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AN IDENTIFICATION OF DECISION-MAKING FACTORS IN POST-IMPLEMENTATION DEVELOPMENT OF E-GOVERNMENT PROJECTS IN THE UK: A SINGLE CASE STUDY OF SHEFFIELD CITY COUNCIL

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

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Abstract

Background

The purpose of this study is to develop a clearer understanding of the factors influencing the decision making of public sector administrators at the post-implementation stage of electronic government (e-Government) projects in the UK. E-government refers to the provision of government services through the use of a government portal based on e-Government development models. Despite a wealth of e-Government adoption and implementation studies, there is a paucity of literature describing the roles of e-Government decision makers post-implementation.

Therefore, this single case (i.e. Sheffield City Council) interpretivist study, using semi-structured interviews for data collection, makes a unique contribution to the literature. Semi-structured interviews were applied to collect the data and the researcher interviewed 17 managers and member of staff from Sheffield City Council.

Subsequent data and thematic analysis has revealed four themes. The first theme concerns organisational management issues (e.g. corporate strategy, reputation management, project initiators, etc.). The second theme concerns financial factors of post-implementation decision making behaviours. The third theme relates to technological factors, including IT risks, scale of IT improvement and system accessibility. While the fourth theme concerns the influence of government policy factors. These themes are interrelated and impact upon each other. Also, organisational management theme is identified as core factor of e-Government post-implementation decision making. The findings of this study have implications in the field of post-implementation e-Government decision making. Public sector managers should be sure

to give due consideration to each of these themes ahead of post-implementation decision making in order to arrive at better and more informed decisions.

List of Publications

Mojtahed, R., Nunes, M. B., Martins, J. T., & Peng, A. (2014). Equipping the Constructivist Researcher: The Combined use of Semi-Structured Interviews and Decision-Making maps. *The Electronic Journal of Business Research Methods*, *12*(2), 87–95. Retrieved from www.ejbrm.com

Mojtahed, R., Nunes, J. M., & Peng, G. C. (2015). Provision of Governmental Services through Mobile Phones and Tablets and Threats to Users' Security and Privacy. In M. Khosrow-Pour (Ed.), *Encyclopedia of Information Science and Technology*, Third Edition (pp. 2766-2773). Hershey, PA: Information Science Reference. doi:10.4018/978-1-4666-5888-2.ch270

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1. Introduction

This thesis focuses on key issues in post-implementation decision making to enable the provision of electronic government (e-Government) in local authorities in England, thereby that in excluding Wales, Scotland and Northern Ireland, which together with England form the United Kingdom (UK). The main reason for defining this research boundary is that despite the fact that the overall e-Government strategy is common to the whole of the UK, local e-Government plans and focus are unique and specific to different regions. For example, Wales has a different governance system because of its unique political and historical contexts.

Technological differences exist also at local level (OECD, 2005), which have prompted calls for in-depth understanding of e-Government initiatives and practices at the local level, which is still in its infancy (Lofstedt, 2005). The research reported in this thesis was spurred by this need and by the realisation that although there is a plethora of studies focusing on the success factors of e-Government adoption (e.g. Kumar, Mukerji, Butt & Persaud, 2007), evaluation of e-Government studies (e.g. Gupta & Jana, 2003) and adoption of e-Government development and implementation (e.g. Warkentin, Gefen, Pavlou & Rose, 2002), very few studies have focused on the decision-making elements surrounding the continued provision of e-Government services at local level.

Focused understanding of this research problem required the identification of a local council that demonstrated sustained and continued provision of e-Government services to its citizens. Accordingly, the Sheffield City Council was selected. The Sheffield City

Council is one of the first city councils in the UK to have installed information kiosks to disseminate information and to encourage citizens to become familiar with utilising technology (Silcock, 2001). Torres, Pina, and Acerete (2005) studied e-Government developments on delivering public services among European Union (EU) cities. Their findings identified the Sheffield City Council as among the steady achievers of e-Government development. The Society of Information Technology Management (Socitm) 2013 report also supports the fact that the Sheffield City Council has improved its e-Government services.

This chapter begins with an overview of e-Government definition, together with details of four types of e-Government and an explanation of the UK government's journey towards the implementation of information, communication and technology (ICT) in public sector organisation. ICT failures in the public sector are then described. Thereafter, the status of e-Government development in the UK local council is reviewed. A brief summary of decision making factors identified in the six decision making models is provided in Section 1.1.5. The models are later described in detail in Section 2.2.3.2. In addition, the research aim, questions and objectives are presented.

1.1 Research Background

This section reviews e-Government definition, ICT implementation in the UK public sector, and then explains e-Government failure in the public sector. Section 1.1.4 describes e-Government investment and the level of advancement of e-Government by UK local authorities. Section 1.1.5 provides a brief summary of decision making factors identified from the decision making models.

1.1.1 E-Government

This section describes e-Government definition and e-Government categories.

1.1.1.1 E-government Definition

Current globalisation, the movement towards the concept of New Public Management (NPM), the development and enhancement of IT and the establishment of the internet; altogether, these help governments embark on a new endeavour called e-Government. The concept of e-Government, an official government website delivering information and services, was implemented from the mid-1990s onwards (Coursey & Norris, 2008; United Nations/American Society for Public Administration (UN/ASPA), 2002). Technologically developed countries, particularly those whose population had widely adopted the internet, became the pioneers of putting governments online. Countries such as the United States (US), UK, Canada and Australia have been the earliest brokers of basic web-based services (Chadwick & May, 2003). These initiatives were based on strategic plans established by the central government, which led the use of the potential of online technologies. For example, the Cabinet Office, as cited in Chadwick and May (2003), stated that:

> '[…] If our public service is to survive and thrive, it must match the best in its ability to innovate, to share good ideas, and to control costs. Above all, the public service must deliver efficiently and effectively the policies, programs and services of government (Cabinet Office, section 4, paragraph 1).'

Another example is the statement issued by the US National Performance Review (1993). The US government expressed its rationale for initiating an e-Government plan:

> '… [to] make the entire federal government both less expensive and more efficient, and to change the culture of our national bureaucracy away from complacency and entitlement toward initiative and empowerment. We intend to redesign, to reinvent,

> to reinvigorate the entire national government …' (National Performance Review 1993 as cited in Chadwick & May, 2003).

O'Donnell, Boyle and Timonen (2003) claimed that we need to use e-Government as a tool to transform business routines from the traditional management style to a modern system that responds to and accommodates the needs of citizens, businesses and government agencies. Digital tools such as TV, radio, e-kiosks, mobile phones and the World Wide Web can be used to establish online communication between a government and its stakeholders, e.g. citizens (government to citizen), businesses (government to business), employees (government to employee) and other government sector organisations (government to government).

Several definitions of e-Government describe it from different viewpoints. For example, the UN/ASPA in 2002 defined e-Government as:

> 'Utilising the Internet and The World Wide Web for delivering government information and services to citizens.' (UN/ASPA, 2002)

Some of these perspectives are driven by economics, politics, management and technology. Some e-Government definitions are reviewed to decipher researchers' and organisations' descriptions of this phenomenon and which the media has used to deliver online governmental services. According to Yildiz (2007), there is no universally accepted definition of e-Government. However, a review of e-Government definitions by authors such as Carter and Bélanger (2005), Means and Schneider (2000), Brown and Brudney (2001) and Laudon and Laudon (2010) indicate that researchers have mainly used and focused on the three descriptions 'electronic means', 'information technology' and 'the World Wide Web' when defining the concept of e-Government. Therefore, we may

conclude that researchers have chosen the World Wide Web as one of the essential tools for delivering government online services. Moreover, different e-media, such as e-kiosks, computers and mobile devices, can be used to fulfil any e-Government plan.

Therefore, for the purposes of the present study, the *operational* definition of e-Government is the use of the World Wide Web to provide access to the wide range of governmental services. In addition, each of the highlighted key words can be considered a pillar of e-Government delivery, and all pillars together can deliver e-Government services. However, this claim demands further study of the elements that influence the successful delivery of e-Government, which is beyond the scope of this study. Nevertheless, delivering e-Government has somehow been delayed as a result of difficulties in establishing the necessary infrastructure and providing widespread public accessibility to the aforementioned prerequisites for delivering online governmental services.

1.1.1.2 E-government Categories

The government has greater accountability to its stakeholders as compared with private sector organisations. This difference is influenced by the type and range of services it provides to stakeholders and also the duration of service delivery for each recipient of governmental services. Moreover, e-Government has ushered in considerable changes in terms of internal (internal government operation) and external (services to the public) objectives and services of this public entity. The external goal of the government, in terms of being equipped with ICT, is to address the public's needs and requirements more efficiently by removing difficulties and providing easy interaction between various online services (Backus, 2001). Potnis (2010) stated that one of the main initiatives of a governmental organisation in implementing ICT is linking various units of organisations

such as governments, private sectors, non-governmental organisations (NGOs) and citizens. Hermana and Silfianti (2011) also stated that four groups could gain an advantage at the time of implementing e-Government initiatives. These groups are government, citizens, businesses and employees. In addition to the categories of procuring e-Government services, Palvia and Sharma (2007) acknowledged that all levels of government—city, state, national—aim to use and capitalise on e-Government capabilities. The widespread intent of using ICT in public sector organisation can also be referred to as a sign of popularity. Nevertheless, as mentioned earlier, there are four modes of delivering online governmental services, each of which is developed and devoted to addressing the needs of specific public sector audiences. The definitions and explanations for the four categories are provided below.

1.1.1.2.1 Government-to-Citizen Services (G2C)

G2C comprise one of the earliest types of online governmental services. Ntaliani, Costopoulou and Karetsos (2008) support the idea that G2C was one of the first initiatives of a government in moving towards digitalisation. G2C refer to using online media to promote interaction between citizen and government (Alsaghier, Ford, Nguyen, & Hexel 2009). Therefore, such services facilitate the relationship between government and citizen. There are different reasons for prioritising the procurement of G2C, for example, gaining an advantage by attempting to remove the boundaries and intermediary parties between government and constituent (Davies, 2008). Evans and Yen (2005) stated that one of these benefits is removing the queue for receiving and registering forms.

The types of G2C are dependent on the detailed duties of governmental portfolios. Based on their responsibilities, public entities provide their own unique services to their

customers. For example, Zhao (2010), who studied the performance of public services in 14 local municipalities in China, identified eight forms of G2C delivered through websites to citizens: education, social security, public utility, health, traffic, birth, marriage and domicile register.

Today, when we look at other governmental organisations such as local councils in the UK, we would be able to identify similar or even more services offered through ICT media. For example, the Salford City Council provides 10 forms of online governmental services: business-related, community and living, children's services, environment and waste, job-related, leisure-related, social care and health, transport and streets, forms and council publications, email subscriptions and alerts. However, it should be noted that not all of the aforementioned services provided by the Salford City Council are related to G2C. Some of these services, particularly the business-related services, have implications for government-to-business services.

1.1.1.2.2 Government-to-Business Services (G2B)

G2B are also recognised as one of the earliest types of e-Government services provided and adopted to provide access between government and businesses (Torres, Pina, & Royo, 2005). Rowley (2011) describes G2B as a form of e-Government category that involves interaction between government and businesses. The types of businesses are private sector organisations, NGOs and charities. However, the main focus of e-Government researchers is on providing online governmental services to private businesses.

Communication between government and businesses is established for various reasons, such as providing trade regulations that update agencies on import and export regulations (Evans & Yen, 2005). Nonetheless, these relationships are not only be limited to these

forms of interactions, and there are other needs that demand the provision of more governmental services through online media to provide ease, efficiency and effectiveness for both businesses and public sector organisations. The other examples of G2B are information dissemination, companies registration, tax payment and renewing and obtaining licenses (Al Nagi & Hamdan, 2009; Fang, 2002). To conclude, the aim of G2B e-Government is to render interaction between businesses and government bodies more accessible and streamlined (Davies, 2008).

1.1.1.2.3 Government-to-Government Services (G2G)

G2G are based on establishing online interactions and transactions between different government agency bodies with the aim of improving communication and collaboration between different levels of public administration organisations (Gil-Garcia, Chengalur-Smith, & Duchessi, 2007). Yong and Koon (2005) describe G2G as one of the most important and the backbone of e-Government projects. The reason for this can be traced back to the way public administration organisations conduct their operations. This is because there are different layers of government which feed information to and transform data for the use and benefit of other public agencies. In their descriptions of the last two stages of their e-Government development model, Layne and Lee (2001) placed emphasis on vertical (different levels of government being connected online) and horizontal (different functions of government being connected online) integrations, where the importance of providing and establishing G2G communications can easily be perceived. Therefore, it can be asserted that the main goal of implementing a government-to-government programme is to emphasise the enhancement of delivering services and communication among different levels of public sector organisations. Consequently,

different government agencies have access to each other's databases and resources and also provide services to each other that lead to enhanced efficiency and effectiveness of e-Government services (Layne & Lee, 2001; Torres et al., 2005). Moreover, this type of service will help governments eliminate redundancy and duplication within public sector organisations (Evans & Yen, 2005; Suh, Park, & Jeon, 2010).

The additional benefits of moving towards G2G are increased speed of communication, reduced operational cost through knowledge sharing, improved strategic decision making (Klischewski, 2011; Maluf & Bell, 2005) and monitoring and preventing illegal transfers and activities (Evans & Yen, 2005). Local authorities depend on other public agencies to develop and provide their services or share their knowledge and experiences within public sector entities. This could be facilitated through G2G (Carter & Bélanger, 2005; Hamza, Sehl, Egide, & Diane, 2011; Reddick, 2004). Furthermore, the application of other agencies' best practices, policies and strategic plans by local authorities can be found in e-Government benchmark studies that promote standards and guidelines for future implementation of e-Government services (Malta Information Technology Agency, 2010). This can also be linked to the provision of G2G. Moreover, local authorities' applications of other agencies' best practices, policies and strategic plans can be found in e-Government benchmark studies that can be also linked to G2G. However, the objectives of the present study do not extend to further developing the importance and implications of benchmarking in public sector organisations and cross-referencing different governmental websites for implementing online governmental services. However, it is necessary to mention Teo, Wei and Benbasat's (2003) opinion on adopting G2G, in that the decision to procure new services is highly unpredictable. This decision depends on the influence of other

organisations within the institutional environment. An example of this is the time at which a government aims to introduce a new system which needs to extract information from another agency's database; however, the other agency's system cannot support the required type of functionality, or when the central government decides on a particular G2G plan. This entices and obliges subordinate public agencies to provide specific services which are not part of the local government strategic e-Government plan.

1.1.1.2.4 Government-to-Employee Services (G2E)

G2E aim to provide online communication and transactions between a government and its employees. This form of communication can be based on publishing information on government websites or even disseminating information through an intranet portal. This type of service would not be limited to informational activities but also involve a series of transactional processes and communications. Ndou (2004) also mentions some of the possible functionalities of G2E, for example, governments could provide e-learning and enhance knowledge sharing among employees by using an intranet. G2E are often provided with other titles. For example, Evans and Yen (2006) termed G2E intra-government. Other benefits of a G2E system are the provision of a better system to control ordering and billing, which results in savings and reduces collection problems (Evans & Yen, 2006).

1.1.2 E-government as an ICT Implementation in the UK Public Sector

In order to accomplish day-to-day operations, governments depend on large-scale ICT infrastructure components (Cabinet Office, 2011). Newman, Raine and Skelcher (2001) and Weerakkody and Dhillon (2008) stated that the internet has provided public sector

organisations with the opportunity to develop and provide citizen-centred services by following integrated policies and programmes. According to Boyne, Farrell, Law, Powell, and Walker (2003), improving the manner in which local government and the public sector in general deliver their policies, programmes and services is the main objective of the government.

Moreover, Beynon-Davies and Williams (2003) suggested that the UK public sector has for many years promoted the idea that the use of IT can potentially provide opportunities to deliver services more quickly and at lower cost. In fact, the use of IT to enhance local government services resulted from the concept of local government modernisation introduced around 2000. Meanwhile, e-Government is regarded as an effective solution for providing better governance (Gupta & Jana, 2003). However, this promised benefit remains difficult to attain in most e-Government projects (Heeks, 2006).

To achieve the expected objectives in the UK, various bodies are and have been involved in the process of e-Government development and implementation. Some of these organisations are the Office of the e-Envoy, e-Government Unit, the e-Minister, Local Government Association, Improvement and Development Agency, Socitm, Two Units, Central Local Information Partnership, Central Local Liaison Group, Central Local Information Age Forum, Local Government Online Programme Board and the Office of Government Commerce which is now part of the new Efficiency and Reform Group. Each of these organisations was created with a specific agenda; some provide technical advice to local councils, while others help create and plan ICT strategies. Page 13 includes more explanations for some of these organisations.

According to a Cabinet Office report in 2011, ICT was deemed an essential element for the delivery of government services. The UK government is not the only public sector organisation that has implemented ICT, but it is one of the pioneers and earliest leaders to have applied and used ICT (Cabinet Office, 2010). The results of a benchmarked e-Government services survey, conducted among members of the EU every 18 months, indicated that the growth and rate of advance in providing fully online services are much higher for the UK as compared to other EU members (Cabinet Office, 2010). Furthermore, according to the global e-Government survey published by the UN in 2014, the UK government is ranked among the top 10 countries providing advanced e-Government services, with an e-Government development index of 0.8695 (United Nations, 2014).

A brief summary of the consequences of a series of initiatives by the UK government is presented in the following paragraph. Since 1994, UK public services have radically changed after the Cabinet Office announced that all central government websites and agencies would be routed through open.gov.uk (Cabinet Office, 2010). The guidelines for this initiative were established by a number of white papers, legislation, guidance and goals introduced after the general election of May 1997. In the 1990s, the introduction of e-commerce by private and multinational organisations provided the same opportunity for public sector organisations to embrace the same principles in e-Government. Tony Blair, then leader of the Labour Party and Prime Minister, introduced the concept of e-Government in the UK in 1999. The goal had been for public sector authorities to implement a plan to deliver 100 percent e-Government services by 2005. Moreover, to support the e-Government strategic plan, the government introduced the following four supporting principles (Performance and Innovation Unit, 2000):

- Developing services around citizens' choices.
- Enabling and enhancing accessibility to government services by creating a competitive environment.
- Becoming creative, learning quickly from mistakes and setting ambitious goals.
- Using all possible channels for efficiency savings.

Various efforts have been made by the central government to achieve the e-Government strategy plan. For example, in March 2001, the government produced guidelines and asked the 388 English local authorities to prepare and submit their e-Government implementation statements within four months. In addition, the local councils were instructed to include not only the technological requirements of their plan but also describe cultural changes, changes of management, attempts at continuous improvement and business transformation for their whole organisation, including organisational objectives supporting technology which required attention (DTLR, 2001). Therefore, local councils were expected to provide a road map for achieving an e-revolution in local government.

Moreover, an e-Government Strategy Support Unit and an e-Government Implementation Unit were allocated to assist local government councils to accomplish their e-Government goals. The e-Government Strategy Support Unit was responsible for providing support in implementation, procurement, collaboration, tracking progress and learning from other industries, while the e-Government Implementation Unit was designated to provide individual support for meeting e-Government targets and providing onsite programme and project management assistance (Cabinet Office, 2007 as cited in Weerakkody, El-Haddadeh, Sabol, Ghoneim, & Dzupka, 2012).

However, around 2007, the emphasis of UK government activities shifted from e-enabling front office processes to transforming internal operations to increase efficiency and to reduce costs (Irani, Elliman & Jackson, 2007). The reason for this change in approach was that the success of e-Government development and implementation relied on improving both the front and back offices simultaneously.

The fact that DTLR (2001) and Irani et al. (2007) highlight the importance of pursuing e-Government strategy not by only introducing advanced technological equipment to public sector organisations but also by developing organisational and managerial strategies to support e-Government plans indicates the importance of aligning technological advancement and organisational and managerial strategies.

1.1.3 E-government Failure in the Public Sector

Whitfield (2007) published a report identifying the scope of terminations, delays and major cost overruns of large ICT projects. The survey dealt with information systems/Information Technology (IS/IT) project failure in the central government, NHS, local authorities, public bodies and agencies over the last decade. As the result of the analysis, 105 outsourced public sector ICT contracts were identified. Thirty-three percent of the studied contracts experienced major delays, while 30 percent of the projects were terminated.

The list of IT project failures from 1979 to the present demonstrates the high probability of e-Government project failure. Even when IT was first implemented in public sector organisations, the failure rate was high. For example, Heeks (2008) identified three categories for e-Government projects: total failure, partial failure and success. He stated

that only 15 percent of e-Government projects in the developing and transitional countries succeed. This can be considered an extremely low percentage. In 2004, the Royal Academy of Engineering and the British Computer Society reported that IT project failure rates in public sector organisations stood at 84 percent (The Royal Academy of Engineering, 2004). According to statistics published by the Standish Group in 2013, CHAOS MANIFESTO 2013: Think Big Act Small, the success rate of software projects was only 39 percent (Standish Group, 2013).

Some high profile public sector IS/IT project failures have led some researchers to refer to the UK public sector as '*a world leader in ineffective IT schemes for government*' (Dunleavy, Margetts, Bastow, & Tinkler, 2008, p. 70). The Child Support Agency IT system, the Defence Information Infrastructure Programme and the implementation of the Single Payment Scheme by the Rural Payment Agency are a few examples of many high profile IS/IT project failures in the UK public sector (House of Commons, 2011).

In addition, ICT projects comprise various IS/IT projects. Successful implementation of IS/IT projects is fundamental to a successful organisation and ICT project. Nonetheless, as mentioned before, government ICT projects entail a significant proportion of failures and are associated with considerable monetary costs, and governments need to control this risk as much as possible.

There are various criteria for differentiating between successful and unsuccessful IS/IT projects. Wateridge (1995) stated that cost, time and user specification are criteria used predominantly by researchers to measure the success of IS/IT projects. There are various reasons government ICT projects can fail. Various researchers and organisations have

attempted to answer this question, for example, lack of ownership and leadership at senior and ministerial level, lack of linkage between the project and strategic priorities of the organisation, lack of stakeholder engagement, lack of project management and risk management skills, difficulty of senior management in understanding and contact with the supply industry when evaluating new ICT proposals (National Audit Office, 2004). In addition, Lam (2005) identified issues such as strategy (e.g. lack of shared e-Government goals and objectives), technology (e.g. lack of architecture interoperability), policy (e.g. data ownership) and organisation (e.g. slow pace of government reform) that can act as barriers to integration. These barriers would lead to failure to achieve a mature e-Government. Furthermore, Layne and Lee (2001) mentioned that the multi-layered nature of e-Government development is one more reason for the unsuccessful implementation of e-Government projects. Heeks (2008) also introduced six categories of potential causes of IS/IT failure: direct financial costs, indirect financial costs, opportunity cost, political cost, beneficiary cost and future cost.

Gauld (2007) stated that IS coordinators expect the possibility of project failure in almost every IS project. He also stated that ill-planned, poorly managed, large and multifaceted projects are more likely to fail; however, this is influenced significantly by contextual issues. The same study further proposed that the uniqueness of political and organisational elements of public sector organisations adds to the complexities of IS/IT project commissioning and development.

There are 14 characteristics that could result in IS/IT failure in public sector projects: a large and multifaceted project, undefined IS needs, undefined IS project objectives, uncertainties around the appropriateness of the product, lack of continuity of key

management staff, no chief information officer (CIO) throughout the entire project, ad hoc reliance on external consultant for advice, perspective differences between management and front-line staff, expectation of re-engineering organisational structure, lack of front line staff engagement, ill-constructed purchase contract, front-line staff resistance to the project, political interference in decision making, politicisation of the sector: media, external reviews and political attention (Gauld, 2007).

It has been determined that successful Government implementation depends on several aspects such as innovative leadership with strong central direction, which considers regional and local diversity (Cabinet Office, 2000). However, what can be extracted from these claims is that the role of public administrators in launching new e-Government projects is vital. As they are to be placed in political, organisational and economical environments, they have to play a role in bringing into reality any new ICT advancement. They have to make a decision to transform the potential opportunity into reality. In addition, the Standish Group (2013) investigated, from the perspective of IS executives, the elements of importance when reviewing post-mortem information on project execution. The results revealed that 90 percent believed that change in management was crucial, while 89 percent and 83 percent identified decision making and requirement management, respectively, as crucial. The findings again emphasise the importance of management and managers when executing any IS/IT-related project.

Although there is a high possibility of ICT project failure in the public sector, it does not prevent such organisations from initiating e-Government projects. Different factors could result in a new journey toward e-Government development. For example, e-Government

services may be affected and influenced by changes occurring in '…citizens' need, changing legal regulations, availability of new technologies, outsourcing opportunities and new service provision models' (Apostolou, Mentzas, Stojanovic, Thoenssen, & Lobo, 2011). In addition, from a general perspective, the Member of Parliament's (MP's) viewpoints and citizen opinions and demands with regard to the type of online services they expect to become available to them influence future steps taken by local government. Moreover, the existing system may require maintenance, which would become a reason for attempting to correct the system or initiating a new journey toward providing new services.

Nonetheless, IS decisions made by public administrators to launch a new e-Government project require proper understanding of the criteria to be considered for providing e-Government services not only to avoid any risk of project failure in the future, but also to understand the concerns and information needs of public sector administrators when attempting to procure new e-Government services. This form of IS decision-making is taken during the post-implementation phase of an e-Government development lifecycle. Currently, it is difficult to find an organisation that has not implemented e-Government. Therefore, it requires the identification of factors that eventually lead to the shaping of the decision to follow an IT ambition.

Furthermore, e-Government services need to be continuously improved and changed to reflect political and societal changes. In fact, it is the responsibility of local council administrators to play a part in delivering e-Government projects based on the contextual environment. Although the government needs to be equipped with advanced e-Government, which would result in an e-Government investment, there is always the possibility of failure

which demands more attention from the public sector administrator in IS decision-making. The failure of many projects can be avoided if decision makers gain more understanding of the criteria they have to consider when engaging in IS decision making. Researchers such as Kamal, Weerakkody, and Irani (2011) and Mishra and Mishra (2011) have stated that e-Government implementation consists of various stakeholders and factors that could influence e-Government development. Therefore, it could be expected that IS decision making consists of the involvement of different stakeholders in the decision-making process, and different criteria is to be considered when IS decision making is a matter of concern.

Previous e-Government studies concentrated largely on identifying and evaluating e-Government development, the barriers and challenges to successful implementation of e-Government projects and the success factors of e-Government at local and national level (Mishra & Mishra, 2011). Little attention has been paid to the role of internal decision makers in the local council for providing e-Government. In addition, the perspective of a public sector manager with regard to the elements that affect their decision for the providing of e-Government services has been rarely studied. Furthermore, the existing literature appears to reflect a single-sided view toward the concept of e-Government, which is mainly from user and technology perspectives (see Section 2.1.3).

In the existing literature, there is general agreement that there are different stages in e-Government provision for achieving IS/IT maturity in public sector organisations (Irani, Al-Sebie, & Elliman, 2006). E-Government development includes different stages, and each stage would result in the provision of different forms of e-Government services (see

Section 2.1.3). Irani et al. (2006) stated that the path to full system integration is at the transaction stage of e-Government models, arguing that a significant number of projects fail at this stage. For example, the most recent failure to provide a fully functional transactional service is the US project to provide citizens the opportunity to buy affordable health insurance. Although this project was expected to be fully functional from October 1, 2013, system administrators faced a considerable number of bugs and errors at the early stage of operationalising the web portal.

There is always the possibility of failure in IS/IT projects; however, situations such as the US government's healthcare project should not and will not prevent governments from investing in fully transactional services. To prevent failures of an organisational and managerial nature in e-Government development, public sector administrators have to gather more information to reduce the level of uncertainty. This information could be obtained by studying the processes of IS decision making in organisations, including studying the steps management teams take and the aspects they consider to promote IS/IT advancement. Explanations of the status of e-Government development in UK local authorities are provided in the next section.

1.1.4 E-Government Investment and Level of Advancement of UK Local Authority E-Government

In the UK, both the central and local government allocate substantial funding to enhance and improve their public services every year. The 2010 Cabinet Office report on the future of public sector organisations was concerned with the future impact of the financial crisis of 2008/2009. Due to this crisis, the government expected a barrage of pressures on public

sector organisations, impacting market structures and investment models and leading to a greater need for cost efficiency. The Office for National Statistics' (ONS) (2013) report outlined that public sector debt increased from £1,119.5 billion in August 2012 to £1,193.3 billion in August 2013. In addition, changes in UK political viewpoints resulted in budget cuts designed to reduce national debt. As a consequence of the economic downturn, local government funding is expected to decline. According to Spending Round 2013, it will be reduced from £25.6 billion in 2014/2015 to £23.5 billion in 2015/2016 (HM Treasury, 2013).

The cost reduction plan has tightened government engagement towards ICT investment. In its government ICT strategy report, the Cabinet Office (2011) explained that the government has implemented and applied controls to its ICT expenditure to ensure that it spends taxpayers' money more wisely and carefully. For example, the government has stated that it has assigned a control mechanism for reviewing the ICT portfolio of projects valued over £1 million, which could identify projects that need to be halted, reshaped or allowed to continue (Cabinet Office, 2011). Nonetheless, public sector expenditure on IT is considerably high. Based on a Cabinet Office report, the public sector spends approximately £16 billion per year on technology (Cabinet Office, 2010). The issue, which has gained importance, is the success rates of e-Government development initiatives in public sector organisations to ensure that taxpayers' money is wisely invested.

Brooks (2000) reported significant pressure to modernise local government authorities to restructure the political decision-making process and to improve the reliability of local government authorities, thereby resulting in enhanced delivery of local authority services.

To modernise and improve the government and deliver public sector reform, e-Government is widely recognised as a fundamental tool with which to deliver this expectation (Foley & Alfonso, 2009).

In its 2011 report, Socitm, an organisation in which one of whose aims and objectives is to provide a snapshot of all local authorities' websites in the UK, presented the state of development of local authorities based on a one- to four-star ranking system. The evaluation system was simplified by using a maximum of 12 criteria for all rankings. The criteria included aspects such as information content, usability and usefulness. For example, transactional functionality was one of many criteria used by Socitm for conducting their 2011 evaluation. *Transaction* was defined as how well online services are provided to the public. One of the findings on the transactional functionality of local council websites was that in only 39 percent of cases was the online option available to reviewers before any other options (Socitm, 2011). According to the Socitm report in 2011, 68 percent of 433 local council websites were categorised as 1-star and 2-star website groups. The review of the Socitm report in 2013 also indicated that only 9 percent of 433 local councils reached 4-star level and that 32 percent of local councils have 3-star websites. This was after Socitm categorised 5 percent of local council websites at 4-star level and 38 percent of local council websites at 3-star level in 2012 (Socitm, 2013).

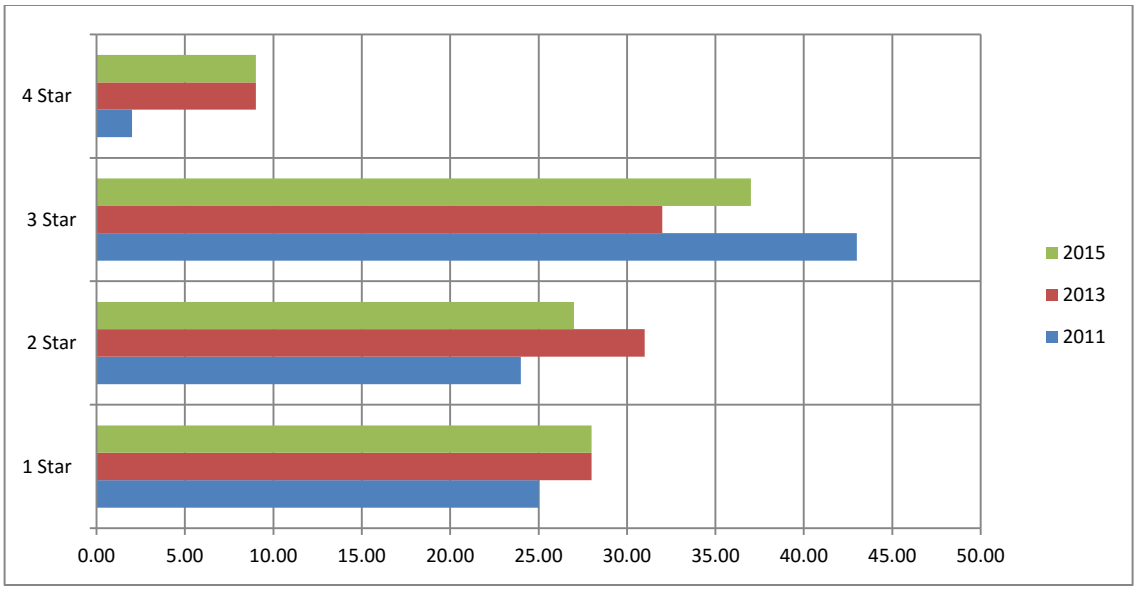

Figure 1: Grading of local authorities' e-Government between 2011 and 2015

Based on reports produced by Socitm, there was no significant improvement in the ranking of local council websites between 2010 and 2015. However, the figures highlighted slight positive changes in improving local council websites. For example, Figure 1 illustrates a decrease in the number of websites categorised as 2-star websites, while the number of 3-star and 4-star websites was slightly increased.

The number of 2-star and 3-star websites is definitely greater than before. However, the review in the Socitm report in 2015 clearly indicated that progress toward an advanced e-Government portal is slow, as the total percentage of 3-star and 4-star sites comprised only 46 percent of the total, only 2 percent more than in 2014, as shown in Figure 2.

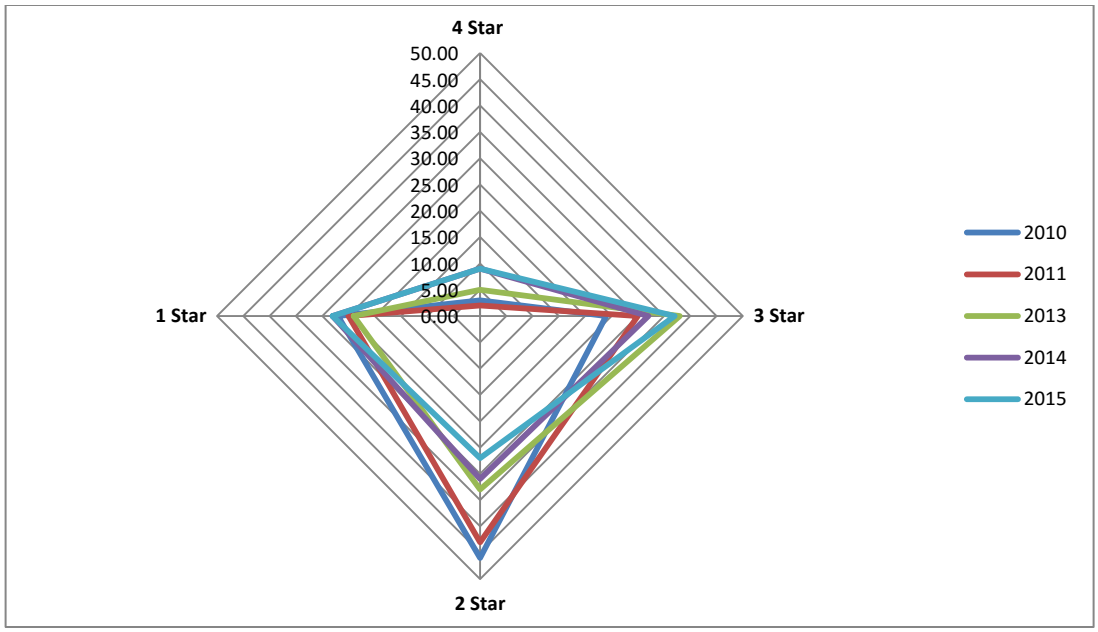

Figure 2: Radar map of the level of local government websites between 2010 and 2015

One point worth emphasising more than anything else about these figures is that this is an effort to enhance local council websites, a challenge endured and accepted by public sector administrators. Therefore, it is vital to understand how decision-making towards enhancing the provision of new e-Government services occurs rather than understanding the current status of any local government portal.

Previously, much of the initial investment was devoted to the development and exploitation of a web presence. Therefore, the infrastructure had been established and that was time to provide advanced e-Government services. Currently, following the establishment of the initial web portal, there is a need to engage in a continuous cycle of maintaining, updating and improving e-Government to fulfil stakeholder needs. Most previous research in the field has focused on the technical and implementation aspects, such as the creation, design

of functionalities and launch of e-Government websites (e.g. Andersen & Henriksen, 2006; Layne & Lee, 2001).

In addition, there is a wide range of claims regarding different classifications of e-Government studies. For example, Srivastava (2011) identified three main categories: (1) evolution and development; (2) adoption and implementation; and (3) impact on stakeholders (e.g. citizens and businesses). Kamal, Weerakkody and Irani (2010) stated that in different organisational domains, there has been considerable study of the adoption of integration technologies, with the main focus being on organisational and technical viewpoints, including cost, benefit and barriers. It has been concluded that there is limited existing research aimed at discovering and investigating the human behavioural aspects of public sector management decision-making attitudes towards the adoption of integration technologies (Kamal et al., 2010), while Srivastava (2011) has emphasised the importance of investigating e-Government initiatives at a fine level of analysis.

Furthermore, identifying the factors public sector managers perceive as important in procuring e-Government services are seldom studied. Boonstra (2003) raised concerns that little attention has been paid to the process organisations employ in deciding, developing and implementing IS/IT applications. This is a concern that has not been addressed in detail in the past 10 years. According to Rollinson (2008), the surrounding context influences the nature of decision making and consequently the result of that decision impacts on the context. This statement led this researcher to question the surrounding contexts of UK local government that influence decision making for providing new e-Government services.

Figure 3 is presented to better depict the focus of the present research study. Figure 3 represents a visual presentation of moving from an existing e-Government website toward providing an advanced website.

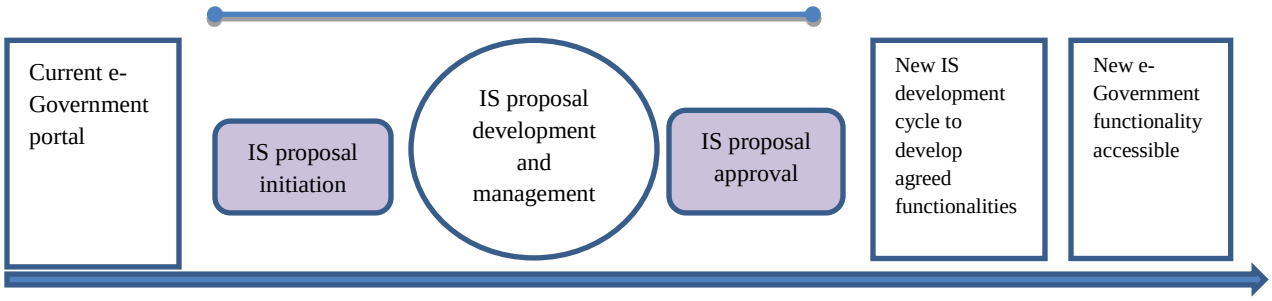

Figure 3: IS decision-making process for developing new e-Government systems (adapted from Maritan, 2001).

The IS/IT decision-making process starts with a proposal initiation. The proposal initiation is the result of an issue that could be a crisis, problem or an opportunity which exists when the current system is operationalising. Different staff members join and contribute to the IS-related problem. After the proposal initiation stage is completed, proposal development and management will follow. Finally, the proposal will be sent for final approval (adapted from Maritan, 2001). After proposal approval, the new cycle of IS development will begin to deliver the agreed functionalities of the government website. The interest of the present research is on identifying factors considered by decision makers who participate in procuring new e-Government services. Figure 3 is used solely to comprehend the decision-making process and to allow this researcher to use the terms and jargon used during decision making. This will eventually lead to identification of the themes and factors perceived by public sector managers as influential when providing new e-Government services.

1.1.5 A Summary of Decision Making Factors Identified Within Decision Making Models

Different stage-based, decision-making models are presented in Section 2.2.3.2. These models provide step-by-step guidelines to decision makers and outline the action required to reach the final stage of these models; in other words, choose and implement the final decision. The models are mostly normative or descriptive. In these stage-based models, the authors named some factors that could impact on decision-making activity. However, these factors are not well-defined by most authors; rather, they simply name possible impacts. A brief description of these factors is presented in Section 2.2.3.3. From the review of Daft's (2010) model, 11 factors were identified; for example, less use of resources, overall goals and values of the organisation, achieve desired result, and risk propensity. Drury's (2004) model includes budget, identification of environmental opportunities and threats, performance and financial reports, state of nature and environmental uncertainties. Meanwhile, Simon's (1960) model contains three factors of the type of task, characteristics of the environment and distinct feature of cognitive system. Dewey's (1910) model has two main factors of nature of task and functional potential that impact decision making. Moreover, Mintzberg et al. (1976) model includes 17 factors, such as decision-making stimuli, limited time, overall resource constraints and lack of subject knowledge. Finally, Maritan (2001)'s model considers operational and managerial staff's information , communication, investment champions, risk taking aptitude, level of uncertainties and level of organisational information accessibility as factors that impact decision making. Table 1 presents the identified factors. These factors will be used to discuss their similarities and differences in the context of the findings of this research study.

Table 1: Factors of Stage-based, Decision-making models

Daft (2010)	**Drury (2004)**	**Maritan (2001)**
-Less use of resources -Overall goals and values of the organisation -Achieve desired results -Risk propensity -Organisational rules and procedures -Performance and financial reports -Existing intelligence within the organisation -Managerial, administrative and persuasive abilities -Manager's lack of resources -Communication, leadership and motivation needs -Authorisation	-Budget -Identification of environmental opportunities and threats -Performance and financial reports -State of nature -Environmental uncertainties	-Operational and managerial staff's information -Communication -Investment champions -Risk-taking aptitude -Level of uncertainty -Level of organisational information accessibility
Mintzberg et al. (1976)	**Simon (1960)**	**Dewey (1910)**
-Decision recognition and diagnosis -Decision-making stimuli -Influence of its sources -Interest of decision maker -Perceived pay off of taking action -Probability of successful termination of decision -Associated uncertainties -Decision control routines -Communication routines -Political routines -Limited time -Strategic decisions consideration -Overall resource constraints -External political forces -Lack of subject knowledge -Amount of course actions -Decision-making resources	-Type of task -Characteristics of the environment -Distinct feature of cognitive system	-Nature of task -Functional potential

1.2 Research Aim

The present research aims to study factors that influence decision making and that lead to the provision of new e-Government services. Therefore, the present study covers the period before the new IS development lifecycle begins to deliver the required system and before the new system is accessible to the potential system's stakeholders. Specifically, it focuses

on the moment the IS proposal is initiated, developed, managed and reviewed for final approval in order to extract the list of factors impacting provision of e-Government services.

Therefore, the present research can identify the factors that affect the judgement and decisions of public administrators in delivering a change to their governmental websites. This goal and objective will be achieved by studying the perceptions of public administrators in making decisions to enhance their current web portal.

1.3 Research Questions and Objectives

Based on information obtained from existing e-Government literature and with the knowledge gap identified, the focus of the present research study is briefly stated in the following research question:

- **What factors influence the decision-making process in a UK local council in the provision of e-Government services?**

To answer this question, the following objectives were established:

- To review the literature and explore e-Government and effective practices in relation to the models of e-Government development and implementation;
- To review the decision-making process, describe different approaches to decision making, identify and select a model for the purpose of the study;
- To identify categories or contributing factors that typically influence the decision to improve any e-Government system, focusing on a single case study;
- To explore local council administrators' perceptions of factors that can affect their decisions for providing e-Government services;

- To demonstrate possible elements affecting decisions for improving services and developing guidelines for local managers with regard to essential considerations when making decisions to procure e-Government services.

Therefore, the present research was designed to study decision making for the provision of e-Government projects in public sector organisations, which previous researchers seldom addressed. The focus is on the post-implementation stage because there is rarely a local council in the UK which has not provided web portals, and in fact, the journey towards providing e-Government services starts at this stage. Therefore, with the existing system in place, there is only the wish to enhance or improve facilities or services that triggers the reasons for providing new e-Government services available today to citizens through web-based platforms. As public sector managers often make IT decisions in poorly developed and unprepared structures, identification of the factors that shape decision making at the post-implementation stage will provide the opportunity to make more effective decisions and establish better strategies.

As public sector managers often make IT decisions in a subjective manner and in poorly developed and unprepared structures (i.e. in isolation) (Irani, Love, Elliman, Jones, & Themistocleous, 2005), identifying the factors that shape decision making at the post-implementation stage will provide the opportunity for more effective decision making and establish better strategies. Based on the research aim and objectives, the present study aims to explore and identify, rather than validate, the elements influencing the post-implementation decision making of public sector managers. This study is therefore

categorised as an inductive and qualitative study. A case study strategy was adopted for this thesis, and 17 interviewees located in Sheffield City participated.

1.4 Thesis Outline

This thesis contains six chapters: introduction, literature review, research methodology, findings, discussion and conclusion. The introduction chapter explains five sections: research background, research aim, research questions and objectives and thesis outline. The main objective at this juncture is to provide a quick glance at the research topic and the necessity of performing a study in this field. This PhD thesis also covers two major areas: ICT development and implementation in public sector organisations, and decision making in public sector organisations. Each field is subsequently explained in the literature review section. The literature review indicated that e-Government is a relatively new subject. The subject of e-Government was introduced around 1990 and many research studies have been conducted since then to explore this phenomenon. The early studies up to 2010 have mainly focused on the implementation and the success and failure factors of e-Government and how efficiency and effectiveness can be introduced to public sector organisations. It would not be wrong to state that the mainstream e-Government studies have been more interested in the technological aspects of e-Government and that the managerial aspects of e-Government, meaning manager participation and the influence of their decision making in implementing e-Government are less developed and are left to further exploration by other researchers. The contribution of the present research study to knowledge is the development of a thematic map in terms of the factors that influence public sector manager

decision making when they engage in e-Government provision at the post-implementation stage.

Chapter 3 elaborates on the research methodology, where the qualitative approach is justified and the process of selecting study samples is explained. Specifically, it focuses on the adopted philosophical worldviews for the present research study, the best strategy of inquiry, research method and data collection and analysis technique. As the present study aims to explore the factors influencing e-Government decision making, an interpretive approach was selected as a suitable approach. A case study strategy and qualitative interview of a single city council in the UK with 17 interviewees were selected for the purpose of the present study, and thematic analysis was chosen as the data analysis technique.

The research study findings from the thematic analysis technique are described in Chapter 4. Data collected from the 17 interviews were analysed and a thematic map depicting key themes influencing public sector administrator decision making for procuring new e-Government services was created. Four main themes are identified and explained in this chapter. The findings chapter contains three main sections, namely an evaluation of e-Government development and implementation by the Sheffield City Council, stages of e-Government decision making by the Sheffield City Council and factors influencing public sector manager post-implementation decision making. Moreover, the present study findings not only identify the themes influencing the public sector managers, but also indicate that some of the identified themes are interrelated.

Chapter 5 discusses and compares the present research findings with existing e-Government initiative decision making literature. Furthermore, a new literature review conducted to identify studies that share similar goals and objectives in the area of e-Government, and three studies, one each from the US, Jordan and Kuwait, are identified and compared with the developed thematic map. The studies from the Arab countries are PhD theses. Also, TOE model and factors of stage based decision making are discussed. The theoretical contribution to the body of knowledge and conclusion of the discussion are presented in this chapter. What differentiates this study from other studies is the identified interrelationship impacts of the identified themes, and this study is one of the few studies on public sector administrator decision making for providing new e-Government services. The final chapter of this thesis is the conclusion chapter, which contains the contribution to knowledge made in this thesis, explanations of the limitations of the present study and identification of future avenues of research opened up by the study.

2. Literature Review

The literature review for this research study is divided into two sections. The first section includes information about e-Government and the application of ICT in public sector organisation and aims to better understand the research context. The second section includes information on management and decision making, including information on the types of decision-making and decision-making approaches in a public sector organisation.

Section 2.1 helps to understand the evolution of e-Government in the public sector organisation, identify the advantages of e-Government investment and identify different forms of e-Government development and implementation. In Section 2.1.1, the renovation of public sector organisation in the information age is explained. Section 2.1.2 describes the benefits that can be achieved as a result of investing in e-Government. Section 2.1.3 describes different models of e-Government development and implementation. The review in this section led to the identification of the gap in knowledge. The literature review indicates that the behavioural aspects of e-Government development and implementation have been less studied and there has been limited attention on the post-implementation stage of e-Government projects. Section 2.1.4 describes e-Government development lifecycle. In section 2.1.5, the discussion of e-Government development and implementation is provided. The focus of this research study moves to understand the decision making practices of managers and the elements they would consider at the post-implementation stage of an e-Government project. Therefore, the management literature is studied as the next step.

Section 2.2 discusses decision making in the organisation and includes an explanation of the different approaches to decision-making. Section 2.3 describes the closest studies this researcher could identify. Finally, Section 2.4 summarises the literature review.

2.1 E-Government and Public Sector Organisation

This section includes five sub-sections, namely, public sector in the information age, advantages of e-Government, models of e-Government development and implementation, e-Government development lifecycle and discussion of e-Government development and implementation. The information on each of these sub-sections is presented below.

2.1.1 Renovating the Public Sector in the Information Age

The idea of reengineering and reforming the public sector began in the late 1980s and early 1990s (Heeks, 1999, p. 9). The concept of public sector reform is defined simply as implementing a change that seeks to improve performance. According to Heeks (2001, pp. 9–10), a number of historical causes directed this old and bureaucratic institution in the public sector towards reinventing its governmental structure. He listed three intertwined elements, namely the public sector crisis, an introduction of renewed ideology to respond to that crisis, and at times, the political will and power to implement those responses. Together, these elements have become a foundation [for public sector administrators] to pursue organisational structure reform since 1970. According to Kelly, Mulgan and Muers (2002, p. 9), the concept of NPM in the 1980s and 1990s was grounded in the applicability of management technique across both public and private sectors; moreover, government values would be established by imitating the organisational and financial systems used by businesses. Nonetheless, the public sector movement towards replacing the old bureaucratic

system with more advanced and creative approaches has inevitably influenced public sector organisations to invest in similar approaches from the late 1990s.

Private sector organisations have widely adopted ICT to enhance performance through the reduction of transaction costs and to rationalise organisational activities by saving time and costs (Cordella, 2006; Picot, Bortenlanger, & ReHrl, 1997). Cordella and Bonina (2012) reported that the success of private sector adoptions in rationalising organisational procedures and supporting e-mediated exchange has acted as a stimulus for public sector organisation to support the engagement of ICT within NPM reforms. The reason for such a claim can be found in the technical and strategic solutions imported from private sector experience to public sector organisations for developing and justifying administrative and managerial practices. Moreover, these practices and solutions align perfectly with NPM ideology which endorses the same objectives to modernise public sector administration (Cordella & Bonina, 2012). Heeks (2001, p. 16) believes that IT, IS and information have a greater and considerable role in the process of reengineering and delivering change in public sector organisations. Although the success stories of private sector organisations have greatly increased the attention and motivation of public sector organisations to apply the same practices, there has been discussion among scholars as to whether they should follow the exact same steps as private sector organisations (e.g. Heeks, 2006).

