# Chapter 5
# Enterprise Architecture Framework for Windhoek Smart City Realisation

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## ABSTRACT

*Many cities are adopting information and communication technologies (ICT) to add value to business process. This has led to the realisation of smart cities making them dependable on ICT. In Namibia, the focus is to transform Windhoek into a smart city. However, it is not easy as Windhoek continues to face many challenges, for example lack of collaboration among stakeholders. The challenges could be attributed by lack of approaches such as enterprise architecture (EA). As a management and design approach, EA provides a system view of all components and their relationship. In the absence of EA, realisation of Windhoek smart city will continue to be challenging, impeding the city from providing smart services. The study's aim was to develop EA framework for Windhoek smart city realisation. A qualitative case study approach was employed. Data was interpretively analysed to enable a deeper understating of the influencing factors. Based on the findings, a conceptual EA framework was developed. The framework aims to guide and govern Windhoek city transformation towards its smart objectives.*

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## INTRODUCTION

The Windhoek city aims to become smart. A smart city is one that has developed and implemented information communication and technologies (ICT) to manage its day to day activities and other functions of collaboration. Washburn, Sindhu, Balaouras and Dines (2010) described smart city as the use of smart computing technologies in the development of infrastructures and services of the city which includes its administration, healthcare, public safety and transportation. There are many definitions of what a smart city is in literature, however, it is believed that ICT is considered to be an integral part of city operation (Aurigi, 2016). Schleicher, Vögler, Inzinger and Dustdar (2015) explained that the smart city concept originally started with cities utilising ICT to provide services to their citizens and evolved to the use of ICT in a smart way towards the efficient utilisation resources. Basically, in a smart city physical interaction between service providers and customers is minimised to encourage digital interactions. Thus, processes such as water meter readings, electricity consumption bills, and transport fines are settled through secured e-commerce channels. Visvizi, Lytras, Damiani and Mathkou (2018) advised that when developing a smart city, there is a need to consider emerging technologies, such as internet of things (IoT), cognitive computing, data analytics and business intelligence. However, Meijer and Bolivar (2016) argued that smart cities are not only dependable on sophisticated ICT but also on the collaboration of various stakeholders. Fabry and Blanchet (2019) shared that around the world smart cities share common experiences such as smart development according to local context, resources and abilities to integrate stakeholders. According to Meijer and Bolivar (2016), a smart city is build based on three pillars which are technologies, people and governance. However, for City of Windhoek the intergration of these three has been a challenge as city resources are underpressure leading to housing shortages,water and traffic congestions (Amugongo, Nggada, & Sieck, 2016). In addition, the city continues to be challenged by different factors such as silo systems, processes redundancy and lack of stakeholder's inclusivity.

Meijer and Bolivar (2016) posit that to address challenges of modern cities there is a need for smart technologies, smart collaboration, educated population and effective institutions. However, the design, development and management of resources towards the realisation of a smart city is not any easy process. Bolívar (2016) examined that many of the challenges faced by smart cities are beyond that of their traditional institutions in terms of capacities and capabilities and thus the need for new governance approaches towards their various challenges. To resolve city challenges such as urbanisation, global warming, and power and water consumption, smart solutions are a necessity. According to Amugongo, Nggada and Sieck (2016) cities around the world need to address the challenges they are facing in a smart,