Chapter 5
Design Principles for Public Sector Information and Communication Technologies

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ABSTRACT

This chapter addresses the design challenge of providing Information and Communication Technology(ies) ICT(s) systems for public e-Service provision. Public sector services differ qualitatively from private sector services in that they aim to provide not just value for money but also public value. Generally speaking, public value is created when public organizations successfully meet the needs of citizens. Therefore, public sector ICTs have unique requirements that are not all thoroughly supported by traditional ICTs and their respective design theories. This chapter presents a design theory to guide developers of public sector ICTs on how to produce systems that provide public e-Services through secure and inclusive information systems. These systems will, in turn, create public value by tackling digital inequality and easing citizens' online privacy concerns. The design theory was created while designing and deploying a digital postal system. By abstracting from the experience of building the system, a design theory for ICTs providing public e-Services was formulated. This new design theory is an important theoretical contribution because it provides guidance to developers and sets an agenda for IS research into public sector information systems design. It achieves this by articulating theory-based principles outlining how public value can be created through the development of appropriate ICTs. The design principles outlined by the theory are also subject to empirical, as well as practical, validation.

INTRODUCTION

Twenty first century society is fast becoming digital. A major challenge now facing governments is to create public value not only for traditional society but also for digital society. A common method for governments to create public value is to provide *inclusive* public services. If we consider existing public services like the public education system, the public transport system, and the public waste disposal system, all of these are *inclusive* in that they are available to all members of society. It should follow then that providing inclusive public e-Services will also create public value. For the purposes of this research, the concept of public e-Service is defined as:

Deeds, efforts or performances whose delivery is mediated by information technology, including the Web, information kiosks and mobile devices, and are performed for the benefit of the public or its institutions. Such public e-Services include both customer support and service, and service delivery.

The term e-Inclusion is defined by the European Union (2010) as both inclusive ICT and the use of ICT to achieve wider inclusion objectives. It focuses on participation of all individuals and communities in all aspects of the information society. Europe's e-Inclusion policy, therefore, aims at reducing gaps in ICT usage and promoting the use of ICT to overcome exclusion, and thus improve economic performance, employment opportunities, quality of life, social participation and cohesion.

The new digital age, while hugely beneficial to society, also poses many challenges. Firstly, governments have not yet put in place adequate structures to ensure e-Inclusion in the digital world. This has contributed to the development of a phenomenon called the *digital divide,* which is evident even in developed societies like Europe and the US (Hsieh, Rai, & Keil, 2008). Secondly,

literature shows that a high level of concern has grown among members of society regarding the protection of their personal information when interacting in digital society (Whitley, 2009).

In light of these challenges, this chapter presents a design theory to guide governments when designing ICT systems for public e-Service provision. It is argued that in so doing, digital inequality can be more easily tackled and privacy concerns of individuals can be alleviated. We contend that our design theory is a contribution to the IS literature because it represents an important class of design situations that have not yet been adequately served by existing systems and their associated design theories. Additionally, the design theory contributes to the e-Government literature by providing guidance to practitioners on how to design and develop public e-Services ICTs while ensuring the value orientations of the public sector, namely lawfulness, impartiality, and incorruptibility (Van Der Wal, De Graaf and Lasthuizen 2008), are not compromised. Moreover, by providing these guidelines, it is hoped that this research contributes towards addressing digital inequality and reducing information privacy concerns of citizens.

The next section discusses the theoretical conceptualisation of the design theory. The design theory is then presented as a set of principles that offer guidance to designers of public e-Service systems. Finally, conclusions and an agenda for future research are outlined.

THEORETICAL CONCEPTUALIZATION OF THE PUBLIC E-SERVICE (PES) ICT DESIGN THEORY

Two decades ago, New Public Management (NPM) was proposed for the first time by Hood (1991) as an alternative to what had often become, by that time, costly and bureaucratic public services. NPM sought higher levels of efficiency in the use of resources and of effectiveness in achiev-

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