Obviously, there are considerable differences between public and private sector organisations, for example, there are differences in objectives and accountability, a lack of competition among public sector organisations and a lack of production and sales (Heeks, 2006, p. 11). Moreover, Heeks (2006) stated that what works well in e-business does not necessarily work in the public sector. Goddard and Riback (1998) as cited in Heeks (2006,

p. 11) believed that there is a difference between public and private sector organisations. They stated that if public sector managers seek to follow the same thinking of private sector managers, it would introduce more problems than it solves (Goddard & Riback, 1998 as cited in Heeks, 2006, p. 11).

As there are considerable differences between public and private sector entities, it can also be presumed that, in terms of implementing e-Government development, there would be considerable variations in the way IS/IT is planned, designed, developed, implemented and maintained owing to organisational, political, operational and technical differences of public sector organisations. It can be also anticipated that the apprehension and perception of public sector administrators when practising IS/IT projects procurement would differ significantly from that of managers in private sector organisations.

Therefore, this research study focused more on understanding the factors influencing decision making to provide e-Government based on the fact that public sector organisations differ from their private sector counterparts. The next section of this thesis explains the concept of e-Government. By reviewing the definitions of e-Government, this research will gain the advantage of better understanding of this component of IT implementation in public sector organisations and also how previous researchers have perceived and described the phenomenon of equipping public sector organisations with advanced IT infrastructure. Moreover, the definition, which will be used for the purpose of this study, is explained.

2.1.2 E-Government Advantages

Numerous IS project failures have been reported by governments and researchers in the area of e-Government studies. However, a series of advantages achieved or purported to

arise from investing in ICT also motivates governments to invest more money in these initiatives. ICT is known as a tool that can improve governmental processes, contain costs and guarantee efficiency and effectiveness for the organisation if it is applied and managed wisely. Weerakkody et al. (2012) explained that irrespective of the nature of e-Government programmes, the reasons and incentives for governments in making ICT-interrelated changes can be traced to the desire of public sector organisations to enhance their organisational efficiency and to reduce costs and wastage while providing citizen-centric public services at local level.

This perspective can be further verified from Silcock's (2001) statement that policy makers view new technologies as the key to reengineering internal business processes and reshaping relationships between citizens and service providers. Beynon-Davies (2005), who studied the UK Inland Revenue, also confirmed that the majority of government organisations in the UK, including the Inland Revenue, assign their first e-Government strategy to delivering e-services to mass customers. Therefore, it would not be a false claim to state that the transformation of local government councils in the UK, through the adoption of IT, has been central to political programmes. There are different advantages expected as a result of investing in ICT. One of the earliest claims was made in a paper by Silcock (2001) that was published in the journal *Parliamentary Affairs*.

Silcock (2001) said:

> ‘[Through harnessing IT, public sector organisations’ services become] more accessible through multiple channels and more responsive by providing ‘joined-up’ services, the citizen has access to information relating to services through one point of contact. It will be a consumer-led revolution bringing

> with it more efficient government, more transparent ways of doing business with the different branches of government; a two-way path of consultation and collaboration; a new level of accountability for elected and unelected officials; and more open and responsive politics.'

Wescott (2001) listed the following elements as the advantages of investing in ICT: to promote more efficient and cost-effective government, to provide more convenient government services, to facilitate public access to information and to make a government more responsible to its citizens. Nonetheless, the possibility of access to government information and services 24/7, the transparency of governmental operations and achieving efficiency and effectiveness are just a few examples of the benefits governments and citizens can achieve at the same time. For example, Layne and Lee (2001) identified two benefits of going through the first stage of e-Government development and implementation for both government employees and citizens. For citizens, these are: access to government information on the internet instead of searching for the required information in the yellow pages and making a phone call. Government staff in turn will have more time to define to top-priority requests, allocating more time and work hours to more pressing issues. In addition, Layne and Lee (2001) stated that internet presence is convenient for citizens and reduces the workload pressure on front-line employees.

Reducing pressure on front-line staff can consequently result in better management of human resources and eventually reduce the number of public sector staff and lead to budget saving. The benefit of using ICT in public sector organisations has led to expansion of the e-Government strategy and the creation of a different agenda. For example, the UK government pursued its current ICT strategy by expansion, resulting in its green ICT plan.

The government has made significant efforts to green its ICT strategy. This effort had been established to drive efficiencies by modernising work practices, using technology and consequently leading to reduced travel, enhanced collaboration and finding better solutions for reusing and recycling IT equipment (Green ICT Delivery Unit, 2013).

2.1.3 Models of e-Government Development

Different levels of governments have initiated e-Government development and implementation based on their budgets and available resources. E-government development and implementation usually begin as a project. Yildiz (2007) questioned the criteria required for a project to be considered an e-Government initiative. For example, whether a static website is sufficient to be considered an e-Government project or whether there is a need for interaction. Yildiz (2007) found an answer to this question by referring to Layne and Lee (2001). Layne and Lee (2001) had responded to this question with their model of e-Government stages, where projects that fell in any of their model stages could be considered or defined as an e-Government project.

While the concept of e-Government was in its initial stage, academic researchers such as Layne and Lee (2001), Moon (2002), Andersen and Henriksen (2006), and organisations such as Deloitte Research (2000) and the UN (2008, 2010, 2012) have suggested, developed and used different stages of an e-Government development model to trace and evaluate e-Government projects and help public sector administrators consider e-Government in their organisation. As a result of such a movement, various models of e-Government development, comprising different and similar stages, have been established.

Deloitte Research (2000), Baum and Di Maio (2000), Layne and Lee (2001), Ronaghan (2002), Hiller and Belanger (2001), Wescott (2001),Moon (2002), Netchaeva (2002), Siau and Long (2005), Andersen and Henriksen (2006), Zarei, Ghapanchi and Sattary (2008) and the UN (2008, 2010, 2012) are just a few examples of researchers and international organisations that have attempted since 2000 to describe and explain how e-Government development can be planned and implemented effectively and efficiently for public sector organisations. The efforts to describe what the expectations of investing in internet-mediated channels would be were not limited to public sector organisations; similar models were proposed for different entities to review and describe the progress of organisations on the internet. The e-adoption ladder is one of the early models introduced by the UK Department of Trade Industry in 2000 and then later enhanced by Xu, Rohatgi and Duan (2007) in an effort to explain how the process would work in the exploration and development of new communication technology by small firms.

Coursey and Norris (2008) compared and studied five early models of e-Government development and implementation: that of Layne and Lee (2001), Wescott (2001), Baum and Di Maio (2000), Ronaghan (2001) and Hiller and Bélanger (2001). They described the models as partly descriptive, partly predictive and partly normative. They also mentioned that some of the models, such as the Gartner model (Baum & Di Maio, 2000) recommend sales of e-Government services instead of unbiased theory building.

Curiously, eight of the 12 e-Government development models were developed between 2000 and 2002. Six principal models were chosen for further discussion and the bases for this selection are explored now. The Deloitte model was included because it is an early model which attempted to explain the phenomenon of e-Government development and

implementation. The next, from the UN (2012), is considered a universal model for studying e-Government development among UN members. The last three e-Government models were chosen using the Web of Knowledge (an academic citation indexing and search service) as most cited. The Gartner Group, Ronaghan and Hiller and Belanger models were excluded because their reports were not published in journals or international peer-reviewed conference proceedings. The Netchaeva (2002), Wescott (2001) and Zarei et al. (2008) models are not listed in the Web of Knowledge database and were also excluded. Among the remaining models, that of Layne and Lee (2001), Moon (2002), Siau and Long (2005) and Andersen and Henriksen (2006) have been cited 341, 232, 47 and 60 times, respectively. Therefore, the Siau and Long model was removed from the comparison list.

The e-adoption ladder model was included in the list of comparison models because it was one of the early models created as the result of UK government initiatives to explain how existing small firms would adopt ICT. Table 2 presents a summary of the reviewed and selected e-Government development models. These models are further described in the following paragraphs.

Table 2: List of selected and reviewed e-Government development and implementation models

Author	**Publication Year**	**Number of Stages**	**Publication Type**
Deloitte Research	2000	6 stages	Consultancy report
DTI	2000	5 stages	Government report
Layne and Lee	2001	4 stages	Electronic journal
Moon	2002	5 stages	Electronic journal
Andersen and Henriksen	2006	4 stages	Electronic journal
United Nations	2012	4 stages	UN annual e-Government survey report

2.1.3.1 Deloitte Research's Six-stage Model

One of the earliest e-Government development models is that of Deloitte Touche Tohmatsu Limited in 2000. Deloitte Touche Tohmatsu Limited (2000) described e-Government as not only impacting on the use of technology for delivering services to the public, but its influence on business processes, and human resources with customers at the centre. E-Government development is described as a continuum, something that changes character gradually with no clear separation point. This model includes two opposite and extreme points of views for the e-Government development journey. On the one hand, it is hallmarked by the use of the internet as a tool for more than just recreation; on the other hand, the internet becomes the important central point of a customer-centric enterprise for government transformation which enables stakeholder access to information and tasks at any time. Deloitte Touche Tohmatsu Limited's model defines six stages of evolving government as the e-service delivery journey progresses. Progress at each stage of this journey is defined by the gradual development of internal organisation and as it interacts with the public, while the government faces the difficult task of establishing synergy between the internal and external fronts. The six stages are defined as follows:

(1) *Information Publishing/Dissemination.* This stage describes each government department's attempts to establish its own website containing information for the public.

(2) *Official Two-way Transactions.* Stage 2 of this model contains transactional activity. This stage emphasises the fact that by providing legally valid digital signatures and secure websites, citizens are able to conduct activities such as

submitting the personal information and effecting monetary transactions with individual departments.

(3) *Multi-purpose Portals.* At stage 3, the model suggests the government moves towards the creation of a portal that allows customers to cross departmental boundaries, send and receive information and undertake monetary transactions with multiple departments.

(4) *Portal Presentation.* Stage 4 refers to allowing customers to personalise and customise their desired portal-based features.

(5) *Clustering of Common Services.* Stage 5 is the actual transformation of governmental structure. The text suggests that government boundaries will begin to [blur] and the government will begin to be viewed as a group of transactions rather than a group of agencies.

(6) *Full Integration and Enterprise Transformation.* Stage 6 is the process of tearing down the old walls defining the silos of services. Technology plays a key role, integrating across the new enterprise to bridge the shortened gap between the front and end offices.

2.1.3.2 The Department of Trade and Industry Five-stage Model

Another model selected is the e-adoption ladder introduced by the Department of Trade and Industry (DTI). This model was applied as an earlier model of a bench-marking study to review the progress of small businesses on the internet (DTI, 2000 as cited in Martin & Matlay, 2001). This model claims to represent the processes of ICT adoption involved in smaller businesses (Martin & Matlay, 2001). The idea behind this model is that small

businesses will engage in e-business through a series of stages that are well-planned and sequential processes. It has been taken into consideration for this model that not all firms begin the adoption process at stage one and progress linearly through subsequent stages (Martin & Matlay, 2001).

In this model, the process starts from the simple use of an email for internal and external communication. The second stage is a website that provides an opportunity for the organisation to establish a place in the worldwide market and open a window of opportunity on worldwide suppliers. The third stage is e-commerce that renders possible the process of paying and ordering online, reducing costs and maximising accessibility and speed. The fourth stage is e-business that integrates the supply chain, meaning manufacture and delivery become streamlined. The final stage is the transformed organisation, including open systems information for customers, suppliers and partners and a new business model that includes communications and the exchange of data between organisations and individuals.

Martin and Matlay (2001) stated that 'the DTI ladder adoption model represents both a limited and a limiting vision of government-inspired support for the ICT implementation and development needs of firms operating in the small business sector of the UK economy'. They believed that the model needs to be revised, extended and modified to reflect the requirements and experience of firms based on their size and geographical location (Martin & Matlay, 2001).

Xu et al. (2007) revised and developed the e-adoption ladder model after conducting interviews with 40 owner–managers in the electronic components industry in the UK.

According to Xu et al. (2007), industry common practice, peer pressure and customer push are recognised as major external forces that influence the level of e-business technology adoption in small/medium industries (SMEs). In addition, industry champions/leaders who demonstrate the strategic benefits of adopting advanced technologies and a strong demand from suppliers or customers were identified as influential factors that could affect the move of many SMEs toward higher/more advanced forms of the e-adoption ladder; however, there might be internal constraints that prevent the achievement of more advanced forms of e-business. It has been perceived that there is a non-linear path of e-business adoption as compared to that depicted earlier by the DTI (2001). The model of Xu et al. (2007) takes into consideration that e-adoption is non-linear and that there are internal and external driving forces that affect the model. Xu et al. (2007) stated that there is a need for an external push as well as an internal business drive to guide firms toward adopting advanced e-business technologies. This means that there is a clear need for champions to lead, and owner–managers are required to develop a strategic vision to guide an organisation towards e-business adoption.

IT industries have to provide their e-business solutions based on the unique needs of SMEs and to highlight the advantages and added value of technologies to the owner–managers. Moreover, the lack of expertise, specialist knowledge, and resources in the SME sector warrants vendor support and training for clients. Lastly, the e-business environment and infrastructure are known as uncontrollable factors to SME managers that could influence the level of adoption as an external factor. Nonetheless, the e-business environment and infrastructure need continuous enhancement to enable e-business applications in SMEs (Xu et al., 2007). The model of Xu et al. (2007) is presented in Figure 4.

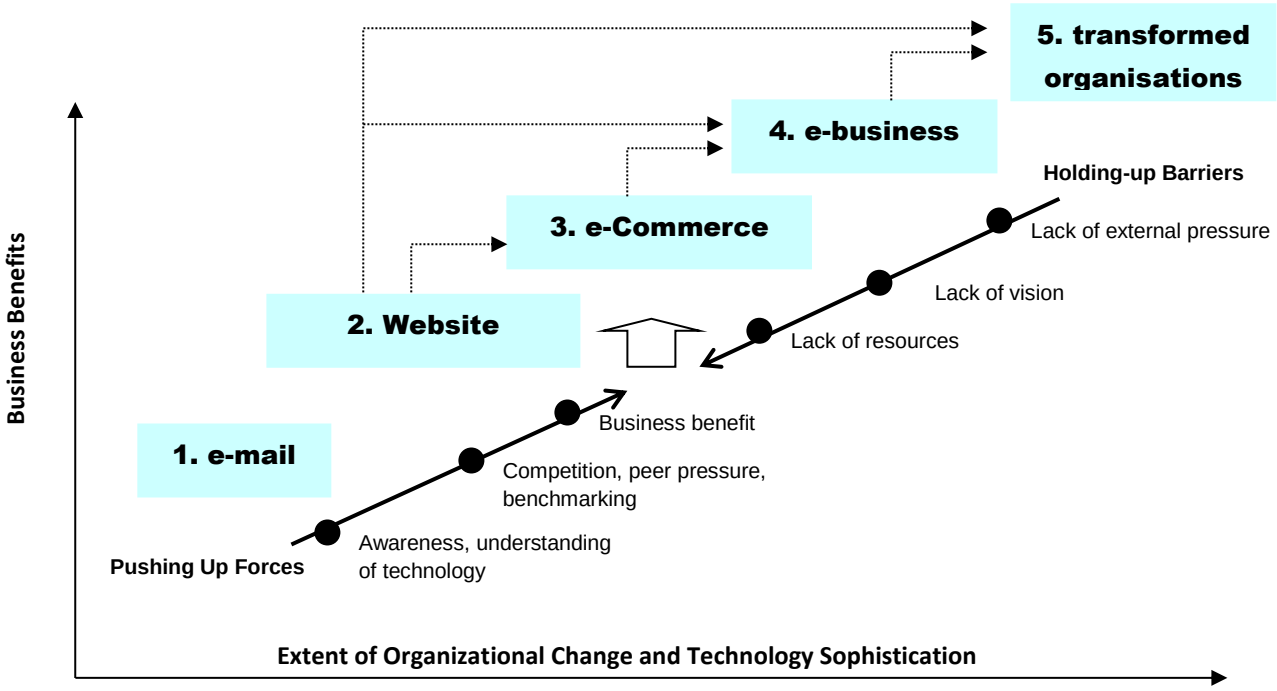

Figure 4: An e-adoption ladder with influencing factors

2.1.3.3 Layne and Lee's Four-stage Model

Layne and Lee (2001) also termed e-Government development an evolutionary phenomenon. Their model was designed specifically to answer the question of how e-Government can be implemented in the context of the US. Their model comprises four stages, namely cataloguing, transaction, vertical integration and horizontal integration. The last two stages of this model fit quite well with the organisational and political structure of the US. However, the principles of these last two stages can still be used by other governments to trace e-Government development within their own organisations. Layne and Lee's (2001) definitions for each stage are as follows.

(1) *Cataloguing*. In the cataloguing stage, the main effort of governments is to categorise and provide information on the web. At the initial stage, only limited governmental information is catalogued; however, it progresses to the establishment of index pages or a

localised portal in which all scattered documents and information are organised. Consequently, citizens can search for information and download the required forms.

(2) *Transaction.* The second stage explains how government initiatives focus on establishing links between the back office (i.e. internal government system) and the online interface (i.e. the website). This stage is termed transaction-based e-Government. The functionalities expected from this stage are transactional activities such as renewing a driving license, paying a fine, etc. The ideal situation in stage 2 is described as when the government provides the possibility of direct links between its functional intranet system and online interfaces, thereby enabling citizens to complete transactions with a government system with limited interference of government staff. Layne and Lee (2001) began the description for the last two stages of vertical and horizontal integration as follows:

> '… The critical benefits of implementing e-Government are usually derived from the integration of internal underlying processes, not only across different levels of government, but also across different functions of government' (Layne & Lee 2001).

(3, 4) *Vertical and Horizontal Integration.* The third stage of the model refers to the point that different levels of US government (i.e. local, federal and central) are connected to provide and deliver different governmental functions or services, while horizontal integration (i.e. the fourth stage) is described as integration across the different functions and services. The justification provided for implementing vertical integration first and horizontal integration next is that the discrepancy between different levels of government is less than the discrepancy between different services.

Layne and Lee's model is based on the organisational and technological aspects of the concept of developing and implementing the provision of e-Government. Citizen demands for access to governmental services are highlighted as a main reason, which pushes the government to progress towards the last stage of this model. What has been observed from the model is that each stage of e-Government development starts from a weaker idea of implementing e-Government development and application and is then enhanced in order to move towards the next stage. The model has been portrayed as evolutionary and linear. The model also suggests that government achievement of a higher stage is always desired and briefly describes the kind of online services citizens can expect as a result of government investment in IT. Moreover, the model attempts to describe concisely the intra-organisational change processes for each stage.

2.1.3.4 Moon's Five-stage Model

The five-stage model was generated as a result of the researcher's need for a conceptual tool to examine the evolution of e-Government services among US municipalities. The model involves five stages of information: dissemination/cataloguing, two-way communication, service and financial transaction, vertical and horizontal integration and political participation. The model is divided into two categories: internal and external. The internal perspective refers to perceiving the web and other technologies as efficient managerial tools for the various activities of collecting, storing, organising and managing an enormous volume of data and information. Moreover, the possibilities of transferring funds to other government agencies and the possibility of publishing information for public employees through the intranet and the internet system are other potential internal benefits of this movement. Externally, web technologies facilitate government linkage with citizens,

other governmental units and businesses. The model suggested by Moon is a developed version of Hiller and Belanger's 2001 model. Each stage of the model contains the levels of technical sophistication and interaction with users. The descriptions of the five stages are:

(1) *Information: Dissemination/Cataloguing*. Stage 1 refers to the simplest and easiest model of e-Government, which involves the use of IT only for disseminating and posting information for public use and access.

(2) *Two-way Communication.* Stage 2 of this model is known as the interactive model between government and constituent. The incorporation of email systems as well as data transfer technologies into the government website is the goal of this stage.

(3) *Service and Financial transaction*. The government provides the possibility of online services and financial transactions by linking online interfaces with live databases.

(4) *Vertical and Horizontal Integration.* The fourth stage of Moon's (2002) model involves the horizontal and vertical integration of e-Government services with the aim of enhancing the efficiency, effectiveness and user-friendliness of online governmental services.

(5) *Political functions.* The final stage refers to increased engagement of government and the public in conducting daily interactions as well as the promotion of web-based political participation, including online voting, public discussion forums and opinion surveys.

2.1.3.5 Andersen and Henriksen's Four-stage Model

The Andersen and Henriksen model developed in 2006 differs from that of Layne and Lee. The main difference lies is in the opening argument of the latter's model, in that some previous e-Government studies reinforce the technology bias pushed by government and

international organisations when promoting e-Government. Meanwhile, Andersen and Henriksen emphasise that mature models of e-Government stages require capturing the future use of IT applications by external users (e.g. citizens, businesses and other organizations) when they conduct core activities with the government. They suggest that rather than establishing only the grounds of operational and technical interfacing, the strategic ambition of government use of IT must be studied. Andersen and Henriksen (2006) stated that the main differences between their model (i.e. the Public Sector Process Rebuilding model) and Layne and Lee's model (2001) are its activity-centric and customer-centric approach. Moreover, Andersen and Henriksen suggested that the application's development for the last two stages of Layne and Lee's (2001) model should be reconsidered from being rare to being widespread and as a continuous process rather than as separate variables.

(1) *Cultivation*. Andersen and Henriksen (2006) define cultivation as shelter for horizontal and vertical integration. However, at this stage, the use of a front-end system for offering customer services is very limited and the focus is on adoption of the internet within the government system. From the user's point of view, the internet is still considered another tool of enforcing gate-keeping and filtering users. At this stage, organisations are keen users of IT and often prioritise internal data and integration; they await the completion of data integration before moving on to developing a digital interface for the user. Andersen and Henriksen (2006) stated that most governments are now at the stage of cultivation, and unfortunately, only that stage is a strategic goal for those institutions.

(2) *Extension*. The second stage involves the use of an intranet by government organisations, accompanied by the adoption of a web interface for processing customer

requests. The aim of this phase is mainly to design and build fully functional web user interfaces for citizen use. Andersen and Henriksen (2006) stated that stage 2 implementation can face challenges such as risk of failure to deliver projects, unexpectedly high cost of the delivered user interface, difficulty of integrating the delivered system with other systems, high cost of maintaining systems and the high likelihood of producing an outdated system.

(3) *Maturity*. In the third stage, governments clearly stop using intranet processes, moving towards absolute transparency and offering personalised web interfaces for processing customer requests. At this stage, for cost-cutting purposes the intranet and internet are merged and the government website will provide the required information rather than redirecting users to other websites. The main purpose of this stage is to promote self-service and to provide clear guidelines.

(4) *Revolutionary.* Stage 4 will provide e-Government services at all levels. This stage is characterised by a high level of data mobility across organisations, the possibility of application mobility across vendors and data ownership being transferred to customers.

2.1.3.6 The UN's Four-stage Model

Since 2001, the UN has published a series of e-Government readiness reports. The last three reports, published in 2008, 2010 and 2012, were studied to assess how the model of e-Government development has been measured and evaluated by the UN. The latest model is explained below. The 2008 model comprises five stages: emerging, enhancing, interactive, transactional and connected. However, the stages of e-Government development for the UN studies of 2010 and 2012 were reduced to four stages of similar type. The report, United Nations E-Government Survey 2012: E-Government for the People, defined the four stages

as emerging information services, enhanced information services, transactional services and connected services.

(1) *Emerging Information Services*. At the first stage, the government plays an informational role by providing information to citizens such as public policy, governance, law, regulations and the types of services provided. Ministries, departments and other branches of public sector organisations are linked together and citizens have access to information and desired news.

(2) *Enhanced Information Service*. The second stage comprises one-way and simple two-way communication between citizen and government.

(3) *Transactional Services*. In the third stage, the government enters into complete two-way communication with citizens by providing services such as requesting and receiving governmental policies.

(4) *Connected Services*. The last stage emphasises the full empowerment of citizens, moving towards being citizen- rather than government-centric. At this level, the government's focus is to use the web 2.0 and other interactive tools to communicate with citizens and to collect their opinions to make customer voices heard during government decision making. In addition, information, data and knowledge from government agencies would be transferred through integrated applications.

The comparisons of the e-Government development models are presented in Section 2.1.5, providing understanding of the underlying structures of the models.

2.1.4 E-Government Development Life Cycle

The various forms of e-Government projects and development were outlined in Section 2.1.3. Each of these projects provides a different form of services, and different project development approaches may apply to make these services available to users. The processes of IS development and management includes different steps, which are influenced by socio-behavioural, cultural, political, technical and managerial factors (Laudon & Laudon, 2010). These factors influence the development process and final release of the system for stakeholder use.

There are different approaches and methods for developing IS/IT in organisations. Soft System Methodology (SSM), Structured System Analysis and Design Methodology (SSADM) and Dynamic System Development Method (DSDM) are examples of system development lifecycles (SDLC) that could be used by system developers. SSADM is known as one of the best approaches for developing IS/IT in public sector organisations. This approach comprises both hard and soft components. Heeks (2006, p. 159) refers to this model as socio-technical.

According to Heeks (2006, p. 160), the selection of an appropriate method for developing an IS in organisations relies on three factors: the system developer, size of the system and the nature of the organisation. Furthermore, he emphasised that there are various methods and approaches to developing IS in organisations (Heeks, 2006, p. 157). However, he believes that all approaches can be categorised into four stages:

(1) *Analysis*. This stage investigates the current reality of an organisation and whether there is a need for a new system in the organisation.

(2) *Design*. This stage plans new components for e-Government systems.

(3) *Construction*. This stage builds new e-Government systems.

(4) *Implementation*. This stage implements and executes an operationalising system in the whole organisation.

According to Heeks (2006, p. 157), 'any e-Government system project seeks to create a new situation that is different from the current one'. In his book chapter, e-Government System Lifecycle and Project Assessment, Heeks (2006, p. 158) adopted an IS lifecycle within e-Government and defined five stages for developing IS for public sector organisations. The stages are outlined below:

The first stage is project assessment. It involves identifying possible e-Government projects, defining basic project parameters and measuring the need and feasibility of the projects in public sector organisations. The *second* stage is analysing the current reality, and involves seven elements: Information, Technology, Processes, Objectives and value, Staffing and skills, Management systems and structures and Other resources (money and time). It is also referred to as the seven ITPOSMO checklist, designed to clarify the current state of organisations (Heeks, 2006, p. 158). The *third* stage is concerned with designing the proposed new situation. It includes two objectives. The first is to choose and identify new goals for the new system, while the second forecasts how ITPOSMO could be changed based on the specifications of the new system. The *fourth* stage involves system construction. It involves buying new technology, designing a detailed system and building, testing, and documenting system performance.

Implementation and beyond is the final stage of Heeks' (2006) model. This stage involves providing training for users of the new system, transforming the data format into the new required format, introducing the new system, monitoring and evaluating the system's performance and conducting necessary maintenance of the new system if necessary.

One of the sub-phases of implementation and beyond is *maintenance*. The concept of maintenance mainly involves all post-implementation changes occurring in a provided IS to correct a design or to introduce a new design. There are different forms of maintenance: *corrective*, *adaptive* and *perfective* (Johnson & Foote, 1988). Corrective maintenance is for diagnosing and correcting errors. However, adaptive maintenance is applied when there is a need to integrate a system with a new equipment, etc. Perfective maintenance takes place when the system is successful and there is pressure and a need to enhance and extend the system (Johnson & Foote, 1988). Therefore, managers are responsible for constant correction or development of the system based on changes in their organisation's environment and its strategies.

Heeks (2006, p. 158) suggested that the five stages could be considered a system development lifecycle as the whole process can be repeated, given the possibility of initiating a new project.

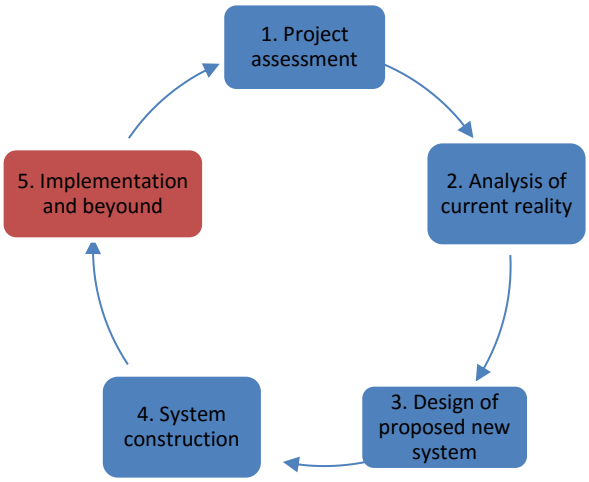

Figure 5: The e-Government systems development lifecycle (Heeks, 2006, p. 159)

The development of new e-Government services is not only be limited to the listed methodologies: various approaches and architectural frameworks will be acquired by government agencies to facilitate the process of service provision. One of the examples of IS architecture which has also been used by the UK local government is the TOGAF model which is known as an open government architecture framework. According to the Open Group definition, this framework includes a detailed method and a set of supporting tools to develop enterprise architectures (TOGAF, 2011).

The present research study focuses the post-implementation phase. The concept of post-implementation should be seen not only as correcting the procured system to prolong its functional life, but also the evolution of the system, which requires enhancement and improvement. Among the possible forms of post-implementation IS, the present research focuses on the provision of new e-Government. Different forms of e-Government projects were explained earlier. The main focus of this thesis is on factors influencing public sector

administrators at the post-implementation stage of their e-Government project to provide a new form of G2C.

As the provision of new e-Government services is a matter of concern, the decision to provide new e-Government services is usually made at the post-implementation stage. The reason for this claim is the figure published by Socitm. The Socitm (2013) report indicates that almost all UK local councils have established their own e-Government portal. It means that, currently, they are at the post-implementation phase, during which time any decision for the provision of new e-Government services would be made.

Apart from the cycle of e-Government system development, there are different role players in public sector organisations that assist in implementing the SDLC. For example, Arif (2008), who studied e-Government in Dubai City, identified two components of e-Government development, namely designing and launching new online services, and maintaining them. He acknowledged that the roles such as custodian (the person responsible for following up and ensuring the project's success), business analyst and vendor are people that are a part of the SDLC. Further information on the role of stakeholders in decision making to provide new advancement is provided in Section 2.2.3.4.

2.1.5 Discussion of e-Government Development and Implementation

Five models of e-Government development were described in the previous section. The arguments in this section are based on analyses of the aforementioned literature and the findings of previous researchers in the area of e-Government development. The models

share common characteristics and contain the same type of stages, including similar features for procuring IS/IT in public sector organisations and offering online governmental services to citizens. Siau and Long (2005), who utilised a qualitative meta-synthesis of five e-Government development models, affirmed that the stages of the evaluated models share comparable meanings and depict similar development levels.

In addition, all of these models begin with service typologies that demand less IT skill for both internal and external users of an e-Government and also only require an IT infrastructure to provide access. Therefore, after reviewing e-Government development models, it can be stated that IT is an inseparable dimension of e-Government development. Moreover, the prefix 'e-' suggests that the use of electronics heralds unavoidable change to public sector organisations. Nevertheless, the IT dimension is not the sole element used to describe the concept of e-Government development. In establishing their e-Government development models, few researchers have included the organisational aspects (Layne & Lee, 2001) or considered a customer-centric perspective (Andersen & Henriksen, 2006).

However, some of the authors of these models did not address the theoretical background for developing e-Government. However, a detailed review of these models could lead to the identification of the theoretical bases, which in this thesis are termed dimensions. For example, the analyses of Deloitte Touche Tohmatsu Limited's model show that it contains strong bases of organisational, operational and technological change to provide e-Government development in public sector organisations. The justification for this claim can be traced back to the descriptions of the six-stage model. A short explanation is provided for each named dimension. From an operational perspective, the consultancy group stated that core competencies and processes need to be revisited and evaluated before investing in

IT. It has also been explained that when IT use begins, the number of phone calls public sector staff must respond to will decrease; this is indicative of the change in processes and the way internal and external operations are conducted between the public and public sector staff. The use of technology is explicit in the model, which is not difficult to justify as the purpose of all e-Government development models is to bring to organisations. Issues such as providing an individual website, establishing a portal, building a secure website and providing a digital signature are all signs that technology is at the forefront in this model's stages.

From an operational perspective, the movement towards being an IT-intensive organisation is said to cause disagreement, uncertainty and frustration inside the organisation. In addition, it has been mentioned that at the later stages of e-Government development, the perception of departments as distinct entities in an organisation will be eliminated. All of these changes refer to the importance of organisational considerations before advocating IT improvement. In Deloitte Touche Tohmatsu Limited's model, the possible social and environmental changes as a result of progression in IT development for public sector organisations are addressed in less detail. As mentioned in the previous section, the focus of Layne and Lee's (2001) model considers the technological and organisational feasibilities and challenges. The authors consider citizens, society and IT-literate members of public sector organisations as the main drivers for developing e-Government. Nonetheless, the social and environmental impact of e-Government development is not well addressed in the model's stages.

In contrast, the UN's model concentrates largely on the operational aspects of e-Government development and few organisational elements, such as the removal of

departmental and ministerial boundaries, are pinpointed. Andersen and Henriksen's (2006) theoretical model was developed by considering two aspects of customer-centric and activity-centric application. Apart from that, the model is grounded in the three aspects of operational, technological and organisational considerations.

Among the list of models, the Moon model is the only one to consider explicitly the evolution of social and environmental communication between a government and members of the public in addition to its other three perspectives. Moon stated that at one of the model's stages, citizens can contribute to web-based political activities, which is the indicator of change in social and environmental engagement. However, Layne and Lee's (2001) paper was one of a few to consider the power and influence of citizens in pushing e-Government development. The model does not suggest that social and environmental changes will occur as a result of movement towards IT procurement in public sector organisations. Nevertheless, the procurement of IT in public sector organisations has been accompanied by the consideration of several social and environmental elements. Although these changes have not been addressed or highlighted by researchers in this field, indicators are embedded in these models. However, they are suggested loosely by the concept of a digital divide and the importance of providing full access to e-Government.

The arguments raised in this section are also highlighted by Siau and Long (2005). They stated that the models are not comprehensive. In addition, they believed that politics, organisations, management and technology perspectives have not been combined and considered in one model by previous researchers. The study of these models led this researcher to view e-Government development as a combination of operational or service, organisational, social and environmental and technological dimensions. The technological

approach covers all hardware, software and interrelated concepts that accompany IT development. The organisational concept refers to organisational hierarchy, culture, political and strategic management.

The operational perspective addresses the communication styles between public and service providers and also the variety of IT-based services that can be offered by using IT channels. A social and environmental perspective embeds the social, political and environmental changes of investment in Government development in public sector organisations. Therefore, it could be expected that, during the establishment of the ground rules for enhancing e-Government development, the aforementioned dimensions would be considered in greater detail to finally produce an artefact for the use of different audiences (e.g. G2C, G2B, G2G, G2E).

To provide e-Government development, there is a need to understand the role of management. Management involves activities such as planning, organising, leading and controlling resources. However, it also includes other essential managerial practices such as staffing, communication and decision making (Daft, 2008, p. 8). Nooraie (2008) stated that decision making capabilities are quite important when managers engage in other managerial functions such as planning, organising and leading. According to Daft (2008, p. 272) and Nooraie (2008), decision making is an inevitable task that needs to be performed by managers. This is also applied to e-Government development in that key role players in the organisation engage in decision-making activity to decide on initiating a new e-Government project. The decision is often made based on the range of alternatives available to the decision maker. This topic is further discussed in Section 2.2, in which the concept of decision making is explained comprehensively.

2.2 Decision Making in an Organisation

This section includes three parts: decision making definition, differences of decision making in public and private sector organisations and decision making approaches.

2.2.1 Decision Making Definition

Daft (2008) defined decision-making as the process of identifying problems and opportunities, and finding resolutions. A decision could be made for an uncomplicated or complex scenario (Main & Lambert, 1998), and for the short- or long-term (Pearce & Robinson, 1985). Decision making is known as an inevitable task because if managers decide not to make a decision, it is still a decision (Pearce & Robinson, 1989).

The effort of managers to secure actual choices depends on certain activities before and after the process of decision making. Decision making could take two forms: programmed and non-programmed. An example of programmed decision making is a situation where the same problem repeatedly occurs, while examples of non-programmed decision making are building a new factory or developing a new service or product. According to Daft (2008, pp. 272–273), information availability (certainty vs. ambiguity) and the possibility of failure shape the decision-making. Certainty is related to the amount of information needed to make a decision and the availability of information (Eilon, 1985). Organisations, either public or private, continuously seek information because they have zero tolerance towards environmental ambiguity. There are various types of uncertainty. For example, Milliken (1987) identified three types of uncertainties: state (inability of the decision maker to predict the organisational environment or part of it), effect (inability to predict the impact

of an event on their own organisation) and response (inability to make a decision or evaluate the consequence of these decisions).

Lack of organisational certainty may have an impact on different parts of organisational life. Some examples are strategic decision making (Porter, 1980), market entry (Haveman, 1993), exchange relations (Podolny, 1994), vertical integration (Sutcliffe & Zaheer, 1998), and network partner selection (Beckman, Haunschild, & Philips, 2004). According to Gopalakrishnan and Damanpour (1994) and Rogers (1995), implementing new technological innovation is difficult, while more original innovations are less likely to be adopted and entail a higher level of uncertainty.

Nevertheless, organisations have their own mechanism for scaling down the level of information uncertainty. For example, they may model themselves after other organisations if the goals are ambiguous or if the operating environment is uncertain. One approach is to apply mimetic decision making when there are diversification decisions (Fligstein, 1991). In other words, the organisation has to follow other organisations' best practices. This approach is expected to save on investigation cost and to eliminate first mover risks (Teo et al., 2003). Villadsen, Hansen and Mols (2010), who studied public managers' decision making, stated that there are three types of uncertainties: volume, technological and performance. Volume uncertainty is where the decision maker is not able accurately to forecast volume requirement (Heide & John, 1990) and consequently schedule production or service improvement appropriately (Parmigiani, 2007). Technological uncertainty is the inability to appropriately forecast the technical requirement of an organisation (Heide & John, 1990). The possible elements that may cause technical uncertainty are technological developments or changes in standards, procedures, or specifications that are expected by

stakeholders or mandated by regulatory oversights (Villadsen et al., 2010). In addition, performance uncertainty refers to the difficulty in predicting how products or services will perform and be adopted in the future (Parmigiani, 2007). Villadsen et al. (2010) found that technical uncertainties could have strong relationships with mimetic decision making.

Nonetheless, every decision is based on acknowledging some level of risk. The risks of each decision could also be understood through the estimation of the amount of information available to a decision maker. The goals and objectives of an organisation would assist decision makers when they intend to make a decision; however, estimating risk would remain difficult. Another element that affects managers' decision making is ambiguity. Ambiguity refers to a situation whereby the goals or problems are unclear. Managers would have difficulty identifying alternatives and there is limited information with regard to the possible outcomes of decisions (Daft, 2008, pp. 274–275).

In order to further explore decision making in public sector organisation, decision making differences in public sector and private sector organisations are explained in Section 2.2.2. This will help us to discover the characteristics of public sector organisations at the time of decision making and to understand if there are any differences in public and private sector organisations decision making.

Although there are considerable complexities and difficulties in identifying the decision-making process, Sabherwal and King (1995) identified two main patterns that can be followed by researchers to study the process of decision-making in organisations, namely attribute-based and stage-based. The attribute-based approach and stage-based approach are described briefly in Section 2.2.3.

2.2.2 Decision Making Differences in Public and Private Sector Organisations

Mullins (2010, pp. 82–83) differentiated public and private sector organisations on the basis of ownership and finance and on profit motive. A summary table of the differences between public and private sector organisations is provided below.

Table 3**:** Differences between public and private sector organisations

	Ownership & finance	**Profit motive**
Private enterprise organisations	- Individuals, partners or shareholders in a joint stock company, and are accountable to their owners or members.	- The main aim is of a commercial nature such as profit, return on capital employed, market standing or sales level.
Public sector organisations	- Created by the government and includes for example municipal undertakings and central government departments which do not have profit as their goal. - Municipal undertakings such as local authorities are 'owned' by council tax payers and ratepayers and financed by council taxes, rates, government grants, loans and charges for certain services. - Central government departments are 'state owned' and financed by funds granted by parliament.	- Have political purposes and do not distribute profits. Any surplus of revenue over expenditure may be reallocated through improved services or reduced charges. The main aim is service to and the well-being of the community.

In terms of applying private sector techniques in the public sector, Sir David Wright (2003) as cited in Mullins (2010, p. 83) mentioned that the difficulties in implementing private sector techniques remain in the manner a government performs and delivers its services. Government departments have a large number of tasks and are dependent on political initiatives. Both of these characteristics could result in deprivation of the public sector of

the use of its valuable resources and influence evaluations of how private sector techniques are implemented.

Professor John Stewart as cited in Mullins (2010, p. 436) stated that it is the illusion of our time to believe that public sector organisations can be managed in the same manner as private sector organisations. Recognition of a need is an important characteristic of a good manager in both the public and private sectors that relates to their management style and approach to context and tasks. There is an absolute diversity of services in the public sector organisation that requires different management approaches. Mullins (2010, p. 436) cited Stuart (2003, p. 31) as saying that many dominant management approaches suggest that local governments consider a uniformity of approach which ignores the differences between public and private sector organisations. He added that considering a universal type of management for all situations can be misleading in that it conceals the need for rigorous analysis of the nature of the task and context, as local governments provide a diverse and wide range of services that need to be managed differently.

Although there are considerable drivers that can lead to blurring of the traditional boundaries between the management of public and private sector organisations, there remain perceived differences between these organisations (Mullins, 2010, p. 435). Mullins (2010, p. 435) listed some of the unique characteristics of public sector organisations as follows:

- The public sector operates to provide services for the well-being of the community rather than merely of a commercial nature;
- The scale, variety and complexity of its operations;

- High tendency that the public sector will be the subject of press reports on its activities;
- Unique political environment in which it operates;
- High levels of statutory controls, legislation and ministerial guidance;
- A level of trade union involvement
- Difficulties in measuring standards of performance of services provided as compared with profitability;
- Substantial level of demands for consistency of treatment and public accountability for its operations;
- Tendency towards more rigid Human Resource (HR) policies.

In their chapter on *Public Sector Enterprise Resource Planning* (ERP), Beal and Prabhakar (2011) looked at issues surrounding ERP deployment for federal, state and local governments as well as public school districts and public higher education institutions in countries with open and representative forms of government. They linked the many challenges of public sector ERP to the dynamics of these organisations. The characteristics of public sector organisations, such as having more lines of business (Claps & Sood, 2009 as cited in Beal & Prabhakar, 2011), the wide range of stakeholders with greater impact on the organisation's business operations, a greater need for public transparency when budgetary decision making is involved (Gossling, 2009 as cited in Beal & Prabhakar, 2011), complicated network of political divisions and silos and often vague or conflicting

measures of success (Robinson, 2007 as cited in Beal & Prabhakar, 2011) render this organisation unique in comparison to its counterpart, i.e. the private sector organisation.

Beal and Prabhakar (2011) mentioned the role of budget, organisational silos, transparency and public interest, election and external mandates, social goals and process orientation as important public sector governance characteristics that influence ERP implementation. Each of these characteristics is briefly discussed in the following paragraphs.

- Role of budget

Marino (1992) as cited in Beal and Prabhakar (2011) said that to address public demand, budget acts as a primary force to manage public sector financial, human and capital resources. Gosling (2009) as cited in Beal and Prabhakar (2011) believed that everything a government does for the next year or multiple years is shaped through the budget process decision. Beal and Prabhakar (2009) stated that understanding of the political nature of the budgeting process is required to understand the true nature of budget influence on public sector ERP. Public sector budgeting decisions are mainly shaped through compromise between different organisational bodies with the aim of establishing equilibrium between the wide range of participants' interests rather than strategic goals (Rubin, 2008 as cited in Beal & Prabhakar, 2011). Beal and Prabhakar (2011) named budget process and budget approach as important factors to take into account when public sector organisation budgeting with regards to ERP development is a matter of concern. McGee (2007) as cited in Beal and Prabhakar (2011) described budgeting as all steps that are essential for adopting and managing a budget through a fiscal year. Beal and Prabhakar (2011) named the potential impact of budgeting process on ERP deployment as an effect on ERP go-live

schedules, functional configuration and reporting requirements and project resource availability. They also emphasised that any changes in the budget process and budget calendar of public sector organisations would dramatically influence ongoing or planned ERP projects or ERP system configurations, especially in the three areas of reporting, preparation and execution. Beal and Prabhakar (2011) named the common approach to budgeting in public sector organisations as the incremental approach to budgeting. The assumption for this approach is that the base or current level of services will be provided from budget to budget (Le, Johnson, & Joyce 2008 as cited in Beal & Prabhakar, 2011).

- Organisational silos

Organisational change management is known as the greatest contributing factor for determining the success or failure of public sector ERP (Claps & Anderson, 2009 as cited in Beal & Prabhakar, 2011). The executive power in public sector organisations may be divided between different political parties which may have competing agendas or who dislike each other's (Beal and Prabhakar, 2011). As power in a public sector organisation is shared between different bodies, the process of obtaining client sign-off on important configuration and project decisions is often complicated (Blake, 2010 and Jamison, 2011 as cited in Beal & Prabhakar, 2011). Beal and Prabhakar (2011) believed that this situation leads to project delay and cost overrun. In the context of ERP implementation, Beal and Prabhakar (2011) mentioned that these silos only add to ERP implementation complexities and often lead to an ERP with complicated system interfaces or duplicate processes that eventually limit the realised value of the ERP.

- Transparency and public interest

The level of public sector organisation accountability (Bowman & Kearney, 2003 as cited in Beal & Prabhakar, 2011) and openness to the public in terms of transparency and response to public scrutiny (Classens, 2005 as cited in Beal & Prabhakar, 2011) is much higher in the public sector as compared to the private sector. The media interest is to report the more troubled aspects of public sector ERP implementation (Beal & Prabhakar, 2011). Hickey (2010) as cited in Beal and Prabhakar (2011) named public interest that is associated with media attention as a significant risk for public sector ERP deployment.

- Elections

Beal and Prabhakar (2011) stated that public sector organisations with elected officials in an election year would be more focused on constituent-facing services and leave the planned or ongoing projects such as ERP deployment on the back burner. The leadership changes after an election could effect changes in public sector priorities and balances of power within the organisation (Abney & Lauth, 1986 as cited in Beal & Prabhakar, 2011).

- External mandates

Public sector organisations would be obliged to a series of funded or unfunded legal mandates. There are different forms of mandates that could derive from different levels of government or be the result of voter referendums or juridical decisions (Beal & Prabhakar, 2011). Public sector organisation operations, financial and human resource management and procurement business practices could be influenced by external mandates (Beal & Prabhakar, 2011).

- Social goals

Small, minority-owned, women-owned or veteran-owned business contract participant targets are examples of social groups (Capstack, 2010 as cited in Beal & Prabhakar, 2011). These businesses could have preferential procurement rules or other practices designed to level the playing field. As a result of social goal impacts, Beal and Prabhakar (2011) believed that: 'business practices driven by social goals may impact the ERP consultant project team makeup, and may create unique ERP functional requirements affecting configuration and reporting, particularly in the procurement or employee recruitment areas'.

- Process orientation

Revenue growth, improved profitability and stock price are often seen as the tail end of success by private sector organisations (Beal & Prabhakar, 2011); however, the demarcation of success in public sector organisations has proven elusive (Miller & Robbins, 2009 as cited in Beal & Prabhakar, 2011). Although cost saving and efficiency are dominant success factors of ERP implementation, this has been found difficult to justify in public sector organisation during a time when cost saving accompanies the laying off of government staff in the middle of a recession; it is expected that the idea would be accepted by fewer people (Hill, 2010). Beal and Prabhakar (2011) stated that this situation and political considerations could shape public sector organisation focus towards process and compliance improvements that are widely accepted by the broader constituency.

2.2.3 Decision Making Approaches

2.2.3.1 Attribute-based Approach

This approach discusses how an overall view of the decision-making process can be illustrated through key attributes. Sabherwal and King (1995) suggested that researchers who study strategic decision-making processes use between one or two attributes to several attributes to investigate decision making in organisations. Some of the key attributes are: analysis and planning, instrumentalism and politics (Bourgeois & Eisenhardt, 1988; Dean & Sharfman, 1996). This type of decision making has been widely used and applied in previous research on IS/IT decision making (Ranganathan & Sethi, 2002). The main advantage of using the attribute-based approach is gaining deeper understanding of the decision-making process of an organisation. However, this approach cannot provide and demonstrate detailed information about the role of organisational actors in the decision-making process. Different schools of thought contribute to the aforementioned approach. The school of economics suggests that decision making is in the form of rational action and includes the two activities of analysis and planning. In the analysis section, information, reflective thought and deliberation will be used to respond to the problem and arrive at a series of solutions to solve the problem (Miller, 1987; Stein, 1981). Meanwhile, planning take into account the scale with which decision makers explore the future and which apply formal planning methodologies (Miller, 1987). Another school of thought which is rooted in psychology suggests that decision making is subject to bounded rationality (Simon, 1965). This school describes decision making which is made slowly because many interruptions (Rackoff, Wiseman, & Ulrich, 1985) and environmental uncertainties (Quinn,

1980) exist for the decision makers. This view suggests that by slowing down the decision-making process, the existing risk in decision making would be controlled and reduced.

Another school of thought is the school of politics which is created as the result of joining the two schools of political science and sociology. This type of decision would be made based on the consideration of political and social pressure in groups, whereby each of these entities could have diverse interests and unequal power in the group (Pfeffer & Salancik, 1974).

2.2.3.2 Stage-based Approach

The vision of the stage-based approach differs in terms of decision making activity. In this approach, decision making is described as a number of phases that have to be followed and completed (Sabherwal & King, 1995). Sabherwal and King (1995) stated that this approach is more about 'what follows what'. Maritan (2001) also described IS/IT investment decision making as a complex and multi-stage process that is in line with the principles of the stage-based approach. A summary of some of the models of stage-based decision making are presented in Table 4.

