, supporting system development, supporting business and IT budget prioritization, etc. Different issues in any organization like legacy transformation, business changes, infrastructure renewal, and application systems renewal and business/IT alignment can be resolved by designing an Enterprise Architecture (EA).

The chapter will start with objectives and scope of the project, and after a brief theoretical background on EA concepts, the approach taken to developing NEAF is described. Each stage of the approach is then discussed and the findings and challenges are highlighted. During the architecture assessment stage (As-Is), an EA maturity view is established and concluded. This builds a

foundation to developing the target architecture along with the design of governance and compliance process. Additionally, the definition of a set of standards and guidelines, to help government entities focus on certain technologies and reduce their cost and interoperability in the long run, will be highlighted. Finally, the gap identified between the as-is and to-be architectures that triggered a set of initiatives at national level and specific to government entities will be described. The chapter is closed by a summary of NEAF development outcomes.

## **WHAT IS NEAF?**

NEAF is an aggregation of models and meta-models, governance and compliance mechanisms, technology standards, and guidelines put together to guide effective development and implementation of EA by different government entities across the country.

The Open Group Architecture Framework (TOGAF), an industry standard architecture framework, was adopted to develop NEAF. NEAF was designed to be an extensible and scalable framework, one that would be able to adapt to the changing environments and needs of the Kingdom.

## **PROJECT OBJECTIVE AND SCOPE**

EA is practiced in many industries; private and public sectors. It is very important before embarking an EA project that the objectives to be achieved are defined clearly. As a trend, EA could serve different objectives: to lower the cost of IT, fix its effectiveness, fix its strategic value, use IT to generate new strategic value or in many cases to transform the business with IT. For instance, EA could help with coping legacy complexity and cost, reintegrating the supply chain, integrating public services, enhancing channel capabilities, or even delivering better customer service.

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