Chapter 7
The Role of IoT in Digital Governance

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ABSTRACT

The acronym IoT stands for internet of things. The IoT ecosystem can be envisioned as a set of physical electronic devices embedded with intelligence, connected through a network, enabling them to collect and exchange data, and allowing these devices to be sensed and handled remotely between the physical and cyber worlds. The devices connected through the internet has been influencing all walks of our life ranging from individual, societal, educational, industrial, entrepreneurial, and related to governance as well. As we are connected and surrounded with a plethora of connected smart devices, it seems there is a great risk of security and privacy in several aspects, such as device authentication, data theft, device manipulation, data falsification, etc., to name a few. Hence, the current chapter has been undertaken to explore and comprehend the security and privacy related implications, opportunities, future directions, and challenges involved in implementing digital governance with IoT.

INTRODUCTION

The origin of communication over Internet was perceived as human to human interaction but with the advent of IoT, the concept of communication over Internet has changed tremendously as now the communication encompasses from beings to things that is Human to Machines, Machine to Machine, and vice versa. With the advancement of IoT it seems that this technology is moving towards an automated society where everything and everyone will be connected (R. Khan, Khan, Zaheer, & Khan, 2012). IoT is the major technological revolution in recent human history which has changed the directions of computing comprising several physical objects with unique identity and pervasive connection. In this technological continuum everything around us like smart vehicles, smart gadgets, smart home appliances, smart wearables etc., are all interconnected to share their data with each other, as well as pass their data to the cloud. IoT ecosystem is expanding every moment based on the existing network environments with embedded intelligence. IoT is one of the fastest growing area in the history of computing with a projected increase of 50 billion devices by the end of 2020, which is 80 times greater compared to the population growth as illustrated in Figure 1.

Digital Governance DG or Electronic-Governance EG is projected as the digital presence of an organization encompassing its means of communications with the external world, these means of communication can be websites, blogs, social media channels, portals and all other internet related products and services. Thus, DG is defined as the use of Information and Communications Technology ICT to exchange, integrate and enable communication to dissipate information involving numerous standalone systems and services between government and businesses, government and citizens, and several other back office processes and interactions with in the entire governments operational framework. With the advent and advancement of ICT many manual processes with in the government sector have been automated to improve the quality of service in public sector to name a few are registration of documents online, online payment provisions for various bills, taxes, online registrations of assets belonging to individuals and business organizations, etc. thereby enabling governments to function smoothly with pace and efficiency for the public welfare. ICT now has extended its horizon with an extension of IoT which has provisioned automation for several systems that are facilitating civil life to a large extent to name a few of IoT enabled DG systems are: parking systems allowing public know the parking updates,

Figure 1. Projected growth of IoT
Source: (Zahrah A. Almusaylim & Zaman, 2018)
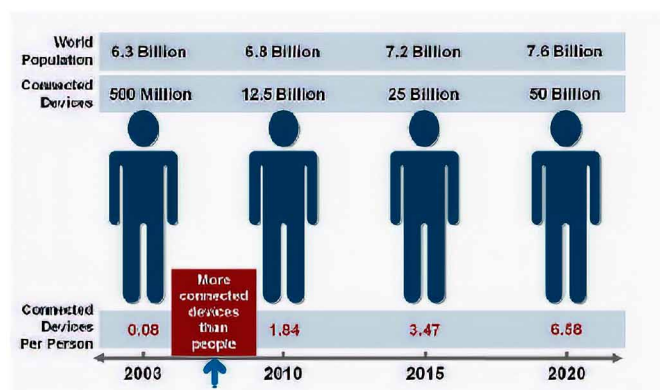
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