Regardless of whether decision-making is programmed or non-programmed administrative or political, there are stages and processes that managers are required to follow (Daft, 2008, pp. 271–287). The development of decision-making stages can be mainly clustered into two groups: descriptive and normative models. Descriptive decision making theories address mainly the actions and decisions made in an actual context, while normative theories concentrate on what should be done (Dillon, 1998). Previous researchers have identified different frameworks which suggest a wide range of phases to follow for making a

decision. Several models of decision making have been identified. Each of the models views the concept of decision making through different lenses. Some researchers, such as Mintzberg, Raisinghani and Theoret (1976) and Simon (1960), identified three main stages, while Drury (2004) developed seven stages of decision making. Some of these models are selected and briefly explained.

Drury (2004, pp. 8–12) defined the seven stages of decision making in his book *Management Accounting for Businesses*. The model is based on rational economic behaviour. The first five stages are grouped as the planning process. The aim of the first five stages is to select alternatives among the existing choices. The last two stages are known as 'controlling steps' that aim to measure and correct the actual performance to ensure that a plan has been chosen and performance is ongoing. The seven-stage model includes identifying objectives, searching for alternative courses of action, gathering data on alternatives, selecting alternative courses of action, implementing the decisions, comparing actual and planned outcomes, and responding to divergent forms of the plan.

The first stage, identifying objectives, enables managers to realise and focus on the desired aims and objectives. The second stage is to search for available and existing strategies and alternatives that could possibly help to achieve goals and objectives. The third stage is to gather data. Data gathering is essential for obtaining accurate information, especially in an uncertain environment and when factors are outside a manager's control. The next stage is to select appropriate alternative courses of action. Managers should select alternatives and promote those that are beneficial to the goal set of the organisation. The fifth stage is to implement a decision. Budgeting and resources allocation are the main considerations at this stage.

The controlling stages aim to promote confidence and ensure that the organisational goals are being pursued and are met. This objective will be accomplished through measuring, reporting, and correcting of decisions. In the second step of the controlling process, responding to divergences from the plan, there are two loops: the first shows that the manager is searching for the availability of alternative courses of action, and the second represents the actions taken.

Another example is Daft's (2010) model. Daft is the author of a book called *Management*. He identified seven stages in the process of decision making. Daft's (2010) seven stages are recognition of decision requirement, diagnosis and analysis of causes, development of alternatives, selection of desired alternative, implementation of chosen alternative, and evaluation and feedback.

Simon's (1960) trichotomy model of decision making is recognised as a prominent model (Mintzberg et al., 1976). Simon (1960) introduced this model to specify how decisions are made in organisations. Simon's model consists of three phases: intelligence, design and choice. *Intelligence* addresses the process of identifying the need for a decision. The stage of *design* begins after the completion of an environmental study and the identification and clarification of the need for a decision. This stage is inundated with investigations and the development of problem domains and available alternatives. The final stage involves the selection of the appropriate *choice* of action from among the range of available alternatives. Simon's model can be complex, as each phase can require further information, thus marking a return to the intelligence phase and drawing different evaluations and alternatives.

Figure 6: Simon’s model of the decision-making process

The model suggested by Mintzberg et al. (1976) is similar to Simon’s model (1960) in terms of the number of stages. However, the three main phases leading to a decision are different in each model. In addition, each stage of Mintzberg et al.'s (1976) model contains some routines. Each stage, including its routines, is described below.

- *Identification*. The identification phase in strategic decision-making consists of two main routines. Decision recognition is the first routine that mainly addresses the recognition of opportunities, difficulties and crises and evokes decisional activities. The second routine is diagnosis that attempts to understand the reasons and causes of the situation and develops a causality relationship (cause and effect) for the decision.
- *Development*. The second phase is development. Mintzberg et al. (1976) called this phase the heart of the decision-making process. At this stage, activities and tasks are proposed with the aim of identifying solutions for the identified problems. This phase includes two routines: search and design. ‘Search’ aims to identify existing solutions, while ‘design’ concentrates on developing a new solution or modifying an existing one to better fit the goal.
- *Selection*. This stage requires dividing the decisions into sub-decisions and ultimately deciding on one selection. This phase consists of three routines, namely screening, evaluating and authorising.

Dewey's (1910) model is another example of formulating a decision-making process. Dewey is known as a pioneer of reflective practice based on his investigation of experience,

interaction and reflection. According to Miettinen (2000), Dewey's introspection of reflective thought and learning is most clearly developed in his publications on thought and logic: *How We Think* (1910), Essays in Experimental Logic (1916) and *Logic, Theory of Inquiry* (1938). Dewey's approach to decision making is known as a naturalistic one (Miettinen, 2000). The first stage of Dewey's model starts when there is interference in an activity or there is a state of uncertainty or indeterminacy (Miettinen, 2000). According to Miettinen (2000), a series of activities, such as studying the conditions, resources, aids, difficulties and obstacles, takes place at this stage. At the stage of intellectualisation, Miettinen's interpretation of Dewey's model is that the actors attempt to identify what is wrong in the situation. The actors attempt to shape the conception of the problem and describe it. The third stage is concerned with analysing and diagnosing the conditions that include both material and social components and suppositions of the mean and resources with which the problem is expected to be resolved (Miettinen, 2000). The stage of reasoning involves the expansion of understanding of the meaning of ideas and their relationship to each other (Miettinen, 2000). In the stage of logical thinking and argument building, the testing and evaluation of a tenable hypothesis in the light of knowledge and resources will be completed. The final stage of Dewey's model involves testing the hypothesis by actions. The applicable hypothesis will be tested through its realisation of the hypothesis in practice through reconstruction of the situation. Testing the hypothesis allows the possibility of checking its validity (Miettinen, 2000).

Another model of decision-making was introduced by Maritan (2001). The model includes four stages of capital investment decision making: proposal initiation, proposal development, proposal management and project approval.

- *Proposal Initiation*. Maritan (2001) stated that the investment idea is more likely to be generated and developed at the lower level of a firm. She believed that because division specialists have closer communication with the market and operations, they would have better information that could be used to identify and evaluate investment opportunities. In her study, she found that some investment decisions were initiated by division managers; however, other decisions were made by senior managers. Later, Maritan (2001) stated that the reason for diversity in the level of management engagement in the proposal initiation process is the level of information present in different levels of a company.
- *Proposal Development*. As mentioned previously, the investment proposal can be initiated at different organisational levels. However, Maritan (2001) believed that the development of all investment proposals should be conducted by division specialists. She concluded that staff who are specialists, who have acquired the required skills and information to provide project details and have the ability required to conduct cost and benefit analysis, would be involved at this stage.
- *Proposal Management*. Management of the proposal should be conducted by people who provide motivation and who champion the project. According to Maritan (2001), the level of management involvement is highly dependent on the nature of investment. If the objective of investment is to maintain and add investment, it is championed by either division specialists or senior division managers. However, the new investment should be championed only by senior division managers.
- *Project Approval*. Maritan (2001) stated that all projects at the final stage of the process receive formal approval. She identified two forms of approval: effective and sign-off. Effective approval is defined as receiving verbal approval from senior managers and

ultimately a sign-off as a form of final approval. This form of approval could be achieved at different stages of the project proposal lifecycle. It could be at inception, at inception but after the partial completion of some analysis, after the completion of all analysis or when corporate management has received the project for sign-off. The timing of receiving approval for the project depends on the level of uncertainty in the project (Maritan, 2001).

Table 4: Different stages of decision making

	Stage 1	**Stage 2**	**Stage 3**	**Stage 4**	**Stage 5**	**Stage 6**	**Factors impacting stages of decision making**
Daft (2010)	Recognition of decision requirement	Diagnosis and analysis of causes	Development of alternatives	Selection of desired alternative	Implementation of chosen alternative	Evaluation and feedback	-Less use of resources -Overall goals and values of the organisation -Achieve desired result -Risk propensity -Organisational rules and procedures -Performance and financial reports -Existing intelligence within the organisation -Managerial, administrative and persuasive abilities -Manager's lack of resources -Communication, leadership and motivation needs -Authorisation
Drury (2004)	Planning process				Controlling process		
	Identifying objectives	Search for alternative course of action	Gather data on alternatives	Select alternative courses of action	Implement decisions	Compare actual and planned outcomes	Respond to divergences from plan	-Budget -Identification of environmental opportunities and threats -Performance and financial reports -State of nature -Environmental uncertainties

Simon (1960)	Intelligence			Design			Choice	-Type of task -Characteristics of the environment -Distinct feature of cognitive system
Mintzberg et al. (1976)	Identification		Development		Selection			
	Decision recognition	Diagnosis	Search	Design	Screening	Evaluating	Authorising	-Decision recognition and diagnosis -Decision making stimuli -Influence of its sources -Interest of decision maker -Perceived pay-off of taking action -Probability of successful termination of decision -Associated uncertainties -Decision control routines -Communication routines -Political routines -Limited time -Strategic decisions consideration -Overall resource constraints -External political forces -Lack of subject knowledge -Amount of course actions -Decision making resources
Dewey (1910)	Suggestion	Intellectualisation of recognised difficulty into a problem or question	Formulate and develop hypotheses	Logical thinking and argument building		Hypotheses testing		-Nature of task -Functional potential

Maritan (2001)	Proposal initiation	Proposal development	Proposal management	Project approval	-Operational and managerial staff's information -Communication -Investment champions -Risk-taking aptitude -Level of uncertainty -Level of organisational information accessibility

2.2.3.3 Factors of Stage-based Approach

Sabherwal and King (1995) described stage-based decision-making as a focus on 'what follows what'. Despite the fact that the model could be normative, descriptive or political, the six decision-making stages presented in Section 2.2.3.2 of the literature review identified the factors highlighted by the authors to explain their models of stages.

Internal and external environments are factors that could influence the decision-making process. Decision-making begins when there is an opportunity, threat or problem. Simon (1960) emphasised the importance of searching the environment to identify opportunities, problems and crises. Management requires intelligence from internal and external studies to understand the situation (Daft, 2010). Drury (2004), who defined his stages of decision-making based on a management and accounting perspective, believed that to maximise future cash flow, organisations should identify potential opportunities and threats in the current environment and take necessary steps to limit any future damage or surprises. Mintzberg et al. (1976) introduced decision recognition - which includes identifying the problem, error and diagnosis - as a method to comprehend the evoking stimuli as elements of the identification phase. Mintzberg et al. (1976) stated that decision-making stimuli originate both inside and outside an organisation. The amplitude of each stimulus is shaped by a number of factors, such as source influence, interests of the decision maker, perceived pay-offs of actions and the probability of successful decision termination and associated uncertainty (Mintzberg et al., 1976). Maritan's (2001) views of the internal and external environments were slightly different. She saw operational staff as a main source of information for the decision-making proposal because these staff members are closer to

operations. She mentioned, however, that this initiative could occur at the senior managerial level (Maritan, 2001). Different levels of management initiatives exist because quantity of information varies within the organisational hierarchy. For example, it is more likely that an investing division has information about maintaining an existing capability, while senior management is more likely to moot the idea to invest in a new capability with a certain level of uncertainty. The different level of initiatives is related to the scale of search to identify new capabilities. The division managers may search within their local authority to identify new capabilities, but the senior manager has the opportunity to search for broader opportunities and identify capabilities that do not exist within the organisation's capability stock. Drury (2004) and Daft (2010) identified performance and financial reports and feedback as tools that can assist managers in determining needs and understanding the situation.

The acquisition of information is extremely important in the decision-making process because managers need to know about possible alternatives. The decision will be made in an uncertain environment, and in some instances, managers may need to consider alternative courses of action because of the possibility of a state of nature factor. State of nature factors are events that cannot be controlled, such as recessions and economic booms (Drury, 2004). In programmed decision-making, identifying alternatives is much easier, and the required information can be obtained from the organisation's rules and procedures. In contrast, nonprogrammed decisions require the development of a new course of action (Daft, 2010). Mintzberg et al. (1976) indicated there is high usage of decision-making resources at the stage of development phase. There are two types of solutions: custom-made and ready-made. Mintzberg et al. (1976) stated that decision makers are more likely to

choose the custom-made solution once a solution is developed as part of an analysis; however, when confronted with more courses of action, decision makers are more likely to choose ready-made solutions. The best choice will (a) fit the overall goals and values of the organisation, (b) achieve the desired results and (c) use few resources. Daft (2010) considered these elements important in selection. He named risk propensity as an element that affects managers' decisions depending on how willing they are to accept risk for the chance to gain an increased pay-off (Daft, 2010).

Maritan (2001) described different forms of senior management involvement in proposal development and management. One form of manager participation occurs in discussions about how a new form of investment could change future division and firm strategies and influence other divisions' strategies. Division managers and senior managers could both be investment champions; however, senior managers are the main drivers of new investments. This structure relates to the levels of risk and uncertainty each of these managers can uphold. Nonetheless, there are signs that integrated senior managers are more willing to take risks than division specialist managers. However, the willingness to take risks is influenced by the compensation and incentive system in place. Investment in new capabilities may demand changes to existing strategies (Maritan, 2001).

Mintzberg et al. (1976) named three routines that apply to their main selection category: (a) the decision control routine, which guides the process of decision-making; (b) the communication routine, which provides necessary input and output information for decision-making; and (c) the political routine, which enables the decision-maker to arrive at a solution in an environment of influencing and hostile forces.

Managerial, administrative and persuasive abilities require certainty that the chosen alternative will be carried out at the implementation stage. In addition, managers' lack of resources and energy could prevent the selected alternative from becoming a reality. Finally, skills such as communication, leadership and motivation are essential to ensure the decision will progress (Daft, 2008, p. 250).

Drury (2004, p. 11) stated that once a decision is made, it must be implemented as part of the budget. He defined budget as a financial plan to implement the decision that includes budgeting process communication between managers and the people involved in the implementation process (Drury, 2004).

Senior authorisation is required when the decision-maker does not have the authority to commit the organisation to the specified actions. This form of approval has to occur through a hierarchal chain of command, and it is possible that the action could be blocked because of the organisation's environment (Daft, 2010). Mintzberg et al. (1976) also mentioned other elements that could impede the evaluation choice:

The time for it is typically limited; at this level the decision must be considered in the light of other strategic decisions and overall resource constraints; outside political forces are often brought to bear on the decision at the point of authorisation; and the authorisers generally lack the in-depth knowledge that the developers of the solution have (Mintzberg et al., 1976).

Simon's (1960) and Dewey's (1910) models represent more individualistic approaches that are more commonly used to formulate decisions. Nonetheless, even these models are affected by factors such as individual perception and thoughts in decision-making.

Campitelli & Gobet (2010) identified three factors in Simon's model that are considered in decision-making: the type of task, the characteristics of the environment and the distinct features of the cognitive system that makes the decision. Also, human cognitive limitation and mind adoption of the real world are two main factors in Simon's (1960) rejection of perfect rationality. The authors highlighted two factors in human decision making, namely characteristics of the human cognitive system and characteristics of the environment (Campitelli & Gobet, 2010).

Hirokawa and Poole (1996) stated that some studies have shown that the simplified version of Dewey's (1910) reflective thinking agenda promotes problem-solving and decision-making abilities over other types of procedures. Hirokawa and Poole (1996) argued that the relationship between discussion formats and group decision-making performance depends on two factors. The first is the nature of the task (i.e. whether decision makers are faced with an easy decision task); the second factor is the functional potential of the respective format that encourages a group to analyse the problem in fine detail and assess the positive and negative qualities of alternative choices that lead to a better decision (see Table 4 for a visual factors breakdown of the models of decision-making stages).

2.2.3.4 The Role of Stakeholders in IS/IT Decision Making Activity

Although a considerable number of papers in the literature on management decision making have put forward the view of objective and rational management (Taylor, 1990), case studies of the concept of e-Government have described decision making as delegated and complicated (Sharif, Irani, & Weerakkoddy, 2010). Sharif et al. (2010) stated that middle managers rather than senior executives are in charge of making decisions regarding e-Government. This statement is not surprising, as the number of middle managers in

organisations is normally greater than that of top managers. Furthermore, the members of top management are nominated to make strategic decisions in a firm. Typically, the decision team includes one senior manager and several middle and operation managers (Nooraie, 2008).

Regarding the role that top managers play in e-Government projects, previous studies have indicated that senior managers do not play a very visible and supportive role in e-Government projects (Sharif et al., 2010). Conversely, the National Assembly for Wales (2002) pointed out that strong sponsorship by senior management of e-Government is important and that it is vital that e-Government ownership is understood clearly.

Nonetheless, IS/IT decision making is influenced by several stakeholders. External influence (Jemison, 1981), internal influence (Sambamurthy, Zmud, & Boynton, 1994) and top management influence (Sabherwal & Tsoumpas, 1993) are the key players that could impact on decision making. Top and middle management, mentioned by Sharif et al. (2010), could be located in senior management influence. Internal influence would be departmental influence. External influences include citizens, vendors and legislation.

IS/IT investment can proceed from top to bottom or from bottom to top in an organisation. These possibilities are also emphasised by Weill and Olson (1989) who stated that IT investment decisions come from different levels of the organisational hierarchy [i.e. (a) top, (b) middle and (c) bottom levels within the organisation]. IT investment decisions can evolve through senior executives emphasising corporate strategy (top–down), divisional goals of mid-level managers (middle–down) or from the frontline knowledge workers and specialists (bottom–top) (Weill & Olson, 1989). This discussion will also support the early

thoughts on the possible influence of a project team during post-implementation decision making and the role they can play in finalising it.

One of the advantages of stage-based decision making is identifying all players rather than only focusing on the final decision maker (Xue, Liang, & Boulton, 2008). Maritan (2001) and Mintzberg et al. (1976) emphasised that [IS/IT] decision making is not only affected by the final decision maker but is also formulated through other organisational actors involved in initiating, developing and managing [IS/IT] the investment proposal. According to Carter (1971), the process of gathering information and fully understanding the situation in making a final decision is influenced by contributions from two elements: (a) wide ranges of people, and (b) multiple organisational levels. Although IT investments in public sector organisations are ambiguous, there are multiple organisational actors involved in the governance of IT investments. This confirms that the IT investment decision process consists of multiple stages and demonstrates how lead actors provide input at various stages of the decision-making process (Weill & Ross, 2004).

2.2.4 Discussion of Decision Making

The different examples of the decision making approaches have been explained above. Decision making in public sector organisations may have more similarities to a political-based decision making approach while simultaneously following the bounded rationality approach. The reason for this claim is that the public sector organisation is considered a risk-averse organisation and it tries to avoid and minimise risks associated with its e-Government project. Therefore, the bounded rationality approach provides this opportunity to control environmental uncertainties, which are associated with e-Government provision projects. However, a political approach is obvious in these organisations, as they are surrounded by different social groups and political powers that could influence decision making.

Table 4 presents the different stages and approaches that could be followed by decision makers. Although the models were developed from different schools of thought, they follow almost the same ground in advocating decision-making activity. All models start with monitoring and screening the environment. Therefore, the early stages are more about collecting intelligence and understanding the situation. The stages are then followed by the development and management of alternatives to solve the problem. However, the last stages are more about the selection of the best alternatives and the application of the selected alternatives in an actual situation.

Instead of specifying what factors influence each stage of decision making, the provided models of decision making explain what events occur at each stage of decision making. These models are mainly developed to guide managers on how to structure their decision

making. Although the models have different stages, the underlying principle is the same: (1) to collect as much information as possible to reduce the level of uncertainty; (2) to conduct detailed and thorough analysis of the solutions and alternatives to reduce the chance of failure and (3) to choose the best alternative and ensure successful implementation of the solution.

The Daft (2010), Drury (2004), Mintzberg (1976) and Dewey (1910) models attempt to describe and identify the stages of decision making using a very detailed approach. These models have more descriptive and suggestive trends towards the decision-making process. However, these models were deemed inappropriate because they do not allow the identification of the approach taken by management. Therefore, these models were excluded. Between the Simon (1960) and Maritan (2001) models, Maritan's (2001) model was selected because it is designed to investigate investment decision making, and as the local authorities perceive the provision of IS/IT services as a form of investment, this model is closer to the context of the research study. Other reasons that make the selection of the Maritan (2001) model a suitable model are:

(1) The early models have individualistic viewpoints. It means that they look at decision making as a consequence of individuals' perceptions and consequently their actions. Although this may be true, the decision making in organisations these days is mostly done as a result of group contributions. Of course, senior managers or board committees are in charge of decision making. However, their decisions are also a consequence of the information they receive from other organisational levels or hierarchies. Therefore, breaking down the investment process into four stages creates a more useful tool for the purposes of the present study.

(2) Approximately, each of the abovementioned models has its own characteristics. Analyses of the models show that the construction of each model is based on different concepts such as management, marketing, strategic management, investment process and project management. As the present research aims to investigate the factors that influence a public sector manager's decision to provide new IT improvement, Maritan's model, which has a project management and investment structure, was selected for this research.

Nevertheless, these decisions are mainly taken during the stage of implementation and beyond of Heeks' (2006) model. It has a wide range of focus on the implementation of e-Government projects. However, the post-implementation stage has been less-addressed by e-Government researchers. Therefore, there is a need for further investigation of the factors that influence the decision making of managers when they engage in the new provision of e-Government services.

2.3 Review of Three e-Government Adoption Models and the TOE Model

This researcher could not identify the research studies that specifically address the objective of the present research study, that is, identifying factors public sector administrators consider important elements at the time of e-Government post-implementation decision-making. However, the literature closest to the objective of this research study are that of Lee and Kim (2007), Khasawneh-Jalghoum (2011) and Al-Rashidi (2013) studies and the Tornatzky and Fleischer (1990) model. These studies and the Technology-organization-environment (TOE) model are described in the following paragraphs.

2.3.1 Lee and Kim (2007)

Lee and Kim (2007) studied the perception of government authorities pertaining to problems and solutions of IS/IT initiatives in the US. Their study is categorised as an exploratory study that attempted to provide information on how IS/IT projects in the government sector have to be managed and directed. Specifically, the researchers' objective was to identify the perceptual barriers formed by government officials against e-Government initiatives. They interviewed heads and directors of local authorities in a Southwestern US state. In total, 26 in-depth, semi-structured and open-ended interviews were conducted to identify the elements perceived by government officials as barriers against e-Government initiatives and the possible solutions, and to establish a link between the barriers and initiatives to provide an overall framework to direct e-Government initiatives.

Lee and Kim (2007) applied grounded theory as a methodology to conduct their research study. Their findings were grouped into two categories: problems and solutions. The category of problems included the sub-categories financial, organisational, technical, human resources and expectations, while the solutions sub-categories were change management, relationship management, risk management, plan management and 'on your own'. An overarching theme of the IS/IT government sector in Lee and Kim's (2007) study was the 'growing system'. According to Lee and Kim (2007), IS/IT was not perceived as a fixed asset by the authorities, but as growing when the environment and situation changes. The terms most repeated by Lee and Kim's (2007) interviewees were problems of budget, 'lacking central planning, training problems, scattered efforts for IS/IT, smokestack

phenomenon among different departments, change management, reengineering, funding and change of technology, and self-trained IT people' (Lee and Kim, 2007).

Table 5: Lee and Kim's (2007) table of categories

Goal	Category	Sub-category	Items	Sub-items
Growing systems	Problems	Financial	Resource limitation	Budget
			Funding and change of technology	Timing
		Organizational	Smokestack phenomenon	Separation by power
				Bureaucracy
				Sense of control
			Scattered efforts	Reactive
				Communications
		Technical	Synchronization	Different system characteristics
				Technologically different systems
		Human resources	Retention	Hard times of IT personnel
				Training
		Expectation	Escalating commitment	Necessary burden
			Project delay	Headache to carry
	Solutions	Change management	Reengineering	Big Bang
			Horizontal and vertical integration	Centralization
			Phased approach of conversion	Quality review
		Relation management	External relationship is important	Elected official's experience helped
		Risk management	High risk project	IT is the only way
				Risk-taking behavior
		Plan management	Central planning by IT department	Central government Initiatives
			Localized planning	Communications
		On your own	Departmental CTO	No CIO
				Emergence of IT Champions
				Initiator
			Self-trained IT people	New position
			Separate steering committee	Separate management team for IT

Lee and Kim (2007) determined that a budget cycle functioned as a constraint when the management team aimed to move their systems to the next generation at the right time. Lee and Kim's (2007) interviewees stated that, to initiate the next phase of IS/IT, they had to wait for one or two years, while technological improvement occurs every three to six months.

Lee and Kim (2007) stated that organisational matters had more prominence than technical matters. They found that scattered effort and communications problems were the most frequent issues mentioned regarding the smokestack problem. Technical synchronisation

was identified as another problem that management faced for e-Government initiatives. However, Lee and Kim's (2007) study was conducted in the US. Therefore, they found problems related to integration and synchronisation of federal and state agencies. Lee and Kim (2007) determined that vertical integration was not as problematic as horizontal integration.

Lee and Kim (2007) stated that there was considerable difficulty regarding the securing of training funds for new applications and changing technologies. They noted that, the government often provided desktop equipment and applications without offering any form of training. Moreover, it was added that training must not only contain technological perspectives, but also needed to include organisational and managerial components; the latter is generally lacking in training. Another challenging aspect regarding human resources as specified by Lee and Kim (2007) was the recruitment and retention of qualified employees in the government sector. They claimed that many current government employees had the knowledge of old-frame technology skills and that substantial retraining was essential to achieve optimal performance in the internet and e-Government era.

Lee and Kim (2007) identified escalating commitment and project delay as two items of expectation. They provided little information on the sub-categories of expectations. Nonetheless, they stated that they discovered varying views regarding what information technology can do for a public sector organisation, including some respondents who were unclear on the potential of IT. Some of these views were of IT as a necessary burden, IT as a source of control to be held and IT as a headache that must be endured.

Reengineering and horizontal and vertical integration were called for as solutions for growing systems. This finding is unique to the context of the US, especially horizontal and

vertical integration. Lee and Kim (2007) described IS/IT initiatives as running parallel to, or preceded by, process reengineering efforts. The process of IS/IT implementation was perceived as reducing outdated processes. Nonetheless, they stated that most local authorities did not perceive the current e-Government efforts as sufficient to catch up with advanced technologies. Although continuous re-engineering was perceived as essential and necessary to these organisations, resource limitation prevented this form of action from actually being carried out.

E-Government projects are perceived as high-risk projects. There has been a high level of uncertainty about technological and social changes. Lee and Kim (2007) believed that the organisation would not benefit from the behavioural attitude of public sector managers who sit idly on new ideas. They believe that a government has to be more proactive in the e-Government journey and reward risk-takers and initiate new forms of e-Government development. However, system failure is more likely to occur in e-Government projects, and this could become an easy target for journalists who look for remarkable news. Lee and Kim (2007) stated that without this risk-taking, the government would have no opportunity to witness the successful implementation of IS/IT initiatives.

Lee and Kim (2007) noted that the majority of directors and/or heads of state agencies who were interviewed were accompanied by someone who claimed to play the role of technical assistant to these directors and heads, even though the role of the IT worker was not stated among the responsibilities of these people. This scenario could be considered an inducement to create new positions. In addition, the authors claimed that the emergence of IT champions and initiators in the organisation to initiate e-Government, and the creation of a separate management team within the organisation to advance e-Government initiatives,

are other possible solutions. They also found that many authorities did not have a formal CIO position that could provide guidance. On the contrary, the directors' opinions of technology and their willingness to agree to the risk of implementing new technology and managing the inevitable culture clashes in the organisation acted to move the agency toward greater technological innovation and integration. In Lee and Kim's (2007) study, it was found that IS/IT projects that came from the federal government were more likely to be implemented due to the large amount of funds available to these organisations.

2.3.2 Khasawneh-Jalghoum (2011)

The Khasawneh-Jalghoum (2011) model is the second model of e-Government initiatives discussed. Khasawneh-Jalghoum (2011) conducted her research study in Jordan and was interested in identifying factors that impede and support e-Government initiatives in an Arab culture. Her model of e-Government initiative in Jordan is presented in Figure 7. Khasawneh-Jalghoum (2011) commenced her research study by stating there were few research studies had attempted to identify the drivers and barriers of e-Government initiatives within the context of Arab countries. She later created a conceptual framework that included eight key forces: political, economic, socio-cultural, technological, legislative and regulatory, environmental, organisational and administrative, each of which she expected to have positive and negative impacts on e-Government initiatives.

Khasawneh-Jalghoum (2011) claimed that most of her research findings were confirmed by previous studies. Her contribution to the field of e-Government initiatives was described as discovering the influence of the holy month of Ramadan, ministers reshuffling, religious beliefs, preaching without practicing, *wasta*, and improper use of technology. She specifically related her findings to emerging knowledge in the Jordanian, Arabic and

Islamic contexts. Khasawneh-Jalghoum's (2011) study is a qualitative single case study that employed semi-structured interviews as the primary source of data collection. She claimed that, due to the limited knowledge in the field, hers was an exploratory study. In total, she conducted 29 interviews in Jordan, and she applied template analysis to analyse her collected data.

Khasawneh-Jalghoum (2011) stated that the conceptual framework she developed earlier was very helpful to her during the process of data collection, analysis and writing up of the final findings of her research study. She explained that the key forces she could identify were merely related to the first two stages of e-Government development in Jordan: web presence and communication.

2.3.2.1 Drivers of e-Government Initiatives in the Khasawneh-Jalghoum (2011) Study

Khasawneh-Jalghoum (2011) identified seven major categories that drive e-Government initiatives in Jordan: political, economic, socio-cultural, legislative and regulatory, environmental, organisational and administrative. For the category of political drivers, Khasawneh-Jalghoum (2011) identified three themes: expectations of reducing red tape, support from the monarchy and service decentralisation. With regard to the expectations of reducing red tape, Khasawneh-Jalghoum's (2011) findings revealed that one of the main drivers of e-Government initiatives in Jordan was the desire to serve Jordanians and meet their expectations. She believed that providing efficient and effective services would result in reduced hassle in dealing with complex procedures and would eventually reduce the red tape in the organisation. Support from the monarchy is a unique theme that describes the initiatives of the royal family of Jordan to enhance government services. Khasawneh-Jalghoum (2011) referred to decentralisation as a drive in Jordan to initiate e-Government

services. She stated that to conduct e-Government transactions, Jordanians had to go to the capital and that the e-Government initiative could reduce the level of centralisation in transactions conducted between government and citizens.

Khasawneh-Jalghoum (2011) viewed the e-Government initiatives as a tool that improves the image of Jordan among potential internal and foreign investors. She stated that e-Government could persuade internal and external investors to consider investing in Jordan because of the simplified e-procedures offered through e-Government.

Khasawneh-Jalghoum (2011) opened her argument by stating that there is a high level of literacy and a high percentage of young people in Jordan. She stated that these two elements are considered initiatives for initiating a new e-Government development, as e-Government is more likely to be used by these people. It was expected that young people would be better acquainted with computers and the internet, which would make them potential users of e-Government advances. With regard to the holy month of Ramadan, the author referred to the short tempers and low performance levels of staff, and stated that e-Government could be used as a tool to improve the performance of government employees.

The social inclusion initiative in Jordan has been defined as one of the drivers of e-Government initiatives. Khasawneh-Jalghoum (2011) described the Jordanian government efforts to educate citizens and provide access to computers and the internet for digitally excluded customers. One of the described initiatives was ‘a computer for each citizen, a computer for each university student’. Moreover, she pointed to her interviewees’ statements, where they had no intentions or plans to end the traditional methods of communication because they did not want to exclude customers who were less privileged.

According to Khasawneh-Jalghoum (2011), her interviewees believed in the constructive impact of an e-transaction law on encouraging the government to progress in the e-Government area. She stated that the e-transaction law was one of the reasons for confidence and a reason for all e-Government stakeholders to initiate a new form of e-Government development. Nonetheless, Khasawneh-Jalghoum (2011) found contradictions among some of her interviewees' statements, and she stated that the interviewees admitted that the e-transaction law was outdated and that some sections of this law required amendment, especially in the areas of privacy and data protection law.

Khasawneh-Jalghoum (2011) identified that the Jordanian IT private sector has given strong support to public sector organisations to advance e-Government in Jordan. A competitive environment is another driver of e-Government development. Khasawneh-Jalghoum's (2011) findings showed that the interviewees considered other regional and national governments as case studies with which to compare and contrast their advancement, technology and innovation for enhancing e-Government services. Through this practice, government officials attempted to benefit from good experiences and to avoid bad practices.

Khasawneh-Jalghoum (2011) stated that national incentives could play a role in initiating new e-Government development. Her interviewees highlighted the importance of the King Abdullah II Award Excellence for public institutions and how this award encouraged management to make an effort to deliver new enhancements to their organisations.

Khasawneh-Jalghoum (2011) saw e-Government systems as a cause of continuous change to the existing government model that government administrators have to find a means of directing and managing. In many statements by her research study interviewees, she found

that a change in management is the key towards the successful implementation of an e-Government project. She noted that the establishment of e-Government units within public sector organisations helped conduct these changes within the organisations.

Khasawneh-Jalghoum (2011) also discovered that resistance to change, lack of innovative resistance, lack of appropriate authority to enforce decisions, weakness and variations of ICT infrastructure within institutions, certain religious beliefs, reluctance to make risky decisions and lack of e-trust could complicate the achievement of change within an organisation. Khasawneh-Jalghoum (2011) also stated that to gain positive engagement of employees with a new change in the organisation, training and promotional campaigns could help spread the news about new change and encourage employees to interact with recent and evolving technology.

2.3.2.2 Barriers to e-Government Initiatives in the Khasawneh-Jalghoum (2011) Study

In her list of barriers to e-Government initiatives, Khasawneh-Jalghoum (2011) identified seven categories: political, economic, socio-cultural, technological, legislative and regulatory, organisational, and administrative. She argued that the bureaucratic system in the developed countries was better established than those in the developing countries. She found that the interviewees believed that the government procedures involved many complexities and were slow and complicated. Ministerial reshuffling was named as another theme in the political category. Khasawneh-Jalghoum (2011) found that changing of ministers in Jordan would cause the stoppage and change of direction in e-Government initiatives. She discovered that the agendas of ministers would change after the new minister elections. Khasawneh-Jalghoum (2011) stated that the main reasons for this situation were the selection of individualistic perspectives rather than institutional ones, and

the selection of short-term projects and plans rather than long-term projects. One of the reasons for these ministers' attitudes was that they sought to take credit for the plans implemented. Khasawneh-Jalghoum (2011) pinpointed the high cost of computers and internet connection, and general poverty, as barriers to e-Government initiatives in the economic category. A group of her research interviewees stated that in some areas that suffered from extreme poverty, such families perceived computer and internet access as luxurious and unnecessary. In addition, the cost of computers and internet access were considered as extremely high for the families who struggled with poverty.

In her category of socio-cultural consideration, Khasawneh-Jalghoum (2011) included religious belief, preaching without practicing, *Wasta* (i.e. using one's connections and/or influence to get things done), change resistance, lack of ownership and corruption themes.

Change in as organisation is described as changing the processes, upskilling and training staff, and potentially making redundant some processes and tasks. Therefore, with any idea of change in the organisation there would always be feelings of resistance and opposition.

In the technological category, Khasawneh-Jalghoum (2011) identified three themes of weakness and variation of public sector infrastructure, digital divide, and improper use of technology. She found that citizens may not use their mobile phones or internet cafés to familiarise themselves with the best knowledge on the World Wide Web; mobile phones were mostly used to send text messages or to make phone calls. In addition, the digital divide was identified as an element preventing best use of e-Government development. Khasawneh-Jalghoum (2011) described government agencies' technological infrastructure as quite variable and not necessarily in line with other institutions' IT capabilities.

The IT infrastructure, hardware, software and applications that a government uses may not be the same as that in other agencies or institutions. Khasawneh-Jalghoum (2011) identified lack of authority to enforce decisions and lack of e-trust, which exists mainly among citizens, and security and privacy as themes of the legislative and regulatory category. Security and privacy concerns, including ensuring system and device security in addition to the assurance that online transactions would not compromise the security and privacy of its users were the key issues mentioned by Khasawneh-Jalghoum (2011).

Turnover and isolated entities comprised the organisational category for Khasawneh-Jalghoum's study (2011). She stated that low salaries in public sector organisations and private sector competition with public sector organisations to recruit the most qualified employees were the main barriers to e-Government initiatives. It can be hypothesised that such employees found better positions in other sectors after completing their training. Another theme for the organisational category was isolated entities. Khasawneh-Jalghoum (2011) described the lack of cooperation and poor sharing of information between different public sector entities as an obstacle to e-Government initiatives.

The last category Khasawneh-Jalghoum (2011) identified as a barrier to e-Government development was administrative. She stated that her research study interviewees believed that many steps should be taken before e-Government is implemented. These actions, such as building an appropriate infrastructure, preparing employees for the change, changing the current processes and eliminating overlapping processes, are some of the tasks that have to be completed first. Her research study interviewees believed that many existing systems in the organisation had to be reformed before going online. Therefore, this process is gradual rather than immediate.

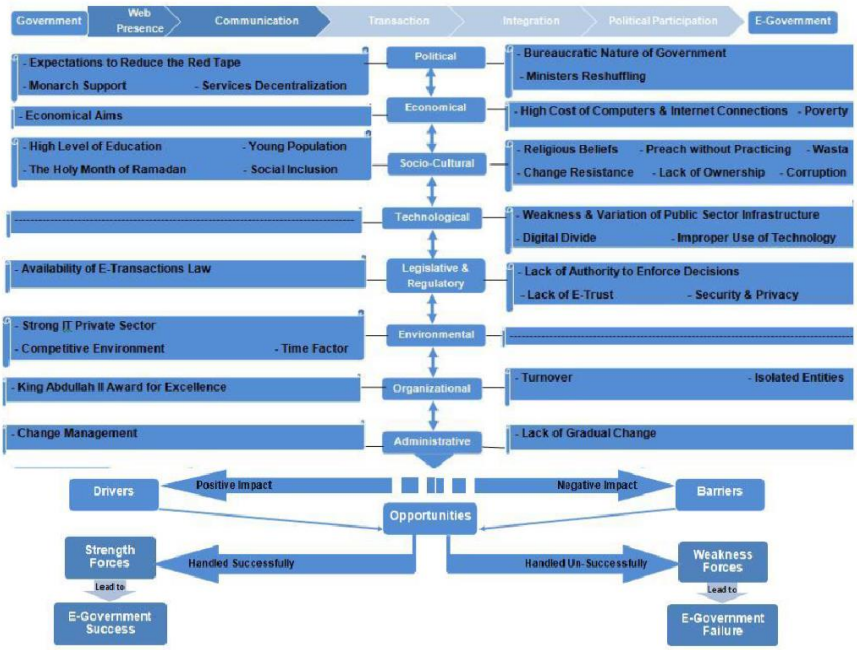

Figure 7: Khasawneh-Jalghoum's (2011) model of e-Government initiatives

2.3.3 Al-Rashidi (2013)

Al-Rashidi's (2013) study is another research study that tackled the identification of factors that influence internal stakeholders and e-Government initiative development. The author conducted his research study among three public sector organisations in Kuwait. He chose the interpretive research stance and qualitative case study strategy to conduct his research study. Thirty-five interviews were conducted to collect interviewees' perceptions regarding e-Government initiatives in Kuwait. The author reported that he asked mainly open-ended questions. Al-Rashidi (2013) stated that to obtain an accurate result, he only interviewed people at managerial level or above. He stated that qualitative data analysis was used to code and analyse the interview scripts. To initiate his data collection, Al-Rashidi (2013) established a list of factors influencing e-Government implementation internally. His initial

framework contained three main categories: political factors, technical factors and organisational factors. Table 6 shows his final framework of factors influencing e-Government initiatives.

Political, technological and organisational factors were named as categories of issues that influenced e-Government implementation. The categories were derived as the result of conducting his first round of literature review. The identified factors are described in the subsequent sections.

Table 6: Al-Rashidi's (2013) table of factors

List of Factors influencing E-government Implementation Internally		
Political Factors	**Technical Factors**	**Organizational Factors**
• Leadership • Finance/Cost • Strategy/Awareness • Political Desire/Support • Legislations/Regulations • **Political Power** • **Scope** • **Documentary Lifecycle**	• IT Qualified Staff • Privacy/Security • IT Infrastructure • IT Training	• BPR • Resistance to Change • Enforcement/Reward System • Cooperation • **Initiative Priority**

What Al-Rashidi (2013) found is that there was a prominent need for a leader who is capable of managing an e-Government initiative. Moreover, he stated that there was a lack of leaders to support and ensure the success of e-Government initiatives. The lack of capable leaders and frequent change of leaders slowed the process of e-Government implementation. Al-Rashidi (2013) identified three forms of leaders' contributions to e-Government initiatives. The role of a political leader was mainly emphasised during the first phase of e-Government initiatives, and it was expected that the political leaders' influence would gradually decrease as a project proceeded. However, the role of leaders in

the organisation was perceived as most important when the e-Government initiatives were deployed online, while IT department leaders' roles were highlighted in the implementation phase of e-Government initiatives.

Al-Rashidi's findings (2013) on the influence of finance and cost in the process of e-Government initiatives indicated that the issue of securing finances, especially during pre-implementation of e-Government initiatives, was extremely important. He stated that according to his research study interviewees, this process might take more than a year. Al-Rashidi's (2013) findings included interviewees complaining that due to difficulties in securing sufficient funds, it was difficult to support e-Government initiatives in time. They stated that faster implementation and an increased number of e-Government initiatives would only be possible if financial support were provided in time.

Awareness and clear strategy were named as elements that influenced the implementation of e-Government initiatives in Kuwait. Al-Rashidi (2013) stated that awareness and clear strategy also depended on plans with adequate political support, ensuring their implementation. He stated that the interviewees emphasised the importance of strategy in all phases of e-Government initiatives; in particular, e-Government initiatives required a clear implementation strategy. In his three case study organisations, Al-Rashidi (2013) noted the importance of political will in e-Government initiatives. Although political will has been found to be important, no follow-up to a specific e-Government initiative has been reported. Al-Rashidi (2013) stated that a clearer strategy could render political will more effective. Additionally, routine monitoring of e-Government initiative implementation is required to confirm the political will. Moreover, more authority and political power should

be granted to government organisations to initiate their e-Government initiatives (Al-Rashid, 2013).

The impact of legislation on e-Government initiatives was raised by Al-Rashidi (2013). He stated that legislation, such as digital signatures, and laws for e-Government, such as e-transactions and computer crime laws, could be considered a main initiative of e-Government implementation. These laws and legislations, according to Al-Rashidi (2013), would facilitate e-Government initiatives.

Al-Rashidi's (2013) interviewees highlighted the importance of and the need for more political power to granted to stakeholders in an agency to enforce their strategy. There was also emphasis on the fact that the initiatives' requirements had to be addressed by public agencies at the beginning of the development of their e-Government initiatives.

Al-Rashidi (2013) asserted the importance of having a clear scope of e-Government project administration, and that requires the government itself to have a clear scope. There should also be a scope for each agency website and its departments. Finally, Al-Rashidi (2013) argued that any e-Government initiative must have a clear scope of the workflow process. Scope refers to the beginning-to-end process of the workflow for any initiative and also to the stakeholder's role in that initiative.

Al-Rashidi (2013) determined that one of the causes of long delays in implementing e-Government initiatives was bureaucracy. The documentary cycle might last more than a year, causing long delays in implementing e-Government initiatives. Hence, the documentary cycle was a new factor empirically discovered to directly affect the

implementation process of e-Government initiatives. The author stated that the documentary cycle influence was mainly visible in the pre-implementation phase.

Al-Rashidi's (2013) found that qualified IT employees are important in the two phases of implementation and post-implementation. In addition, the feeling of competition between private sector organisations and government institutions is similar to the findings of Khasawneh-Jalghoum (2011). Al-Rashidi (2013) stated that government institution resources are limited and cannot compete with counterpart organisations, i.e. private sector organisations, to absorb and dominate IT professionals. This issue has been referred to as one of the challenging factors. However, Al-Rashidi (2013) later suggested the introduction of a reward system as a solution to this problem.

Al-Rashidi (2013) found that the e-Government system would face a lack of adoption when the stakeholder feels a lack of security and privacy. Upholding security and privacy can add to stakeholders' trust during the e-Government initiative implementation process. Al-Rashidi's (2013) interviewees stated that reliable IT infrastructure was essential for their e-Government initiative programmes. However, Al-Rashidi (2013) found that the old IT infrastructure affected these initiatives.

Interestingly, Al-Rashidi (2013) found that the legacy system had no influence on e-Government initiatives. He stated that this was because of the establishment of new IT infrastructure after the Gulf War in 1990. This finding of Al-Rashidi (2013) somehow contradicts his IT infrastructure findings. He corrected himself later by stating that 'This is because most if not all the government organizations have built new IT infrastructures after the Gulf war.'

Al-Rashidi's (2013) findings indicate that IT training of staff and citizens to use e-Government services is essential for the success of e-Government initiatives. Al-Rashidi's (2013) interviewees referred to their Microsoft training programmes for their staff as an example of training courses they provided to their staff.

Al-Rashidi (2013) identified business process reengineering (BPR) as one of the most important factors for e-Government initiative implementation. To achieve a successful BPR, Al-Rashidi (2013) identified four points to be considered, namely support from top management, full involvement of the IT department at different stages of the process, involvement of actual system users, focus on beneficiaries' needs.

Al-Rashidi's (2013) findings indicate that e-Government initiative implementation is influenced by resistance to change. He stated that a lack of desire to learn new methods to perform daily tasks or privacy and data security fears were identified as reasons for employees' or officials' resistance to change.

Nevertheless, Al-Rashidi's (2013) only discovered a few reports of resistance to change among the organisations he studied. The initial resistance to change was from government officials to implementing a change; however, Al-Rashidi (2013) discovered a willingness among most employees to adopt e-Government initiatives. According to Al-Rashidi (2013), most resistance to change in an organisation occurs at the pre-implementation phase and this is because of the stakeholders' worries about the security and privacy of data in their department. Al-Rashidi's (2013) interviewees stated that legislation and IT training were two components that could guarantee the implementation of e-Government initiatives without difficulty and resistance from managers or employees.

Like Khasawneh-Jalghoum (2011), Al-Rashidi (2013) raised the issue of nepotism in public sector organisations in Kuwait and the fear of public sector organisation employee leakage to other organisations or private sector organisations. Al-Rashidi (2013) believed that the implementation process of e-Government initiatives could be improved through the application of an enforcement and reward system. Nonetheless, Al-Rashidi's (2013) findings indicated that although this factor was important, it had not been applied in most government organisations.

Al-Rashidi (2013) identified cooperation as another important factor that influences e-Government initiatives. Also, he said it is important that new e-initiatives take priority over traditional services, providing the opportunity for success, and that it is essential at the post-implementation phase.

2.3.4 TOE Model

Tornatzky and Fleischer (1990) explained the TOE framework in their book *Processes of Technological Innovation*. The book contains a description of the entire process of innovation beginning from the development of innovation by engineers and entrepreneurs to the adoption and implementation of those innovations by users within the firm context. How the firm context impacts the adoption and implementation of innovations has been addressed through the TOE model that is part of this process.

He and Wang (2014) stated that TOE framework is widely used in factor analysis of technology adoption in different fields of IS adoption in organisations. They also stated that the model is widely applied in the IT diffusion field.

The TOE framework is known as an organisational level theory that explains three different aspects of a firm's context impact adopting decisions; these three elements are technological context, organisational context and the environmental context (Baker, 2012). The three identified elements have shown their influence on the way a firm identifies the need for, searches for or adopts a new technology (Baker, 2012). Figure 8 illustrates their model.

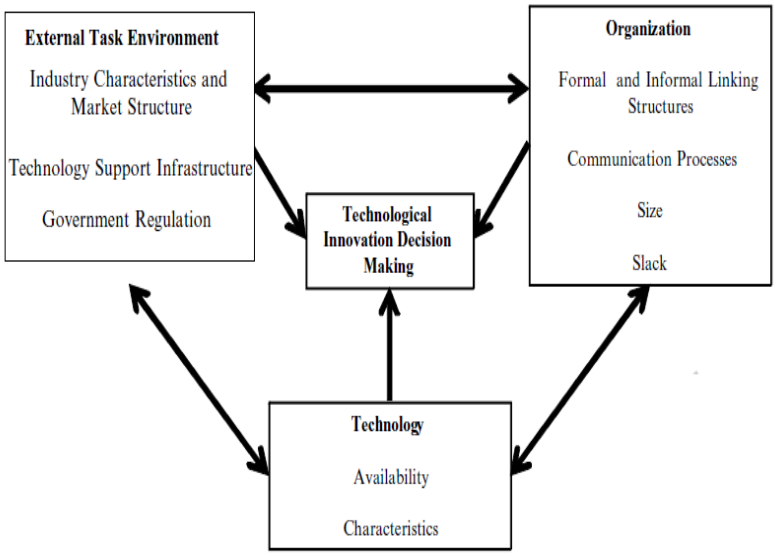

Figure 8: TOE Framework

Each of three elements is briefly explained below.

- Technological context

It is related to all technologies that are interrelated to the firm, including technologies that are already in use at the firm as well as technologies that exist in the marketplace but are not currently in use. Collins, Hage and Hull (1988) stated that the technologies existing in

the firm have a great impact on the innovation adoption process because the technology in place sets a broad limit on the scope and pace of technological changes a firm could implement. Existing innovations not use in the firm may determine the technological demarcation of what is possible and define the way technology can enable the firm to evolve and adapt. Organisational changes accompanies the adoption of new technologies, i.e. innovation could have a dramatic influence on the firm and the industry in which it competes, while others could have minimum impact.

- Organisational context

The organisational context is related to the characteristics and a firm's resources. This includes the establishment of structures between employees, intra-firm communication processes, firm size and the amount of slack resources. Mechanism is identified as one of the elements that impact on adoption and implementation decisions. Product champions, boundary spanners and gate-keepers which are known as informal linking agents are linked with adoption. In addition, cross-functional teams and employees that are formally or informally linked to other departments or value chain partners are another example of this kind of mechanism. Organic and decentralised organisational structures are identified as associated with adoption (Daft & Becker, 1978 as cited in Baker, 2012). Zaltman et al. (1973) as cited in Baker (2012) stated that study of organisational structure indicates that organic and decentralised structures are most suitable with adoption phases in the innovation process. This is while the mechanistic structure that includes formal reporting relationships, centralised decision making and clearly defined roles for employees may be suited to the implementation phase of innovation.

The other element that could promote or inhibit innovation is communication processes. Top management could foster innovation by creating an organisational context that welcomes change and is supportive of innovation that promotes the firm's core mission and vision (Tushman & Nadler, 1986). This includes describing the role of innovation within the organisation's overall strategy, identifying the importance of innovation to subordinates, rewarding innovation both formally and informally, emphasising the history of innovation within the firm and establishing a skilled executive team that has the capability of casting a convincing vision of the firm's future.

