

Chapter 2

Cloud Computing Technologies for Connected Digital Government

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ABSTRACT

Connected digital government vision is about putting a government in the hands of its citizens. It suggests the use of digital connectivity technologies for the development of electronic services, collaboration with governmental institutions, and interacting with citizens for their full involvement in governments' processes and operations to make them transparent and more effective. Some of the latest technologies that can help to enhance connected governance include cloud distributed computing paradigm, internet of things vision, mobile technologies, social media, and Web 2.0-based communication tools. Although all these are well developed, the focus of this chapter is on cloud computing. In this chapter, the author first introduces the cloud computing paradigm, and then, outlining the characteristics and requirements of an open connected government, the chapter discusses how cloud-based provision and related technologies can support governments to enhance their functioning, transparency, openness, and interaction, in real time, with the citizens.

INTRODUCTION

Connected Digital Government is electronic government that employs digital technologies for public administration to improve the provision of public services and democratic processes, and also to strengthen the support for public policies. The aim is to transform a government by making it more accessible, effective, transparent and accountable, and to enable the general public to fully participate in the political process. If properly implemented, connected digital government (or simply *connected government*), also referred to as *Government 2.0*, a term coined by Eggers (2005), promises numerous benefits in a number of critical areas including the following:

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- Promotion of openness, trust, fairness, and transparency
- Enabling efficiency of processes and effective centralisation
- Increased global acceptance, integration and competitiveness
- Enabling citizens to actively participate in governments' decision making.

Initially, when the Internet became available to citizens in the mid-1990s, governments developed static web pages and provided information of a general nature such as available services, operating hours of government offices, announcements, etc. This was useful; however, it was one-way government to citizen (G2C) interaction, and citizens could not easily interact with government institutions. Soon, this evolved into two-way G2C and citizens to government (C2G) communication, known also as G2C2G interaction. Now, citizens were able to pay their bills electronically, conduct electronic commerce (e-commerce), and make financial transactions, etc. With the emergence of mobile and wireless technologies, all the available features were now possible through the use of smart handheld devices such as mobile phones. Later, when the device protocols and communication technologies further developed, the Internet of Things (IoT) vision helped to further automate all kind of processes, whether business related or industrial or governmental. The IoT applications now include development of Industrial IoT, development of smart living environments including smart homes and intelligent cities, development of intelligent transport system including the Internet of Vehicles (IoV) paradigm, etc.

The availability of digital technology, as briefly mentioned above, has proved highly attractive for governmental departments, city managers and politician. Citizens can now, also, easily access governmental e-services, deal with business tax affairs through the use of e-tax systems, choose their members of parliaments through e-voting, avail healthcare through governments' provision of e-health, drive autonomous vehicles as part of smart city intelligent transportation system, and participate in the political process through e-democracy.

In this context, there are three sets of latest technologies that governments are currently using to enhance connected governance. These are:

- Cloud Computing and related Fog and Edge Computing paradigms
- Mobile Networking and Internet of Things based technologies
- Social Media and Web 2.0 based communication technologies.

The purpose of this chapter is to discuss Cloud Computing and discuss how this framework is enabling world governments to provide further enhanced open and transparent connected government. The next two sections are focused on the Cloud Computing paradigm and provide more detail about the connected government vision. The third section links the previous two sections to discuss how the Cloud paradigm and related technologies can help to improve the functioning of, and enhance the transparency and openness of, a connected digital government. The final section presents conclusions.

In this chapter, the terms *connected digital government*, *connected government*, and *Government 2.0* will be used interchangeably.

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