



Toward an AI-Driven National Reference Architecture for Saudi Arabia (NORA)

Assignment 2

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Assignment Report: Toward an AI-Driven National Reference Architecture for Saudi Arabia (NORA)

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Toward an AI-Driven National Reference Architecture for Saudi Arabia (NORA)

Problem Statement

2030 vision of Saudi Arabia encouraged Saudi government entities to speed the process of adopting and activating digital transformation standards for technology management and data management. Digital Government Authority (DGA) has an important role in this initiative in terms of developing the Overall Reference Architecture (NORA). NORA is a framework to provide insight and guidance for government entities on how to design and connect digital systems. The framework focuses on six (6) layers: Business, Application, Data, Technology, Integration, and Security (Digital Government Authority, 2024).

In another words NORA provides a major guidance in digital governance, but artificial intelligence (AI) is missing in the suggested framework, and the robotic automation is limited. This can cause some difficulties in adopting the framework from non-technology talents at the government entities.

Recently, Enterprise Architecture (EA) experts suggest that Artificial Intelligence (AI) can have a significant impact on enhancing digital, data, and security governance through enhancing analytics, automating workflows, and adaptive AI agents (Wang & Zhao, 2025; Schmidt & Müller, 2020).

However, this trendy technology has not been adopted yet by the Saudi government entities due to the reliance on TOGAF. This mindset has contributed to slowing the adoption of AI technology in digital governance.

The goal of this study is to merge AI principles with National Overall Reference Architecture (NORA) framework. Through AI NORA framework can be simpler to adapt, actionable, and aligned with the Vision 2030 digital transformation goals.

Research Objectives

- Analyzing and documenting how the NNORA framework is currently implemented in the Saudi Government entities.
- To highlight the gaps in NORA framework that contributes to limiting robotic automation and data driven decision and the absence of AI agents.
- Reviewing international best practices of implementing AI in Enterprise architecture and provide an enhanced framework that align with Saudi 2030 vision
- Defining a governance policy of integrating AI into NORA.
- Developing a practical model for current NORA framework.
- Creating a roadmap for transitioning the current NORA framework to an AI enabled version.

Literature Review Summary

Enterprise Architecture Links strategies with the technologies that enable them. In Saudi Arabia, NORA framework Acts as the guidance for government entities should design and manage digital systems. While it offers a solid guide it lacks flexibility and intelligence needed for trendy digital transformation.

Many researchers tried to examine how AI can make EA more scalable and efficient. Bakar, Ali, and Khan (2024) confirmed that AI can automate EA processes, enhance traceability, and better data-driven decisions.

Schmidt and Müller (2020) suggested that government entities should have a level of maturity in terms of policies and EA framework before adopting AI concepts to maximize the result of AI integration. Also, Wang and Zhao (2025) confirm that EA framework should be adaptive to new technologies to enable continuous innovation and scalability.

AI in Saudi government entities needs advanced balancing automation with data leaking to secure government data from being shared though AI agents. The Singapore's Smart Nation and the European Interoperability Framework provided a great example on how AI can enhance governance and protect data from being exposed (Lee & Tan, 2024).

Looking at all the papers, we can agree that integration of AI with EA can have a significant improvement in digital automation, data driven decision and governance. However, these papers are mostly either theoretical or not familiar with the Saudi government entities. This research aims to tighten the gap between NORA framework and AI.

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