Another element identified as impacting innovation is slack and size. There are different standpoints with regard to the impact of slack and size. Some studies indicate that slack promotes adoption; however, other studies indicate that slack may not necessarily lead to technological innovation (Tornatzky et al., 1983 as cited in Baker, 2012). This is similar to the impact of size on innovation adoption. Baker (2012) stated that the impact of size on innovation adoption has been widely studied but did not reach a conclusive agreement with regards to the link between size and innovation. Baker (2012) cited the works of Kamien and Schwartz (1982) and Scherer (1980) in that larger organisations are more likely to adopt innovation. However, Kimberly (1976) stated that size contains more underlying factors such as availability of resources that could impact on the adoption of innovation.

- Environmental context

The industry structure, the absence or presence of technology service providers and the regulatory environment are identified as an environmental context (Baker, 2012). A situation such as intense competition motivates the adoption of innovation (Mansfield et al.,

1977 as cited in Baker, 2012). Moreover, the dominant firms within an industry could impact on the value chain and could influence other value chain partners to innovate (Kamath & Liker, 1994 as cited in Baker, 2012). It has also been stated that firms in rapidly growing industries tend to innovate more rapidly (Baker, 2012). Baker (2012) cited Rees et al. (1984) in that they stated that the existence of skilled labour, consultants or other suppliers could facilitate innovation. Baker (2012) said that government regulations could have a beneficial or detrimental impact on innovation.

2.4 Chapter Summary

In general, the concept of e-Government development and decision making have been explained and discussed. A review of the literature suggests that decision making is integral to managers' responsibilities. However, the manager's decision is influenced directly or indirectly by contextual factors and different stakeholders. The literature reveals that the decision-making process is not a straightforward process, nor would a decision be made in an isolated environment. Decision making is known as a complicated process; the decision to provide e-Government cannot be expected to be taken easily. The reason for calling this process a complicated activity is that decisions have to be made following the consideration of a series of elements such as external environment and the organisation. This also includes the contribution of different stakeholders such as top management, users and vendors. Also, it has to take into consideration the public sector decision making is not similar to private sector decision making since the goals and objectives of these organisations are considerably different (see Section 2.2.2).

The interesting facts about e-Government models come from follow-up studies conducted by the UN (2012) and researchers such as Coursey and Norris (2008) and Norris and Reddick (2012) in the US. The latter two papers' research findings show that public sector organisations did not make sufficient progress based on early models of e-Government development. For example, US municipalities have only reached the early stages of e-Government development models, and are mainly informational and offer only a few transactional services (Coursey & Norris, 2008; Norris & Reddick, 2012).

These findings are unexpected, as the US is a pioneer in establishing and developing e-Government portals. Another indication of government delay in processing beyond the early stages of e-Government development can be found in the percentage of transactional online services provided through central government portals. 'Transactional services' refers to a government website's engagement in two-way communication with citizens, including requesting and receiving input on government policies, programs and regulations, etc. (United Nations, 2014). The results of the UN e-Government survey in 2012 revealed that among the list of transactional online services, defined as income taxes, utilities, fines, birth certificates, car registrations, ID cards and driver licenses, only 40, 28, 24, 22, 21, 18 and 18 percent, respectively, of 193 members of the UN provided these types services through their national websites. In the UK, the online option was available in only 39 percent of cases (Socitm, 2011).

The study of SMEs also indicates the same patterns of equipment with online technologies in that these organisations do not adopt very advanced forms of online technology. Xu et al. (2007), who studied SMEs in the electronic components industry, found that these organisations have not progressed to the e-adoption ladder model as expected. Xu et al.

(2007) found that email and the internet are the main technologies used by SMEs to display the products and services they offer and that they have not been equipped with an e-commerce platform to enable online and organisational transactions.

Moreover, the writings of previous researchers who studied e-Government models and the e-adoption ladder in the real world, and also what has been observed in practice, show that public sector organisations do not necessarily follow all the stages in sequence and it is common for them to address only a few elements at each stage rather than going through all of them at length in depth (e.g. Moon, 2002). One of the relevant explanations is that although the use of IS/IT is at the centre of attention early on, researchers did not predict that the fast pace of IT advancement would allow public sector organisations to practise a few characteristics of the latest stages of e-Government development models, such as walking through some stages of e-democracy (e.g. Moon, 2002) by being presented in a Web 2.0 environment.

The review of e-Government development models resulted in the identification of four attributes (i.e. operational, organisational, technological, social and environmental) to use for investigating decision making in a public sector organisation. Figure 9 portrays this researcher's understanding of e-Government development and implementation after a review of the e-Government literature. In the framework model, the front face of e-Government development comprises different e-Government categories containing different forms of services, such as information, two-way communication and financial transactions, shown as a middle layer of the e-Government development. The decision-making process by public sector administrators in providing online services through a city council web portal is shown as the underlying layer of this framework.

The reality of e-Government development models not only includes the front stage, but also involves the back stage. The front stage includes different stages of an e-Government development model for the use of different stakeholders. While e-Government development models and studies mostly cover and concentrate on the front stage of online governmental practices, a review of these models has directed this researcher's attention towards the back stage of these models. Researchers have used the two terms front office and back office. The term front office is often used when researchers attempt to refer to G2C and G2B (Janssen & Van Veenstra, 2005), while 'back office' has been used for explaining the provision of G2G. For example, Homburg and Bekkers (2002) called back office operations the backbone of any form of e-Government, which may require knowledge sharing and information exchange between various units, departments and organisations. They then described back office operations as a form of G2G interaction. Another example is a description of front office and back office for the concept of e-Government by Kunstelj and Vinttar (2004). They said that in the area of front office studies, two perspectives are covered: supply and demand. The supply perspective of the front office concept includes an investigation of '…availability, level of development, quality and other characteristics of individual websites, and portals as well as particular e-services and information content' (Kunstelj & Vinttar, 2004).

In addition, they described the demand side of front office studies, conducting investigations from the point of view of the users (citizens and businesses). Furthermore, back office studies have focused on evaluating and assessing the use of different IS between organisations, etc. (Kunstelj & Vinttar, 2004). Therefore, it was decided to use the two key expressions of front stage and back stage to avoid any confusion with the front

office and back office terms. In the present study, the back stage involves the management activities to provide new e-Government development, while the front stage relates to different forms of online services that become accessible for stakeholder use.

The reason for this viewpoint is that the outcome of e-Government development decision making is providing informational and transactional services. Seeing IT as the push may cause us to forget the focus of each organisation. However, a question arising from the models is whether these models cover all necessary angles of system development and implementation. The most hidden and less studied subject in e-Government advancement remains the role of managers in this endeavour and their decision to implement an e-Government project. In fact, it is the responsibility of an organisation's management to make a decision and facilitate the provision of government services. This approach will direct more attention to studying the factors that influence management decision making.

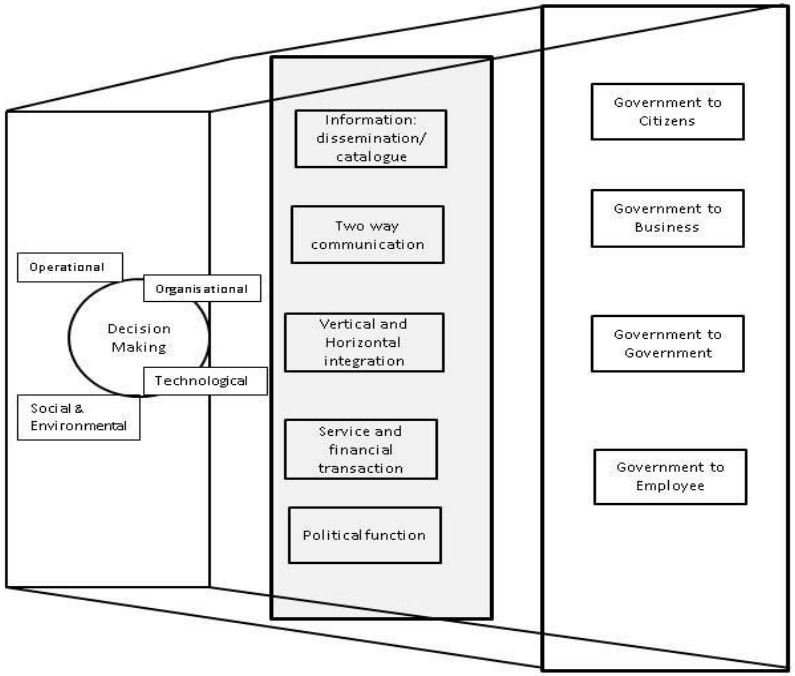

Figure 9: Overview of e-Government development

In terms of e-Government evolution, developed countries have established their web-presence and now they are at the stage of post-implementation. It means that they have to decide about what would be their next e-Government project. Therefore, the concern is now shifted toward enhancement and improvement of e-Government services.

Researchers and international organisations have described and developed models to explain how IT can transform the shape and structure of public sector organisations, and above all, the method of providing services to the public sector stakeholders. In contrast, they have completely ignored or forgotten the role of public sector managers, who are key decision makers in the provision of such services. Although researchers claim that the previous stage of each e-Government development model will support the next stage of these models, each stage still looks like a separate island based on different levels of IT difficulty and various amounts of public sector organisation engagement with stakeholders through the particular technology.

However, the purpose of this research is not to question or argue the existence of these models, but rather to suggest new insight into these models, that is, post-implementation decision making. Two earlier objectives that were defined in the introduction chapter are addressed in the literature review. The review of e-Government development and implementation models and e-Government studies resulted in the understanding that very little attention has been paid to factors that influence the post-implementation decision of new e-Government project/development/advancement.

- To review the literature and explore e-Government and effective practices in relation to the models of e-Government development and implementation;

The review of e-Government models also led to the definition of four categories of factors that influence decision making, i.e. operational, organisational, technological and social environmental. These four factors are considered a theoretical framework and the basis for investigating decision making for providing new e-Government services.

- To identify categories or contributing factors that typically influence the decision to improve any e-Government system;

Also, the review of management literature resulted into the identification of two approaches of decision making: attribute-based and stage-based. Among the stage-based decision making models, the Maritan (2001) model was selected because of its relevance to the subject of this research study. This model was later used for data collection purposes.

As the e-Government development models have been established to depict what public sector organisations and their stakeholders can achieve as a result of IT investment in their organisation, we can consider that each stage is actually the expected outcome or service and there is no obligation for a government to proceed separately through automation and transformation. However, the roles of public sector managers in making decisions to implement each stage have been completely ignored.

Some would argue that it is not the aim and objective of these models to describe how governments provide these types of e-Government development. Nevertheless, this researcher would like to assert that it is very simplistic thinking to ignore the critical roles of public sector managers in a council or municipality, as in the e-Government development journey, there are people responsible for making the decision to provide e-Government services. It would not be false to say that the influence of private sector

organisations at the time of implementing IT may have led these models to focus mostly on the results expected from the e-Government development and the decision-making role of public sector managers in providing new e-Government.

The literature review suggested that issues such as security, privacy, technical capability, budget, financial support and legal, political and organisational concerns can be possible explanations as to why public sector organisations have not established many transactional and advanced forms of web-based services. It remains unclear whether these are only possible reasons for the delay in enhancing government websites to an optimum stage or how these possible elements act in context.

Three e-Government studies that focused on e-Government initiatives and their identified factors were discussed in the previous section (see Section 2.3). In addition, the TOE model that focuses on how the firm context could shape the adoption and implementation of innovation was also explained. These were the closest literature this researcher could identify to review for the purpose of the present research study. However, what differentiates this research study from the reviewed studies and models is its focus, which is identifying the factors public sector administrators consider as influential on their cognitive decision-maker behaviour and the context in which they make their decision, that is, the post-implementation stage. This is an area that has not been studied before and there is lack of knowledge in the field about the area of research study.

Therefore, the factors this researcher will identify will be specifically the factors that are important at the post-implementation decision making stage. By contrast, the previous research studies were more interested in e-Government initiatives and factors influencing

the e-Government initiative and adoption rather than post-implementation decision making process. Nonetheless, the identified factors within these studies can be later used for comparison with the present study findings. Consequently, rather than further emphasising the stages of e-Government development, this research seeks to highlight the roles of public sector managers and investigates the factors that influence their decisions to provide a new e-Government development which occurs at the post-implementation stage of an e-Government development lifecycle.

3. Methodology

3.1 Introduction

This chapter describes the approach followed to investigate the research question developed as a result of reviewing the existing e-Government literature. In addition, a few early interviews were conducted with members of the Sheffield City Council to discuss the research subject. These interviews questioned whether the domain of research study would make a constructive contribution to the experience of public sector administrators in enhancing an e-Government development. This researcher received positive feedback from the interviewees, and the Sheffield City Council offered and agreed to participate in the present research project. The research methodology was then selected using the best technique to study the research question.

The explanations as to why particular techniques and methods were selected are provided in this chapter. This study is situated within the domain of strategic planning and the decision-making processes of city council administrators enhancing their e-Government provision and making new services accessible to the local city council's stakeholders. In particular, this research focuses on elucidating and exploring factors that impact on public sector managers' perceptions of enhancing e-Government services. Specifically, the objective of this section is to explain the interpretative stance used for investigation. The selection of a qualitative case study strategy is also justified in this section. In addition, the course of the project is explained in the empirical research design section.

3.2 Research Philosophy

Before commencing a study, the researcher needs to be equipped with the appropriate tools. In other words, the researcher must align his thinking and practical skills to being able to achieve the objectives of the investigation. Thinking skills can be obtained by identifying the research philosophy required for the study, while practical skills are related to the selection of the method and the tools required to collect, interpret and report the findings. In the field of sociology, numerous views have been suggested as to the best ways of extracting knowledge from society, namely, positivism, interpretivism, and realism. Particularly in the field of IS, various philosophical approaches are used: positivism, interpretivism and critical sociology (Orlikowski & Baroudi, 1990). These main perspectives and realism are briefly discussed in the next section. Subsequently, the rationale for selecting the best research philosophy is justified.

3.2.1 Positivism

The use of positivism has a long history in the field of social science. Positivism endeavours to use different tools and scientific techniques which are applied in the natural sciences to describe a phenomenon and also to objectively extract the knowledge in the field of social science. This point has also been highlighted by Hughes and Sharrock (2006, p. 42). They stated that: '[...] positivism's motivation came from a strongly held view that the social science should endeavour to emulate the most advanced of natural science'. One of the main principles of positivism philosophy that is taken for granted is the production of objective knowledge through the use of empirical research (i.e. observation, comparisons

and experimentation are a few examples of performing empirical research) (Hughes & Sharrock, 2006, p. 43).

The approach of positivism describes the objectivity of science based on an assumption that the researcher has a neutral [observational language] role in the world of experience (Hughes & Sharrock, 2006, p. 43). This means that s/he barely provides a description of what s/he experienced as a result of performing the empirical research. However, the researcher, fully detached from the real world, reports only 'What has been directly observed' (Hughes & Sharrock, 2006, p. 43). Although the concept of objectivity during the research process is idealistic, it can be partially gained by continuously following scientific procedures to prevent bias in the results (Macionis & Plummer, 2005, p. 46). It can be concluded that the foundation of positivism for performing a scientific investigation is based mostly on the accumulation of facts rather than beliefs and opinions.

3.2.2 Interpretivism

Interpretivism has been highlighted as a consequence of widespread reaction against positivism. Hughes and Sharrock (2006, p. 97) discussed the idea of studying social science based on natural science disciplines as inadequate if the subject of study relates to understanding human behaviour. However, they mentioned an exception whereby 'human being[s] were natural objects' (Hughes & Sharrock, 2006, p. 97). It is necessary to emphasise that interpretivism has attempted to make sociology a more 'humanistic discipline concerned with understanding' (Macionis & Plummer, 2005, p. 48).

Another contradiction existing between positivism and interpretivism is the idea of 'social action' introduced by positivists. The simplified definition of social action theory is that

people's behaviour and action in the social world is linked with the behaviour of other people. However, interpretivism does not regard action as a product of 'mechanistic fashion of stimulus', rather, it is referred to as a cognitive process because the actors interpret their own and others' behaviour (Hughes & Sharrock, 2006, p. 103). In addition, according to Irani, Ezingeard, Gieve, and Race (1999), interpretivism can be applied when researchers focus on understanding the phenomena under investigation from the participants' point of view, where those participants have directly linked and interacted with a specific phenomenon.

3.2.3 Realism

Other philosophical perspectives exist in the field of sociology in addition to positivism and interpretivism. For example, realism is one of the theoretical system concepts developed especially to tackle particular problems, such as how economies, the mind or even social systems work (Macionis & Plummer, 2005, p. 49). The only concept realism shares with positivism is the aim of explanations (May, 2005, p. 11). The argument of realism is based on the fact that there is no science which fully relies on observable empirical evidence or is metaphorically 'straightforward' (Macionis & Plummer, 2005, p. 49). Furthermore, there are always parts of reality hidden beneath the surface (Macionis & Plummer, 2005, p. 49). The idea of realism is that social science needs to be understood based on underlying facts. As one of the key features of explaining social science, goals must not be relinquished (Delanty & Strydom, 2003, p. 376).

3.2.4 Critical Sociology

Another viewpoint is critical sociology, which evolved in reaction to the concept of positivism. The critical view rejects the idea of positivism, which states that society is available as a natural system open to enquiry. This viewpoint maintains that the social world not only needs to be understood, but also changed. This theory mostly understands all knowledge as a consequence of political interest and regards the role of sociology as critically discovering what is happening in reality (Macionis & Plummer, 2005, pp. 49-50).

3.2.5 Research Philosophy Adopted

The ontological and epistemological position of the present research study is justified after careful consideration of the research philosophies described above. Each research philosophy has its advantages and disadvantages for researchers who plan to follow a specific philosophical thought. Selecting the most appropriate philosophical approach is the art of the researcher. Orlikowski and Baroudi (1990) also believe that it is a researcher's responsibility to ensure that the research perspective selected for the research project is compatible with the researcher's interest and predispositions. Of the abovementioned philosophical standpoints, the interpretivist philosophy was chosen. Orlikowski and Baroudi (1990) stated that it facilitates understanding how members of a social group, through their participation in social processes, perform their particular realities and provide them with meaning. It also demonstrates how these meanings, beliefs and intentions help establish their social action, which is the aim of interpretivist research studies. Walsham (1995) also highlighted that much of IS research has adopted the interpretivist philosophy to study areas such as system design, organisational intervention and management of IS and

the social implications of IS. From an ontological perspective, interpretative IS research considers the social world structured and reinforced as the result of human action and interaction (Orlikowski & Baroudi, 1990). Moreover, Orlikowski and Baroudi (1990) stated that:

> 'Organizations, groups, social systems do not exist apart from humans, and hence cannot be apprehended, characterized, and measured in some objective or universal way.'

Public administrators' decision making is a cognitive process and is related to their imaginative thought and perception in the real world and their interpretations of the behaviour of others. Furthermore, decision making in a large public sector organisation is expected to be construed as a result of action and interaction among different members of that organisation. The selection of the interpretivist philosophy is deemed appropriate by this researcher. Furthermore, Hughes and Sharrock (2006, p. 98) highlight that an interpretative procedure is an adequate philosophical approach to extracting knowledge from people; in this project, understanding decision-making processes is one of objectives. Therefore, obtaining knowledge of decision making is an essential part of this research and can be achieved through an interpretivist approach, confirming the appropriateness of the interpretivism philosophy for the purpose of this research.

3.3 Research Method of Reasoning

In social science studies, two main reasoning approaches apply when conducting research: inductive and deductive. An inductive process is described as finding and observing a single case, and after the completion of the first observation, the same relationships are repeated in later cases. This viewpoint aims to identify patterns and regularities, formulate a

hypothesis that can be further explored and also develop conclusions and theories based on specific observations and measures. This approach is often called ‘bottom up’, as it begins from specific observations and is expanded to broader generalisations and theories.

However, deductive reasoning might begin with thinking of a theory for a topic of interest and narrowing it down so that a more clearly defined, specific hypothesis can be tested. This process continues further to address the hypothesis when the observations have been completed. This leads the researcher ultimately to test the hypothesis with specific data. The deductive approach begins by formulating theories, which means there is a presumption that the developed theory is correct unless other results are discovered as a result of the study’s completion. Accordingly, the approach of using and applying theory to collect data in a particular case to explain a specific observation is called the deductive approach (Gilbert, 2003, p. 19).

Inductive and deductive approaches are regarded as separate and self-explanatory; however, these are often ‘intertwined’ (Gilbert, 2003, p. 20). Therefore, the researcher can choose to begin with either an inductive or a deductive approach, later applying the other reasoning approach to complete the research study. The application of inductive and deductive approaches together often provides a comprehensive picture of the phenomenon studied.

Nevertheless, the present research would benefit more from applying inductive reasoning compared to deductive or a mixture of inductive and deductive approaches. A deductive approach is not suitable for this research study as the knowledge it aims to extract from the identified research question and agenda is unique and associated with public sector

organisations. There has been very little information generated explicitly in this area, which investigates the cognitive perception of public sector managers and e-Government development and implementation staff in terms of factors influencing the provision of new e-Government services. For example, Gauld (2007) studied public sector IS project failure and noted that the literature on IS failure case studies is derived mainly from studies on private sector organisations despite the higher chance of IS project failure in public sector organisations (see Section 1.1.3).

Moreover, the aim of this study is to identify the factors perceived by public sector managers as effective and influential in the cognitive process of their decision making and that act as enablers and constraints engaging in new processes of developing and implementing new e-based services. However, a public sector organisation is one of the most bureaucratic and strict organisations, in which every move and action demands justification and establishment based on pre-defined guidelines and instructions from the government; however, there has been very little understanding or cognitive mapping of these processes by researchers in the field.

3.4 Research Approach

The deductive and inductive approaches were explained in the previous section. The deductive approach uses a quantitative approach for carrying out a study while an inductive approach involves a qualitative approach. Moreover, the application of the deductive and inductive approaches leads jointly to a mixed-method approach. Therefore, there are three main research approaches that can be adopted in data collection, namely quantitative, qualitative and mixed-methods (Creswell, 2009). The architecture of the theory for a

quantitative study is based on using a theory deductively and considering it as initiating the plan for performing the study. The approach that has been followed by researchers is mainly confirmation or rejection of a theory as the result of a study. Therefore, the development of a [new] theory is not the objective of the researcher, but the main goal is verifying a theory which already exists. Thus, the framework of the study is shaped through the theory and the organisation of the model formulated through the research questions or hypotheses. Afterwards, the researcher will test the theories and hypotheses through data collection and then the theory will be finally confirmed or rejected (Creswell, 2003).

The qualitative study is located on the opposite end of the spectrum. As mentioned earlier, theory is the starting point of quantitative studies, while the position of theory in qualitative studies is at the end of the study. The use of the qualitative approach supports the opinions and philosophical assumptions of interpretivism, constructivism and realism. Saunders, Lewis and Thornhill (2003) mentioned that the qualitative approach adopts the inductive approach and undertakes qualitative data collection to formulate the theory. The process of performing a qualitative study, which has been described by Bryman (2012, pp. 384–387), is as follows: general research question/s, selection of relevant site/s, collection of relevant data, interpretation of data, conceptual and theoretical frameworks, tighter specification of research question/s and collection of further data, writing up findings/conclusions.

The quantitative and qualitative approaches usually visualise two philosophical thoughts, the first being positivism and the second being interpretivism, which have previously been discussed and recognised as contradictory schools of thought. Gilbert (2003, p. 32) also noted that the logic of selecting quantitative or qualitative approaches depends on whether the researcher aims to identify the objective reality of the social fact or even extend the

external world understanding independently. The application of the quantitative approach is influenced by the enquiry objectives and goals defined by the researchers. The objective reality of social fact or even an independent examination of the external world and human perception are indicative elements of a quantitative approach. If a numerical approach is part of the project priorities, then utilising a positivist approach, which applies quantitative strategies, is appropriately selected by those who plan the study.

The quantitative strategy describes and investigates the realities of social fact through approaches that can be analysed statistically and provide a response to the question on the operation of the social world (Gilbert, 2003, p. 32). However, the qualitative strategy views the social world based on the social construction of reality, which has been portrayed as the strategy adopted by interpretivist philosophy. The interpretivist approach entails believing that individuals and groups produce their own version of understanding of reality.

After careful comparison and contrast of different research methods, the use of the qualitative method was identified as a suitable approach for the present research. Some reasons for selecting the qualitative approach over the quantitative or mixed-method approaches are:

- Some researchers, such as Skinner, Tagg and Holloway (2000) and Broom, Cheshire and Emmison (2009), believe in the need to apply a qualitative approach to discover processes, organisational goals and failures in a new phenomenon. As the present research study aims to explore the processes of decision making and cognitive elements that influence public sector administrators' decision making to

accept or reject the procurement of new e-Government services, the qualitative approach is appropriate.

- The works of Stauss et al. (1990) and Campbell (1996) as cited in Hoepfl (1997) explained that the qualitative research method can be applied to help researchers increase understanding of a phenomenon for which there is insufficient information. In addition, this research approach can be used to collect knowledge about things that we do not know enough about or if we want to gain in-depth understanding of the topic of investigation that is the subject of this research investigation. This knowledge, which this researcher gathered from the existing literature, is very limited, not directly related, and too general. Therefore, it can be concluded that the use of a qualitative component would offer an advantage by extracting in-depth knowledge entirely related to the concept studied.
- The focus of qualitative research is understanding the phenomenon through face-to-face interaction, which leads subsequently to a deeper understanding of the phenomenon and provides a more accurate understanding of opinion, view and human experience.
- Qualitative research that endeavours to apply inductive reasoning is more appropriate as the quantitative approach tests theories which already exist. One could hardly understand and investigate the decision-making processes by quantitative approaches when a decision is made based on the cognitive understanding of the decision maker. It would be too difficult to define a framework which addresses the unique organisational structure of a local city council in reaching a final decision to provide new e-Government services.

3.5 Selection of the Appropriate Research Strategy and Method

Three research approaches were explained in the previous section. Creswell (2009, p. 11) mentioned that there has been considerable growth in a number of strategies available to researchers currently due to opportunities becoming available through computer technology that have advanced data analysis and our ability to analyse complex models. The application of the qualitative research approach is justified in Section 3.4. This led us to narrow our focus on qualitative strategies. Creswell (2009, pp. 12–13) summarised the strategies associated with the application of a qualitative approach into five categories: ethnographies, grounded theory, phenomenological research, narrative research and case studies.

Researchers apply ethnography when they are interested in studying an intact cultural group in a natural setting over a long period of time by using primarily observational and interview data collection techniques (Creswell, 2007). This approach requires the researcher to be inside the society or organisation studied. This strategy of inquiry has been identified as inappropriate as this researcher did not have ability to be part of or be recruited as a member of the society or organisation for the purpose of the present research study. The use of grounded theory by researchers leads to the obtainment of 'a general, abstract theory of a process, action or interaction grounded in the view of participants' (Creswell, 2009, p. 13). There are different types of grounded theory. At least three well-known grounded theory approaches are that described by Strauss and Corbin, Glaser and Charmaz. Grounded theory is known as a qualitative approach that concentrates on developing a

theory grounded in systematically collected and analysed data (Ramalho, Adams, Huggard, & Hoare, 2015). For those who follow the *Straussian* approach, their approach to collecting and analysing data is more structured (Pickard, 2007). This is while the *Glaserian* approach requires researchers to have a passive position, free from preconception and not impose any form of structure on data and trust that the theory will develop (Rodon & Pastor, 2007). The authors of the three grounded theory approaches, namely Charmaz, Strauss and Corbin and Glaser, agree that theory should be grounded in data and not in the existing literature (Ramalho et al., 2015).

Glaser and Strauss (1967) clearly stated that they are against conducting a literature review at the early stage of the research process: '*An effective strategy is, at first, literally to ignore the literature of theory and fact on the area under study*' (Glaser & Strauss, 1967, p. 37). However, constructive grounded theory does not aim to exclude the researcher's subjectivity from the resulting theory, but allows data to be prioritised over the researcher's assumptions and previously collected knowledge, including previous literature reviews (Charmaz, 1990). Thornberg (2012) stated the idea is not to ignore the existing knowledge, but to engage the knowledge critically.

In this research study, e-Government and decision making literature shapes the theoretical foundation before the researcher engages in collecting research data. Therefore, the Straussian and Glaserian grounded theory approaches are inappropriate. In addition, the position of constructivist grounded theory has been controversial with regard to the use of literature. Also, the use of grounded theory requires the researcher to have previous experience in conducting qualitative research because of its complexities to implement the

full range of grounded theory procedures. However, this is the first qualitative study of researcher. Therefore, the grounded theory was not selected for the present research study.

Phenomenological research is another research approach in which the essence of human experience with a phenomenon is identified by the researcher as it described by participants. Creswell, 2009 (p. 13) cited Moustakas (1994) and stated that understanding the lived experiences makes phenomenology a philosophy and also a method. The phenomenology procedure includes studying a small number of subjects though detailed and lengthy engagement to identify patterns and relationships of meaning. Phenomenology was identified as inappropriate for this research study as this researcher would not have been able to investigate how public sector administrators experience e-Government post-implementation decision making throughout the whole process as it would require this researcher to have unlimited access to the organisation and individuals and also demands that this researcher spend extensive time conducting phenomenology, and none of these conditions would have been available to this researcher.

Another type of qualitative strategy is narrative research, where the researcher focuses and studies the lives of individuals and asks one or more individuals to tell about their life stories. The researcher then retells or recasts the collected information into a narrative chronology (Creswell, 2009, p. 231).

Narrative research is known as the best approach for capturing detailed stories or life experiences of a single life or the lives of a small number of individuals. The researcher then needs to spend considerable time with one or more individuals to capture their stories (Creswell, 2007, p. 55). This strategy was not chosen because this researcher was not

interested in the story of a particular public sector administrator. Moreover, this researcher would have had to collect extensive information about the participant and have a clear understanding of the context of individual's life, which was not possible at the time (Creswell, 2007, p. 57).

A case study is a strategy of inquiry with which the researcher could explore in depth a programme, event, activity, process or one or more individuals. Cases are restricted by time and activity and the researcher gathers detailed information through varied data collection procedures over a period of time (Stake, 1995). The use of a case study provides an opportunity to investigate the relationships existing in reality within a single organisation or group of organisations (Galliers, 1992). Researchers such as Klein and Myers (1999) and Orlikowski and Baroudi (1990) acknowledged the case study research strategy as a significant strategy used in the IS field. Tellis (1997) and Pickard (2007, p. 86) described a case study as an ideal strategy for obtaining holistic and in-depth knowledge with regard to the phenomenon being investigated.

Yin (1994) suggested a guidance table to identify a research method appropriate to the objectives of a study. The guidance table consists of three criteria, namely form of research questions, control over behavioural events and focus on contemporary events. The researcher's response to each of these criteria will guide him toward a specific research method. To choose a case study, the forms of research questions have to be 'How?', 'What?' and 'Why?', the focus of the research study has to be on a contemporary event and the researcher has less control over events.

The case study strategy was deemed an appropriate strategy based on the present research and objective of this research study project and takes into account the result of literature review which indicated that there are limited studies exploring the factors that public sector administrators identify as influential at the post-implementation stage of e-Government decision making in particular and in depth.

In addition, research studies which attempt to investigate IS decision making at the post-implementation stage are relatively new and this field demands further investigations to understand e-Government from different angles. Therefore, it can be expected that the use of the case study will provide great opportunities for acquiring knowledge on what will occur at the post-implementation phase of e-Government development and for specifically identifying and understanding elements which impact on local councillors' IT decision-making behaviour. The decision on the use of single or multiple case studies is discussed in Section 3.5.1.

There is a wide range of methods that can be used to analyse qualitative data. For example, Pickard (2007, p. 83) identified eight methods used most frequently in information-related studies: case studies, surveys, experimental research, ethnography, Delphi study, action research, historical research and grounded theory. There are other methods such as quantitative factor analysis, critical success factor analysis, framework analysis and thematic analysis.

Survey and experimental research were excluded from the list of potential methods for collecting, analysing, interpreting and writing the results of the present research study because they are quantitative methods (Creswell, 2009, p. xxiv). Delphi study was first

used by the Research and Development Corporation for technology forecasting studies (Gupta & Clarke, 1996). The classical Delphi study has five features, namely anonymity, iteration, statistical group response and controlled feedback and stability in response among those with expertise and specific issues (Hanafin, 2004). Hanafin (2004) described the Delphi technique as a method for achieving consensus through a process of iteration. The Delphi study was excluded as a potential method because the timeframe of the research study did not allow this researcher to attain the iteration required for this research method. The reasons for not using ethnography and the grounded theory were discussed earlier, so these methods were excluded.

Action research is known as a method suitable for researching and supporting change. Action research includes 'unsolidified and overlapping cycles of investigation, action planning, piloting of new practices, and evaluation of outcomes, incorporating at all stages the collection and analysis of data and the generation of knowledge' (Given, 2008, p. 4). Action research was identified as an inappropriate method as it demands constant participation by the researcher in the context of research and then introducing a change which could be new practices to improve the situation and monitoring the impact of the change afterward. This also requires the researcher to analyse and interpret the situation, and if required, to introduce another new change and monitor the situation. This researcher did not have the chance to become a part of the studied organisation; moreover, the action research procedure could be time-consuming due to its nature of introducing a change in the environment, evaluating the change impact and then repeating the practice if needed.

Historical research is relevant to research on contemporary social and cultural issues that improves the understanding of the present. The primary sources of historical research are

first-person accounts of events in the form of original documents, letters, artwork, literature, music, observational notes, journals and photographs. This will allow the researcher to get close and gain understanding of what occurred during a historical event or time period (Given, 2008, pp. 395–6). The research aim and objective of the present research study is to identify factors public sector administrators consider important at post-implementation decision making. The use of historical research was not in line with what this researcher aimed to achieve, as this researcher was not interested in what has happened in the past to understand the present. Therefore, historical research was not selected.

Another method that could be used is qualitative factor analysis; through this method, the researcher attempts to identify factors through review of the literature, creates a measurement scale and calculates the factor loading through statistical techniques. This method was not selected because this researcher chose the interpretivist methodology and selected the qualitative approach. Therefore, quantitative factor analysis was excluded.

In 1979, John F. Rockart and the MIT Sloan School of Management introduced critical success factors as an approach to assist senior executives in defining their information needs for managing their organisations. Caralli (2004) stated that the use of success factors could lead to identification of the information important for making a critical enterprise decision.

The critical success factor model includes five activities: defining scope, collecting data, analysing data, deriving critical success factors and analysing critical success factors. At the stage of defining the scope of critical success factors, the researcher is required to decide what the organisational or operational critical success factors units are and to select the

participants. Caralli (2004) stated that lack of time is one of the constraints of using the critical success factors method because there might not be enough time to derive the critical success factors of each operational unit. The second stage of the critical success factors method is collecting data, which includes the collection and review of critical documents, developing interview questions, planning and conducting participant interviews and organising the collected data. Caralli (2004) claimed that it might be difficult to grasp the concept of critical success factors and that could impede the likelihood of this method's success, and he suggested that additional analysis would be required to create a set of critical success factors for an individual manager. Caralli (2004) suggested that this new approach of critical success factor be generally used after the critical success factor interview.

The use of critical success factors could have been one of the choices of this researcher in the present research study. However, the amount of resources required to implement this approach, the level of access to different units of the organisation that would be required and time-consuming procedures led this researcher to reject this method.

Jane Ritchie and Liz Spencer developed a framework method in the late 1980s to be used in large-scale policy research. The framework analysis feature is a matrix output that includes rows (cases), columns (codes) and 'cells' of summarised data. This provides a structure that allows the researcher to systematically reduce the data with the purpose of analysing the data by case and by code (Ritchie & Spencer, 2003). Framework analysis can be used and adopted with many qualitative approaches aiming to generate themes. Theme development is a common feature of qualitative data analysis that includes a systematic search for patterns to develop full descriptions enabling the provision of information and explanation

regarding the phenomenon under investigation (Gale, Heath, Cameron, Rashid, & Redwood, 2013). Framework analysis has a thematic coding approach to data analysis. Gale et al. (2013) said that the framework method is commonly applied for the thematic analysis of semi-structured transcripts.

Gale et al. (2013) cited the work of Pope, Ziebland and Mays (2000) and Pope and Mays (2000) and stated that the framework method is systematic, which is what associates this method with deductive qualitative analysis. The present research study is inductive in nature, and therefore the research design objective is not to bring any preconception about the phenomenon of investigation into the research study that consequently impacts on the process of data collection and data analysis. Therefore, the framework analysis was not selected.

Thematic analysis is a method for identifying, analysing and reporting patterns within data. It is known as a method that describes data in rich detail. The theoretical freedom offered through thematic analysis makes it a flexible and useful research tool that can provide a rich, detailed and complex account of data. Theoretical and inductive thematic analyses are two forms of conducting thematic analysis (Braun & Clarke, 2006). The flexibility offered through thematic analysis made it an appropriate method to be used in this research study.

Pickard (2013, pp. 99–100) said that issues such as the aim and purpose of conducting research, the research audience, and research constraints are factors that lead researchers to select the appropriate research method. The use of the inductive approach was deemed usable. The inductive thematic analysis method is an appropriate method for achieving the

objective of this research study. Further information on the use of thematic analysis in this research study is provided in Section 3.6.3.

3.5.1 Single and Multiple Case Studies

A case study can focus on a single event, a single location or a single organisation (Bryman & Bell, 2007). Nevertheless, there are different forms of case study, i.e. single and multiple case studies (Yin, 2009), which will be explained next.

Stake (1995, p. 3) identified three types of case study: intrinsic, instrumental and collective. The researcher's selection of each of these case studies will depend on the research questions and objectives. If the researcher aims to investigate the orderliness and peculiarities of a particular case then the use of an intrinsic case study is a better choice, as an intrinsic case study will provide a better and deeper understanding of the case. However, if the researcher specifically focuses on a particular phenomenon rather than a case, the use of an instrumental case study is suggested. If the researcher plans to use more than one case for studying a particular phenomenon, then the use of a collective case study is suggested, which is usually the collection of instrumental cases (Stake, 1995).

Stake (1995, p. 3) suggests that when there is a question, puzzlement and a need for general understanding, the instrumental case study could provide some insights into the research question through the study of a particular case. After considering the case study approaches, the instrumental case study was considered the right choice and a suitable method for the present study. Therefore, particular phenomena or theories are given importance and the case would not be the main concern.

In his book of case study research, Yin (2009) identified five criteria, where if any of the identified conditions matches these criteria, the use of a single case study research is suggested. The five criteria are: (1) when a critical case is being used to test a well-formulated theory, (2) when a case represents an extreme or unique case, (3) when a case is a representative or typical case, (4) when a case is revelatory of less tackled phenomena, (5) when a case study is longitudinal.

Therefore, a single case study, the local council in the city of Sheffield, was chosen instead of a multiple-case design. This research includes the following characteristics: being a typical case that aims to discover a commonplace situation, which is decision making to improve governmental services and the processes of decision making to provide advanced e-Government by public sector staff. In addition, Yin (2009) mentioned that collecting evidence from multiple cases is more convincing and general study is referred to as being more robust. Based on the fact that a very limited number of local city councils have reached a higher level of e-Government maturity, only a single case study was used to achieve the objectives of the present research study.

The anticipated results are the enablers and concern that public sector administrators experience when they engage in decision making activity at the post-implementation stage of e-Government development. This information is considered valuable, as there are very few studies of this depth. In addition, the results of this study can be informative in terms of which elements need to be given further attention by public sector administrators and how the decision making to advance e-Government services is shaped.

Furthermore, few researchers have the possibility of directly accessing public sector administrators and key decision makers in public sector organisations. As gaining access to public sector organisations to conduct research, whether a PhD dissertation or a research project, needs to overcome a considerable number of obstacles to receive permission for access, this project has a special feature. This can provide information as to how decision-making takes place in this less well-studied area.

As justified earlier, a single case study of the Sheffield City Council was chosen from among the metropolitan public sector organisations for the present research study. The prior history of the Sheffield City Council of equipping itself with an advanced IT infrastructure and equipment to provide online services for access to an e-Government kiosk proves that this city council is a good case for studying the execution of an e-Government project in a public sector organisation. Therefore, the selection of this city council is justified by this researcher being able to study the underlying processes of local government providing services online. Further information on the Sheffield City Council is provided in Section 3.6.1.1.

There is widespread concern over the issue of generalisability of single case studies. Yin (2009) stated that case studies provide little basis for scientific generalisation. However, his description of the generalisability of case studies is that they resemble an experiment. Moreover, they may lead to generalisation at the level of theoretical suggestion and not to populations or the universe. Therefore, a case study, similar to an experiment, does not signify a ‘sample’, and the goal of applying case studies is to conduct analytic generalisation and not to lead to statistical generalisation (Yin, 2009).

The two issues of data reliability and validity are relatively important elements that need to be tackled promptly by researchers. The efforts to decrease the number of errors and biases in any study are to address data reliability, while the attempts to ensure that the collected data are true and reliable which 'can be measured objectively and observed empirically' (Luk, 2009) are referred to as data validity.

Researchers apply different approaches to ensure data reliability and validity. One of these approaches is triangulation, which refers to the use of multiple sources of evidence. Yin (2009) described the use of multiple sources of evidence as highly complementary. He also stated that the use of the data triangulation approach, which implies multiple sources of evidence, helps the researcher confirm the same fact or phenomenon. This approach supports the researcher in collecting data on facts or events of the case study from more than a single source of evidence.

In addition, Yin (2009) believes that the use of multiple sources of evidence provides an opportunity for measuring the same phenomenon through the application of multiple measures. He identified six sources for acquiring data for case studies: interviews, documents, physical artefacts, archival records, direct observation and participant observation. The main sources of data collection for the present research study were interviews. Further information on each of the data collection sources is provided in the next section.

3.6 Empirical Research Methodology

An empirical research methodology of the present project was established to find responses for the research question, aims and objectives that were defined earlier. The empirical

research methodology for this research study comprises three parts: research design, data collection and data analysis. Each element is further explained and expanded on in this section.

3.6.1 Research Design

Research design is known as an outline of the method selected to respond to the research questions. Yin (2009) called research design a logical sequence of an action plan that includes collecting data, and analysing and interpreting evidence to achieve responses to the research questions. The first two chapters of this report, which encompass the research problem, research questions and theoretical framework, were developed to illustrate and justify the need to conduct research in this area.

In addition, the application of the single case study strategy through a qualitative method was deemed an appropriate approach. A semi-structured interview format was selected for collecting data. The reason for this decision is that an unstructured interview suggests data collection without considering the literature, and a structured interview that has strict rules for collection was deemed inappropriate. Therefore, this researcher used a semi-structured interview that provides greater flexibility during the process of data collection.

The interview data was analysed using thematic analysis and NVivo software was used to code the data. This researcher expected to find a comprehensive list of elements that influence the decisions of public sector managers when improving a current local council e-Government system (i.e. website). In addition, the stages of decision making to provide enhanced governmental services were expected to be extracted as a result of analysing the

interviews. To complete the research process, this researcher had to select a site to conduct a case study, and the required information is provided below.

3.6.1.1 Case Study Site

As project researchers are always dealing with difficulties such as lack of time and resources, it is necessary to define a proper case boundary which enables them to fulfil their goals and objectives based on available resources (Pickard, 2007, p. 87). The UK is divided into 12 districts (Office for National Statistics (ONS), n.d.). Therefore, if a researcher aims to cover all 12 districts, there would be a need for a longer duration and more resources to complete the study. Therefore, for the purpose of the present study, one of the local councils of Yorkshire and Humber was selected, i.e. the Sheffield City Council.

3.6.1.1.1 The Process of Case Study Selection

The Sheffield City Council was selected as a case study for the three reasons of relevance, appropriateness and convenience. According to Directgov (i.e. the official portal of the UK government for access to government services online), the municipalities of the Yorkshire and Humber region are divided into five areas: East, West, North and South Yorkshire, and Lincolnshire.

The Sheffield City Council in the South Yorkshire region is a relevant case of e-Government development which reflects and presents central and regional government initiatives to implement e-Government in public sector organisations.

Thomas (2011) cited Wieviorka (1992, p. 160) in that the existence of a case depends on the researcher's ability to identify a characteristic unit, and this unit must be observed but does not have meaning in itself. The unit will only be significant if the researcher can link the unit to an analytical category or theory. The case selected for this case study is e-

Government post-implementation decision making in the Sheffield City Council, UK. To answer the question of why the Sheffield City Council was selected, this researcher refers to the statement by Thomas (2011). Thomas (2011) stated that the main feature of a researcher's selection of a case could be the interest the researcher has in the subject of study. He then classified the reason for a researcher's interest into three main categories: (1) the researcher is intimately connected with the case; (2) the case stands out as a good example of something in which the researcher is interested; (3) the case is different from what is typical.

The case of the Sheffield City Council was selected mainly because of the second reason as provided by Thomas (2011), and this was for the long history of the Sheffield City Council in providing e-Government services for the use of its constituents and the continuous effort of this city council in enhancing its e-Government services, which renders this a standout and appropriate case for study. Table 7 highlighting the features of the Sheffield City Council as a case to be studied is presented below.

Table 7: A brief summary of the Sheffield City Council e-Government initiative

Sheffield City Council	
1	The earliest presence of the Sheffield City Council website was around 1999.
2	The Sheffield City Council is one of the first city councils in the UK to install information kiosks to disseminate information and to encourage citizens to become familiar with utilising technology (Silcock, 2001).
3	Implemented a content management system in 2003 (Sheffield Education Directorate, 2004).
4	The Sheffield City Council is among the steady achievers of e-Government development (Torres, Pina, and Acerete, 2005).
5	Socitm's (2013) report also supports the fact that the Sheffield City Council has improved its e-Government services.
6	The Sheffield City Council website ranking was 3 out of 4 stars in 2015 (Socitm, 2016).
7	Socitm (2016) cited the Sheffield City Council website as a good practice in BC 15.

Moreover, this researcher was based in Sheffield, so the selection of the Sheffield City Council added an element of convenience. Consequently, this researcher could visit the public sector administrators at their convenience and the commute to interviewees' offices was easy.

Therefore, the expectation was that the Sheffield City Council would have more experience to share and that the present research would benefit from its contribution. A further point that should be considered by the researcher when carrying out a case study is to carefully identify salient facts within the context of the study and try to identify the people who can provide the required insight into these issues (Pickard, 2007, p. 88).

3.6.1.1.2 The Process of Interviewee Selection

To choose the appropriate interviewees, the following reviewing process was followed: (1) identifying people and job positions, which have been highlighted by previous authors by stating that a contributor could impact on the final IT decision by managers; (2) other positions which can also contribute to this process, although not listed in the literature, were also included. These two lists were combined and the primary group of people identified for interview were IT public managers and staff, information managers and officers and project managers. Pickard (2007, p. 88) defines a key informant as one 'who will have a great deal of knowledge about the case as a whole and what goes on at a variety of levels within the case'.

The plan for accomplishing this research was based on interviews with public sector managers who had knowledge of the process of developing e-Government websites in their city council. The main targeted managers were senior and mid-level managers and IT project managers. These three groups were mainly chosen as the result of the literature

review; mid-level managers were identified as the most participative staff at the time of organisational decision making.

Two preliminary interviews were conducted at the earlier stage with the manager of the Sheffield City web portal and later on with the director and the head of 'Customer First Point', as this researcher had to improve his understanding of the people involved in the decision-making process. This researcher explained the aims and objectives of the research project and a list of potential interviewees was mentioned to the senior managers of the Sheffield City Council. Thus, the initial list was generated based on the Sheffield City Council staff list, which is available on the internet and includes information on their position, name and e-mail.

However, the results of early meetings led to the conclusion that the Sheffield City Council would provide the list of interviewees and schedule meetings. The reason for this decision was that the senior managers believed in having a better understanding of the people who attend the IS/IT project decision-making process in their organisation. In addition, this researcher had to find a suitable time to arrange the interview schedule because public sector manager responsibilities are challenging. Therefore, the council agreed to recruit interviewees and arrange the interview schedule.

Consequently, the researcher engaged in the process of interviewing the first group of interviewees, who comprised mainly senior managers in charge of e-Government development. The second group of interviewees was recruited through the first group by asking them if they knew any member of staff that could make a contribution or who had more knowledge about the decision-making processes of e-Government development in the

council. This means that snowball sampling was applied to recruit the participants of the present research study.

Hancock, Windridge and Ockleford (2009) said snowball sampling is based on referrals in that one participant recruits others. Harris et al. (2009) described snowball sampling as an approach that includes the selection of one participant and asking that participant to identify other like individuals who could be added to the sample for understanding the phenomenon. Snowball sampling includes asking the recruited individuals to identify more people until there are enough participants to understand the phenomenon (Harris et al., 2009).

The interviewees were categorised into two groups of senior and mid-level managers. In total, 17 interviews were conducted with the key role players of e-Government decision making that attempt to organise and manage e-Government projects. The level of interviewee information that can be disclosed is very limited, as this researcher promised full anonymity and confidentiality to the research study participants. Table 8 was created after discussion with the research study supervisors on how to present a demographic table of the research study participants. Approximately 1040 minutes of audio recording were transcribed verbatim.

Table 8: Demographics of research study participants

Demographic	
Length of experience in public sector	3 More than 10 years
Area of operation	1 Operation & IT strategies 2 Operation & Service delivery
Position	3 Senior level management
Gender	2 Female 1 Male

Demographic	
Length of experience in public sector	2 More than 10 years 3 Less than 10 years
Area of operation	5 ICT provision & Management
Position	5 Middle level management
Gender	1 Female 4 Male

Demographic	
Length of experience in public sector	2 More than 10 years
Area of operation	2 Operation & Development
Position	2 Middle level management
Gender	1 Female 1 Male

Demographic	
Length of experience in public sector	4 More than 10 years
Area of operation	4 IT & Business strategies
Position	4 Senior level management
Gender	2 Female 2 Male

Demographic	
Length of experience in public sector	2 More than 10 years 1 Less than 10 years
Area of operation	3 IT & Business strategies
Position	2 Senior level management 1 Middle level management
Gender	1 Female 2 Male

3.6.1.1.3 Description of the Sheffield City Council

Sheffield is one of the metropolitan boroughs in South Yorkshire. It is one of the eight largest regional English cities and one of the fourth largest English districts by population. The city is located in Yorkshire and the Humber region, with an estimated population of 551,800 in 2011. Currently, the council is run by the Labour party. The city council has 84 members [18 Liberal Democrat, 59 Labour, four Green and three Independent]. The Executive Management Team (EMT) of the Sheffield City Council includes the Chief Executive and Executive Directors. The EMT is responsible for making managerial decisions with regard to the operation and application of policies in the council. The city council includes four Executive Directors who are each responsible for a portfolio. Figure 10 illustrates the organisational structure of Sheffield City Council directorates.

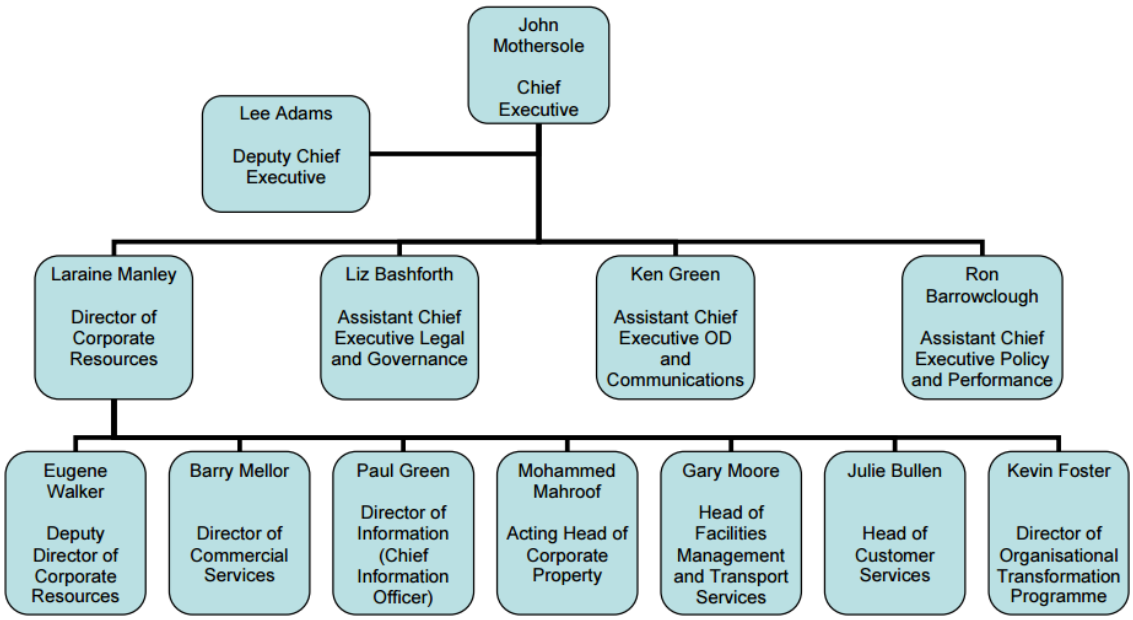

Figure 10: Organisational structure of Sheffield City Council directorate [Source: Sheffield City Council (2009a)

The current web address of the Sheffield City Council is https://www.sheffield.gov.uk/. The website services are simplified into four categories: 'pay It', 'apply for it', 'report it' and 'find it', which includes 14 in-demand services, which are road & transport, housing & neighbourhoods, leisure, council tax, your city council, libraries & archives, business, rubbish & recycling, children, health & social care, planning & development, jobs & training, benefits, birth, marriages & deaths.

One of the reasons for selecting Sheffield City Council as a case study site is that (Socitm, 2013) identified the Sheffield City Council as one of the public sector organisations that has improved its website. In 2012, the council was awarded a 2-star ranking, but a year later it was grouped with the 3-star websites, thereby signalling progress and improvement

in its development and enhancement. In addition, this council has set the following strategy for public service reform:

> '… focused on an ambitious vision to deliver public services that are designed around citizens, that foster resilience and promote independence in our communities and that deliver better outcomes for the people who use them, as well as providing good value for money. We want services that are better connected between different sectors and providers, and better connected to the people they serve'. (Sheffield City Council, 2014)

To achieve this objective, the council needs to engage in a series of improvements, of which the enhancement of Sheffield City Council website is one. A brief history of developing e-Government is provided next. The earliest presence of the Sheffield City Council website was around 1999. Nonetheless, the website experienced a series of problems such as different styles of presenting and writing pages, lengthy processes of updating and maintaining information and lack of compliance with standards. However, there was a corporate decision in 2003 to implement a content management system (CMS). A CMS is a database-driven web application which allows the creation and maintenance of web-based content by non-technical staff (Sheffield Education Directorate, 2004).

The Sheffield City Council (2004) reported that the target set by the Government was to provide 95 percent of services online by March 31, 2004. The number of web pages provided through the council website was 4,000. According to the report published by the Sheffield City Council in 2009, the council had approximately 15,000 web pages, of which 1,000 were eliminated after the process of website restructuring and rationalisation. Moreover, the council reported that it had linked the website to Twitter. The cost of maintaining the council website was approximately between £150,000 and £300,000

(Sheffield City Council, 2009b). Moreover, this organisation was previously operating based on an Easysite CMS; however, the council decided to replace their previous CMS with a new one called Magnolia CMS (Magnolia is known as an open CMS platform). This change was made with some expectations, such as enhanced quality of e-Government services. Currently, the website is managed by the 'Customer Services' department. A screen capture of the Sheffield City Council website is provided in Figure 11.

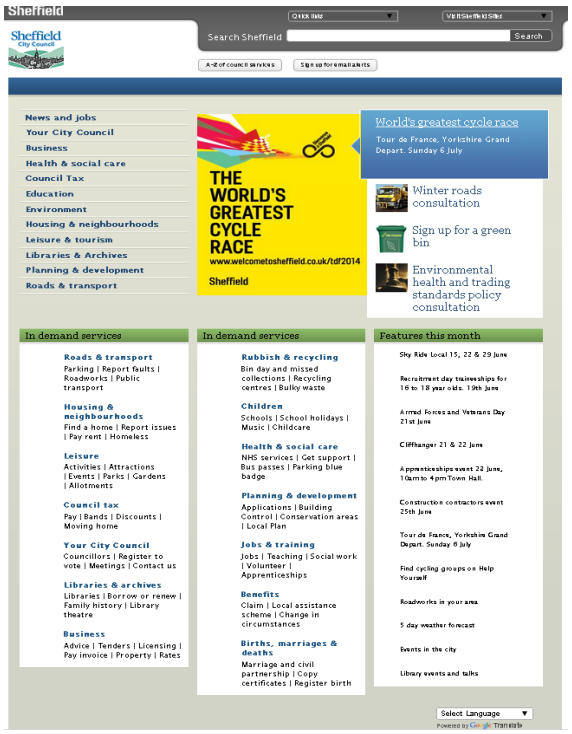

Figure 11: A snapshot of the Sheffield City Council website

Different departments and organisations are involved in developing and maintaining the council website. The internal department is the Business Information Solution (BIS) team. In addition, the organisations that contribute to e-Government development are Capita and Technophobia. The organisation has completed the implementation of a new infrastructure, and enhancement of services is considered the next stage to be completed.

3.6.1.2 Obtaining Access

One of the most challenging aspects of conducting case study research relates to gaining access to the case study site. The difficulties will vary based on research topic and type of organisation in which the researcher is interested. For example, Saunders et al. (2007) reported that one of the critical issues in conducting case study research is obtaining access to a case study site. For the purpose of the present research project, preliminary contacts were made in early 2011. However, the early contacts did not result in any agreement to conduct the research project with the city councils. Finally, in December 2012, this researcher was granted access to the Sheffield City Council after conducting a series of meetings and presenting his research idea to the head members of the Sheffield City Council.

Interviews were conducted between December 2012 and January 2013. During this period, this researcher had access to different members of staff involved in the decision-making process of e-Government projects. All interviews were conducted at Sheffield City Council buildings. Further contacts were made with the head of the city council to request for more interviewees. However, the council replied in March 2013 that this researcher had already interviewed all key role players and that including others would not be of any additional benefit. The council's affirmation that every key role player had been interviewed supported this fact and confirmed that this researcher had covered the required sample for investigation.

3.6.2 Data Collection

There are different sources for collecting evidence and data for case study research. For example, Stake (1995) and Yin (1994) identified six tools, namely interviews, documents, archival records, direct observation, participant observation and physical artefacts. An interview question script, decision-making map and digital recorder were used to collect information.

3.6.2.1 Semi-structured Interview

Qualitative data are used to study the phenomenon to be researched. Specifically, an interview was used as the primary tool for data collection. According to May (2003), the basis of interviews and interviewing can be described as maintaining and generating a conversation with people across the entirety of a specific topic or range of topics. Conducting an interview will provide a considerable amount of benefits and privileges for the researcher. May (2003, p. 120) mentioned that in carrying out an interview, the researcher gains a proper understanding of people's thoughts, feelings, options, values and experience. As this study links and relates to the cognitive thoughts and understanding of public administrators at the time of post-implementation decision making to a high degree, the interview is considered the most appropriate tool for collecting data.

There are a variety of interview styles available, such as structured, semi-structured, unstructured and group structured (May, 2003, p. 121). Among the listed interview styles, the semi-structured interview was selected for data collection in the present research study. The reason for selecting the semi-structured interview from other styles was that the interviewer would be freer to 'probe beyond the answers' (May, 2003, p. 121). The semi-structured interview is acknowledged as an appropriate tool for performing an investigation

if a researcher follows a specific concern in the research study. The use of an unstructured interview was deemed inappropriate as it would challenge the interviewer's preconceptions (May, 2003, p. 124).

3.6.2.1.1 Interview Question Script

Different forms of questions must be considered: initiating questions (Yates, 2004, p. 165), trigger questions (Anderson & Dedrick, 1990) and closed and dichotomy questions (Saunders, Lewis, & Thornhill, 2003, p. 263). Each of these forms helps the researcher take one step forward to better understanding the phenomena. However, this demands the proper choice of questions at the appropriate time.

The types of interview questions designed for this study included open-ended questions followed by trigger questions and follow-up questions to elaborate on and expand understanding of the phenomenon. To be more specific about how the interview questions were designed, a few key terms and themes were extracted from the literature review. As mentioned by Yates (2004, p. 163), at the time of designing interview instruments, one of the main tasks of the researcher is to specify the range of themes s/he expects to cover. This question can be answered easily by referring to the research questions and the literature review section. The three main categories of themes for the present research study were factors influencing the decision-making process, the stages of decision making to reach a final decision, i.e. acceptance or rejection of a concluded decision, and categorisation of influential stakeholders at the different stages of decision making.

At the first approach, 51 potential interview questions in the three main categories of e-Government website, stages of decision making to procure new e-Government services and influential factors at the stages of decision making were identified. These research

questions were later refined and modified after a series of comprehensive meetings and discussions with the research supervisors. As a result of refining and tailoring the interview questions, the final interview script consisted of eight main questions and included a mixture of initiating, triggering and follow-up questions.

The interview script comprised four parts: introductory statements which involved explanations of the research questions and objectives; a description of the interview process; an introduction to the consent form; and an explanation of how a digital recorder operates, general e-Government questions, general decision making questions and identification of decision-making factors that influence e-Government post-implementation processes.

The complete interview script is provided in Appendix 1. Nevertheless, one question from the interview script is provided in Figure 12 to demonstrate the different components of the interview script, and includes the main question, triggering and follow-up questions and a blank space designed specifically for note taking.

5- At the stage of initiating a proposal for improving e-government services, what are the main (organisational/operational/ Social and environmental/technological) aspects/factors influence decisions to accept or reject initiated proposals?

Trigger questions

- Organisational : How about organisation aims and business strategy, structure, culture?
- Operational: How about internal operations and service to citizens of Sheffield council?
- Social and environmental: How about regional and national policies, social, ethical and environmental responsibilities of local council?
- Technological: what kind of technology is available, what forms of technology will become available? What is the staff viewpoint about new technology? What needs and organisational barriers technology can respond? How technology can be affordance?

Follow up questions:

a. Why are these aspects/elements important?
b. How do these aspects impact decisions for improving e-government services?
c. Which organisational roles/ individuals may influence the council to initiate new e-government service proposals? How?

Figure 12: Example of interview script

It is essential to mention that the finalised interview script was later tested during four pilot interviews (two lecturers and two postgraduate research students from the Information School, Sheffield University). No significant changes were added to the finalised interview scripts.

3.6.2.1.2 Digital Recorder

The accuracy of recording conversations between interviewee and interviewer is critical to social science studies. To have a non-biased and fair recall of an event, i.e. the meeting and

conversation between interviewee and interviewer, the researcher needs to provide a tool that covers this possibility. As recording a conversation word for word and establishing an in-depth conversation between the interviewee and interviewer at the same time are difficult tasks to accomplish, the use of a device such as a digital recorder is justified. Moreover, the use of a recording device was also emphasised by Patton (2002, pp. 380–381). He believed that using a recording device enables a researcher or interviewer to focus more on the process. As a result of this approach, the research can establish interview conversation fluency. Moreover, he added that the use of a recording device can provide the possibility of recording complete and accurate conversations between two parties that later provides the opportunity for conducting detailed data analysis.

Therefore, to complete the process of data collection, this researcher used two digital recorders to accurately record the interview process. The second recorder was used as a backup device to avoid any interruption in the interview process if the primary device stopped working. The interviewees were informed on how they could stop the digital recorders if they felt uncomfortable with the interview questions or the interview process. The recorded interviews were later checked by this researcher to ensure the quality of the recordings. The best recorded audio files were stored for further action (i.e. transcribing interviews and checking transcription quality against the original audio files). After the interviews were transcribed, they were imported into NVivo 10.0 for analysis.

3.6.3 Data Analysis

3.6.3.1 Data Analysis of Semi-structured Interview

Qualitative data can be analysed in different ways. There has been no general agreement on which data analysis technique has greater prominence over the others. However, the choice depends on factors such as the research question(s), overall purpose of analysis, ease of access to resources, and the required depth of analysis and timing (Lacey & Luff, 2009).

Bryman (2008; p.538) describes the main difficulties of qualitative research as the quick generation of large, cumbersome databases. This is because its dependence on data derived from sources such as field notes, interview transcripts or documents.

Data analysis can take several forms, for example, grounded theory, discourse analysis, etc. However, it is important to select the most suitable technique based on Lacey & Luff's (2009) considerations, as highlighted earlier. As a result of reviewing different qualitative data analysis techniques, thematic analysis was selected for this research. Bryman (2008, p. 554) argued that searching for themes can be recognised in many, if not most, approaches to qualitative data analysis. Moreover, Braun and Clarke (2006) referred to Patton's (1990) statement about inductive approach and stated that in inductive study, identified themes are linked strongly to data. Indeed, these are the shared similarities between grounded theory and thematic analysis.

Braun & Clarke (2006) described thematic analysis as a method for identifying, analysing and reporting patterns (themes) within the data. As there are not many inductive e-Government studies (Joseph, 2013), the selection of thematic analysis could help identify themes and patterns that influence public sector managers' decision making at the post-implementation development of e-Government projects.

In addition, the researcher is required to identify the key terms and patterns at an early stage (Coffey & Atkinson, 1996, p. 27). To clarify how this researcher aims complete this job, this researcher has explored different qualitative data analysis techniques such as grounded theory, thematic analysis, discourse analysis, etc. Regarding the selection of the appropriate theoretical frameworks and methods for analysing the research data, the researcher needs to be confident that the selected method will match the purpose of the investigation and the issue being researched (Braun & Clarke, 2006).

Although there is general and limited knowledge published, identified and gathered on IT decision making by public managers, this researcher decided to use thematic analysis because some information has been collected on the research topic and its uses planned by this researcher. Thematic analysis is performed by carefully reading and re-reading the collected data (Rice & Ezzy, 1999, p. 258). This analytical technique is widely used within psychology and beyond (Braun & Clarke, 2006). Specifically, this method has been used in several IS studies for interpreting qualitative data (e.g. interview). Thematic analysis differs considerably from other qualitative analytical methods, with a far greater level of flexibility.

However, for coding data, there are some theoretical similarities and bounds between thematic analysis and other qualitative data analyses, especially grounded theory (Braun & Clarke, 2006). There are two forms of thematic analysis: inductive and theoretical (Braun & Clarke, 2006). As the name makes the inductive approach is clear, where the themes are identified strongly through the data (Patton, 1990), this method has some inherent similarities with a grounded theory approach (Braun & Clarke, 2006). Braun and Clarke (2006) identified two other characteristics of inductive thematic analysis: when the themes

will be identified they may have little relation with the questions asked of participants, and the themes would not be determined by the researcher's theoretical interest in the topic. However, theoretical thematic analysis tends to be extracted based on theoretical or analytical interest (Braun & Clarke, 2006). Nevertheless, the process of coding for a secondary type of thematic analysis, theoretical thematic analysis, is that the interview transcript will be coded for a specific research question. For the purpose of the present research study, inductive thematic analysis was selected. The main reason for this decision is that very limited knowledge was extracted from the literature that addresses the decision-making process by public sector managers in managing e-Government projects.

As there are not many inductive e-Government studies (Joseph, 2013), the selection of thematic analysis could help identify the themes and patterns that influence public sector managers' decision-making at post-implementation development of e-Government projects.

Thematic analysis involves several stages and processes. The table provided by Braun and Clarke (2006) to describe the thematic analysis process is provided below.

Table 9: Thematic analysis (source: Braun & Clarke, 2006)

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

- Phase 1: Familiarising yourself with your data

This researcher spent an average of five days to transcribe each interview's voice recording. The process included transcribing the interviews and reviewing the transcripts to ensure

their accuracy. After transcribing the interviews, this researcher moved toward familiarising himself with the collected data. Braun and Clarke (2006) call this stage a vital step that needs to be accomplished by the researcher. They suggested that the researcher becomes immersed in the data to such an extent that he becomes familiar with the depth and breadth of the content. Moreover, they mentioned that reading and re-reading the prepared manuscript would be time-consuming; therefore, it is tempting for some researchers to skip this process. They strongly emphasised that this is necessary for the researcher to become familiar with the collected data and also to check the transcript against the original audio to ensure accuracy, as this information would be the 'bedrock for the rest of the analysis' (Braun & Clarke, 2006).

While often perceived as time-consuming, frustrating, and at times boring, transcription is an excellent means of becoming familiar with the data (Riessman, 1993). This is in fact true, as this researcher has gained considerable benefit as a result of this process. This has caused this researcher to become familiar with the data and gain a general idea about interview data.

- Phase 2: Generating the initial code

After completing the first phase of thematic analysis, which led this researcher to have some understanding and ideas about what is interesting among the collected data, the initial coding of the data was started.

In this phase of the research, this researcher followed the code definition provided by Boyatzis (1998, p. 63) to create codes for the present research study. Boyatzis (1998, p. 63) defined a code as a label that identifies a basic segment or element of raw data that can be assessed in a meaningful way regarding the phenomenon. According to Boyatzis's (1998, p.

63) definition of code, in responding to 3644 segments of meaningful excerpts, this researcher identified 278 labels (codes).

The coding process was driven by data rather than theory. This means that the created themes were dependent on the data. This decision was based on the lack of e-Government studies in the area of decision making. Coding can be performed manually or by software programmes. This researcher began the coding process using a software programme called NVivo. This researcher read through the entire data set, giving full and equal attention to each data item, aiming to identify interesting perspectives in the data items that may form the basis of repeated patterns (themes) across the data set (adopted from Braun & Clarke, 2006).

Three pieces of advice suggested by Braun and Clarke (2006) for the coding process were followed to code the interview transcript:

- This researcher coded the interview scripts for as many potential themes/patterns as possible;
- This researcher coded the interview scripts inclusively;
- This researcher coded the individual extracts of data into as many different 'themes' as they would fit.

Saldana (2009, p. 19) said that the actual number of codes, categories, themes and/or concepts is varied and that it depends on contextual factors. He later stated that three elements impact on this, namely the nature of the research data, the coding method selected for analysis and how detailed the analysis needs to be. Saldana (2009, p. 19) named 'lumping' and 'splitting' as two methods of coding data and he described the splitter approach as the 'one who splits the data into smaller codable moments'. In the present

research study, this researcher attempted to code the data in to as many different 'themes' as they fit, which is closer to the splitter approach.

An example of the coding approach applied for coding the interview transcripts is shown for a short segment of data in Table 10. Five codes were developed as the result of reviewing the data extract: departmental budget, department budget investment authority, Tendency towards cost-saving IT solutions, Central budget for wide organisational impact solutions and Central IT decision making for large-scale organisational solutions. Once the initial coding of the data extract was completed, this researcher conducted a series of code reviews to ensure that the provided labels were appropriate, and coded the data extracts to as many potential themes as possible. Code 3, i.e. 'departmental IT decision making' was created from interviewee statements that '*Each department had its own budget, so therefore it's kind of responsible for how it manages that budget and if you think it can do things online and save money then it will procure things*'. Code 7 was created as the result of considering the entire data extract.

Table 10: Example of coding approach

Data extract	Coded for
7,1 Each department had its own budget **2**, so therefore it's kind of responsible for how it manages that budget and **3, 4**if you think it can do things online and save money then it will procure things'. **5**If there are things that are corporate that affects everyone like the CMS. Then that will be a central spend and **6**the decisions and everything will come more centrally'. (WD001)	1. Departmental budget 2. Department budget investment authority 3. Departmental IT decision making 4. Tendency towards cost-saving IT solutions 5. Central budget for wide organisational impact solutions 6. Central IT decision making for large-scale organisational solutions 7. Scale of IT solution impact

The screenshot of codes generated in NVivo software for the provided example is presented in Figure 13.

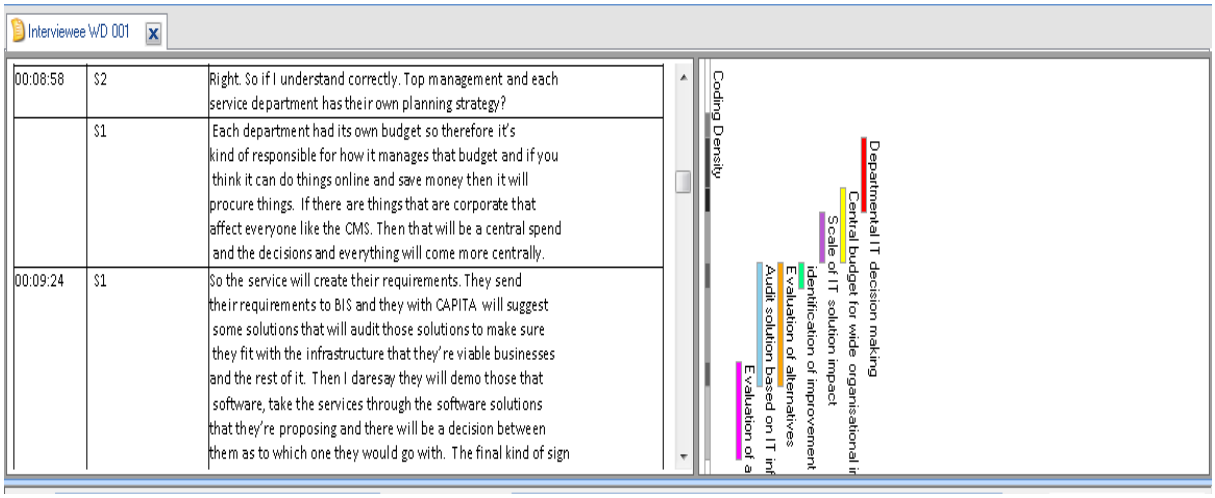

Figure 13: Screenshot of NVivo software

The interview extracts were uncoded and coded many times to select the appropriate codes explaining the meaning of interviewee statements regarding the phenomena precisely. Several supervisory meetings were held between this researcher and his research supervisors during the interview transcript coding process, in which the codes were discussed. The codes were checked against the interview transcripts and the research supervisors provided, providing their suggestions for uncoding and coding the data extracts where required.

During the interview transcript coding process, a code definition list was created as a tool to define the meaning of each created code and it was also used to compare the new emerging codes with existing ones. MacQueen et al. (2008, p. 121) as cited in Saldana (2009) suggested that the code definition list or each codebook entry can include 'the code, a brief definition, a full definition, guidelines for when to use the code, guidelines for when not to use the code, and examples'. The code definition list allowed this researcher to compare the similarities or differences of new emerging codes with existing ones and to merge a code

with similar ones or to add it to the list if it was a new code. An example of a code definition list is provided in Table 11.

Table 11: Code definition list

Theme	Sub-theme	Concept	Codes	Example of data extract
Technological factor	System accessibility	Equality assurance	[1]Ensure no service provision impact as the result of channel shift	[1]So channel shift is a key one because if we are going to shift people from telephone to face to face to electronic service delivery then we need to make sure that we do not disadvantage anybody by doing the services.
			[1]Income diversity of social groups [2]Diversity of access to computers within social groups	[1,2]A lot of people do have a computer at home and a lot of disadvantaged people probably do not have a computer at home probably as do quite affluent people.
			[1]Socially disadvantaged area	[1]I do know the people who they do not have access to computer in a lot of social disadvantage area and again if you do it via an e-government system … .
			[1]Equality implication [2]Assessment of IT impact on different social groups [3]Create IT access opportunities for disadvantaged members of society	[1]There are some first and foremost some equality implications [2] so that would be to make sure that the change does not disadvantage people - and [3] for some customer group could provide the opportunity to give them equality of the access and that has to be considered in all of your service delivery changes.
			[1]IT literacy	[1]I mean with people who are IT educated they love it [online services] because this what they will do but for people who are not does it real fear fighter?
			[1]Citizen age	[1]Let's imagine that we got a 75-year-old one who wants a disable parking permission, we could not just say you need to do it online.

Another objective of the supervisory meeting during the coding process was to ensure that the codes were true representatives of what was stated in the data extracts. Some data extracts with the same meaning that were however labelled differently were merged through the use of the code definition list. Figure 14 presents the number of new codes generated for each conducted interview. The high number of codes at the early phase of the interviewing stage was mainly due to interviewing the first group of senior managers at the

first approach to collect the data from the case study site. This researcher tried to create as many codes as possible based on the advice of Braun and Clarke (2006): 'code for as many potential themes/patterns as possible (time permitting)/you never know what might be interesting later'. Phase 3 was started after the coding of all interview transcripts had been completed.

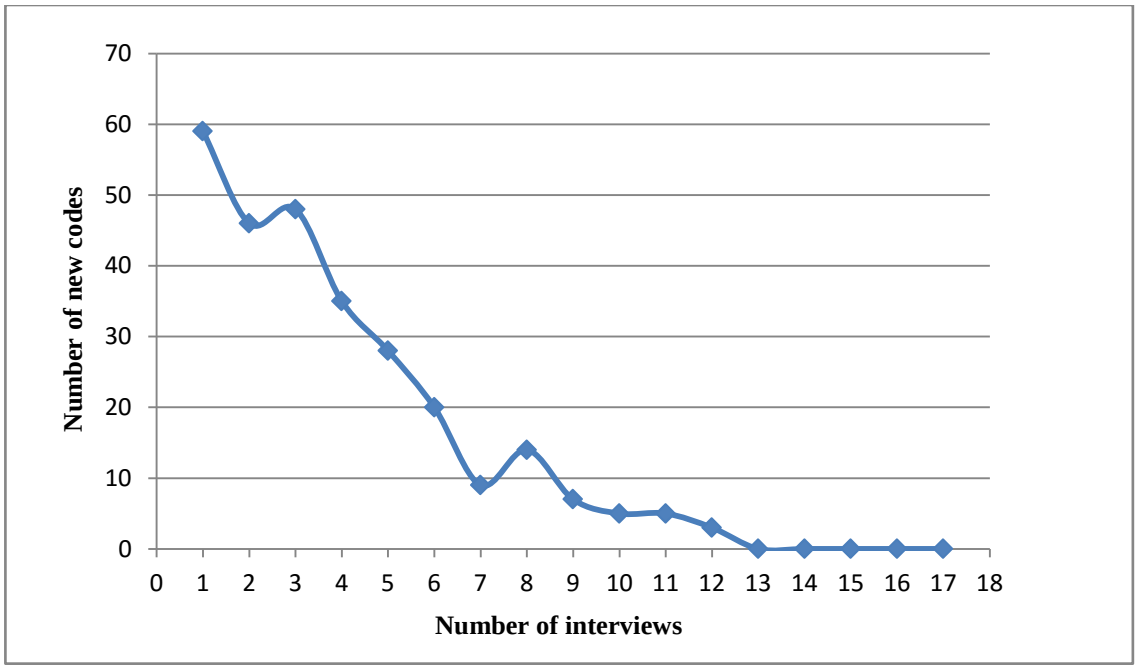

Figure 14: Number of new codes per interview

- Phase 3: Searching for themes

After phase two has been completed, this researcher had a list of codes that included the most interesting aspects of the data set. This phase was focused on the broader level, i.e. themes rather than codes. At this stage, this researcher sorted the codes into potential themes and collated the relevant data extracts within the identified themes. Braun and Clarke (2006) described this phase as the researcher starting to analyse his codes and considering how different codes may combine to create an overarching theme. According to Braun and Clarke (2006), this is when the researcher needs to start thinking about the

relationship between codes, themes and different levels of themes. They said that some initial codes may form main themes, while other codes may form the sub-themes and yet other codes may not be used.

Braun and Clarke (2006) mentioned that it might be helpful to use visual representation to sort the different codes into themes, using methods such as tables or mind maps. Ritchie, Spencer and O'Connor (2003, p. 219) as cited in Bryman (2008, p. 554) also described the framework suggested by the National Centre for Social Research in the UK as a potential method to order and synthesise data. This researcher used a table to sort the research study codes (see Table 11). At the end of this phase, this researcher had a collection of candidate themes and sub-themes and all data extracts that had been coded in relation to them. As the result of this phase, eight themes (i.e. political influence, IT infrastructure impact, financial perspective, cost perspective, technological perspective, organisational strategies, operational perspective, and social and environmental perspective) and 49 sub-themes were created.

Saldana (2009, pp. 20–21) responded to the question of what would be the appropriate number of codes, themes and categories in qualitative studies by referring to the works of Lichtman (2006, pp. 164-5), Creswell (2007, p. 152) and Wolcott (1994, p. 10).

Saldana (2009) stated that according to Lichtman's (2006) projection, most qualitative studies in education will create 80–100 codes that will be formed into 15–20 categories which are finally synthesised into 5–7 major concepts. Saldana (2009, pp. 20–21) stated that different sets of numbers as general guidelines for analysis may be prescribed by other disciplines and varying approaches to qualitative inquiry. Lichtman (2006) suggested 5–7 central concepts and Creswell (2007) mentioned 5–6 major themes. Saldan (2009, p. 21)

said that: ‘the final number of major themes or concepts should be held to a minimum to keep the analysis coherent, but there is no standardized or magic number to achieve’.

Acknowledging the fact that this process involves sorting different codes into potential themes, this researcher began his task of sorting codes together. Various versions of the code and theme tables were created during this process; an example of one of these tables is presented below.

- Phase 4: Reviewing themes

When the first potential themes were ready, the next step was refining them. The main reason for this process is the possibility that the themes defined in phase 3 would not really be themes, as there might have been insufficient data to support the themes, while other candidate themes might collapse into each other. Braun and Clarke (2006) identified two steps for reviewing and refining themes: (1) step 1 requires reading the collated extract for each theme and ensuring they present a coherent pattern; (2) step 2 involves a similar process but this time for the entire data set. These steps were conducted and several thematic maps were created as the result of this process. Each generated map was discussed with the research study supervisors to validate the map and codes and to discuss which candidate themes were not themes, which themes could be merged to create a new theme or whether there was a need to code any additional data within themes missed in the earlier coding stage. As the result of phase 4, four themes and 12 sub-themes were created. Each theme and sub-themes are explained in further detail in Chapter 4.

- Phase 5: Defining and naming themes

This phase begins by defining and further refining the themes and consequently analysing the data within them (Braun & Clarke, 2006). This phase is described as the process of

returning to the collated data extracts for each theme and then attempting to organise them into coherent and internally consistent accounts with accompanying narratives. This researcher was able to identify four main themes that may impact the decision-making behaviour of Sheffield City Council managers when e-Government post-implementation projects are a matter of concern.

Organisational management factors, government policy factors, technological factors and financial factors were generated as final themes. The organisational management factors theme includes two sub-themes: strategic factors and operational factors. IT cost, cost vs. benefit assessment, budget and economic climate were identified as sub-themes of the financial factor theme. The technological factor theme contains IT risks, scale of IT improvements and system accessibility sub-themes, and government policy factors comprised central government policy, regional government policy and ICT green policy. The final thematic map is presented in Figure 31.

- Phase 6: Producing the report

This phase is the last stage in thematic analysis. At this point, this researcher had a set of fully developed themes. Braun and Clarke (2006) argued that it is important that the write-up, including data extracts, provides ‘a concise, coherent, logical and non-repetitive and interesting account of the story the data tell – within and across the themes’.

The narrative of the research findings is presented in the Chapter 4, in which each identified theme and sub-theme is explained.

3.7 Ethical Issue of This Research

This was a research study involving human behavioural patterns and aimed to identify the effective factors which influence public sector administrator decision making at the post-implementation stage and by definition required a combination of semi-structured interviews to gather population data. Based on categories, the present study is identified as non-invasive and low risk. Nonetheless, the application of a qualitative approach is often accompanied by a higher level of intrusion into people's lives (Punch, 2005) such that it can yield considerable side effects on an interviewee's prospects. To minimise the possible risks of any disadvantage to interviewees in this research project, it was decided to anonymise as much information as possible. For example, in the report no information is reported with the name or title of the interviewee.

In Chapter 4, the generic term is associated with each interviewee to safeguard their identities. The process of name allocation was performed as follows:

- The audio transcripts for each interviewee were referenced as Interviewee 1, 2, 3, etc.
- Random names were allocated to each interview transcript.
- Generic terms were assigned to the respondents in Findings chapter to provide more details and yet not identify respondents.

However, in order to conduct this research, this researcher received a Research Ethics confirmation form from the Information School of Sheffield University Ethical Committee (see Appendix 2). The interviewers also received an information sheet (see Appendix 3) that explained the research purpose, the process of data collection and information

dissemination. Later, they were asked to sign two consent forms (see Appendix 4) for the research study: one for the use of this researcher and another kept by the interviewee for his/her record. After completing this process, this researcher officially started the interview process.

In addition, to ensure minimum research risk for both participant and researcher, a set of elementary principles was identified and the researcher and interviewee both agreed to the conditions below:

- The interviewee's participation is voluntary and s/he is free to withdraw at any time without giving any reason and without there being any negative consequences.
- Interviewee responses will be kept strictly confidential.
- Interviewee gives permission to researcher to have access to anonymised responses and to publish anonymised excerpts of the interview.
- Interviewee agrees to the conversation between the two parties being recorded, transcribed and that the transcription will be reused by the researcher in future work.

3.8 Research Validity and Reliability

This researcher followed two criteria suggested by Lincoln and Guba (1985) and Guba and Lincoln (1994) as cited in Bryman (2008, p. 377) for assessing the reliability and validity of this qualitative research study. The authors suggested two primary criteria for assessing quantitative studies: trustworthiness (i.e. credibility, transferability, dependability and confirmability) and authenticities.

- Trustworthiness
  - Credibility:

Bryman (2008, p. 377) said that to establish qualitative research credibility, the researcher has to ensure that the research is established based on 'the canon of good practice' and to perform respondent verification checks. Graneheim & Lundman, (2004) claimed that credibility includes the decision of researchers to choose the focus of the research study, the selection of research participants, the context and data collection approach. They also stated that another way to increase the credibility of a study is to use a diverse range of participants. In addition, as mentioned earlier, this researcher had several meetings with the senior management team to discuss the research subject. This researcher received positive feedback and the senior management team mentioned that this was an interesting subject and that they were willing to participate. The choice of methodology, data collection and data analysis technique was based on the selection of the best approach to obtain the maximum possible information on the topic of study. Therefore, the interpretivist approach, qualitative method, single case study and semi-structured interview were chosen to study the research subject. Thematic analysis was used to analyse the collected data. The interviewees were from different departments of the Sheffield City Council that participated in e-Government projects. The interviewees were from the senior manager team, technical team, development team, delivery team and strategic team. This covers a good number of interviewees and maintains the diversity of research interviewees.

  - Transferability

Graneheim and Lundman (2004) stated that a researcher could propose the transferability of his research findings, but it is the reader that decides whether the findings can be used in

different contexts. A qualitative study involves the in-depth study of a small group of individual that share common characteristics. Therefore, qualitative findings contain the contextual uniqueness and significance of social aspects studied (Bryman, 2008, p. 378). Therefore, the transferability of this research study will be in context of the provision of e-Government services at the local level. However, the identified factors in this research could be applied in other contexts using the quantitative approach for generalisation.

- Dependability

Bryman (2008, p. 378) argued that to establish the merit of a study, the researcher has to adopt an auditing approach. This means that the researcher has to ensure that all stages of the research process are recorded fully. This includes information such as problem formulation, selection of research participants, fieldwork notes, interview transcripts, data analysis decision, etc. (Bryman, 2008, p. 378). This researcher secured all required information and some related information submitted to the department as part of supervisory meeting reports that contained information about all journeys and decisions made during the PhD programme. The transcripts and interview recordings are kept in password-protected hard drives and will be kept for five years.

- Confirmability

Confirmability is about demonstrating that the researcher maintains objectivity through the research process (Bryman, 2008, p. 378) to ensure that objectivity has been maintained and that the researcher has followed the interview script instructions that were also approved by the department. It contains the stage and type of questions to be asked, avoiding any personal perception impacting the process of data collection. The themes were fully derived from the interview scripts and this researcher did not include his biases about e-

Government. However, full objectivity is not possible, especially if a researcher conducts a qualitative study.

- Authenticity

The four criteria of fairness, ontological authenticity, educative authenticity and catalytic authenticity were named as the elements that should be considered for measuring the authenticity of a research study (Bryman, 2008, p. 379). The present research includes all people who participated in this study from different departments. Therefore, the fairness of the research findings presentation has been maintained. In terms of ontological authenticity, this research study helps managers and members of the decision-making team gain better understanding of the different concerns of Sheffield City Council staff; this could improve the decision-making process of the city council. This research study can certainly provide the management team with an understanding of the different perspectives on decision making. Therefore, this study fulfils the criterion of educative authenticity. In terms of catalytic authenticity, all interviewees acknowledged the importance of this subject and they stated that they were willing to improve their situation. However, the present study findings need to be presented to the Sheffield City Council to determine how the management team reacts to the findings and improves its environment.

3.9 Chapter Summary

So far, the research philosophy, research methodology, research approach, research method and research design have been described in general, followed by justification of the selection of specific techniques. This chapter has described the research design, which has been adapted to achieve theory building, reporting, and answering the research question. A

case study research design was formulated. The purpose of this research includes identifying the factors considered by public sector managers at the moment of post-implementation decision making and also describing each factor and providing suggestions on how these elements can be approached by managers to make better decisions. The research design includes eight stages. A short description of each stage is provided below:

- Stage 1: Define a primary research question. The identification of the primary research question was a continuous process of reading the literature and refining research questions and objectives. This action was reflected in Chapter 1.

- Stage 2: Literature review. The main aim was generating sufficient theoretical background on the research subject by reviewing previous IS, post-implementation, e-Government, and decision-making. The literature review provided benefits and advantages to this researcher such as identifying gaps and extracting enough knowledge about the area of study to formulate interview questions. Pickard (2007) raised a point about selecting the right keywords during a literature search. She hinted that the right key words would prevent the collection of useless information and unnecessary repetition. For the purpose of this study, the key words, which were used during the primary investigation within the accessible resources, were ‘e-Government development and implementation’, ‘post-implementation stage’ and ‘decision making’. In addition, different search engines, for example, Sheffield University Library eResources, Google Scholar, ScienceDirect, Web of Knowledge and JSTOR were used to extract information for this study.

- Stage 3: This stage involves selecting an appropriate research methodology, approach and technique for collecting and analysing information to determine a response to the research questions and objectives and also to provide a theoretical grounding for establishing a new theory. Therefore, the selection of the interpretivist philosophy and a qualitative approach were identified as appropriate. In addition, a single case study was chosen for this research—the Sheffield City Council. The interview script along with a decision-making map applied to data collection and thematic analysis approach were selected to analyse and report the research findings. NVivo software was chosen as a tool for conducting coding.

- Stage 4: This stage refers to conducting data collection at a case study site, in this case the Sheffield City Council. As a result of this process, 17 open-ended, semi-structured interviews were completed.

- Stage 5: This stage is allocated for analysing the collected data through application of a thematic analysis approach and using NVivo software.

- Stages 6, 7: This stage is about writing up the research findings and a discussion chapter.

- Stage 8: This stage is for writing a concluding chapter.

4. Findings

The review of e-Government literature in Chapter 2 provided an understanding that there remains a need to further investigating e-Government phenomena when the elements or factors influential in public sector managers decision-making are a matter of concern. This thesis aims to create a holistic framework indicating key factors, that are influential and shape public sector administrators decision-making in post-implementation development of e-Government projects. Undoubtedly, the context of decision-making, advantages and disadvantages of selecting each option that each decision-maker envisages that during decision-making process will determine a final decision that are going to be made. The contribution of this thesis will be identifying the categories or themes that could shape perception and opinion of public sector administrators to provide new e-Government services. Identifying key categories could determine what could lead public sector managers to approve or decline an e-Government procurement project. This section of the thesis is devoted to presenting the findings in the form of themes that emerged from the process of thematic analysis.

The aim of this chapter is to present the themes and concept map that emerge from collected data (i.e. 17 interviews with public sector administrators in Sheffield City Council). The first two sub-sections 4.1 and 4.2 are the exposition of the research context. Since this study is a single case study, these sub-sections describe and explain the evolution and processes of e-Government development and implementation in the City Council. Therefore, the explanation of e-Government development and implementation in Sheffield

City Council helps to understand the status of e-Government development and implementation in the selected case study. Moreover, the stages of decision-making in the City Council could help to better understand what stages will be taken in place in the council to provide new e-Government services. Therefore, section 4.1 and 4.2 provide the knowledge required for understanding the context in which the findings of this study are based on.

The main findings are presented in section 4.3. This section is divided and presented in four main sub-sections of organisational management factors, financial factors, technological factors and government policies factors. Thematic analysis techniques have been applied to extract the identified factors. This part, which includes the main body of the research findings and form the main outcome of this research study, is the factors that need to be considered and properly addressed in decision-making processes for providing new e-Government services. Table 12 presents the order of presenting the research findings.

Table 12: Arrangement of presenting research findings

Section	Description
Section 4.1	Setting the case: An evolution of e-Government development and implementation in Sheffield City Council
Section 4.2	Setting the case: Stages of e-Government decision-making in Sheffield City Council
Section 4.3	Influential factors at the time of e-Government post-implementation decision-making

4.1 Setting the case: An evolution of e-Government Development and Implementation in Sheffield City Council

The e-Government development and implementation in the council has been described by its staff as a movement towards the enhancement of the public sector organization, including cost saving, efficiency and effectiveness for the organisation (e.g. ICT decision maker). In addition, it was expected that this movement could provide a possibility of improving services for the use and benefit of constituents (e.g. Strategic decision maker 1) that are considered as one of many benefactors of the council's journey toward IT advance. Three phases of e-Government development and implementation in the local city council, based on informants' perspectives, were identified in the collected data. According to collected data, these phases of e-Government improvement were named as follows: the establishment of an online presence, the provision of transactional presence and multi-media presence. Continuing in this section, each phase is described in detail.

4.1.1 Phase One: The Establishment of an Online Presence

Extracted from analysis of interviews, the first move by local government was to establish their website and provide access to many services online, and this action was first formulated through the establishment of a series of webpages that mainly includes information by each department in the local city council in early 2000. In addition, the web-pages had a different layout and structure .Moreover, the attempt to publish information online was to enable customers to access information online without a need of physical presence in the council building.

> ‘We have not got website at all , when I first started in the council. The first thing was obviously with the information. So people go online and find out things without having to come into the town hall.’ (Business and IT enhancement decision maker)

> ‘[…] is back in the late 20th century, 2000. The council added [the webpage]. It was not obviously the content management system. So it was a just a vague number of webpages . Because it was in the early days and they never matched each other at all. So you could click on one page to another and navigation completely changed and everything was completely changed in that early stage .’ (IS/IT implementation administrator)

Provision of information is among the most widely offered services by the local city council and this journey has been accompanied by constantly maintaining and updating the website.

> ‘[…] information provision is another massive sort of area, sort of you know, that the web offers. So, a big portion of what we’ve done is as well, reorganizing and restructuring the web specific to the needs of the contract and information that customers need.’ (IT and operational development administrator)

According to one of the informants, the council adopted its first content management system between 2002 and 2003 (i.e. IS/IT implementation administrator). This is considered the starting point to provide standard design in the web and configure the web functionalities.

Many web-pages were created during the process of going online. Thousands of web-pages that ‘were very team-focused rather than a service-focused’ existed at the time and 600 web-editors were responsible for updating the web contents. However, as a result of a series of initiatives within the council, the web-pages and the number of web-editors were regulated. In addition, the council initiated a new programme to improve the website

around four years ago and consequently procured a new type of content management system (ICT decision maker).

Apart from the establishment of an online presence by the council, one of the most important aspects of e-Government development and implementation was the use of these services by citizens. However, the use of online services depends on citizens' willingness to access governmental services online. Citizens did not initially accept that and did not adopt the new initiative of the council. Nonetheless, this situation later changed and citizens became more comfortable engaging in an electronic way of service delivery.

> 'So it was probably ten years ago when e-Government first thought about making as many services online. And, I think where we are now. Ten years ago, quite a lot of public would not be familiar with IT and certainly not comfortable with engaging with government in an electronic way. They very much preferred to do that engagement by telephone or by coming in and visiting a government building in a face-to-face reception type of environment.' (ICT strategic decision maker)

Various reasons have been named as leading the council to establish and continue its internet presence. Reasons such as better management of human resources, reducing the operational cost and the council tendency to empower citizens to find information online were named as motivating factors for continuing presence on the internet (e.g. Service enhancement decision maker). In addition, the effect of central government programmes to publish information on the web was another point that was highlighted by informants. This is because the central government decision to provide information online had resulted in, and influenced, the council initiatives to make requested services accessible through their e-Government.

> ‘It was our IT teams who came along and said government requires us to deliver this’. You will therefore build on the website a page around dog fostering. I was remembering that they came and said: If we do not deliver the dog fostering page we would not get […] pounds.’ (Information and service development administrator 2)

According to the result of interview analysis, the outcome of *informational presence* is to disseminate information as much as possible for the benefit of the city council and its audiences as long as ‘[it] does not have issues with it [i.e. information] being freely available to public’ (Service enhancement decision maker). This phase includes publishing information (e.g. ICT and service enhancement decision maker), answering the frequently asked questions (e.g. Service enhancement decision maker) and responding to citizens’ needs through cross-linking and also communicating with citizens through social media channels (ICT strategic decision maker). Since the council promoted the use of self-service services, they tried to encourage their services departments to provide more information online (Service enhancement decision maker). The web was perceived as a channel for disseminating and publishing information online that emphasises the importance of the online presence phase.

> ‘There is a lot of information out there. Another good example is new moms which just they have a baby and they are looking to find a moms’ and babies club. The most popular website that moms use is one called ‘mom's now’. That is interesting because actually the council provides information about where social clubs are. So we had to recognize people are using the social networking link to the Internet to find information has not necessarily come in to us directly.’ (ICT strategic decision maker)

In addition, as the result of created capacity in an area of online social networking, the city council has used the opportunity to establish its presence in different social media networks. One of the informants said that:

> ‘I also maintain our Twitter account, our YouTube account, and our Flickr account, the latter we’ve kind of [...] but don’t use that much anymore. Twitter is very active.’ (ICT decision maker)

The quotation above indicates clearly that the city council is completely aware of the advantages of online networking tools. According to the interviewees statements, the social network websites can be used not only for publishing information but also for collecting citizens’ opinion and also establish two-sided communications (e.g. ICT strategic decision maker). Interviewees state directly that the use of social media networks can be used to achieve a greater understanding of citizens’ opinion. The city council is providing services to more than 550,000 citizens; an intricate interaction between citizens and public sector administrators. One of the channels, that can be used to alleviate this situation, is social media networking. The social media networks allow the possibility of collecting, understanding and responding the citizens’ viewpoint much more easily than the conventional communication methods.

> ‘Social media are becoming more common in terms of the kind of things that used to interact with parents and young people to make sure that there is a holistic approach.’ (Service enhancement decision maker)

> ‘There is a recognition also that […] a lot of engagement that the public make about the public services is actually direct with the council and with their system. What I mean by that, is that you use social network to make comments about the councils. So, we are aware of that, but what we need to do, and we are doing, is trying to identify which are these social networks websites […] citizens may use […] to raise the point around issues they have got.’ (ICT strategic decision maker)

This potential capacity has provided an opportunity of taking one-step toward digital democracy. However, the concept of digital democracy entails too many aspects, which

were not mentioned by interviewees in this research project. However, the empirical analysis of collected data shows that the public sector administrator perceives the possibility of citizens' participation in local council decision-making. That is one dimension of digital democracy through applying the potential of social website networks.

> 'So if someone said why are the swimming pools in Sheffield not open at 6 o'clock […] that is a legitimate question. What will happen is that someone who is responsible for the city council for running swimming pools will ask the question: […] why do I need to open it after 6 o'clock ? […] I have got one person here or thousands of people? Or somebody tweeted who thinks the swimming pool […] should be open after 6 pm and you have got one thousand followers who say I do, then the councillors should do something about it and more importantly the office who is responsible would be actually more inclined to do something about it. because s/he could cite that there were one thousand tweets confirming that original tweet. […] it is showing the evolution that is how […]social networking is now becoming more powerful in decision-making. Because more people now are aware first of all that has someone has raised the point and actually have jumped on the bandwagon. And it has started by giving the command as well, where previously they may have thought about but never said anything about it.'(ICT strategic decision maker)

It must be mentioned that based on comments made by interviewees, although the main agenda of the local city council was to present in virtual space, which has been truly depicted in the early models of e-Government implementation, the establishment of an online presence by the local city council has been moved to more advanced stages. Nevertheless, it does not mean that the phase has stopped, rather , it has moved to become more effective and efficient in the presentation of the local city council's information in its web-portal and provides more up-to-date information. This is because a public sector organisation is one of the most information-intensive institutions that needs to continuously publish and disseminate information. Nonetheless, according to the informants, the main

objective was shifted toward how information could be presented through a web-portal, which standards are needed to be follow for publishing information and monitoring the number of pages which are allocated to address different issues.

> ‘We went through the pages and rationalized those as well and we educated people [i.e. web-editors] on how to name and structure their web pages, write their web pages. So, the website has not grown a number of pages because I have been quite strict on housekeeping […].’(ICT decision maker)

Therefore, this phase includes the distribution and dissemination of information for the audiences of the local city council through the use of a web-portal and web 2.0 channels, such as Facebook and Twitter. However, publishing information was previously the most important goal of the council, but the situation has changed and providing more transactional services is the order of council.

> ‘So things [i.e. informative contents] were definitely improved and now we’re doing more transactional things which are less amount of content.’(ICT decision maker)

Further information about provision of transactional services is provided in section 4.1.2 .

4.1.2 Phase Two: The Provision of a Transactional Presence

The second identified phase of e-Government development and implementation was the provision of transactional services. It has been observed that the primary focus of a local council was to establish their presence in virtual space and to publish information for the use of their stakeholders. This claim can be verified by the amount of effort put into the first phase of e-Government development and implementation. The local city council recruited a larger number of web-editors to publish its information online. After gaining confidence that the informative website has met the primary requirements of e-Government

development and implementation, the public sector administrator proceeded with contents that are more transactional as a next step.

> 'Well, I think that there's been a, I would guess from my view, I have seen a greater focus and a greater corporative move towards sort of online, sort of e-services.' (IT and operational development administrator)

Furthermore, the movement towards providing contents that are more transactional does not mean that the council did not consider or even initiate providing its transactional contents in the early journey of e-Government development and implementation (i.e. phase one). However, the complexities of transactional services were much simpler than those accessible today. Although each council department has developed and accomplished different levels of transactional services, the focus was to have more services that adopt full-transactional capability.

> 'In council services, different services are in different stages in that development, so some are able to perform full transaction without any transaction with a local government officer, but in some there is a person that need to fill a form in and then a local officer will contact them. So there are a different stages of development and that is obviously our desire where possible to be able to have full transactional capability. So the constituent does not have to speak to anybody , more technically, can get a service as required any time of the day giving them the full transactional services.' (ICT strategic decision maker)

The transactional contents of the local council include different levels of service complexity, which means that the level of transactional activities vary from submitting their enquiries online to actions such as requesting information or fixing street lights, to paying their council tax bill online. From some informants' perspectives the way of conducting and completing business through e-mail was also perceived as a form of transactional activity which can be considered as the most simplest form of transactional activity. However, there

has been some efforts in the council to frame the simplest forms of transactional activity into a more structured way of communication such as a creation of online forms.

> ‘We have removed e-mail contact information, things like that. You can still find it but we’re trying to push people towards the online form option as sort of the primary routine because for us, it’s the most efficient. So that’s sort of the move we have had here.’ (IT and operational development administrator)

Nonetheless, according to some other interviewees of this research study, the premium transactional services are those processes that contain no human intervention and the process is fully automated (e.g. ICT strategic decision maker). This viewpoint has shed light on quite an interesting perspective about the formation of transactional services. One example of a fully automated transactional service that was mentioned by interviewees was: an online payment system (e.g. ICT implementation administrator 2) and report road maintenance (e.g. Business and IT strategy decision maker).

> ‘We also got ways you can make payments at the moment. You can any make point so if you have got an invoice, like council tax and things like that .You actually get a proper invoice. You can go online and you can pay those, which you could not do before. Obviously what we are looking to do is, and it should be fairly soon, where you will be out to do actually other online payments for small things. What we do not do at the moment as well, which we are looking to do, is to have a kind of booking system, which for me is quite important. So, if you want to book to come and see someone […], I do not know, it could be a golf course, it could be to book and see someone to come and organize a marriage or anything like that.’ (Business and IT enhancement decision maker)

It has been stated that each type of transactional content includes its own level of complexity that influence timing and the length of project.

> '[…] a whole range of factors would take place for that to actually happen and then that take quite a long time actually to do any major change and then you go and identify; have you got the resources to be able to do it and know the changes that we have been making to the website.' (Strategic decision maker 2)

According to what has been stated above, the government had quite a long journey to achieve what has been defined as transactional here and of course, it demands a lot of effort, which cannot be easily gained through a short period of investment in this area. Nonetheless, the analysis of interview data shows that transactional content exists, however, the complexities of transactional services are varied based on the level of automation applied for each service. From what has been said by interviewees, the focus of the local city council is now to develop and advance their transactional services. The interesting fact about transactional service is its dependence on existing informational content. There is almost a need for informational content to introduce and explain the way of using the transactional services. It is somehow impossible to use the transactional services without existing of informational contents.

> 'If you want to apply for [the name of service] permission, they go on [the name of service] home page, click 'how to apply', read some information. Then they click a link, which takes them to the [the name of service] portal website, […] and on there, they apply for [the name of service] permission.' (ICT and service enhancement decision maker)

The initiatives of the local city council administrators to accomplish phase one is an indication of understanding the relationship existing between phase one and phase two of e-Government development and implementation. Phase two, without any doubt, is dependent on phase one, which pinpoints the importance of providing an acceptable level of development and advancement at phase one. Therefore, phase one is more about providing an infrastructure that could host the information and future transactional services of the

council. It addresses the need for ensuring that the current technological infrastructure has the capability to support the current and future strategies of the Council.

> ‘We have now completed phase one of that, which was to actually to put it in a completely new web-platform. Phase 2 is about making sure that we deliver, if you like in our channel switching strategy. Interesting move. More people to do self-service through our online services, to access our services more and more through our online services that require mediation from people within the council, make them do that whole transaction online; we have a strategy in place.’ (Business and IT strategy decision maker)

> ‘[…] we implemented the first phase of that and part of that was putting a new content management system to give us the functionality to be able to do […] a lot more online […] but we have done the first phase of it and we are working through the scope of the next phase of work. […] That work will command some to degree what we deliver that work, how transformational we can be.’ (ICT implementation administrator 1)

4.1.3 Phase Three: Multi-media Presences

It shows from analysis of empirical data that the local council considered other available media, especially mobile technology, to provide access to its e-Government services and conduct their daily tasks. The wide use and the daily enhancement of mobile-technology led public sector administrators to consider this technological advance as a possible channel for communication.

> ‘There are still many of our citizens who are excluded digitally and we need to work out how we can make them more included, but at the same time providing services to them in a way that they can get access too. On top of that, probably in the last 12 months toward 18 months, the explosion of mobile technology has significantly driven a different agenda in a way that government engages with the public.’ (ICT strategic decision maker)

Although the initial movement of e-Government was to provide access to government services though a personal computer, the public sector managers had considered the possibility of open access to governmental services through any device. This kind of approach could be considered taking one-step forward with the concept of digital democracy. Nonetheless, the technological limitation within the city council is still slowing down this movement to become a reality.

> 'Some things also do not work with our things, so […] you probably heard of bringing, your own device. So, a lot of organizations are looking at that. And we are looking at how people can use an iPad and this stuff. The problem is how those work with the current technologies that we have got and some of our things won't work with some of those devices.' (Business and IT enhancement decision maker)

Therefore, it could be concluded that mobile-technology is one of medium that the local city council relied on to facilitate access to its e-Government services. However, the decision to procure new services through a new medium depends on different criteria, such as the level of technological capability and also the organizational capacity to adopt a change. Nonetheless, the city council somehow held back its mobile project because of various information and technological uncertainties.

> 'From the technological point of view, we are obviously keen to move to different channels. We are starting to look at how we would use mobiles because the obvious question is, do we just wait until browsers support our website, I think? Or do we build an application or do we just provide online navigation when you [silence]. So, customer services are having those discussions at the moment, I think we are kind of going down the mobile navigation route.' (ICT decision maker)

However, the existing uncertainties about mobile technology did not stop the council using this advance for its internal operations and also conducting business with local city council contractors. The use of mobile technology provides an opportunity of providing real-time

information and at the same time the staff or contractors of the Council could retrieve and update information real-time.

> '[…] we have approximately 100 PDAs in use, where they are being used by cleaners actually, clean the building actually, told basically but it had been what it cleaned. […] I think it was such a benefit because again the benefits of investment in the mobile side of the system as well. It is (a) we get information in real time fact, but (b) is we do not need the officer in the office as much. The officer just spent more time out in the field, that is you, in the work. So you got (a) reduction of carbon footprint, because officer does not use much office space, and (b) they can actually do more inspections , more kind of service and asset management.' (IT and operations administrator)

4.1.4 Section Summary

Based on analysis of collected data, e-Government development and implementation from, the city council administrators' perspective, was an incremental process established on three dimensions: a management tendency to change the bricks and mortar processes, a scale of change which requires providing a new technological advance, and time. It is clear that the local council was constantly active in implementing a new IT-based change. However, IT improvement was dependent on how much government was likely to procure new kind of changes and their tolerance in accepting the risks and challenges of this movement.

Another factor influencing e-Government implementation was the scale of the required technological changes. This mean local government was more likely to implement a project, which included a reduced magnitude of change; that can be the amount of organisational and operational changes required to plan and implement a project. The statements of interviewees clearly show that starting with the small-scale project is more likely to be proceeded with because it does not demand too many changes in their

organisation. This is because of a large scale of change includes more rigorous governance that need to be assessed and evaluated through different bodies in the council that procedure might cause a stoppage or slow the provision of e-services. For example, when the concept of offering government services through mobile devices were discussed with one of the interviewees , the informant stated that they are aware of the potentials of offering government services through mobile phone but they have currently decided to wait and assess the situation in more detail (ICT decision maker). Therefore, it can be presumed that the phase of establishing an online presence is considered the safest step towards the idea of e-Government development and implementation.

Another factor is the element of time. The informants' statements indicate that the tendency for developing more advanced online services and the scale of change, which are demanded to provide its services, have been advanced through the element of time. For example, at the early time of providing online services, the council only relied on premature web-based technologies to offer its services. However, as the time passed, the management engaged to provide e-services, which have been more complicated, procure efficient and effective web-solutions, i.e. content management systems, and offer a series of transactional services that was not previously accessible.

One of the reasons that can be named, which resulted in e-Government development for many departments in the council now to be at the stage of informational presence, is that the government had to update its web technology (i.e. Content Management System), a web technology that has a capacity to provide the possibility of offering better technological services. What has been observed as the result of analysing empirical data is that the council noticed that their previous content management system did not support its e-

Government strategy (e.g. ICT decision maker and Strategic decision maker 2). Therefore, it was decided by the council to replace their system with a new Content Management System.

Nonetheless, throughout that time, the council adopted more changes for its e-Government services on a greater scale of change and IT advance. From the collected data, it is clear that local council administrators were committed to improving their web-based services and this improvement initiative continues non-stop.

> 'The only point that I would make is that we are absolutely committed to this and we want to improve and implement e-Government.' (Strategic decision maker 1)

To summarise the findings of this section, Xe et al. (2007) model, which is a developed version of DTI model and Andersen and Henriksen model (2006), which emphasises on the importance of capturing the future use of IT applications by external users when they conduct core activities with government are selected to briefly discuss with the developed model of this research study because of their relevance. Xu et al (2007) model consists of two main dimensions that are business benefit and the extent of organisational change and technology sophistication. Andersen and Henriksen's (2006) model comprise of two main perspectives of activity centric applications and customer centric. Figure 15 illustrates three phases of e-Government development and implementation in the studied case, which developed as the result of analysing collected empirical data. It consists of two dimensions of tendency to change the old processes and scale of change demanded by new development plan. The created model has more similarities with Xu et al (2007) model in terms of model perspectives.

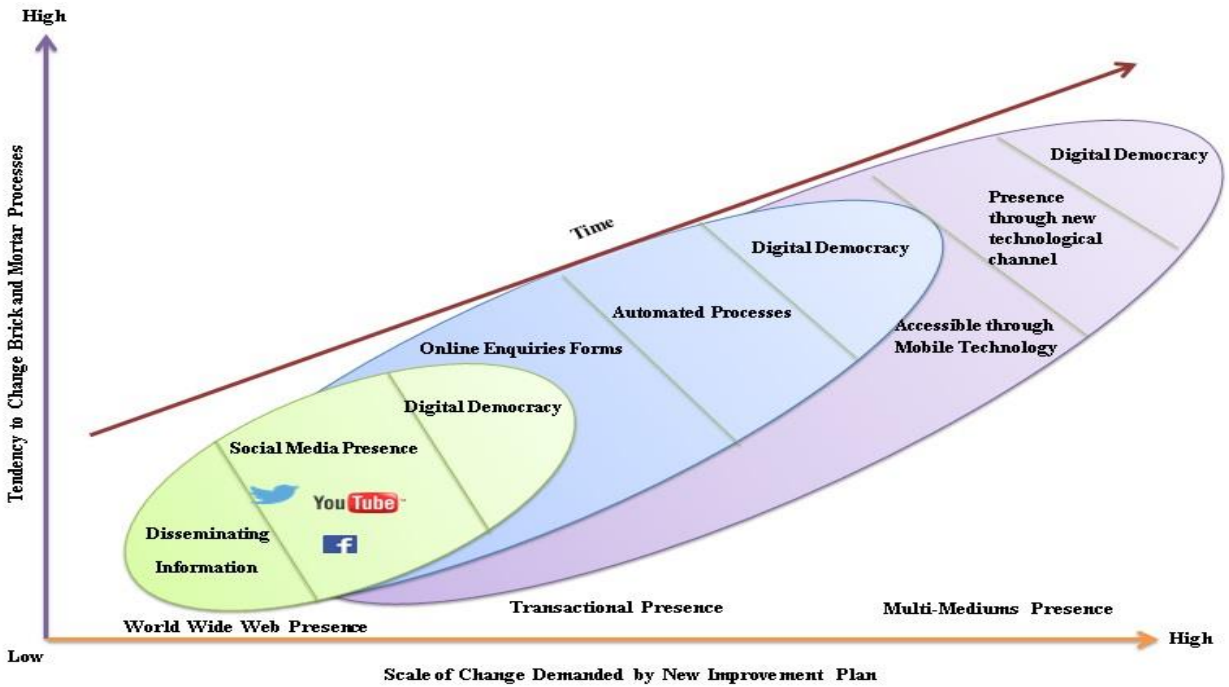

Figure 15: Phases of Evolution of e-Government at the Sheffield City Council

Xu et al (2007) referred to business benefit and we have tendency to change the old processes that tendency to change of services will be involved the consideration of business benefits. Also, Xu et al (2007) refers to the extent of organisational change and technology sophistication that is exactly the same in our model.

Andersen and Henriksen's (2006) model includes four phases (i.e. cultivation, extension, maturity and revolution) and Xu et al. (2007) model comprises of five stages (i.e. e-mail, website, e-commerce, e-business and transformed organisation). Our created model has 3 main phases of the establishment of an online presence, the provision of a transactional presence and multi-media presence. Andersen and Henriksen's (2006) stages are more customer oriented that means it includes personalisation of web-interface for customer processes. Xu et al. (2007) model has technological viewpoint including internal and external forces. Xu et al. (2007) named elements such as awareness, understanding of technology, competition, peer pressure and benchmarking and business benefit as elements push the organisation to progress in DTI model. However, lack of resources, lack of vision and lack of external pressure are the elements that make progress from e-commerce (3rd stage) to transformed organisations (5th stage) difficult. What has been presented in our model begins with the stage 2 of Xu et al. (2007) model and progressed through the provision of transactional services and then multi-media presence. Our model have common stage's characteristics in terms of underlying perspective that shares features with stages of Xu et al. (2007) and Andersen and Henriksen's (2006) model, but what is more focused in our study is technology implication in the organisation and the potential impact of technology in organisation's operation.

The last point to consider in regard to our model and selected models is the possibility of progression and move from one stage to another. Andersen and Henriksen's (2006) diagram shows the gradual development from phase one (i.e. cultivation) to phase four (i.e. revolution). Xu et al. (2007) model also includes a gradual development and add to the complexities of services. However, Xu et al. (2007) considers the possibility of moving from phase two (i.e. website) to any upward stages. What has been discovered in this research study is a gradual development of e-Government stages. However, what makes our model slightly different from the other models is that once the basic online presence established the progress toward other stages could take in place, nonetheless, the progressed stage will be still enhanced and improved during the time. An example of this case is the replacement of old content management system with a new one in the studied case.

What has to be emphasized concerning previous e-Government development models is that those models were mostly established based on speculations and suspicions (i.e. normative). However, the models were later tested and modified based on empirical study. The new model came to reality by reviewing a perspective of implementers of e-Government, from those who have had a close interaction with this phenomenon and observed the growth of e-Government in their city council and take part in development of e-Government in their council.

What has been clear from the analysis of interviews is that there is a link between the phases of e-Government development and implementation and two vectors of the scale of change and the strength of the tendency to change old processes. Curiously, these elements are somehow being progressed in time; that leads to emphases on different forms of e-

Government development and implementation. However, without a doubt, the time element has helped to advance current services and add to the complexities of e-Government.

4.2 Setting the Case: Stages of e-Government Decision-making in Sheffield City Council

The data analysis identified, two processes of decision-making to provide e-Government services. The first process of decision-making belongs to the provision of informational content that has been identified earlier in section 4.1.1. This process includes three stages. The second model of e-Government decision-making is for providing transactional content. This model comprises more stages and has more rigorous assessments and evaluations of the situation. One of the reasons for this difference could be the scale of changes demanded to provide transactional services that issue has been previously explained and addressed in Section 4.1.4. More information in regard to processes of e-Government decision-making is provided in section 4.2.1 and 4.2.2.

4.2.1 Processes for Providing Informational Contents

The interviewees of this research project have described the outcome of the online presence as publishing a piece of information through different media based on the audiences of the requested information (Service enhancement decision maker). Further information about the provision of informational content by the local city council is provided in Sections 4.2.1.1, 4.2.1.2 and 4.2.1.3. In total, three stages have been identified that contain a series of evaluations of the request to publish information that consequently leads to the decision to provide or not provide the demanded information. These stages are named as initiating a

request to publish information, development and amendment of the request and closure of the request.

4.2.1.1 Initiate a Request to Publish Information

It appears from the collected data that the initiation of this stage is based on demands or requests submitted to the government department to grant access to information or to provide further information to answer questions, which has been asking frequently, by different stakeholders. One interviewee said:

> ‘I think there are some of the things that I would consider when I am initiating or people come to me and say this. Something that we keep receiving questions, why we are not doing something more about it […] ,if you keep answering same information to different people, you just do the same job over and over again.’ (Service enhancement decision maker)

Another interviewee stated that:

> ‘You know everyone in the office basically might say us, did you know people are asking quite a lot of questions about this area of the service? People mentioned earlier, people receiving phone calls from the public again. They notice something, sometimes whether they might say that it is quite hard to find this, can we have a look at that how we can change or improve this area of the services. […] They [central government] have regular updates to what they want to do, what they [central government] think we should be doing on our website. How we can make it easier for people to use it . So they have quite, a lot of useful suggestions as to what we do not have to do, […] because they kind of, they do know what they are talking about.’ (ICT and service enhancement decision maker)

There are different stakeholders that cause this stage to begin. These stakeholders were grouped into two categories: internal and external stakeholders. Internal stakeholders are city council member of the city council that raise the request for access to information

(Service enhancement decision maker) while external stakeholders are members of the public, central and regional governments and the media (ICT decision maker).

When the department has received the request to publish information, the initiated proposal contains information such as: What type of information is requested ?; Who has raised this request?; Who in the city council knows the answer to this question ? What is the current timeline to respond to the inquiry? (Service enhancement decision maker) The inquiry is then passed to a committee of the local city council to be further evaluated and discussed. This phase is called as the development and amendment of request. Section 4.2.1.2 contains information in regard to this stage.

4.2.1.2 Development and Amendment of Request

At the second stage, the result of empirical data analysis leads to identifying two evaluation processes for the initiated proposal. These two stages are: an initial evaluation of the suggested proposal and the next process is the evaluation of risk associated with that proposal. When the proposal to publish information is initiated and is passed into meeting committee to decide on publishing information, the committee as the first point of the evaluation processes would look at the kind of information previously published before and does the published information address the current enquiry? If the answer is 'yes', is this information up-to-date ?

> 'You always have to go back and check the answer because it might have changed since the last time you did it. So the time to keep checking the information was actually if you published it. You can say this will be an update. This is out at this day and this will be updated at this date or between those days. The information's actually correct at that point in time, specially in freedom of information when you publish something that you will say you are going to publish at certain date. You don't have to keep publishing it for different people at different times. You just

> need to say that is where the information is and it will be updated at this and if you are going to publish it another time, you make people aware that, sort of, it is based on what you are going to say.' (Service enhancement decision maker)

If the answer to the two questions mentioned above- is 'Yes', the city council will tend to publish the information again. So, it would enter into the last stage of decision-making to publish the information. However, if the answer is going to be 'No', then the decision makers will start evaluating what kind of risk is associated with the requested information. The kind of information, which is requested, will be assessed and will be categorized into three levels of associated risk: (i) low, (ii) medium and (iii) high risk. Then the committee will discuss the possible approaches to mitigate the identified risk. This stage is of considerable importance in the cycle of decision-making since the failure to respond by risk mitigation can be detrimental to the reputation of the city council.

> 'There is not much deviation in how we can do things. You will take something to table and say, […], this is a problem and then these would be elements you would think about and solve the problem. But actually if you are aware of these problems in the first place, you would take those with the initial issue and say as far as I can see this is the issue. These are the issues we need to discuss then and come out with the high, low, medium risk factor and then decide, based on the high, low, medium risk. Whether we go forward or not with that particular project and how we do it, I suppose certainly for me, whether it is reputational risk or not, I would say I would come with one, say I personally think it is a reputational risk to do this, but having had the conversation with a wider colleagues, because it is not only my decision, they may feel differently because of the things that their influenced by, like the councillor may come back and say we need to get these published ASAP. It just has to be this way for the organisation taking account of the individual requirement, but sometimes the organisational requirement overrides the individual. Again, it is how much risk are we willing to take on that individual in terms of doing it a different way for that individual and changing the system after that. So if this is a problem to be solved, it can come from anywhere, but these are the things that we would then base our decision-making on and depending on high, low

> medium risk cost another implication is how the outcome would be achieved.' (Service enhancement decision maker)

If at that time, no solution is recommended or identified to reduce the high level of risk, the decision making process will end with the rejection of the proposal or postpone the proposal to buy more time and further study the situation. Nonetheless, if the demanded information is to be publishable, the process of decision-making moves into developing and publishing the content. These activities are categorised under the title of the closure of a request. The information about this stage can be found in Section 4.2.1.3.

4.2.1.3 Closure of Request

The stage of closure of a request for information includes two main stages: development and audit of information and publishing that information. The information content may be developed or provided by members of the department to which the inquiry is related or the head of the section may provide it. Also, this information will be later edited and will be prepared to be put online. This action is said to be complemented by web-editors.

> 'A lot of time, my manager […], .he writes a lot content to the website. He will pass it to me as a web author and I will put it in the most polite way, properly change a title, bit of language. So make it a bit more you know playing English and make it more easier to read. I will then upload it. I will then type it in content management system, you know, add graphics. So I will do that submit it for approval then goes to web manager, who is [the name of person], and [the name of person] will check it for basic things like spelling mistakes or hyperlink is not working, making sure it is a very usable web page. He will click approve, and then it goes live on to the website that is the basic process behind that.' (ICT and service enhancement decision maker)

The stage of closure of the request for publishing information is usually conducted in the local city council based on a consideration of who are the receivers of this information and

then the information is published through the most appropriate media. These online media can be the local city council web portal, intranet and e-mail lists.

> ‘We have three communication channels. If we are going to communicate with certain people that is how we choose how we communicate. If it is going to be all members, all people, so we looked at that as being the public. We put it on the web. If it is only to internal people, we will put that on the intranet. If it is just [the name of community], we will put that on the information centre. We may link each one. However, we would put it in the most in a primarily place that most people who need to see it , would see it and then link it to another one as appropriate.’ (Service enhancement decision maker)

Nonetheless, when the local city council attempts to publish information through the web portal, after the content of information has been prepared, the web-editors become responsible for publishing its content online. To be able to publish information, web-editors have to go through a series of web-standards that have been published and have been prepared by the web-manager team to prevent any glitch in publishing the information and the rejection of web pages through the use of adopted system. The web-standards contain a series of regulations such as how to edit the web page and who has to edit the page.

> ‘So we rationalise the process. We picked the most people, that write most often and know the standards the best, and we kind of assigned around 15 people per portfolio, per department and those people lead on the stuff. They know best but they worked together to act for our contingency for one another, for the whole department. So if there is a team without an editor, then the editing group would pick that work up. But if the editor’s team wanted something doing then chances are that the editor would do that work. So there is a specialism, but there was also a cover. So that’s the governance model we have at the moment. Any editor can edit any page. All pages are free to be done by any editor, but we ask that if someone is editing a page for the first time, that someone else uses, they at least tell that person, tell them why they’re doing it… We will only replace [web editors], we will not add to the numbers, we don’t want to get back to where we were. So – and then in that group of 15, there will be one person that has kind of evolved, there role has evolved because all those people will be doing a different day job.[…] We found that one or two roles were involved were they take

> the lead on the web. So I called them web champions and I will discuss with them kind of improvements to their services sections first […].' (ICT decision maker)

After the content has been prepared to be put online, the web page will be passed to the web-manager or web-champions for further evaluation and final approval. If the content of the web page is, be acceptable, the web-manager will approve it for publication online. However, if its content is not acceptable it will be sent back to the web-editors for further work and modification until it gets to the level of acceptance.

4.2.2 Processes for Providing Transactional Contents

The result of analysing the interviewees' data led to defining five stages of decision-making that result in providing new transactional e-Government services. The identified stages are: initiate a proposal to develop a new service, identify the requirements of new service, evaluate the possible alternatives, confirm the selected alternative, and implement the solution. Each one of the identified stages is further discussed below.

4.2.2.1 Initiate a Proposal to Develop a New Service

Interviewees of this research project described the initiation of e-Government services based on needs submitted to the local city council to improve using different channels, internal stakeholders and external stakeholders of the local city council. According to interviewees' statements, the external stakeholders who lead the initiation of a new form of e-Government services are mainly central government and citizens.

According to interviewees' statement, the local city council is obliged to execute changes that are mandated by central government. The new requirements set by central government

influence the way that citizens have access to government's services. Therefore, the local city council has to make improvements based on standards set by central government. As a result, this is one way that development and improvement of e-Government services begin in the local city council.

> 'So if a central government department like DWP, stop offering face-to-face services and moving everything to electronic service delivery, then what impact does that have on local people and do we need to do something differently to respond to that change?' (Strategic decision maker 2)

Another informant stated that:

> 'We have mandatory changes. Yes, we have decisions made by central government that have an impact on us. So, for example the social fund decision is a central government decision that transfers from central government to local government.' (Business process improvement administrator)

Therefore, it can be concluded that central government is one of the key, influential external stakeholders, and any form of change that they demand, the city council has a legal obligation to implement, to shows that they are implementing the improvement recommended by central government and gain the benefits associated with the implementation of the new technological advance. The second external stakeholder of the local city council, who have an impact on the initiation of any e-Government proposal, is citizens. However, the influence of citizens may not be stronger than central government. The citizens' message to the city council for implementing a new e-Government service has been collected through different media such as an online survey designed for gathering information about the opinion of citizens who have visited the local city council website. This would be understood by reviewing feedback submitted online or even written feedbacks send to public sector administrators. For example, Strategic decision maker 2

commented that she often receives a letter from a member of public that request to have access to a series of government services online.

> ‘We have got, tell us what you think, which invite compliments and suggestions for service delivery. So we get them through a range of different routes. We got feedback by the website, a web manager. We have a survey on there as well. That we also receive suggestions through the customer service centre through the Ibrrace (i.e. a survey system), written feedback. So we have got processes in place.’ (Strategic decision maker 2)

> ‘We often get ideas for improvement directly from customers. So, a customer will say: I want to do this or can I do that? Something like that or they can use it in a way that we did not intend it to be used.’ (Strategic decision maker 1)

Another informant referred to the complaints that they receive from customers could lead to identifying the requirements for a new system.

> ‘Through our staff, they will be dealing with customers and they will come up with suggestions. All the customers will complain and that can lead to developing a new [project].’ (Strategic decision maker 1)

Nonetheless, it appears from collected interview data that the local city council internal stakeholders who drive the initiation of e-Government services are: the leaders of the council, middle level managers, which are managers of service sections. The middle level managers often identify a series of improvements in their area to add efficiency and effectiveness of their operation. This can be directly started from middle level managers or they may receive opinions and suggestions from their front line managers that consequently result in filing a request to improve e-Government services.

> ‘I think the proposal wouldn’t necessarily be suggested by top management in terms of the web I think that they would be very much service led, so it’s only the services that really understand their processes and their needs and customers’ needs. They will be the ones that would probably drive improvements.’ (ICT decision maker)

Also, interviewees introduced another source of initiation of e-Government proposal, that is leaders of the city council. The council leaders' evaluation of the current nature of e-Government services may lead to the initiation of a proposal for improving those services. However, this action may describe or be perceived as a political move or a gesture by the leaders of the local city council, especially when it prepares itself for the local city council elections (ICT decision maker and ICT strategic decision maker). Since, these leaders can influence the initiation of new e-Government services. One of the informants has described the initiation of new e-Government project as following:

> 'About three or so years ago the then leader of the council told us we need to improve our website and told us to get a new one.' (ICT decision maker)

A new proposal to improve e-Government services is usually started and continued with a perspective of improving an organisation's operation, delivering a better service and engaging with customers in a more cost-effective, effective and efficient manner.

> 'It is all about […] a cheaper channel which is a key initiative. It also increases access and improves access and it delivers better service for customers.' (Strategic decision maker 1)

Therefore, each-above mentioned party, which takes a role in initiating a proposal, submits their enquiry as a form of a request for change and the business case will be generated consequently. This is related to the next level of decision-making that is explained in section 4.2.2.2.

4.2.2.2 Identify Requirements of New Service

This stage begins immediately after a proposal to improve e-Government services is received by public sector administrators. The aim of this stage is to understand the current

operation of the service section, which was the reason for raising the improvement proposal, and to identify improvement criteria for further development and decision-making.

This approach helps the public sector administrators understand and identify how a change in the service can affect a customer journey (e.g. IT and operational development administrator), how the new change proposal can be aligned with customer perspectives and business perspectives (e.g. Business and IT strategy decision maker) and how the suggested proposal fits within the council corporate IT strategy? (e.g. Business process improvement administrator). This information is quite important because, without it, the public sector administrators will face difficulties in their decision-making.

Based on the scale of change associated with each request, the e-Government development and implementation journey will be defined. This issue can affect the number of key players who enrol in the decision-making process, the amount of information needing to be collected and the stages and complexities of the decision-making process.

> ‘It really does depend on the type of project. I mean, because of the nature of the projects that I do, they generally tends to be large change programme. So, both my projects are taken probably about a year from first identifying that there is an issue and probably needs to be resolved and coming out with the scope of project to actually doing a delivery. It can be a lot longer than that though. […] You know you can go through numerous decision-making boards to get approval to do something and you might not get backing the first time. […] I would say on average a year for the type of projects that are delivered. It could be longer, unlikely to be shorter.’ (ICT implementation administrator 1)

One of the activities completed in this section is to make sure that the change is aligned and is in favour of customers of the city council. According to interviewees, the information

about customer perspective is collected through different channels. Interviewees named the customer service section, client team and communication people within the council as the sources of information gathered about customer perspectives (Business process improvement administrator). Nonetheless, the information collected from the customers of the local city council is quite limited within the internal boundaries of a public sector organisation. Because, when interviewees were asked about how they collect information about customer perspectives, the interviewee refers to their member of staff. This process is somehow confined because of the wide-ranging operations of the city council and it is difficult to collect all people's opinions at once. Therefore, there is some limited access to citizens for collecting information and the process is mostly completed through discussion and consultation with the member of staff. Since the city council has a limited budget to complete its project and the time scale for delivering a project is very tight and short, the city council looks for ways to remedy this situation. The public sector administrators use their internal sources, which are the staff whom they have to establish communication with members of public because of their role as a first point of contact for responding to customer inquiries and requests.

> 'It is quite difficult from customer perspectives because we did not do any external sort of benchmarking, things like that, we did a bit of research but we did not go to any customers and we did not do any focus group. So that kind of thing because the time scale of the project did not allow, the budget of project did not allow it. So, […] we are using stakeholders such as customer services and client team and communication people in the council, as our focus group people in Sheffield and that is where we got our customer requirements and those kinds of workshops.' (Business process improvement administrator)

> ‘We often do use our staff as potential customers when we are doing project. Like I said, it is usually costly to do consultation. We do not always do consultation, but we found a lot of staff who work in this area really believe in their profession and what they are doing for their customers, and they think they know what a customer wants and needs by the amount of time they engage with them and that kind of thing. So, you know, when we talk about customer benefit and that kind of thing. [...] I think if we were commercial organisation we were doing much more customer consultation.’ (Business process improvement administrator)

Another form of information that is collected and will be used at this stage is to gather information about business processes. This is while informants emphasised on the importance of understanding customers’ journey.

> ‘We send them things which are based on the scope of our contract. So , there is governance their which is shaping our requirements. The customer journey, which is really a key one to us, but also there are also, sort of, business requirements as well […] . You know how we want to send information, when we send information, who to send information to, then how we get update back again. So, really they are key factors and the decision which we are taking about, and again the way we are doing that, was through, you know, being transparent in our requirements. It is quite difficult from customer perspectives because we did not do any external sort of benchmarking, things like that, we did a bit of research, but we did not go to any customers and we did not do any focus group.’ (Business process improvement administrator)

Nonetheless, the informants found it difficult to verify the requirements from the customer’s perspectives. To collect information and identify service requirements, the system analyst’s first action is to meet the managers and staff of the section. The system analyst aims to achieve understanding of how the service group is conducting their daily operation and map out their daily operational performance.

> ‘ What sometimes happens is there are two ways, basically, as an organisation. We have a service called ‘transformation’ and they will actually go to a service and actually look at how they currently do their

> processes and look at how they could be improved and that does not necessarily mean technology. It could be , you know, just a way that someone actually does something, and if it is technology, I would say that will come over to us and another way is that organisation will get in touch with me and say: we are thinking of doing this, can we have a word with you and I go and see them and I map out what technology they use and how they are doing it now and look at, how by drawing that pictures, we call them BIMs (Business Interaction Models) and that gives us an overall picture of how they work. We obviously put all the problems down there, you know, any volume matrix and all that kind of thing and then from that we can see if there is something that we can do to either make that better or even if we just upgrade an IT system. It gives you a better overview by doing that. So that is, use the initial engagement.' (Business and IT enhancement decision maker)

According to this interviewee, different IS methodologies apply within the council. Nonetheless Process-mapping, AGILE, UML and BPMN methodologies are some of many techniques used by a systems analyst team to elicit the required information (Business process improvement administrator). Therefore, as mentioned earlier, the systems analyst team attempts to collect all information required to understand the business processes of the service section. This action contains an understanding of business goals, objectives and functional requirements of the service. The interviewees described the results of identifying system requirements as diagrams, such as a user-scenario, which contain information about the customer journey and customer information, and a narrative of system operation (IT and operational development administrator). To conclude, according to interviewees' statements this stage assists the public sector administrators to understand and find what solutions have to be suggested to respond to the needs, which have been raised at stage 1. The identification of system requirements can assist the management team to identify what solutions need to be suggested and how solutions should be developed and presented. After the completion of identifying system requirements, the management responsibility is to

evaluate available alternatives that meet the identified system requirements. Section 4.2.2.3 contains a description of this stage.

4.2.2.3 Evaluation of Available Alternatives

The third stage of e-Government development and implementation is the evaluation of available alternatives. The list of alternatives is designed based on two early stages to respond to the needs of the service section and to be in line with identified requirements. According to interviewees' statements, IT staff are enticed with an identification of what kinds of technology and system can be used to respond to needs and achieve the objectives of the section.

> 'So solution design is done. It is impact assessed and then the solution design obviously we do not always suggest we go through a new application. What we do is we look at the requirements of that business case and we see if we can utilise any more existing systems to undertake that and in a number of case we do so. That means, we do not have need to make any investment in technology. We may have to invest some cost in bespoke and configuring something.' (ICT strategic decision maker)

According to interviewees' statement, a group of outsourced IT company, the Business Information Solution Team from within the city local council, and the web-manager are responsible for evaluation of alternatives identified by the group. The group compares the possible systems that can benefit the service and the city council. The process of evaluation is conducted by scoring each alternative, which is presented and its functionalities demonstrated to the group. The system, which receives a higher score, will be sent for a decision by senior managers and to allocate a budget for the selected alternative (i.e. the e-Government development and implementation project).

> 'So […] our outsource partner entice by demonstrating the top five CMS and I went along to those and the people in the room, mainly from

> Business Information Solution team and [the name of IT outsourced partner], and look it from an architect's point of view and how it fitted with our systems and I looked at it from a usability point of view and editing point of view. And we made our recommendations, scored them and that went forward. Then things changed a bit to get some budget. It moved the procurement, moved into customer first. [The customer first] commissioned Techno-Phobia, a local agency, to write a strategy for the web to make sure we weren't just buying the system, we were actually going in the right direction and we had a vision for how we would use the system. Techno-phobia wrote a strategy and they suggested that the CMS we were using wouldn't fit the strategy.' (ICT decision maker)

It has been stated that the process of scoring the alternatives of an e-Government system is based on four criteria of usability, editing perspective, accessibility standards and architecture perspective. The evaluation of the usability of the proposed system is one of the tasks conducted at the stage of evaluating alternatives. So, the usability contains different perspectives, such as appropriateness for all groups of audiences, ease of use and usefulness of the system. The editing viewpoint contains a series of considerations about how the staff of the city council conducts their daily operation through interaction with the system. This is because some responsibilities of city council staff were to update and maintain the system (ICT decision maker).

Accessibility is another issue of concern of public sector administrators, when the issue of evaluating e-Government alternative arises. Public sector administrators at this stage aim to see if providing any suggested advancement causes deprivation, in the sense of citizens' access to governmental services. So the public sector administrators try to choose the alternative which results in less limitation for citizens accessing governmental services, or if any possible limitation is associated with the choice, they try to limit the consequences which are associated with that decision.

> ‘My role, particularly around accessibility, [is] to make sure that people could use the applications. In terms of different audiences, so the online audience, you know, existing customers, for me were alright. Customers that don’t, aren’t online at the moment, we have done various things to encourage. So there has been free training provided at the town hall.’ (ICT decision maker)

The architecture point of view was given as another criterion that has been considered by a public sector administrator. To be more specific, the public sector administrators consider how the newly suggested alternatives fit within the current IT system. Moreover, they evaluate how the new alternatives match with the organizational structure of the local city council. Also, the best option would be the one that is the better fit with the current structure of the public sector organisation (Strategic decision maker 2).

In addition to what has been listed as the form of evaluation for suggested alternatives, public sector administrators also carry out an impact assessment. In that test, financial implications are also evaluated at this stage (e.g. Strategic decision maker 1 and IS/IT implementation administrator). Another form of assessments also conducted in the local city council is the evaluation of the legal implications of each alternative that has to be assessed by the public sector administrator.

> ‘There are some legal implications, some things that we can and cannot do and with this as well. I would go through particular issues around data and data protection, things like that. There would be some things for major change that will be politically driven i.e. political priority.’ (Strategic decision maker 2)

4.2.2.4 Best Choice Selection

According to interviewees, this stage is related to the confirmation and allocation of the budget for alternatives proposed at the previous stage. As mentioned earlier, the results of alternative, evaluation are a document containing a score for each suggested system and

cost and benefit analysis of each alternative. The decision-making, for the confirmation of the proposed alternative, however, depends on the magnitude of effect that the proposed system has on the local city council. This means that if the proposed system only influences a service or section of the local city council then the number of senior public managers to be involved in this process will be limited to senior managers who work in the area where the new piece of technology is planned to be installed. However, if the suggested advance covers a wider area of the local city council, then the decision will be more like a corporate decision (e.g. ICT decision maker). According to the informants, if the project requires a greater contribution of different levels of management, it would affect the complexities of the project and slow down the process of sign off.

> 'Decision-making, I think, is an interesting one in terms of governance. The complexity of the tri-party sort of governance arrangement in this did make that process of sign-off more complicated. Again, that creates problems of delay in, you know, potentially, you've got three boards of bodies to get approval for. You get challenges and complexity in that, so I think that is difficult for this.' (IT and operational development administrator)

At this stage, public sector administrators conduct cost and benefit analysis of suggested alternatives. This stage involves another consideration such as examination of suggested alternatives against the proposed web-strategy, ensuring the alternatives meet the organisational strategies and visions of the local city council.

> 'So the proposal is linked to alternative activity in the organisation. So it could be that we are thinking of doing it for this reason but doing a similar process but for a different reason, cost vs. return, so it could be that we looked at it as an invest to save initiative or it could be that we decide we are not going to get sufficient benefit out of this. Tech involved alternative's already in place, so it could be that we are looking at sign posting the customer to there.' (Strategic decision maker 1)

In addition, the project sometimes needs more sponsors to lead to development and implementation of new online governmental services. In other words, the public sector administrators, to be able to carry out their proposal to develop and implement new online services, need to acquire full support from majority of the city council management (e.g. Service enhancement decision maker and Strategic decision maker 2). According to interviewees, if the project contains all necessary measurements, the project will be approved , signed off and got ready for its development phase, otherwise the proposal will be sent back for further evaluation and, if the situation does not change, the proposal will be rejected.

4.2.2.5 Solution Implementation

After selecting the best alternative, the order of development and configuration of selected solution is the next step by the council management team. These two activities are presented in following sub-sections.

4.2.2.5.1 Development of System

The development of an approved proposal is conducted through a partnership of the Business Information Solution Team in the local city council and their outsourced IT Company. The local city council has a technological partnership with [the name of outsourced service provider]. The city council role at this stage is monitoring and observing the IT outsourced solution provider.

> ‘We are going technology-wise and with the infrastructure and that gets self-signed off then obviously we will implement the project from there and obviously with the business. So we have implementation on the technology side we will often have [The name of outsourced service provider]’s project manager because obviously they are doing with the technology side and we also we have a governance role with that as well. So we do oversee what the [the name of outsourced service

> provider] project managers are doing as well.' (Business and IT enhancement decision maker)

Also, the local city council has a lack of IT infrastructure that prevents the company developing its own technological requirements. Therefore, the Business Information Solution Team works with [the name of outsourced service provider] during the development of an e-Government project to ensure that [the name of outsourced service provider] develops all requirements demanded by the local city council.

> 'I mean our IT is outsourced generally to [the name of outsourced service provider] but we have an internal service BIS, that sort of the leadership directional.' (Business performance improvement decision maker)

4.2.2.5.2 Configuration and Maintenance of System

The next stage of decision-making to provide e-Government services is the configuration of the developed system for the use of the service or section. This process will carry on until the system administrators make sure that the content provided is appropriate for the system users. Nonetheless, the process of configuration and maintenance of the implemented solution is characterised as a quick review after solution implementation and sometimes the management team does not feel any necessities to conduct this task.

> 'Talking about review process, so the project is actually going back to the customer. I am talking internal customer here, after three months, six months, a year to see if they can improve, the way the system is being used, in business as usual. They are using it for a few months, they understand the system better, they then need to challenge themselves; we would tell to do it this way when the project started. We now think that is a better way because we know more about it. We have seen the system, we using it regularly at the moment. There is usually one post-implementation review which is very shortly after we have implemented. It depends on the project, sometimes it does not happen at all.' (ICT implementation administrator 2)

4.2.3 Section Summary

To conclude, the e-Government development plan will be assessed for the efficiency and effectiveness benefits that they can offer. In addition , a series of cost vs benefit assessments will be conducted to make sure of profitability of plan and a capacity and a capability of organisation to perform the tasks. The result of this analysis will consequently influence the final decision. The required budget of organisation can prevent a project plan to be approved when there is a lack of funds to support the project. However, if the project plan brings a long term cost efficiency to the organisation, it is more likely to be accepted. Furthermore, the scale of change could impact the likelihood of change acceptance. Because if the project includes a large scale of changes in the organisation, it can be expected a complex process of decision-making that requires a large scale of elements to be considered by the management team.

Also, the results of interview analysis led to an identification of two trends of e-Government development and implementation decision-making. One of these trends is related to the stage of decision making to provide e-Government services at the phase of the establishment of an online presence (i.e.3 stage level of decision-making) and another stage's model is for the phase of transactional presence (i.e.5 stage level of decision-making).

The decision-making to provide information at the stage of the establishment of an online presence is less complex than to the transactional presence. This phase of development and implementation contains three stages of decision-making: initiate a request to publish information, develop and amend the request and close the request. The most important

stage of this phase is included in the section of development and amendment of the request since it is acting as the heart of decision-making process. Because of prior publication of information, the risk assessment will be conducted at this stage. The result of assessment may result in a halt or delay in the process of publishing information. In addition, the process of decision-making would be delayed if there has been any obstacle in receiving the request to provide access to information, or the person who is having or knowing the answer to the question withholds the information or would not be available to provide information on time. Another scenario, which may cause delay in this process, is the political obstacle and/or legal implications that prevent the information being published because of the high level of risks associated with the requested information. Another scenario that can influence the process of decision-making would be the time-consuming processes of collecting and gathering information and preparing it for publication. Finally, yet importantly, the failure of the content management system, that the city council uses for publishing its information online, may cause delay to the process of publishing based on the timeline introduced for responding to enquires.

However, the decision-making stages of the transactional presence involve more tasks that need to be accomplished by public sector administrators. It is somehow difficult to say which stages have greater importance, since one stage cannot be accomplished without the others. Nonetheless, the stage 4 of this model can be considered as a line that divides two sectors of e-Government development, the proposition and its realisation. Each one of the stages named here can act as influential factors on the process of decision-making to develop and implement a new online governmental service. Lack of information or failure to accomplish each stage can cause a failure in an e-Government project. Section 4.3

discusses factors influencing public sector managers' post-implementation decision-making, which are identified as the result of data analysis.

4.3 Factors Influencing Public Sector Managers' Post-implementation Decision-making

This section aims at presenting the main findings of this research study, which is a series of factors that influence public sector managers' decision-making when they engage in a decision-making activity for providing new e-Government services. As shown in Table 13, the factors influence public sector administrators decision-making are on the basis of four main themes that are organisational management factors, financial factors, technological factors and government and policy factors. In total 12 sub-themes were identified that could influence public sector administrators' decision. The order of presenting the research findings is based on Table 13.

Table 13: The structure of themes presentation

Section	Main Theme
4.3.1	Organisational management factors
4.3.2	Financial factors
4.3.3	Technological factors
4.3.4	Government and policy factors

The theme of organisational management factors covers two sub-themes of strategic factors and operational factors. The strategic factors cover the organisational strategies, strategic initiatives and reputation management of the city council. In addition, operational sub-

theme includes change management, human resource management and business performance enhancement that are perceived as the operational perspective of the city council. The second theme contains financial and monetary aspects of e-Government post-implementation decision-making. It includes cost vs benefit assessment, budget, economic climate and IT cost. The next form of the theme that is discovered is technological factors. It covers the risks of IT, the scale of IT improvements in the city council and system accessibility. The last type of theme identified belongs to government and policy factors that address three sub-themes of central government policy, regional government policy and ICT green policy.

Figure 16 shows a general concept map of this research study that includes organisational and management, financial, technological and government and policy factors.

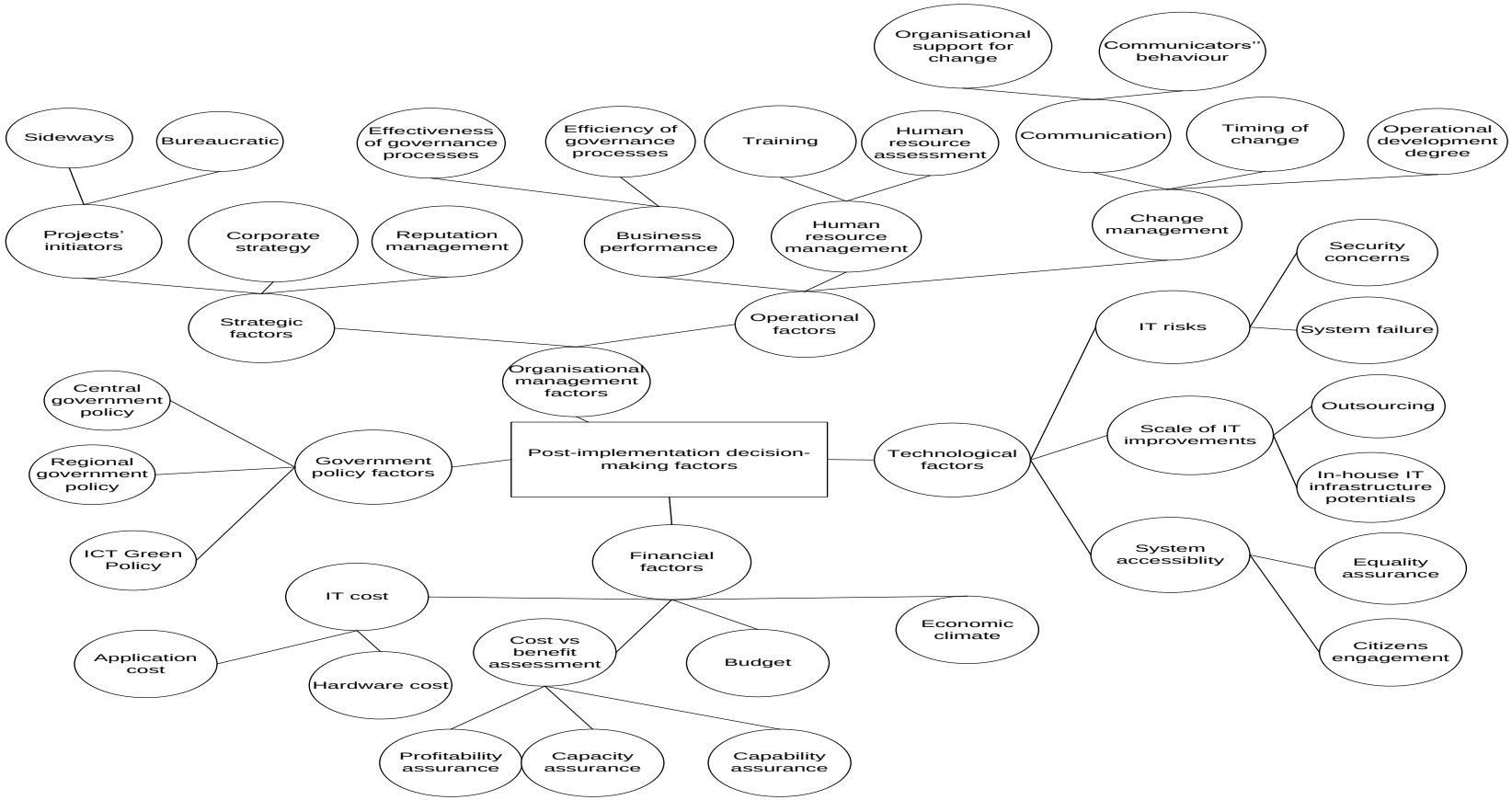

Figure 16: General concept map for post-implementation decision making factors

4.3.1 Organisational Management Factors

The first theme of this research study is organisational management factors. This theme comprises strategic and operational factors, which are the sub-themes of organisational management theme. The strategic factor focuses on strategic approaches that have been identified as influential in the process of e-Government decision-making while the focus of operational factors is in operability of e-Government services. The final thematic map for this theme is presented in Figure 17.

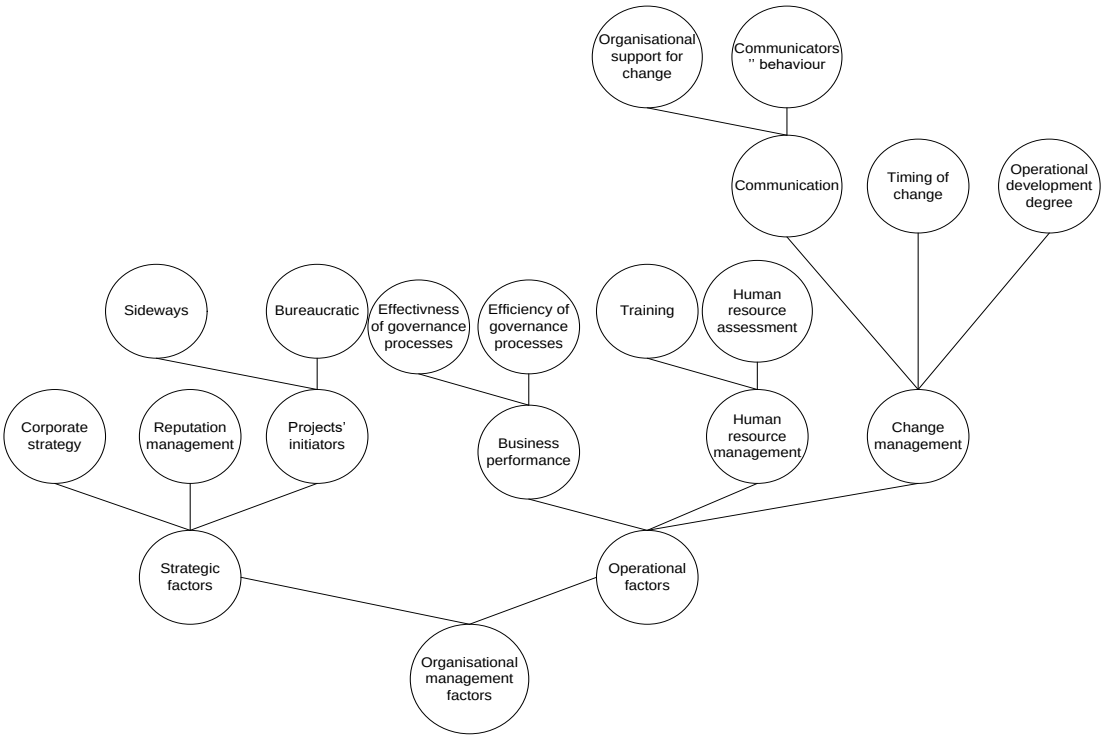

Figure 17: Concept map for organisational management factors

4.3.1.1 Strategic Factors

This section focuses on the sub-theme of strategic factors, which includes three factors that influence the process of decision-making. This section discusses three factors: corporate strategy, reputation management and projects' initiators as presented in Figure 18.

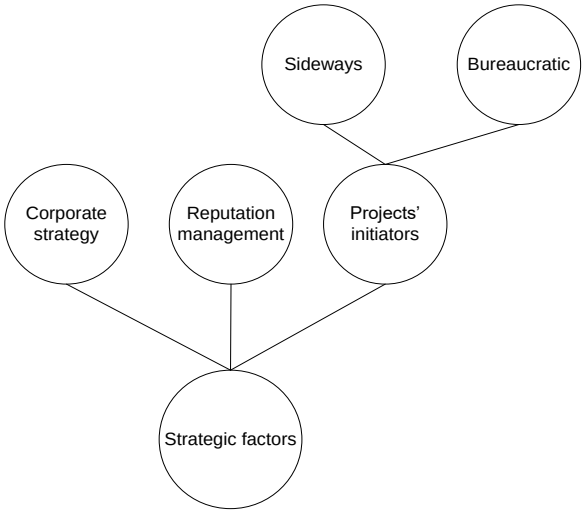

Figure 18: Concept map for strategic factors

4.3.1.1.1 Corporate Strategy

The informants stated clearly that their corporate strategy is one of the tools to review and validate their e-Government post-implementation plan. It was clearly stated that there is less chance of accepting an e-Government post-implementation proposal if the plan does not adhere to the organisation's corporate strategy. In addition, corporate organisational strategy, the informants referred to a newly established organisation's web-strategy that is provided as guidance to regulate the attempts to improve the council's e-Government. Further information concerning organisational strategy is provided next.

It was found that the council's corporate strategy is acting as a rectifier for decision-makers. It means that the decision-makers have to justify clearly their e-Government development plan against their corporate organisational strategy. The council corporate strategy for e-Government may contain different perspectives. Some of the components of any e-Government corporate strategy, mentioned by informants, are the customer

access strategy and digital strategy. It had been clearly stated that the e-Government post-implementation plan is more likely to be being supported and accepted if the proposal matches with corporate strategy plan. Nevertheless, it was stated that it is going to be less likely for any e-Government plan in the council to be accepted if the plans are not congruent with the corporate strategy.

> 'The second thing would be around its contribution to corporate strategies. So does that, does it move […] in terms of our customer access strategy and digital strategy. So will it support the direction that we want to go digital by default. We have got a corporate plan standing up for Sheffield. So that is about making sure that we are targeting our resources in a right way. […] From a corporate point of view, is this moving us forward in order to, you know, help us to achieve what we set up in terms of our future shape. Well, if it did not contribute to corporate objectives, then I will be very surprised if that change would be approved.' (Strategic decision maker 2)

Moreover, the strategic plan of the council was to urge the decision-makers to pursue a corporate approach rather than an individualistic approach. Previously, the council management was talking an individualistic decision-making, that means that each department had only fulfilled its organisational needs (IT and operations administrator and ICT strategic decision maker).

> '[…] I do not think we have silo working as it used to be. I think there is a lot more cross portfolio communication now. I think the culture changed. […] I think that is sort of realisation to [provide] service in the way that we got to maximise the use of what we have got and share the cost of everything.' (IT and operations administrator).

According to informants, this practice led to the creation of too many systems in the city council, which may not necessarily be linked to other systems (IT and operations administrator) and it could increase the maintenance and house-keeping cost of systems (IS/IT implementation administrator).

> ‘Q: What aspects do you consider when you receive the post-implementation proposal?
> A: Does it meet our corporate guidelines? For example, I want to do this. I want to go out and buy this. […] Through this way, because we get it cheaper and actually we got something ordinary. You can use what we already got. So, in the long, in the past, the partners were going out and procure stuff themselves, IT particularly, and then you just got silos of IT stuff everywhere and cost is spiralling to keep it centrally. […] It is kind of guidance in the governance. It is saying, actually, that is not the best way to do it.’ (IT and system enhancement administrator 1)

> ‘The way that we looked at specifying requirements, I think it changed quite a lot. I have been working for a council before transformation service existed and before Business Information Solution (BIS) existed, what has tried to happen within the council, they try to circulate corporate approach now rather than individual sections going out procuring an IT for their own business needs, and the councillors, how they are looking at it, is service oriented architecture.’ (Business process improvement administrator)

Informants stated that the e-Government development plan has to be tested against the organisation’s strategy plan to indicate whether the e-Government plan matches the organisation’s strategies, aims and objectives or not.

> ‘Yeah, we have corporate IT strategy. We have things that need to fit to our way of working in the organisation. […] we do not want to procure more IT systems. […]We have a corporate strategy for how we function in the organisation and complement each other. […] So the influence first on how we approach that project is: corporate IT strategy says … this business needs a payment system. […] They want to take payment from the public, they need to deliver a service and they want to do it online and they want to do all these things. Does that fit with our corporate IT strategy?’ (Business process improvement administrator)

Moreover, the informants mentioned that attempt that was made by the council management to develop a web strategy to see if e-Government projects support the

organisation's corporate strategy plan or not ? Perhaps these supplementary attempts to streamline corporate strategies could help decision-makers to take a better decision.

> 'Then things changed a bit, […] the procurement moved into Customer First, X commissioned a X company, a local agency, to write a strategy for the web to make sure we weren't just buying the system, we were actually going in the right direction and we had a vision for how we would use the system.' (ICT decision maker)

Without any doubt, what the corporate strategy of an organisation is going to be influences the decisions -made by decision-makers. The decision-makers have to assess and justify their solutions based on the corporate strategy and if the solution does not support the corporate strategy, it is less likely to be approved. It seems that the need to justify an e-Government post-implementation project against the principles of corporate strategy has been added especially after the financial crisis.

One of the informants said:

> '[…] You would not get support for any change that was not set in a corporate context really in this [financial] climate.' (Strategic decision maker 2)

4.3.1.1.2 Reputation Management

It has been found that public sector administrators had a considerable worry about their institution's reputation. One of the ways to develop the reputation of a public sector organisation was named as providing the most transparent services possible. In addition, there had been some emphasis on adhering to the national digitalisation initiatives to establish a good reputation for the council among other public sector organisations and to introduce the council as a digital savvy organisation. Since informants had shown awareness of the national survey that is conducted every year to identify and compare the level of development that has occurred in each council, compared to the previous year. It was clear that it had been quite important for informants to improve the status of

their e-Government. The informants had stated that the management team consider the reputational damage of every decision that they are going to take for their organisation. There was a considerable emphasis among the interviewees' statements that the council management is quite cautious about the consequences of their decisions and they will make sure that their decision would not result in any reputational damage to the council.

In addition, it has been clearly stated by informants that the management considers the reputational risk of approving the change (Service enhancement decision maker). To be more specific, the management team's attempt is to make sure that the e-Government project does not put the organisation reputationally and financially at risk (ICT implementation administrator 1). Moreover, the informants had referred to the risk of not adhering to the national schemes could bring reputational damage to the council as an organisation (IT and operational development administrator).

> 'I'm thinking about the sort of reputational risk if we don't sign up for X as a sort of a different activity. […] organisational risks of not to support specific activity […]or I'm just trying to, there's things like […] once a variety of sort of national schemes that are pushed by central government that you almost have to sign up to from a reputational perspective. Because if you do not, you know in that sort of how it's communicated in the council it wouldn't stand out. And I felt we've not signed up to it. So there's always that sort of reputational need to be seen to support this sort of thing.' (IT and operational development administrator)

In addition, the informants stated that if the council does not attempt to provide advanced e-Government services, it will bring reputational damage upon the organisation. Although the informants believe that the council has a long journey to achieve the expected level of advancement, the provision of an advanced e-Government services was being considered as an attempt to save the reputational image of the local council in front of public and other public sector organisations.

> ‘I think the customers’ expectations are moving on all the time. So for example, a few years ago to purchase a card you would just have gone and queued in the post office. […] now you just do it online. It is just amazingly simple and easy. We cannot provide our customers with that level of service now. And I think that is an issue around having customer centric services, but equally, it is a reputational issue because we ought to find a way to provide that. And it is also the cost issue, because if we got it right you know we will actually save money.’ (Business performance improvement decision maker)

The informants stated that the proposal would be risk assessed and adequate actions will take place to reduce the level of risk attached to the new development proposal. This action will help the council protect its public image.

> ‘We have risk assessment and we regulate that so reputational risk: do you know it is high, medium or low? If it is low then we probably go with it. If it is high, we then look at mitigating circumstances. Is it high because of a particular individual; is it high because it is big for the council? So then we will say, if it is high and actually more are willing toward publishing it because of the other of factors, we will look at to mitigate what we felt was high.’ (Service enhancement decision maker)

Another issue that the informants raised is the possibility of the system not operating as expected which could cause the public to have negative thoughts about the council’s e-Government services (ICT decision maker).

Furthermore, the informants were very much concerned with the issue of providing enough information for the use of their constituents. The informants said that they did not like to be known to the public as a non-transparent organisation (Service enhancement decision maker). This could have a negative influence on the public reputation. Nonetheless, the informants stated that publishing information online could bring reputational damage to the organisation if the council reports some news about the council when the public is not ready to hear that information (Service enhancement decision maker). Informants believed that this could result in a bad press and damage the organisation’s reputation.

> ‘One good comment is always actually to keep your complaints down and your organisation hopefully won’t have reputational risk if it’s not open and transparent. So you might not come up against reputational risks as much if you sort costs in the right way.’ (Service enhancement decision maker)

Providing a good public image is extremely important for the future survival of the organisation. Otherwise, constituent dissatisfaction with the council operations would have unprecedented risks for the council management. Public perception of the council image and the status of the council among other local councils are two reputational elements that will be considered by decision-makers.

4.3.1.1.3 Projects’ Initiators

The informants stated that an initiation of an e-Government plan occurred at different levels of the organisation’s management. Nonetheless, the informants categorised the managerial initiatives into two levels, namely; bureaucratic (top-down approach) and sideways initiatives. Bureaucratic decision-making is more authoritative and has been linked with the organisation strategies and plan, meanwhile, the sideway initiatives maintain and enhance the operational level of a department. Further discussion of decision-making initiatives is provided below.

4.3.1.1.3.1 Bureaucratic (Top-down approach)

First of all, the local council was described as a place with hierarchical and political culture. The reasons for this claim were because of its leadership and the members of the Council (Business and IT strategy decision maker). The informants considered different roles for senior management in terms of their influence in the e-Government development and implementation activity. For example, one of the informants stated that the members may support the idea but they rarely initiate an idea in the Council (ICT decision maker). Another group of informants highlighted the impact of legislation (ICT strategic decision maker), central and local government mandates (Business and IT

enhancement decision maker), corporate policies and organisational procedures (IT and operational development administrator) that impact on senior managers' decision-making to initiate a new e-Government project. This means that initiators of a new e-Government provision are under the influence of corporate strategy (see Section 4.3.1.1.1) and government and policy factors (see Section 4.3.4).

> 'Organisationally, I suppose it's more about some of the things I've said, it's more like some of the corporate policies, procedures, service changes things like that, that need to happen and they would generally filter through from sort of corporate director […] who would then trigger a change to say: this is what we need to now mobilise some people to make effect this change. So that kind of comes top-down rather than from the bottom-up. That is the slight difference there.' (IT and operational development administrator)

The initiation of an e-Government proposal by considering agendas will lead the corporate directorates into triggering a change and the e-Government development. This initiation approach was also called a 'top-down approach' (IT and operational development administrator). One of the informants provided an example of a top-down e-Government decision-making initiative in the council:

> 'So recently we've started using a new content management system. So I would use that as an example. The path for that one has been unusual, but it probably best exemplifies how things work. About three or so years ago the leader of the council told us we need to improve our website and told us to get a new one.' (ICT decision maker)

Moreover, each e-Government initiatives require the support of key members of the Council to become a potential improvement proposal. This is a point that has been made by one of the senior informants. Specifically, there has been an emphasis on the roles of councillors, directors of resources, chief information officer and the executive management team to support the idea and approve the financial aspects of the project (Strategic decision maker 2). This code clarifies the link, which exist between the

initiators of new e-Government development plan and the importance of establishing a positive communication within the council to receive sufficient support to turn the plan into reality. Therefore, there is a link between project initiators and communication, which is addressed in section 4.3.1.2.1.3. Project initiators may not necessarily become successful to initiate a new plan if they could not acquire sufficient support for their idea.

4.3.1.1.3.2 Sideways

The informants stated that the idea of initiating a new e-Government project could also be started at the departmental level. Each department of the city council has its resources and budget that allow them to make a decision on initiating a new e-Government project. Moreover, if the departmental management perceives that the e-Government development will bring benefit and savings into their organisation then it is more likely that they will initiate that new development. However, there has been an emphasis on central decision-making if the decision will be influence whole organisation. Based on the collected information, the central decision-making will be taken by the senior management team of the organisation because of the potential organisational influence on the council.

> ‘Each department had its own budget so therefore it’s kind of responsible for how it manages that budget and if you think it can do things online and save money then it will procure things. If there are things that are corporate that affect everyone like the CMS then that will be a central spend and the decisions and everything will come more centrally.’ (ICT decision maker)

Since the council has a hierarchical culture and structure, the departmental initiatives could also be influenced by different levels of management, senior managers and front line managers. The senior management’s influence could be referring to legislation and corporate strategies and asking the management to initiate and embed change. One of

the informants referred to initiating e-Government development in their department because senior management had asked.

> ‘It was our IT team who come along and said government requires to deliver this. You will therefore build on the website a page around dog fostering that one of these does. I was remembering that they came and said: we were driven from the top. […] We must achieve this target. You must therefore do this.’ (Information and service development administrator 2)

In addition, departmental initiatives and senior management initiatives could depend on the front line management. It had been clearly stated that the front line management and staff could feed senior management and middle level management with information concerning what areas have to be considered for improvement and enhancement, the informants named this initiative as an ‘upward initiative’ (IT and operational development administrator). The information that front line staff collect and represent to another level of management came mainly from the constituents’ feedbacks, complaints and personal experience of front line managers with constituents.

> ‘[…] Through our staff, they will be dealing with customers and they will come up with suggestions. All the customers will complain and that can lead to developing new [e-Government]’. (Strategic decision maker 1)

Two types of management decision-making were identified. The bureaucratic decision-making considers a stronger role for a senior management team and the informants had stated that government policies and procedures had an impact on senior management’s engagement in the process of decision-making. Another type of e-Government decision-making, the side-way initiative, was also identified that mainly covers a departmental agenda for the organisation. The role of front line managers was emphasised in terms of highlighting the area for improvement. However, it has been perceived that to achieve a

better perspective of e-Government improvement, staff support for organisational change is required. Otherwise, there would not be enough information to support the e-Government improvement proposal. Therefore, project initiators again depend on the code of communication (i.e. section 4.3.1.2.1.3).To be more specific, it is about communicators' behaviour (see Section 4.3.1.2.1.3.1). The next section discusses the operational factors, which emerged as the result of data analysis.

4.3.1.2 Operational Factors

This section focuses on operational factors, which emerged from the thematic analysis as one of the sub-themes. This sub-theme is formed by three factors as shown in Figure 19. The next sub-sections include an in-depth description of change management, human resource management and business performance enhancement, which are identified as three elements of operational factors.

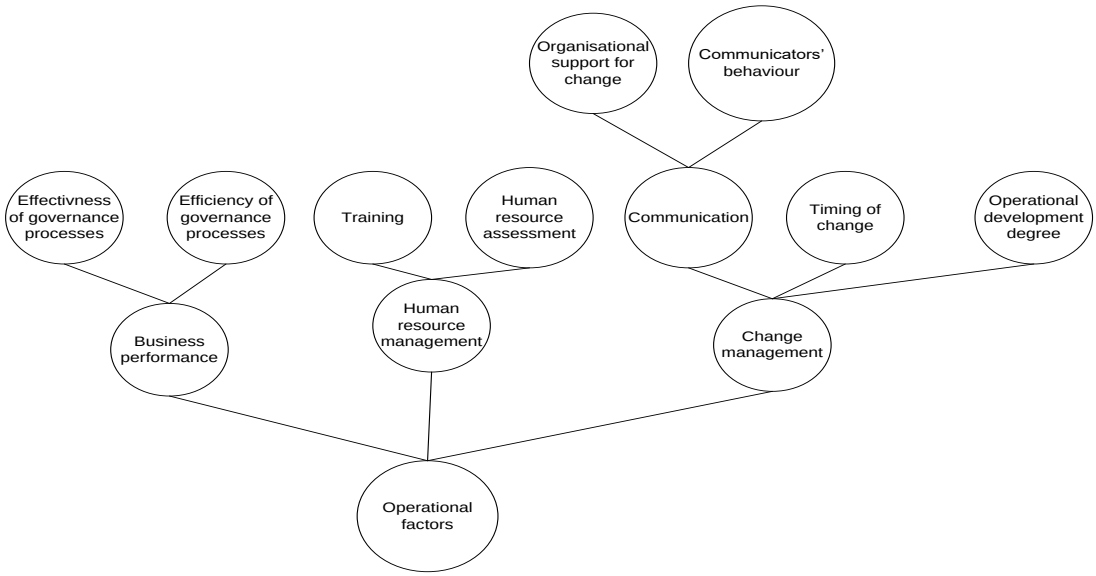

Figure 19: Concept map for operational factors

4.3.1.2.1 Change Management

Change management includes three codes of operational development degree, timing of the change, and communication. According to the informants, each of these elements has to be considered at the time of decision-making because wrongful estimation and understanding about each aspect could result in jeopardising an e-Government post-implementation project. The next section includes further information concerning these elements. Figure 20 presents the elements of change management.

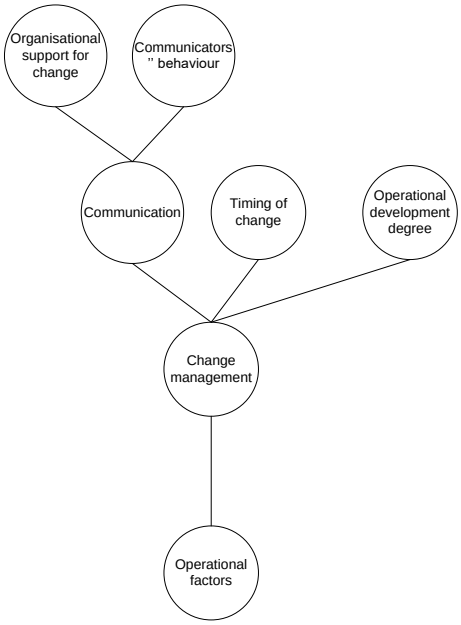

Figure 20: Concept map for change management

4.3.1.2.1.1 Operational Development Degree

The scale of change emerged as an element that impact on managers' perception when they attempt to make their final decision. According to informants, the scale of change in the organisation accompanies a consideration of the level of improvement, which is required to provide the expected level of functionalities for the organisation. Informants described two significant scales of changes in their organisation as service level and corporate level. Service level includes developments and enhancements of services on a small scale, which is limited to operations or services within a public sector department.

To enhance and provide changes in departments' services called in the council, 'tactical change'. The need for making this form of change could be because of the staff perception of the needs for improvement. It was stated that the service perception towards enhancement could be driven toward the customer service team.

> 'I suppose it depends firstly on the nature of change, if that change is a small scale change. There is tactical that can be driven from a number of different places. It can come from the service itself. It can come from customer feedback in terms of how we can improve a process or a way of working. It can come from customer service team, how actually using content to be able to do that job. So if we get small scale changes they are just managed.' (Strategic decision maker 2)

In addition there has been a connection between the levels of involvement of organisational management, with those people who take a charge of operational enhancement in the organisation. However, the informants believed that there are more operational complexities when the enhancement includes the provision of more advanced functionalities and operational development. According to the informants, there would be more regulated approaches when the change is significant and it contains the considerable strategic change in the operation of the organisation.

> 'In Customer Services, as an organisation for example, there is a team that deals with lower level change and that is, you know, they would be influenced by things like, you know, the customer experience, complaints, feedback, costs and things at that lower level. But if it was more significant, like for example, you know, re-developing the online forms package that we use and the service offer we're doing for Streets Ahead, it would be done at that sort of more formal level of strategic business case. Assessing the cost of change versus benefit, and taking it through a process of approval to take in that strategic business case presenting it to the relevant stakeholders, getting approval to that, and then proceeding to a full business case which is a fuller expansion of that, then you're into project then, in essence.' (IT and operational development administrator)

To support the idea that there is a link between the level of management involvement (i.e. project's initiators) and scale of change, one of the informants stated:

> 'More recently, there has been a kind of a transformational team and it depends on the scale of the change, really. You know if it is content, it's team. If it is a new piece of functionally, then it is a department and BIS. If it is a change in the structure of the organisation and something to help that, or just doing things a different way, then it might go into transformation team. They kind of say, you know, in the future we are going to be a different organisation. We are going to need this instead. […] So there are different pulls I suppose, different initiation places depending on the scale of what the problem is. If it's a very more much, kind of, operational customer thing, then I think the push would be services. If it's an organisational thing then I think the push would probably come from transformation.' (ICT decision maker)

Therefore based on what has been stated up to now, the scale of change recruits different levels of organisational key players, and it introduces different levels of operational complexities that need to be tackled by informants. This also associates with decision-making initiatives because, if the scale and complexities of change in the organisation become more demanding, then the approval of senior management level would be needed and that leads to bureaucratic decision-making.

4.3.1.2.1.2 Timing of Change

The informants stated that providing new e-Government is a very time sensitive activity. The decision could depend on the financial year of the organisation or a smaller scale the fiscal year of the organisation's departments. The initial deadline and time scale, set for a project plan, could have an impact on public sector administrators' decision-making activity especially if they are set by central government. The public sector administrators had to meet the deadline and implement the solution based on the specified time-scale and the organisational budget (Strategic decision maker 2).

> ‘It is only time deadlines and time scales that play a part in the decisions being made in terms that they have to be made in a set financial year.’ (Information and service development administrator 1)

Nonetheless, owing to the tight budget of the organisation and challenges of timing, the informants had clearly stated that some e-Government decision-making were directly influenced by the financial budget of that year and the selection of an e-Government project would be based on the priorities of any project plans. This means that those project plans, which had not been prioritised, had to be postponed, based on envisaged priorities. Also, sometimes the organisation does not have the technological capability required for completing the project and they have to postpone the project and buy time to find an appropriate solution. Buying time may have led to the selection of a better solution, which is more suitable for the organisation rather than instantly deciding on the first available solution.

> ‘There are a lot of little things going on. There is a prioritization list and it [particular e-Government plan] may not be the top of the list at the time when the budget is going off. You cannot run anything by budget. So getting the people around the table to make decision might not be what you are [intending] to do with that particular time due to other priorities. So what we called it is appetite, is it empathy or appetite. […] So organisationally that is available there in tune with what we are trying to achieve because obviously everybody’s job is important, but some of them are more important some point in time, that number one thing is that timing. Also the timing and solution are available, because if the solution is unavailable, somebody might come up with an idea that why we are doing this […] do you want to wait six months and go then rather than do it now. Because we do not have a technological solution to be fit the idea that we got. So it is about thinking outside.’ (Service enhancement decision maker)

The reason for emphasising the timing of the project was that the informants observed that it was sometimes the timing of the project implementation was inappropriate Moreover, the implemented system failed to operate a combination of these two scenarios, which led eventually led to the partial stoppage of the system’s operability or

required more effort to tackle the problem generated. Therefore, the decision-makers at the time of defining the project timing had to pay attention to a series of points, such as when is the busiest time of the department's operation? What solution could be quickly implemented?

> 'So we need to think about the impact of that operationally and time scales can be quite important around this - how quickly it can deliver that change. Is it the right time operationally to initiate a change? It might be. I do not know services busiest time. You may need to take into account the impact of that change and how they deliver that service.' (Strategic decision maker 2)

This lag in system operability, which could be perceived as the result of system failure or a need to maintain the system, could have a detrimental influence on the operation of a department or the council, especially if it is a peak operational time for the organisation. The potential delay in providing the council services could damage the council's reputation (e.g. ICT decision maker). Therefore, this point emphasises the importance of considering the time of the solution implementation by the management team, as to when a decision-making activity is going to take place. According to the informants, the management should ask a series of questions to identify the critical operational moments of the organisation's operability to avoid or control the risks, which are associated with the failure or delay in the implementation of the chosen solution. One of the interviewees believed that such consideration had not been taken sufficiently into account in the previous decision-making activity in implementing a new system in the council. The informant commented:

> 'Transfer of Magnolia would happen in October which was the worst time for services. It was the first year we have done it and we really wanted to buy in and the system was really sleek. We were not quite sure whether to put the content in Easysite [i.e. the previous CMS system] and have it transferred to Magnolia. We were not sure whether it works with Magnolia but because of time, slip time to

> adjust it. It became business critical to us and we had to rethink the way we did things. I have got to say the team was really good in trying to help us to do that, but if we have been doing that and we had input into saving money at a business critical time of year, that would not been the choice of either March previously or August or in February at the time system closed. The decision to go, I do not think it has affected many things other than I know it has got a few glitches into the system from what [the colleague name] said. […] So I think it is a better system. I think business critical period for [the name of portfolio], do not get me wrong, at the end of day somebody's going to have a business critical period all through the year. […] I am implementing a window 7, 2010 across the whole portfolio and that what we are doing is saying what is your business critical period? What is actually wrong? What is going to happen in that time? What is the risk of this if it is not happening and then mitigating against if we can. So I think that was a consideration may be it did not happen. It was a decision that was happening and maybe there was not wider consultation, probably I would say, about that particular decision-making.' (Service enhancement decision maker)

In addition to identifying critical moments for the solution implementation, the informants stated that the management also had to consider the possibility of project overrun. The informants stated that this had to be considered during the management decision-making over the scheduling of the project plan. According to informants, all requirements and details of a project have to be considered at the time of reviewing the proposal and for each detail the management has to allow for some time lapse. This will help managers to cover the risks which are associated with unexpected delays on the long term.

> 'Having a set of details of clear requirements at the beginning, so the development team can handle a really clear idea of exactly what is involved in what they are being asked to deliver and giving the opportunity to scope out and estimate how long that is going to take them to deliver. Allow some contingency timing there as well to allow for thing slipping. Allow for things to be delayed. Allow for things of people being off sick unexpectedly. Making sure that at the beginning of the project you are very clear on the potential risks of the project and making sure that they logged and actively reviewed on a regular basis.' (ICT implementation administrator 1)

The code of timing of change includes four points for managers to consider at the time of decision-making concerning the time of e-Government development and implementation. Firstly, the time that an e-Government solution is expected to be decided may not be financially appropriate due to the fiscal year of the organisation. Therefore, the management has to take into account and choose the best financial period for the organisation when they want to plan for the project implementation. Therefore, sometimes the solution might be good but the time may not be necessarily appropriate because of the organisation's fiscal year. So, there is a perceived relationship between the timing of the project and the organisational budget. Secondly, because of an organisation's limited budget, some ideas may not be granted permission to be perused and implemented at a particular period because a decision for timing a project is governed and regulated by the priorities of the project plans. This point conveys the message for management that they have to consider the priorities in the organisation first and then find the best time to introduce their implementation plan. According to informants, good ideas may not always receive management team support if the time is not suitable and there have been other priorities in a place that need to be tackled first. Thirdly, at the time of decision-making for timing of a project plan, management has to avoid deciding on implementing a plan at the critical, busiest operational time of the organisation. Finally, the timing of project plan stages has to be decided considering possible lag or delay during project implementation to avoid the possibility of project overrun.

4.3.1.2.1.3 Communication

Two perspectives are identified by the code of communication. It includes communicators' behaviour and organisational support for change. Each one of these aspects is further discussed in following sub-sections.

4.3.1.2.1.3.1 Communicators' Behaviour

The informants were expressing the need to establish a best form of communication among the council's staff. Based on informants' statements, the staff communicators in the council were categorised into two forms, eager and apathetic communicators. When the informants were asked how they knew that they had to improve their e-Government services in the council, they stated that they were informed through their staff, particularly the front line managers who are constantly using the system and interacting with customers (Strategic decision maker 1).

Nonetheless, some council staff just preferred to do their routine tasks and they were not engaged in the process of raising and identifying system needs for improvement. This is while the informants were emphasising the importance of understanding the detailed processes of the department's operational to plan for improvement, which could mainly be achieved by discussing the processes with those who conduct it. One of the reasons for apathetic communication behaviour by council staff could be a fear of losing their job, which has a connection with the sub-theme of human resource management (see Section 4.3.1.2.2) and a code of organisational support for change (see Section 4.3.1.2.1.3.2) .

> 'The things like that , you just have to really get to the bottom of understanding the end to end process. There is also updating some of what you are doing, so if you are trying to implement any change without communication it to people, you immediately are going to be up against the brick wall. So that's, to me, crucial to everything, communications and information flow.' (ICT implementation administrator 2)

Another example of lack of communication from the member of staff was stated as follow:

> ‘So we really need to make sure that we get these communications and information flow understood. So then we can improve those processes. So happen instances where the team for 20 years will be passing this information to another team. You go to the other team: what do you do with that? We do not use that, we ignore it. Things like that.’ (ICT implementation administrator 2)

Therefore, there is a form of contradiction, which exists, from what has been said among informants, when staff communication behaviour for enhancing e-Government services is a matter of concern. Government staff are used to doing the same repetitive tasks for a long time. This somehow prevents the staff seeking or asking for changes in their organisation, especially when it is a public sector organisation that has a very bureaucratic structure. However, the issue of staff lack of communication in pursuing an e-Government enhancement in their organisation could be addressed by reducing staff’s fear of job losses.

4.3.1.2.1.3.2 Organisational Support for Change

To achieve success in e-Government decision-making, the public sector administrators have to acquire key stakeholders support for that change (Strategic decision maker 2). This point had been clearly raised by the research study informants. They believed that it would be less likely that an idea would be accepted or approved if the idea does not receive sufficient support from key stakeholders within the organisation. To acquire sufficient support to provide a change in the organisation, the informants explained that they had to do a series of pre-engagements with key-stakeholders in the council and explain the reasons for introducing any new e-Government development and potentially the changes to the council. Also, they stated that they had to raise the potential benefits of that change in their organisation. As a result of explaining and communicating the expected result of the change, there would be an expectation of support and organisational buying of the e-Government plan.

> ‘Organisationally, you have to make sure that you have got engagement of all the relevant stakeholders. So it is important that […] you are initiating a major change. The pre-engagement with key-stakeholders to get them to buy in to that change and to support that change is really important. So there is process of me sponsoring really with my peers, explaining the change where it fits into the vision and direction of the council, communicating that change, what is in it for them, why I am proposing to make change and how it would benefit them in their services and seek their support and buying in and that is sort of the organisational route, so that would be with senior directors and executive membership of the council.’ (Strategic decision maker 2)

Moreover, there has been an emphasis on acceptance and receiving support from the senior management team and staff regarding an e-Government development plan. The informants believed that binding a positive relationship with the senior management team and also positively engaging with staff for providing new e-Government could act as a facilitator to institutionalising and embedding the change in the organisation.

> ‘Engagement and communication are quite important. This issue is about why we are making these changes and what is in it for them. So trying to explain what the impact of any change would be on individuals and within that maintaining a good relationship between staff and trade unions.’ (Strategic decision maker 2)

> ‘Senior management commitment, engagement and binding for change are so important because you have to institute that change. So it is ok having that process of change. Yes, here is the initiation and the approval, but unless you can institutionalise that change and making it routine and business as usual and make sure that is fully embedded in the organisation. […] I think [what] we sometimes do as an organisation is to go through the process of initiation and approval. And we do not take time to embed that change and make it part of ourselves, of the way that we do things before we start the next change. […] and you only embed that change if you got that engagement and the buying in and people understand why we are doing it.’ (Strategic decision maker 2)

Moreover, like any introduction of changes in the organisation, the informants had observed some resistance in the council as well, when a new e-Government plan was a

matter of concern (e.g. ICT decision maker and Strategic decision maker 2). Therefore, it has been management responsibility at the time of decision-making to consider the potential aspects of resistance within the organisation and to identify how it would affect the staff and then attempt to reduce impediments to that change in the organisation. In addition, the informants stated that there had been different reactions from the members of the council when the message of change had been conveyed from colleagues and staff rather than the message is being heard from the senior management team. For example, if the message is being heard from a member of staff, it is more likely to be accepted compared to when the message comes from the top management team (ICT decision maker). This means that projects' initiators in the City Council could attract different type of behaviour among the City Council's staff. This could be also linked to the operational development degree because tactical scale involves a lower level of hierarchical management (Section 4.3.1.2.1.1). In addition, one of the informants stated that when the management team attempt to introduce a change plan, they should not present it in the way that the change is going to be made to staff, however, it should be in the way that the change is going to be made *with the help* of staff (Strategic decision maker 2). This approach may help to reduce resistance to change in the organisation.

Nonetheless, if a change in the organisation, which is performed to yield efficiency and effectiveness into the organisation, is accompanied with a message of fewer people being needed, staff are fearful of these forms of change in the organisation, because they mean that fewer people would then be needed to perform the task. So, it is likely that they would lose their jobs (see also Section 4.3.1.2.2).

> 'You will always get some resistance to change. You always have people who embrace a change and other people that are resistant to it. I think particularly around this agenda, a customer serving

> themselves, it means we may need less people and therefore people conceive impact and implication of that particular change and therefore are fearful of it. […]We have to be more efficient in some of our processes and utilises the technology that we have got […]that means the work that you are currently doing, you would not be doing anymore and actually we need less people to do it. It is very difficult message to get across. … We need to make sure that the way we do things is efficient and effective and we are using our resources in the best possible way. But equally our customers are expecting us anyway. […] I think there is a diagram that I pulled out because I used this often when I am talking with people about change. There are five key components in it. […] I think it is quite useful itself, you know, if you have not got a vision, then this is confusion, because the people do not know where you want to get to. If you have not got the right skills then people get anxious because they do not know how we can deliver that change. If you have not got the action plan then you have got lots of false starts because you have not got a clear pathway in terms of what you want to do. If you have not got the resources people get frustrated. If you have not got an incentive around it then what you get is that you do not get true transformation. You just get incremental change. And with all of those five things in place hopefully we will be doing successfully. It is quite a good simple way of articulating what things need to be in place to bring about some change.'(Strategic decision maker 2)

According to the quotation above, the informant defined five elements that have to be considered to reduce the level of resistance to change in the organisation. Firstly, the management has to introduce the organisation's vision in making the change. The management has to raise awareness about the motivation for making the change. The awareness of the reasons for change could bring support and help in the management initiative rather than keeping employees in dark. Secondly, recognising the level of skills that are required to provide support for a planned change could make staff anxious because they may not necessarily have the skills required to support the new change. However, this lack of skill could be easily handled by providing training sessions for the staff. Thirdly, the management needs to introduce clearly its action plan to avoid false starts in the organisation that may lead to the employees' dissatisfaction over starting that new change in their organisation. Fourthly, in planning for a new change it is

essential to make sure that sufficient resources are provided to support that change. The lack of support could lead to frustration of the staff. Fifthly, there has been an emphasis on the importance of having incentives to support the change in the organisation because the lack of incentive may lead to only partial achievement of the goal plan and not a true transformation in the organisation.

To conclude, the decision makers have to ensure that two types of support and engagement have been properly addressed and established, namely senior management and staff level engagement and support. The senior management engagement is essential to support the idea and ensure the acceptance and continuity of the project plan while staff level engagement tackles the issue of resistance among staff. Also management needs to ensure that the staff obstruction has been kept at a minimum level.

4.3.1.2.2 Human Resource Management

According to informants, the decision-makers have to consider two human resource aspects of introducing new e-Government changes in their organisation. These are the influence of improved new job responsibilities and staff duties and another is the training that is required as a result of introducing that improvement. The next section contains a discussion of these aspects. The elements of human resource management are presented in Figure 21.

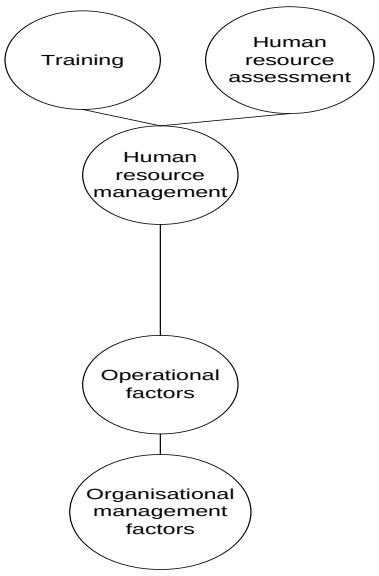

Figure 21: Concept map for human resource management

4.3.1.2.2.1 Human Resource (HR) Assessment

According to informants, decision making over e-Government post-implementation demands management considerations of how any new e-Government plan could influence HR. In other words, management requires the support, involvement and consultation of the HR department.

> 'HR would come somewhere in here. They are trying change things that affect the roles of staff, so that obviously it needs to be involved.' (ICT implementation administrator 2)

Furthermore, the management had to get involved in the process of negotiation and consultation with trade unions to buy in support for a new change if that improvement contains considerable changes in the organisation's human resources. The involvement of the HR department is needed to assess and review the impact of any new e-Government development from 'legal perspective' (Strategic decision maker 2) and 'support of staff' point of view (ICT implementation administrator 2 and Strategic decision maker 2). As a result of this involvement 'they [HR department] may point out things that we [the council] should be doing or we [the council] are doing really well

but we [the council] need to develop further. So that might be built in to […] initial plans and what you [they] are going to deliver' (ICT implementation administrator 2).

The informants said that any changes in roles and responsibilities of staff might be accompanied by feelings of unhappiness and distress for staff. Therefore, one of the informant stated that the council may engage in the process of 'explain[ing] what we [they] are doing, why we [they] are making changes [and] deal with any upset as a result of some of it [services] we are no longer being asked to offer and all of that needs to be agreed internally as well because potentially it was a change to people's job descriptions' (ICT implementation administrator 1).

Moreover, informants emphasised the importance of maintaining a good relationship between staff and trade unions if the e-Government decision-making incorporates considerable influence on jobs and demands job re-design.

> 'So trying to explain what the impact of any change would be on individuals, and within that maintaining a good relationship between staff and trade unions. So operationally we would be consulting around any changes involving the staff and trade unions in that consultation process, particularly if it impacts upon jobs and jobs re-design. So they are things I would think about.' (Strategic decision maker 2)

Therefore, with any e-Government post-implementation plan, there is a possibility of job modification or elimination. The management has to consider the impact of each e-Government project plan from an HR point of view and to consult with authoritative bodies such as the HR department and trade unions to assess the HR consequences of each e-Government development.

4.3.1.2.2.2 Training

Another aspect, which was identified from informants' statements, was the issue of staff training. According to informants, the process of assessing and identifying an adequate

level of training to support a new e-Government plan is quite key to provide successfully any new e-Government development. Otherwise, the staff would not be capable of properly using the provided development.

> 'Some of the systems may do what we want them to do, but the staff have not been given a training to show them how to get the system working for us. So that is absolutely key. We are putting in a lot of new systems at the moment. We need to make sure that we give the staff the training and support.' (ICT implementation administrator 2)

Interestingly, one of the informants explained one of the attempts that were made to up-skill staff through training. The informant stated that among the staff, who were trained, some of them had left their job after training. Although it is not clear and it is difficult to state that it was as the result of staff training, the number of staff reduced. However, it is quite possible to state that the staff training resulted in the rationalisation of the number of staff and a better understanding of capabilities and activities that each staff could accomplish. Another scenario might be the staff either did not like the new job with its different skills or realised that redundancy might follow which will result losing their job, so left before that happened to use their new skills elsewhere.

> 'We kind of rationalised the number of [web] editors. So half of who those that been trained up to 600 had stopped or left. So we rationalised those. We up-skilled the ones that were left and we designed the training course that would get new editors to the right level of knowledge.' (ICT decision maker)

From what is presented in here, training for staff, could have a contradictory message. One message for them would be that training could result in developing their capabilities, while another message for them could be a possibility of losing their job. Nonetheless, that is a management (i.e. decision-makers) responsibility to take an appropriate measure to consider providing sufficient training for staff that makes them capable of using any new e-Government development. The level of training has to be

evaluated by decision-makers and be considered by them at the time of decision-making. However, training might be considered as a threat to staff which means that some of them might lose their job at the end. This point correlates with a subtheme of organisational support for change. One of the reasons of staff resistance for change could be fear of training and possibly loss of their job. This would be the art of decision-makers to convey the right message to the users and maximise the opportunity for enhancing staff skills.

4.3.1.2.3 Business Performance Enhancement

The code of business performance enhancement includes two child codes that are the efficiency of governance processes and effectiveness of governance processes. Having more efficient, cost-effective processes is considered an advantage by these organisations. Further information concerning pursuing efficiency and effectiveness in the public sector organisation is provided below. Each one of these codes is discussed below. Figure 22 depicts the concept map for business performance enhancement.

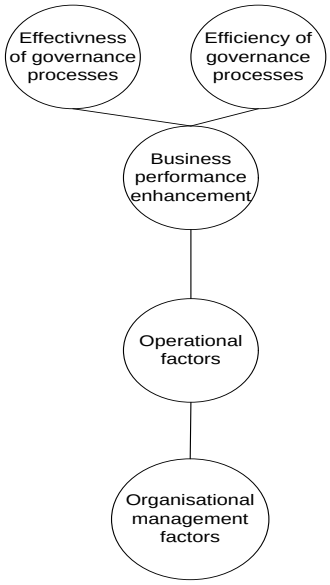

Figure 22: Concept map for business performance

4.3.1.2.3.1 Efficiency of Governance Processes

Seeking organisational efficiency is an objective pursued by every organisation. The procurement of cheaper, better and easier operations was stated as the council objective. These are nearly the same features that were also expected through the exploitation of e-business.

> 'I think with the e-business one is about actually making the processes cheaper and more streamlined, unless resources are demanding, so easier, better and cheaper. Fundamentally, I think the financial side of it was a big issue. Because of the amount of savings that we are going through at the moment. So it would give us financial savings by actually having a better, more streamlined process. […] So it would give us more control and consistency and therefore efficiency. So at the end of the say we structured better processes, very much driven by need to make savings and get better values for money.' (Business performance improvement decision maker)

The aim of pursuing efficiency in the council was to enable the customers to procure simpler and easier processes. One of the main reasons for further emphasis on the concept of efficiency in the council was the cost-saving advantages of this initiative because the attempt to provide efficient services to the council was perceived as equal to saving money in the organisation.

The informants stated that at the time of decision-making there is always a question such as 'What do we need in order to deliver a cheaper, more effective and efficient service for the customers?' (Information and service development administrator 2) The informants stated that the council had a lot of manual processes, and some of those which were digitised, still had some manual processes that demanded supervision to keep the operation running.

> 'Partly, that is very inefficient, the way we are collecting income at the moment and it is very expensive. So, it is internal cost to large extent. Things like raise invoices for thousands and hundreds of small payments. It is not cost effective for us. It cost us a lot of money to do. processing cheques, processing a few cheques because,

> it is not many people paying by them, very costly on the customer bases. It is also feedback from customers that they expect to be able to pay it in modern ways. So they are expecting to be able to pay for everything online which they cannot do at the moment and they expect to be able to pay by direct debit which they can only do for certain services at the moment. So it is a mixture of internal efficiencies and customer feedback.' (ICT implementation administrator 2)

In fact providing efficiency to the council accompanies the standardisation of processes, based on what has been said by informants (e.g. ICT implementation administrator 2 and IT and operational development administrator). This could help to reduce the costs and expenses of each process of the council. This issue has a close link with the concept of effectiveness in the public sector organisation that is further explained in section 4.3.1.2.3.2.

> 'It is very distributed model with different services doing different things. There is a lot of cost in there which needs to be removed, lots of people having to raise lots of paper invoices or fill out paper forms, supporting different systems and managing the money in numerous different ways. You need to standardise all that to ultimately bring the cost done.' (ICT implementation administrator 2)

The informants stated that the provision of more effective way of communication, which is an online form of communication between constituents and the council's staff, is their primary objective and it could bring efficiency (Information and service development administrator 1, IT and operational development administrator and Strategic decision maker 1). In fact, it has been stated that it has been corporate directive principles to move things on the web to achieve a benefit such as cost-effectiveness (IT and operational development administrator).

Moreover, it is clear from the analysis of collected data that the decision-makers were considering the procurement of best efficient services that is equal to

procuring cheaper operational processes including fewer manual interventions and having features such as enhancing the customers' experience and journey through the application of the new system. This is the objective that could be attained by spreading effective services. Since effective services require less resources to support the council processes.

4.3.1.2.3.2 Effectiveness of Governance Processes

The effective process was referred to as a process with a lean series of tasks and activities and also a process that does not demand many resources to operate. This means that fewer human resources are required to support the process, more training may be demanded to have staff skills reach the required level of professionalisation to support the lean processes and at the same time fewer financial resources may be needed to fund the processes.

This section contains further explanations of the development of lean processes. When the effectiveness of the council was at the centre of discussions, the informants stated that they are actively seeking better engagement and a better way of seeking services (e.g. Business process improvement administrator and Information and service development administrator 2). The management performed a series of reviews to see what the expected deliverables and objectives of the business operation were and then tried to use the e-Government capabilities to pursue the identified goals and objectives (Information and service development administrator 1). Therefore, the plan for the council was to avoid the clunky, cumbersome and difficult-to-work processes in the Council (Strategic decision maker 1). The council had a system called Performance Support Framework, which aimed to help the assessment of applications and potentially help the service to enhance its applications and make it user -friendly. The term, 'lean process' was used by informants to describe the government's attempt to provide

effective processes that mean a reduction in resources, needed to support the operation. There was a reduction in the number of touch points required to complete an initiated task.

> ‘We need to sort of make this a more lean process, so I just expand on this point, certainly the costs are too expensive. Resource being that too many resources or people are needed to support the process. The process is too long in terms of the end-to-end which is probably a customer satisfaction issue as well as it being a cost issue. The number of touch points or handoffs is too many.’ (IT and operational development administrator)

Also, to ensure the effectiveness of business processes has been achieved, the informants stated that they attempt to identify requirements from two lenses: organisational interests and customer experiences and journey. In regard to users interests, the informants stated that they had to conduct a series of assessments of the customer journey and users’ acceptance of a test practice.

> ‘[…] The requirement in terms of when we were designing this particular service was obviously that the requirement of making it as efficient a process as possible is in the interest of the organisation in that there is less manual intervention. It’s cheaper to sort of have less manual intervention, but that said, the driving force really has been around the customer experience of it, you know, so there have been some, if you like, limitations that are: we do want people to use the online channel? We do want that to be, you know, the most cost-effective way of doing it and we recognise that this [the new process] is the most cost-effective way of doing it.’ (IT and operational development administrator)

The movement of providing more efficient services also had a constructive influence on the customer journey and level of satisfaction since this movement enables them to do their business with the council in simpler and easier ways. Since the informants stated there are some groups of customers, who value the council movement towards more efficient form of communication and that one of

these forms of communication could be through an online channel (e.g. Strategic decision maker 2). For further information concerning customer expectations see Section 4.3.3.3.2.

The informants clearly stated that one of the advantages of lean process procurement is to reduce the operation cost. Also, this approach could bring standardisation into the organisation. This includes the standardisation of time, cost and quality of services (ICT implementation administrator 2). The informants stated that there is a series of questions that need to be asked to ensure standardisation is achievable. Moreover, if the answer to those questions is affirmative, then the council is more likely to vote in favour of that initiative. Some examples of those questions are: Is this a cheaper channel? (i.e. it is a key initiative), Does it increase access and improve customer access to services?, Does it deliver better services ? (Strategic decision maker 1). The answer to those questions will help managers to take a better final decision.

4.3.1.3 Section Summary

This section discusses organisational management factors, which is identified as one of the main themes of this research study, which influence public sector administrators' perception towards enhancing their e-Government services. To be more specific two sub-themes of strategic factors and operational factors were identified as a result of conducting a thematic analysis.

The sub-theme of strategic factors includes corporate strategy, reputation management and projects' initiators. Corporate strategy enforces the management to plan and implement a type of e-Government advance that matches with pre-defined goals and objectives that set in corporate strategy plan. Reputation management is one of the strategic factors for the council because bad reputation could have a considerable

detrimental effect on the council management. Therefore, one of the top priorities of the council management is to ensure that the public relation and public satisfaction are properly fed and addressed. This means that the council might subscribe to a series of initiatives to maintain its public image that has not been initial as a part of organisation plan.

Moreover, projects' initiators play a strategic role in a public sector organisation to equip the council with an advanced technological development. This has been different management hierarchy that issues a call to provide a new e-Government development. The lack of this initiative could keep the council outdated which could result in a reputational damage and high level of deficiency and ineffectiveness in the council. Moreover, projects' initiators are under influence of government policy factors and corporate strategy that lead the management team final decision.

In addition to strategic factors , operational factors were also identified. Change management is one of the codes of operational factors. This code concentrates on three issues of operational development degree, timing of change and communication. Timing of change is identified as extremely important. If the timing of change is going to occur at the busiest moment of department's operation and if the system, which aims to be implemented, is going to fail at the same time, it would endure high levels of cost to the public sector organisation that could be inefficiency and ineffectiveness of department's operation and also a reputational damage for the council. Human resource management was another code that is identified. It contains the issue of HR assessment of suggested technological plan and also training needs analysis of staff that enables them to conduct the expected level of activities.

Finally yet importantly, business performance enhancement is known as a positive motivational drive to pursue a new e-Government development. The next section (4.3.2) explains the next identified theme of this research study that is financial factors.

4.3.2 Financial Factors

This section discusses the financial factors, which emerged as one of the main themes. In more detail, this section discusses four sub-themes: cost vs. benefit assessment, budget, economic climate and IT cost. Moreover, the final thematic map for this theme is shown in Figure 23.

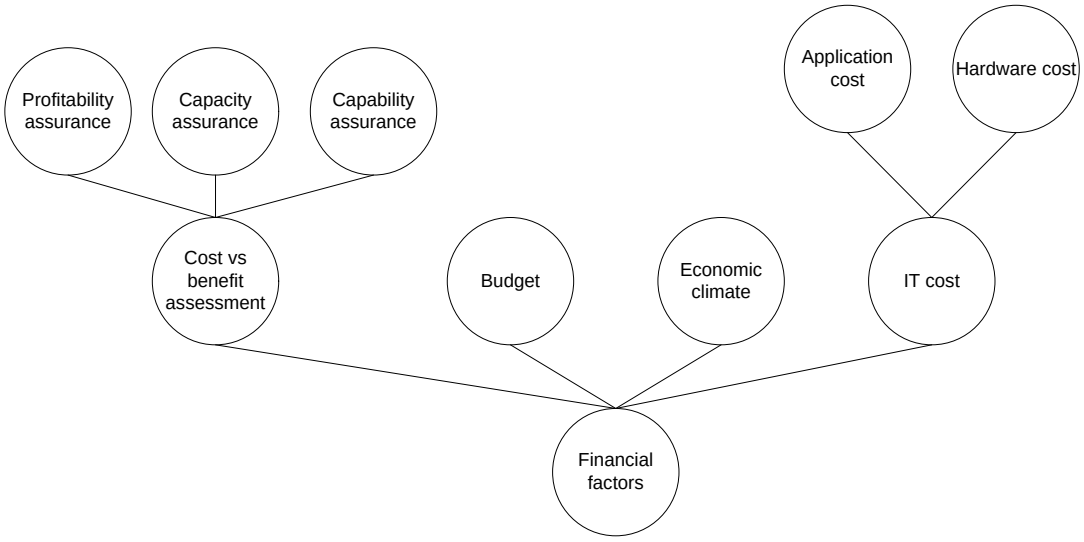

Figure 23: Concept map for financial factors

4.3.2.1 Cost vs Benefit Assessment

The cost vs. benefit assessment was described as one of the key elements that shape the future action of decision-makers when they engage in decision-making activity. The management said that they have to consider different aspects of cost versus return of the proposal at the time of decision-making. According to informants, it is more likely that

the decision-makers will vote in favour of an e-Government development and implementation if the benefits of the e-Government project outweigh its associated costs and risks.

Three types of cost vs. benefit assurances derived from analysis of the collected data, namely, profitability, capacity and capability assurances. Profitability assurance is mainly about answering to the question: does the solution generate sufficient income? The capacity assurance is about: do the changes, which would result as the consequences of implementing the solution in the organisation, have an adverse impact on the way that the business operates? Finally, capability assurance is about the ability to do the required changes and their affordability for an organisation to tackle the challenges of implementation. The next sub-section provides more information about cost vs benefit assurance. These factors are illustrated in Figure 24.

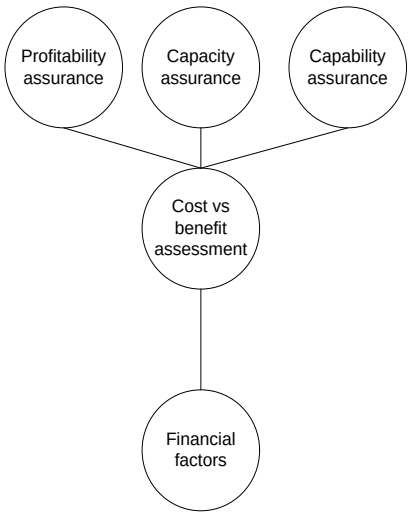

Figure 24: Concept map for cost vs benefit assessment

4.3.2.1.1 Profitability Assurance

To assure the profitability of the proposal, informants had to make sure that the solution saves money or generates income for their organisation (ICT decision maker). The importance of profitability assurance is because of the high financial costs of each

project to reach the expected level of outcome. The informants referred to the high financial side of each project, which become a big issue for the organisation. Therefore, it has become an agenda for the organisation to make sure that the e-Government project has at least brought financial saving into the organisation. The reduction of HR expenses is one of the advantages that lead to cost saving. Furthermore, the informants perceived e-Government as a profitable plan that could bring efficiency into the organisation in the long term.

> 'We do, obviously, from the decision making point of view. One the things is obviously reducing the cost and with doing that certainly we actually decide more self-service. […] So self-service place a part in that. For self-service it is also to reduce cost, because it is cheaper to get someone coming to the organisation to go online and do it by themselves than actually have someone sat on the other side of the desk or the end of the phone.' (Business and IT enhancement decision maker)

4.3.2.1.2 Capacity Assurance

When it gets to capacity assurance the informants stated that it is quite important to make sure that the change in the department or organisation would not bring detrimental operability into the service. Also, there has been an emphasis on how to provide and adapt the services to a new organisational capacity.

> 'If you are wanting to implement that change you have to look operationally at whether they have the capacity to deal with that change, without it, you know, being detrimental to service that they are delivering.' (Strategic decision maker 2)

4.3.2.1.3 Capability Assurance

The informant stated that they have to ensure that they have enough skills and resources that could support them to deliver the expected level of change in the council (Strategic decision maker 2). Since the informants experienced that, some of new e-Government development require them to create and provide technical capabilities that may not necessarily exist in the organisation before (e.g. IT and

operational development administrator). As mentioned in Section 4.3.3.2.2 the council management wants to re-use its technological capabilities to achieve its organisational goals and objectives. Therefore, having the technological capabilities in place to support a new e-Government plan could help to speed up the process of developing an enhanced e-Government service. Therefore, the review of existing operational capabilities of the organisation could assist the management a lot in continuing the e-Government plan.

In addition, the informants stated that the practice of mapping technological capabilities in the council could provide a better overview of how much a new solution may be needed and how much the council could re-use its existing technological capabilities.

> ‘So to improve e-Government , you need to understand business, the business processes and the offerings they do, the IT capabilities, and how they match up and work together. So it is on our enterprise architect to overview all our capabilities, so all of our applications and what each application offers as a capability, and then saying your service use this application. These capabilities deliver your service in a better way, more efficient way. I have got an example […] We are just delivering school closures. It is not quite live you know. The snow is coming. […] It was a manual process to deal with that message then tell the local radio, put it on the council website and tweet about it and then get the message out. We have an ultimatum about using one IT product. […] So we improved the actual process of that service. So I see, the e-Government is going to improve the local authority by improving the business process by using IT more intelligently and more re-use of IT, not always buying new products.’ (IS/IT implementation administrator)

Moreover, the informants believed that the some technological capabilities may not necessarily exist in the organisation. There have been highlights on identifying the best technological partner to procure the required technological capability in the council (see Section 4.3.3.2.1). This somehow highlights the importance of understanding the need

and providing the best of technological capabilities to support the e-Government initiative that may not necessarily exist in house.

> ‘We do not necessarily have the technical competence in house to make sure that we are making sound decisions around the future of the web. Because our capability is quite limited, because we have got a strategic partnership with [the name of company]. So, the in-house capability that we have got inform me about making the right decision is quite limited.’ (Strategic decision maker 2)

4.3.2.2 Budget

This section focuses on the sub-theme of the budget: This section discusses financial challenges and considerations for public sector administrators. As a result of analysing collected data, two types of perceptions concerning the influence of budgeting in the managers’ decision-making have been perceived. One point of view is that the budget could act as a restrictive factor when the council management engages in the process of decision-making. The management had to consider the departmental budget to judge and ground their decision on e-Government decision-making (e.g. IT and operations administrator and Business performance improvement decision maker). The informants had said that consideration of the budget may not always lead to the decision that is the best for the council. However, the decision will be grounded, based on what can be accomplished with the budget available to the department. Therefore, the informants were somehow unhappy with the result of this situation because they could not perform the worthiest projects. During the decision-making process, the management stated that they would consider how much the solution is going to cost the council and how they could budget for the solution (e.g. Business and IT strategy decision maker). Sometimes the council had to choose the solution that fitted within the council budget rather than choosing an alternative that is the worthiest decision for the council.

> ‘One of the problems we got around that sort of things is the recent portfolio budget. […] it sits within the service budgets And so it is generally the services with the most money that can do things rather than possibly do the most worthiest projects.’ (Business performance improvement decision maker)

Another challenge that was highlighted by informants was the challenge of acquiring sufficient budget to do the project (ICT implementation administrator 1). Informants stated that the lack of budget constrains their decision-making in the council, while it also adds to the need for taking a budget wise decision.

> ‘The first phase of that and part of that was putting a new content management system to give us the functionality to be able to do an lot more online that we currently do and that strategy has really shaped the councils vision for where they want to go online in the future. The challenge of course is having the funds to be able to continue investing an moving towards delivering the whole vision.’ (ICT implementation administrator 1)

> ‘I would say decision making is changed in the fact that, certainly budget wise, there is more responsibility on managers to manage that budget, than there was before. There obviously are more constraints because obviously budget got tighter over the last, certainly over the last few, years.’ (Business and IT enhancement decision maker)

Nonetheless, it seems that the situation led to the introduction of an alternative, which is greater engagement with e-services and e-Government solutions. The high cost of the previous service provision model, which was very much face-to-face, had involved a considerable monetary cost for the organisation. That led to the consideration of a cheaper operational concept and an advanced way of communication that is e-Government. Therefore, it could be perceived that, although the issue of budget constraints has acted as limiting factors, it also draws attention to allocating a budget to invest in any e-Government development.

> ‘Budget challenge, which is linked to service changes and budget planning services, and that’s linked to this thing, this big push, people want to look out and go yeah, we can use some of these

> services as a cheaper channel. So people are grasping on to that sort of thing at the moment because they need to estimate savings year on year and so that's certainly something that's happening that would affect sort of e-services.' (IT and operational development administrator)

In addition, the informants were referred to the situation where they will wait to see which team and department have money allocated and had a spare budget to initiate a new e-Government project. In fact, the possibility of having access to the spare money could result in the improved attention to investing in a new e-Government project.

Moreover, there has been an emphasis on the fact that there is the considerable impact of government policy, i.e. budget cuts, in the daily operation of the council. This has led to the raising the management team's attention to acquiring more cost effective solutions.

> 'It is related to government policy. The key driver was seen obviously as is financial because every single council would save millions of pounds every single year. The time where you know actual cost is going up for services that we are procuring, that kind of thing, even as you know gas, electricity that kind of things. So the time where even the budget is the same within the department, it always means you are going to save the money and that is the key driver going across the organisation, local government.' (Business process improvement administrator)

4.3.2.3 Economic Climate

The financial crisis of 2008 introduced a new concern to public sector organisations and that is better management of financial resources and budget. It introduced the concept of more careful management of the allocated budget to the public sector organisation as well as reducing the costs and recognising a level of financial pressure in public sector organisations. More information about the impact of the financial crisis is provided below. The practice of coding the collected data identified that the recent economic

downturn, also known as a 'financial crisis', influenced the decision-making activity of managers when they intended to implement a new project to provide e-Government services quickly. In fact, the influence of the financial crisis was not entirely negative, but it has acted as a factor leading managers to search for greater efficiency and effectiveness as to how to provide their services. All these activities and initiatives were aimed at reducing the operational costs.

> 'I think the other factors are around the climate [financial crisis] that we are currently in and the drive for efficiency and effectiveness. So there are some financial efficiency drivers.' (Strategic decision maker 2)

Based on the facts discovered in the section on operational factors, providing government services through an e-Government channel was perceived as a way that could possibly provide greater efficiency and effectiveness. Therefore, the current economic situation may not necessarily have hindered the process of decision-making to provide e-Government services, rather it became a motivating factor to decide to accept an e-Government project proposal. Nonetheless, the negative influence of the financial crisis remains. The financial uncertainties existing in an organisation, due to lack of confidence in availability of money (ICT implementation administrator 2) and vigilance of managers for any possibility of rapid change in the current economic climate, were emphasised as factors to be considered by decision-makers.

> 'We won't be expecting certainly the big financial crash that we had. So again there are things that happen, you know, that it is probably economic factors happen you did not envisage and certainly […] comes along and it goes and hit you in the face. So, you have got that as well. So it again obviously does impact.' (Business and IT enhancement decision maker)

In addition, the financial crisis affected the mode of communication between different departments of an organisation and citizens. This was clear from the statements of

interviewees that ‘ the [economy] has a quite big influence on how we [the organisation] deliver our [its] services; how many people we [the organisation] need to deliver our [its] services and what IT requires to deliver those services’ (Business and IT enhancement decision maker) .According to informants, the change in the economy not only raised concern over the cost of the organisation’s operation, but had also affected the way the organisation operated and communicated because of the lack of budget.

> ‘Economies seem to be affecting everything we do, not necessarily just cost. It might be money available. The ways that you contact us will change because they [management] have less cash to spend.’ (ICT implementation administrator 2)

According to informants’ statement, the current attention of the organisation was on the operational aspect after the financial crisis. The management attempted to create more cost-saving processes. This means that the management was expected to reduce the impact of the financial crisis by operating in a smarter manner than it had previously and electronic channels were perceived as suitable solutions to provide this kind of delivery.

> ‘So you are talking all products and business says: I want to improve that by 20 percent, i.e. e-Government. […]So if it is a new service, as it is on target, it is still going to be smart. So if this is an old service and delivering the service now in this economic climate, we need to deliver the same service for 20 percent less, often the figure is just higher or …we need to reduce this service by £20,000, that is a figure, …so, I am going to spend this amount of money to change it, but the benefit I get from it, is this amount […]. So, I up front the money into it. So, I am investing the future kind of thing. I am investing now to save. It seems a paradox, to spend money to save money, but that is often what you have to do.’ (IS/IT implementation administrator).

However, the influence of the economic climate on the attitude of management at the time of engaging in decision-making activity cannot be ignored: either the financial crisis persuaded management to invest in more advanced e-Government projects to achieve efficiency and effectiveness and consequently achieve some reductions in

operational costs or it prevented any new investment in providing new e-Government services. Regardless of decisions taken ultimately by management, an obvious sign was observed of change in the decision-making attitude of management. According to the informants, more attention and consideration to the process of decision-making was given recently because of the economic climate.

> ‘You know, it is always a more considered decision. There might be some influence applied but I think generally, particularly more so given the economic climate that we are in. I think decisions are being taken with every intent to implement.’ (ICT implementation administrator 1)

According to one of the informants, ‘the e-Government stuff came in and then [there was] lots of money around and people drawing that money because [of] doing [the] e-Government projects’ (Strategic decision maker 1). It is completely clear that the economic climate probably changed this kind of management attitud. The decision-making over e-Government projects was taken more sensibly and realistically than before.

Therefore, the dual influences of the financial climate on the decision-making practice had been noted. The tight finance of an organisation due to the financial crisis had been deterring the decision makers from making the decision to run a new e-Government project. At the same time, the idea that the use of e-Government could bring efficiency and effectiveness to the organisation motivated the management to decide in favour of the e-Government project. However, the general perception of informants was that the e-Government project could be a solution to address the negative influence of the economic climate. According to informants, a change of operational procedures towards smarter processes led the organisation to achieve efficiency and effectiveness and reduce the influence of the economic climate.

4.3.2.4 IT Cost

The informants highlighted two types of technical costs that they will consider when the IT costs are a matter of concern, namely, application cost and hardware cost. Application cost covers the software aspects of IT compared to hardware cost. The issues such as IT equipment licencing, the scale of system development, system maintenance expenses and staff training costs are the main emphases when application costs are being reviewed by public sector managers. However, hardware costs mainly include aspects such as IT infrastructure costs and ensuring end user device compatibility with a new system. Further information about each of these elements is provided in section 4.3.2.4.1 and 4.3.2.4.2. The concept map for IT cost is presented in Figure 25.

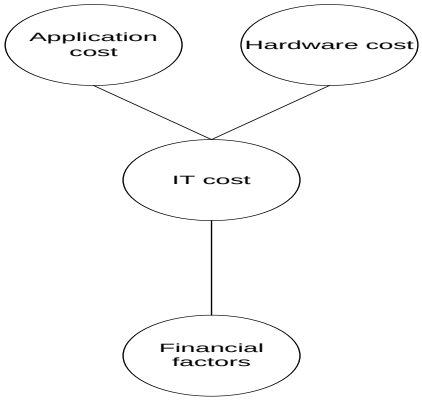

Figure 25: Concept map for IT cost

4.3.2.4.1 Application Cost

Each proposal for enhancing e-Government services includes some information about the range of technical changes required to support the solution and the costs of equipping an application to support the solution. The informants stated that there was an assessment of the potential application costs of the selected solution carried out by the management team. Moreover, the application cost assessment covers other upcoming costs such as those of maintaining the application. The implementation and adoption

costs of an application might not necessarily have a significant financial cost to the organisation. However, the hidden cost is going to be the future maintenance cost (IS/IT implementation administrator).

In addition to the application cost, there had been an emphasis on understanding the range of technical changes, which are associated with each solution. That contains a series of costs for the organisation because of the need to equip an application/s appropriately (e.g. IT and operational development administrator). Another sort of cost, which is associated with the application selection, is the cost of training staff to use the new advance (e.g. ICT implementation administrator 2, Strategic decision maker 1 and IS/IT implementation administrator). Later in this section, further explanations about each of aforementioned application costs are provided.

The informants highlighted the fact that applications and IT equipment licencing were a part of the responsibilities of the council IT solution provider. The council outsourced its technical capabilities and an outsourced IT vendor was chosen as technical partner and solution provider for the council. Therefore, it was a part of the technical solution provider responsibilities to appraise and assess the potential costs of an application, which cover activities such as software licencing, cost assessment and providing recommendations.

> ‘Well, basically, the responsibilities of [name of IT provider], whenever they put a solution forward, are that they ensure that if there are any additional licences required to implement that solution, that is all included in this solution and associated cost that are presented back to council. They have the responsibility to ensure that, the councillor in terms of its IT, is appropriately licensed. Obviously, there are organisations like FAST and so on that you know check these things, and they that did the supplies themselves of the software products also check on the regular based system. [Name of IT vendor] managed that conversation on our behalf to make sure

> that we can prove that we are appropriately licensed for everything that we used.' (Business and IT strategy decision maker)

Moreover, one of the informants divided the licencing into two forms, namely, *enterprise licencing* and *individual licencing* (i.e. IS/IT implementation administrator). Enterprise licencing includes providing licencing for the whole organisation, however, individual licencing contains only to a few departments or an individual user.

Maintenance of an application was one the informants' considerations. It seems the informants were greatly concerned about the technical difficulties and maintenance costs of implemented IS/IT solutions. There were a series of questions being asked by informants before their engagement in the process of selecting a final solution to ensure that they clearly understood the future maintenance and support expenses of each application. Finding answers to questions such as: 'Is it going to cost us more?' Alternatively 'Does it change the support and maintenance arrangements?' 'What is the time scale for implementation?' and 'What is the cost?' (Strategic decision maker 2). The reason for claiming that there was a high level of cautiousness around future maintenance cost of application was that managers perceived the potential high potential costs of maintenance of applications that may also surpass the original price of the application which may have used the technological budget of the council.

> 'The cost of that [licencing issue] as well. I think we've had issues in terms of the ongoing support and things of certain applications, which means that influences a decision on whether we should return that application and therefore, as a decision to move up to a different application and consolidate costs. So, I suppose, it is probably a technological budget decision isn't it?' (IT and operational development administrator)

This situation may also lead the council to re-use a pre-existing application to respond to their current IS/IT solution needs or buy the off-the-shelf products because the application had been already tested and the application security ensured.

> 'Because some security, very rarely we would develop from scratch because that is quite high risk, because of the high cost of maintenance. Usually, you buy enough products off-the-shelf because you have more guarantee that is been tried and tested. The bugs have been worked out of it and you have got a support representative around that product from the supplier.' (IS/IT implementation administrator)

Staff cost to support the application was also one of the considerations of managers when they engaged in e-Government decision-making activities. Although the staff cost could be perceived as an operational element, it is categorised as a technical aspect because of its associated cost with the operationalising of an IT application. This cost was divided into two types of costs: *the staff cost of application support* and *the staff training cost*. The informants described the staff cost of application support as a '… [the] cost of the staff to support that system' (ICT strategic decision maker). Basically, it means that the technical staff, which are an integral part of any IS/IT system implementation, are responsible for ensuring the functionality of the system. The second type of cost is the training cost of ordinary staff to enable them to use the application.

> 'Some of the systems may do what we want them to do, but the staff have not been given a training to show them how to get the system working for us. So that [staff training] is absolutely key. We are putting in a lot of new systems at the moment. We need to make sure that we give the staff the training and support.' (ICT implementation administrator 2)

Another issue, which was highlighted by informants, was the end-user device compatibility with the chosen application. According to informants, it is quite important

to make sure that the application, which is designed and selected to be used by the end-users, have the standard technical configurations that could support and empower the usage of an application by the end-users. Otherwise, the council would lose its communication with its constituents.

> ‘It is also about solution compatibility. So if you are to get out onto the computer and the computer that you sent out, the version that nobody will have because it is higher, then you are going to lose the message because so many people cannot get it.’ (Service enhancement decision maker)

Interestingly, in response to the need for provision of a compatible application for the use and the benefit of the council’s end-users, the informants mentioned the need to finding answers to a few questions such as: ‘How would the application meet the needs of its end-users?’ (e.g. Business and IT strategy decision maker), ‘Are we going to use the existing technical capabilities?’ (e.g. Strategic decision maker 2), ‘How is the new system going to be used? (e.g. ICT decision maker) and ‘Are there any operational constraints against on the usage of application?’ (e.g. Business and IT enhancement decision maker) Based on answers the decision-makers receive for each of these questions, the decision-makers have to attempt to fix the situation appropriately. One of the informants provided an example that the council had to re-configure and adjust its application to grant access to its e-Government services through Firefox browser. The example is provided below.

> ‘[…] We have to upgrade part of our website which was not compatible with Firefox [browser] because at the time […] our […] site […] would only work with Internet Explorer. So that was obviously you know, not good. So we upgraded that.’ (ICT and service enhancement decision maker)

As was explained earlier, an application cost contains three elements, licencing cost, staff training cost and device compatibility. Licencing and staff training costs also have budget implications. Device compatibility of the application also may depend on hardware cost that will be further explored in the section 4.3.2.4.2.

4.3.2.4.2 Hardware Cost

The informants pinpointed that there is a need to ensure that the proposed technology meets the principal design of the council. According to the informants, there was a corporate strategy board, which was responsible for reviewing the proposal and ensuring that the hardware solution fits within the architecture design of the council, or not.

> '[…] So I have got to fit with corporate architecture and design [in the quadrant]. So does it, would it fit with council design around ICT infrastructure? Are we talking about [silence], is this just about, using our existing technology or are we saying that we require something new and different.' (Strategic decision maker 2)

Also, informants had raised a concern that a change in technology might halt public access to a series of government services that had previously been accessible through its e-Government channels. Therefore, from the informants' point of view, the assurance of the continuity of the existing services was a prominent point to emphasise.

> 'Technology point of view, as I say again as a strategy. The elements need to fit into that strategy. We need to fit with the architecture. They need to be robust, the organisation [different portfolios in the organisation] supplying them needs to be and there has to be no doubt that they will continue and be able to provide that service.' (ICT decision maker)

The procurement of adequate hardware technology to support the e-Government development plan was named as another element of IT hardware costs. The informants were named the potential hardware, which was required to provide IS/IT services that

are: server, network, personal computer and laptop (ICT strategic decision maker). One of the informants described the hardware IT cost as follows:

> ‘There are two types of cost in this space [a decision-making map quadrant], it’s capital investment; how much does the server on application cost […]So typically that could be 100K and […] 100K would be to get the application technology in place and it will probably cost business 50K to run it, that is the technology cost.’ (ICT strategic decision maker)

Therefore, the informant divided the hardware costs into installation and operationalization costs of hardware devices. To conclude, hardware cost means ensuring hardware technical solution compatibility with the organisation’s IT infrastructure to guarantee service operation continuity and also includes the cost of buying hardware to support the solution. Two types of IT costs are presented above. The application cost contains the element of staff training that is also linked to the training terms that are presented in section 4.3.1.2.2. Change of condition in any of these two elements could dictate a new scenario with another element. The application compatibility, which was presented as a part of application cost, could also be associated with the procurement of adequate hardware technology. Also, the procurement of adequate hardware technology and the licencing application are under the influence of the budget available to the organisation for supporting the council’s operations.

4.3.2.5 Section Summary

This section discusses and explains the theme of financial factors that include four sub-themes namely, cost vs. benefit assessment, budget, economic climate and IT cost. Cost vs benefit assessment includes the consideration of profitability of solution, capability and capacity assurance of the solution. Capability assurance links with having a

sufficient in-house IT capacity to ensure that they could support the e-Government development plan. Also, profitability assurance is related to cost saving which mean less budget are needed to support the organisation's operations.

Budget, however, perceives as a challenge for e-Government decision-makers since there is a strict policy set in the council to achieve cost-reduction objectives in the council. The budget policies could be defined internally that is a corporate strategy and externally which is a central government policy. Moreover, the occurrence of the financial crisis in 2008 has added to the burden of public sector organisation that result into the enforcement of more budget spending behaviour. This situation does not only inspire wise budget spending behaviour in the council but also it has intrigued seeking an efficiency and effectiveness that eventually lead to provide new e-Government development. Because, e-Government solutions known as one of the media which can mediate the council towards efficiency and effectiveness. IT cost is one of the associated costs of proving a new e-Government development that includes application cost and hardware cost. Interestingly application cost could be reduced by using existing IT capabilities in the council (see Section 4.3.3.2.2). The section 4.3.3 explains and discusses the technological factor that identified as a next series of themes that influence the public sectors administrators decision.

4.3.3 Technological Factors

This section discusses the technological issues of e-Government decision-making. It includes three sub-themes that are: IT risks, the scale of IT improvements and system accessibility. IT risks and limitation in system accessibility could have a limiting influence at the time of decision-making. However, in-house IT infrastructure potentials

could boost the managers' inclination towards agreeing the project development. The final thematic map for this theme is shown in Figure 26.

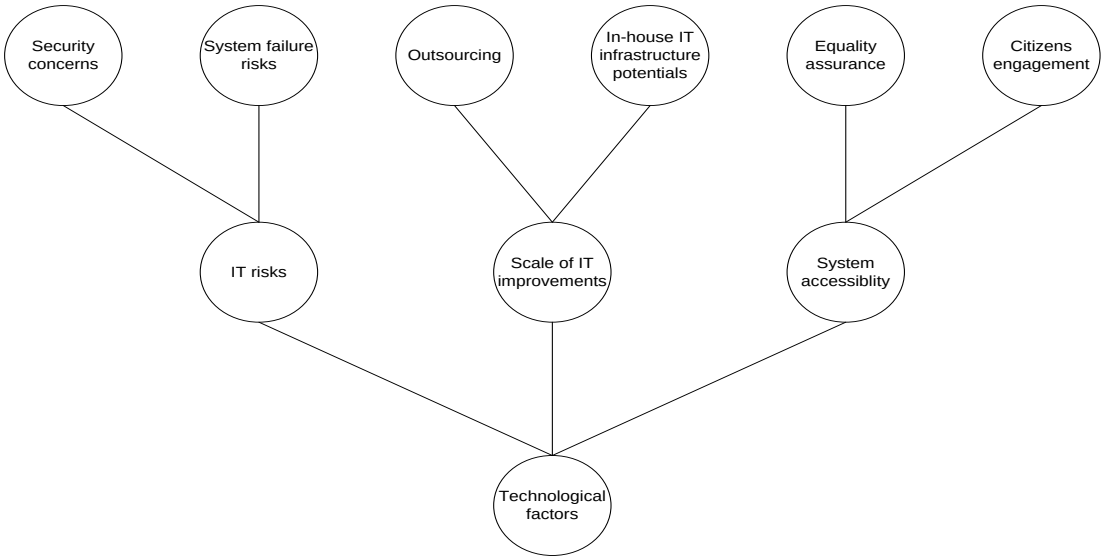

Figure 26: Concept map for technological factors

4.3.3.1 IT Risks

Informants mentioned two types of IT risks, which were detrimental to their organisation, which are *security concerns* and *system failure risks*. Each of these risks is explained in sections 4.3.3.1.1 and 4.3.3.1.2. The cartoon of IT risks is presented in Figure 27.

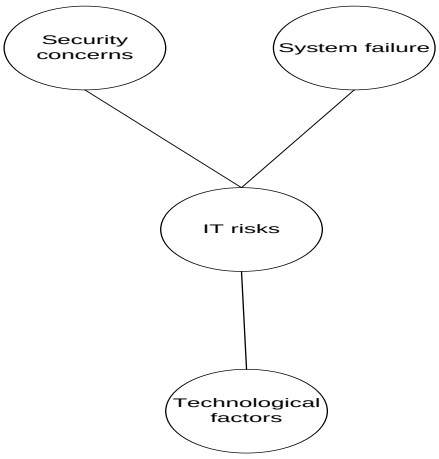

Figure 27: Concept map for IT risks

4.3.3.1.1 Security Concerns

Informants stated that the issues of information security and response to record management policy are the first priorities of decision-makers and they always need to ensure that their IT solution meets the security policies of the council (Business and IT strategy decision maker).

Informants claimed that there are different routines and principle that needs to be followed to confirm a final decision does not bring any informational security risk and consequently reputational damage to the public image of the organisation (Service enhancement decision maker). The information security assessment would be followed by adhering to a series of written 'IT policies, Data Protection Act and Information Access Law' (Business and IT strategy decision maker), which has been set by government, that oblige the council to adhere to the government's statutory and legislative requirements. Therefore, it seems there is a well-structured ground in terms of information security in the council. ICT strategic decision maker named different types of information security (i.e. IL0, IL1, IL2 and IL3) that indicated a security level of information, which is being stored in the council system, and identified a level of security measurement, which needs to be taken into account to protect the information.

> '[…] So if I want to know when the parks open? It is not really sensitive information. If I want to tell you about, [silence] I want to report a neighbour that I think might be abusing a child, that is a different sort of information.' (ICT strategic decision maker)

> 'So in terms of information, obviously it is what type of information they are going to request?, is […] it worthy of sensitivity ?. Is it going to be confidential? etc. […] There are different categories and classifications in local government. We have classification scheme and you may have heard of IL3 and IL2 and things like that, but obviously if we have got some data classified as IL 3 data then obviously that intentionally has impact here [technological quadrant] and all of these areas [other quadrants] because social aspect is

> [silence] there is a higher concern by a member of the public if the information provided is sensitive.' (ICT strategic decision maker)

The informant claimed that there were different types of question, which are being asked by decision-makers to identify the data classification. The questions, such as 'What type of information is being recorded? What information do you need? Who you are getting information from?' (Service enhancement decision maker), help the decision-makers to identify the level of information security risk. In addition, if the solution led to the creation of formal records, then record management policy will become important. Record management policy aims to monitor and clarify whether the data that is going to be stored in databases is properly managed and the information is kept properly based on the record management policy.

> 'Yes, it means that for instance if the solution creates formal records, transactional records, then it must be appropriately managed by that system or it might [silence] it needs to be launched in the right place. So those records get appropriately managed. What do I mean by appropriately managed? So for instance, the system might actually generate financial information that will may need to be kept for at least 7 years. So it needs to be launched somewhere that automatically manage that retention requirement. So definitely it has to be 7 years and it automatically gets deleted, so that we adhere to Data Protection Act and the other relevant Act intended for the retention of sensitive or personal information.' (Business and IT strategy decision maker)

In addition, the informants briefly referred to the recent change in the system access policy, as an example of attempts, which have been made by the council to uphold its e-Government security at a high level.

> '[…] You cannot access [the system] via Firefox when you are at home. So we cannot update webpages at home which I think is identified as a security issue anyway.' (Information and service development administrator 2)

This council attempt could be considered as a further protocol to keep e-Government security to a good standard. To conclude this section, information security assessment and an identification of the risk level of information that is going to be kept in the council databases are identified as important objectives to maintain. The decision-makers are responsible for upholding the security of their e-Government at the expected level requested and mandated by the government. The security of the system was also perceived to be important and that resulted in the definition of different security protocols in the council (i.e. the limitation of access from outside the council e-Government).

4.3.3.1.2 System Failure Risks

Concerning system failure, only three of the informants stated that technologies could fail to deliver the expected outcome and functionalities. ICT decision maker stated that:

> '[…] Councils are generally risk adverse because they are political organisations. And with any technology, there is a risk that it doesn't work, as we found out this week, and then you know bad press. No one wants bad press, no one wants to be found kind of wanting.' (ICT decision maker)

In the above mentioned quotation, it is clear that the system failure is considered as reputational damage for the council. In addition, a risk of system failure could be expected in almost any e-Government development and implementation. From another point of view, the informants considered the maintenance of e-Government, which has failed, is sometimes cumbersome and time-consuming.

> '[…] in terms of us actually being able to use things, you need to do your job. That has not happened. Yeah, that is a disappointing feature [informants refer to one of system's functionalities] and when those things [problematic features] are identified thus far in a year, a year and half of implementation, we have seen […] complete refusal to address the problem, as opposed to OK, we got the problem. Then it is fixed and you know that functionalities come back. It is gone

> and a year later it is not back and it falls over.' (Information and service development administrator 1)

Therefore, the management has to expect the potential of system failure in almost every e-Government decision and consider the range of alternatives, which can be used to rectify the situation. In addition, in term of managing e-Government failure, the management have to consider that the failure may not necessarily have an effect only for a short period.

4.3.3.2 Scale of IT Improvements

The scale of IT improvement covers technological difficulties, which are associated with any e-Government plan. It is in fact about how much technological improvement has to be made to support the goals and objectives of the plan. Two levels of technological development i.e. small and large scale changes were identified and each of them is further explained below. Figure 28 shows the concept map for the scale of IT improvement.

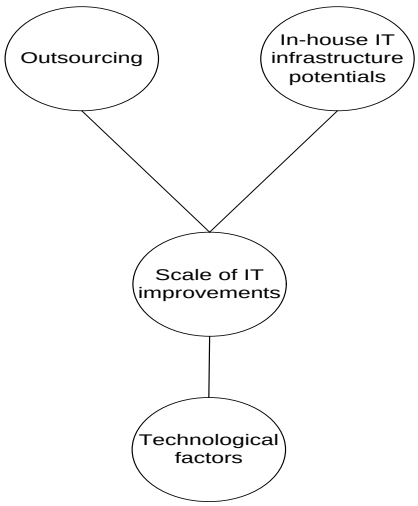

Figure 28: Concept map for scale of IT improvement

A level of technological development, which the council has to provide for their e-Government project, had an influence on the public sector administrators' decision-making activity and also their perception of the scale of technological development that the project is required to go through. The informants had named two main scales of change, namely, small and large scale. The small scale was categorised as actions such as the provision of an access point (e.g. ICT strategic decision maker), changing and improving the web contents (e.g. ICT decision maker) or introducing a new piece of functionalities at a departmental level (e.g. IS/IT implementation administrator). However, the large scale was referred to as those initiatives that introduce a new type of change to the council, accompanied by a considerable level of organisational and structural change. In addition, the informants stated that there were several considerations concerning to the level of technological development of the new e-Government development proposal. The questions such as: What is the nature of each change? and What is the technical scale required for each development could assist the managers in identifying the level of technological development ?

> '[…] When we get a request in, we do not automatically just satisfy that request that way. We take this approach and look at this request and then we bring it in to this and say: how we are going to do that and in some cases, as I say, it could be the decision; is it the application we own in the council, [is it something that] we host and is it a central government system where we just access and input information or actually it is a cloud-based system that we have or is it a new system we want to do and we are comfortable that we can do it in the cloud although if the provider is outside the EU cloud […].' (ICT strategic decision maker)

In addition, ICT strategic decision maker stated that, at the time of decision-making, the managers were considering the answer to questions such as 'What is the potential scale of change for the current system ?' and 'What is the cost of the current desktop ?' Moreover, the informants stated that the attempt to initiate a change in the system could

originate from different sources such as within the services team, customer feedbacks, or customer service team.

Interestingly, the scale of IT improvements and two factors of projects' initiators (i.e. section 4.3.1.1.3) and operational development degree (i.e. section 4.3.1.2.1.1) are interrelated. Different levels of technological difficulties were identified (i.e. small scale and large scale). In addition, there is a perceived relationship between technological development difficulties and decision-making initiatives. It is expected that the large scale of changes would be mediated through a top-down approach while the small scale of changes managed through sideway initiatives. According to informants, to address the scale of IT improvement, two aspects of the need for outsourcing and re-use the existing IT infrastructure will come forward to tackle the requirements of procuring advanced technological systems. These aspects are further discussed in section 4.3.3.2.1 and 4.3.3.2.2.

4.3.3.2.1 Outsourcing

Lack of internal IT expertise was stated as a one of the challenges for the council management. So the council member had to search for an outsourced partner to assist them to assess and push a project forward from an IT perspective. Informants stated that the council did not have the in-house IT expertise and they considered it as a limitation of the council. The council had a partnership with an IT outsourced partner and it was the responsibility of the outsourced partner to advise the council and provide technical solutions. Nonetheless, the management had felt the lack of skills and proficiency in their IT decision-making. In addition, the management did not perceive their IT partner was as a sufficient advisor concerning e-Government development and provision and stated that they were actively looking for other advisors to recommend to them appropriate IT solutions.

> ‘We do not necessarily have the technical competence in house to make sure that we are making sound decisions around the future of the web. ; because, our capability is quite limited. Because, we got a strategic partnership with [a name of company]; so, the in-house capabilities that we got inform me that making the right decision is quite limited. So I am often searching for critical friends outside the organisation to say, look we are going to make this investment in the web; it is significant and is this a help to us, is this a right direction of travel , is it going to get us to where we need to get to? And often that technical capability competence we do not have it in the organisation. ’ (Strategic decision maker 2)

Nonetheless, looking for alternative advisors could be considered as a step to ensure the appropriateness of the solution. This is provided by the main IT provider and internal departments within the council and reduce the associated risks of the decision. In fact, an external advisor could have a prominent role to usher the final decision of the council in a new direction. Since the informants stated that the web-strategy, which was written by an assistant to an external advisor, resulted in a change of direction of the management decision.

> ‘We have upgraded our web platform, but before we did that, we actually engaged with the local company called [a name of company] to do it, develop with us a web strategy to underpin how we think our web capability should develop strategically. We then have a programme of upgrade in terms of a capability of our platform to underpin that web-strategy.’ (Business and IT strategy decision maker)

> ‘[The name of external IT advisor] wrote a strategy and they suggested that the CMS we were using wouldn’t fit the strategy. Okay so, we haven’t purchased it yet. So they said, we needed to go open source. So we can configure it better to suit our needs rather than buy a proprietary system. [the name of internal department] would not have, that was not in their strategy using open source and was creating bespoke because of its costs. So there was a bit of discussions and eventually they decided to go with [the name of external advisor] decision and we got Magnolia on their recommendation.’ (ICT decision maker)

Outsourcing the council’s IT needs was initiated as a result of a trend towards specialisation in the public sector. It had some benefits for the organisation such as

transferring all technical responsibilities to the IT vendor to ensure the application is bug free and it is procured with a reasonable level of security, which is related to the information security concern presented in section 4.3.3.1.1. Nonetheless, the managers perceive that a lack of internal technical expertise could act as a barrier to taking a sound decision. The role of an IT partner was perceived as quite important in the council because, as it presented a recommendation or guidance by an IT partner, it could direct the council to a new pathway of e-Government development, which was not previously perceived as an option.

4.3.3.2.2 In-house IT Infrastructure Potentials

Public sector organisations have too many system applications and technical capabilities that can be re-used. Nonetheless, the recognition of these technical capabilities and an attempt to reuse those capabilities remains challenging. Further explanation is provided below. The use of existing technological capabilities of the local council was one of the main emphases of informants. The interviewees stated that their use could not only help the council to reduce its application development cost, but also could reduce the maintenance cost of the application (IS/IT implementation administrator). Since the informants stated that, there are hundreds of applications in the council (Business and IT enhancement decision maker), which need to be maintained and kept functional. In fact, fewer applications in the council equal less maintenance cost for the system and fewer expenses for the council that could end with considerable monetary savings. For example, ICT strategic decision maker identified that having CRM system in place has helped them to address a considerable number of requests for change, which were submitted to be addressed.

> ‘So in the council, we got over a hundred business applications and our architects who work in this phase can assess quickly whether or not a system we already have can meet the demands and need of this

> request. The CRM one of the key business impact business opportunities […] . CRM can actually, in most cases, handle a lot of information and we had a number of requests for change (RFC) come in from the organisation where we have been able to satisfy that demand in the application space by using CRM. To be able to invest in, without any additional cost, because we already got some. All we have to do is just to configure some modules or whatever, we have not gone to buy another system and traditionally when e-Government was started was what we used to do. And the reason why many organisations have got a lot of services engagement around the request, typically used to come in point to point.' (ICT strategic decision maker)

One of the other reasons for an attempt to re-use the existing technical capabilities of the council apart, from the high cost of developing and maintaining the application, was the financial aspect of the e-Government project. The informants believed that lack of attention to the technical capabilities of the council could result in the production of a series of applications and services that are not linked and connected. To be more specific, the informant used the word 'Silos' (IS/IT implementation administrator), of technologies, which are not connected together, and the cost of developing and maintaining a system is going to be too high. In fact, one of the informants were strongly pinpointing that this situation should never occur and the technological solution 'should never being provided and produced in isolation' (ICT strategic decision maker). ICT strategic decision maker stated that those technological solutions have to meet other perspectives' requirements. In addition, the informants highlighted that reviewing the proposal case by case could prevent the recognition of other technical capabilities existing in the council that, following a corporate strategy, could reduce the number of application, because a proposal would be reviewed in a larger perspective.

The informant stated that at the time of decision-making, the management will first need to find a response to a series of questions such as: 'Why do they need to issue an order for developing a new system?', 'How could they re-use an existing technological

potential in their organisation?' and finally 'Is there something that can be used and adopted to do the task?' (Strategic decision maker 1). In addition, a technical assessment could be performed by reviewing the requirements of a new system against developing systems and existing technological capabilities in the council. According to informants, this kind of assessment could help managers avoid development of a new system in isolation that could consequently prevent duplication of effort and activities in the council (Strategic decision maker 1).

> 'I think the way we so often talk about [the e-Government project name], so it has to be delivered in an efficient way. We do not have a lot of money to deliver that kind of thing. So how can we make our technology help us to move our e-services working for us. You know, how can we make our existing case? So our customer services platform is already there. The customer services system informs systems; how we can make it work for us? And we do that by looking at requirements some, you know, mapping system like that.' (Business process improvement administrator)

To conclude the informants were mainly against to ground their decisions in isolation. To be more specific, the informants preferred to have a communication and potentially collaboration with different departments or organisations (e.g. IS/IT implementation administrator). Communication and collaboration could potentially lead to an identification of organisation's capabilities and capacities. In addition, the practice of considering what technical capabilities are available in the council could assist the organisation to save time, effort and budget. Therefore, the result of this assessment is of technological and organisational importance in a final decision that is going to be taken by public sector administrators.

4.3.3.3 System Accessibility

This section aims to discuss the sub-theme of system accessibility and present elements of equality assurance and citizens engagement that impact on public sector managers

decision-making. Each of these codes is explained in sections 4.3.3.3.1 and 4.3.3.3.2. The system accessibility cartoon is shown in Figure 29.

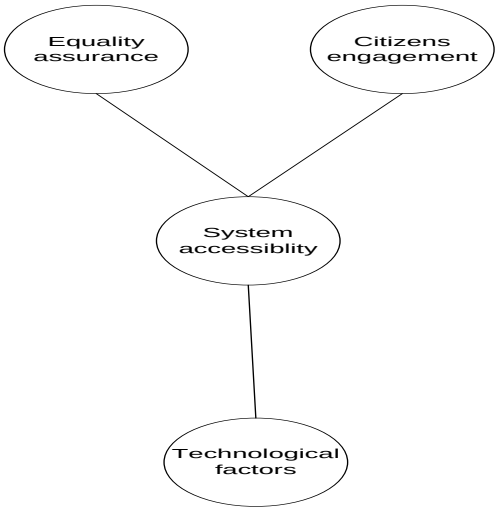

Figure 29: Concept map for system accessibility

4.3.3.3.1 Equality Assurance

The informants referred to the importance of ensuring that the e-Government provision does not exclude constituents using e-Government services. Issues such as medium of communication, age, IT literacy and income diversity are referred to as elements that were being considered at the time of decision-making. These elements are grouped under the heading of ‘digital divide’ and are presented below. Informants reported their concern that not all constituents could have equal access to government services through e-Government. The issues such as the medium of communication, income diversity of social groups, IT literacy and age were highlighted as the reasons for management concerns. Because managers make decision to provide public services, it had been part of their responsibilities to make sure that the way services were offered to citizens would not at the same time deprive citizens of access to government services.

A medium of communication is a channel that constituents could use to raise their needs to government and seek advice and solutions for their concerns. Although the informants had stated that 'We [They] are absolutely committed to this [e-Government] and we [they] want to improve and implement e-Government' (Strategic decision maker 1), there are still some groups of constituents that prefer to use 'traditional methods' which are face-to-face and telephone to communicate with the Council (Strategic decision maker 1). According to informants, the council pursues this 'channel shift', which means the replacement of traditional methods. However this replacement was carried out under the important principle that it would not result in disadvantaging citizens.

> 'So channel shift is a quite key one. Because if we are going to shift people from telephone and face-to-face to electronic service delivery, then we need to make sure that we do not disadvantage anybody by doing the services and that is quite a key thing, for example for politicians.' (Strategic decision maker 2)

It seems that the selection and introduction of an appropriate communication medium at the right time was quite important. This is also related to the topic of citizen engagement that is discussed in section 4.3.3.3.2. One of the interesting facts was identified among quotations belonging to the *Equality Assurance* code. One of the informants stated that there were a small number of people (for a particular service) in the council that can access government services online. 'Information and service development administrator 2' said: 'to be frank it was also particularly for [the name of service] that very small number of our clients who would have actually internet access at home'. However, the interviewee later said: the situation becomes better and the audiences of services could access online government services in libraries, 'friends' and relatives' houses. Nevertheless, this issue highlighted the very interesting fact that the

management needed to ensure that their service audiences were capable of accessing their services through e-Government.

> '[…] You need to …put forward delivering effective communication channels through online facilities and to be frank, it was also particularly for [the services that] have very small […] number of our clients who would have actually internet access at home. […] It was not the big agenda for us, because it was not a primary communication tool. Now if the people working with them are supportive, do not have internet access, they will have relatives, friends or use of communities or libraries. So their access to the internet is much greater and there are expectations of what should be delivered in terms of information.' (IT and operations administrator)

Another interesting quotation was extracted about the need for physical attendance of citizens in the council building to complete certain kinds of businesses. Therefore, e-Government may not always be a great solution for certain kind of communication with the city council.

> 'So one thing is how they [citizens] want to interact with those [services], but obviously on other hand it is how we can deliver that service and how we want to interact with those people. Because sometimes you cannot deliver services just over the phone, sometimes it is the face-to-face thing. So […] even if the citizens want just to do everything over the phone, we could not necessarily do all that, make, do all our services that way, because you know there are things we do actually need to physically see people and do things. It is a two way thing, it is not just a one way thing really.' (Business and IT enhancement decision maker)

Although the informants' perception of e-Government was positive and they expect that e-Government will become more popular among constituents and there will be more access to e-services, e-Government may not always be the best communication medium, because not all constituents would have access to e-Government and not all government services can be accomplished remotely. The informants also emphasised the necessity

of opening other communication channels for those who will not engage with the new communication media (e.g. Strategic decision maker 2). One of the conditions found to be considered by management is the income diversity of social groups. Informants stated that there was a dichotomy in people's access to the computer. From informants' perspectives, those who can afford to have a computer at home were categorised into affluent members of society, and they were more likely to access e-Government compared to the disadvantaged members of society.

> '[…] From technological side, […] how's a customer free to receive information? Because some are aware that a lot of people do have a computer at home and a lot of disadvantaged people probably do not have a computer at home, probably. As do quite affluent people, in the middle of the road, everybody who is working. It is troubling to me that sometimes people do not actually have a computer […].' (Service enhancement decision maker)

Nonetheless, the informants mentioned that one of the initiatives of the council to increase the possibility of access to a computer was providing internet access in the council building for the use of constituents. One of the informants stated that compared to the past there has now been more usage of this facility in First Point at Howden House.

> '[Internet computer] is being used more now than it has been and about a quarter of enquiries downstairs are dealt with in that way.' (Strategic decision maker 1)

Providing public services through e-Government requires the assurance that citizens can communicate with government by having access to essential tools. The management decision to provide e-Government must consider the low-income group and provide facilities and access points in their locations to ease the burden of not having computer access to conduct the e-Government activity. The issues of access could be addressed by

providing more computers at local libraries and increasing the working hours of libraries.

IT literacy is another aspect that was raised by informants. The use of e-Government demands IT education and the council management was aware that there is a group of service users, which are IT savvy and can use e-Government services without any help; however, there is also a group of citizens that do not have any IT education and could not use the computer because of a lack of relevant skills. Therefore, the 'channel shift' would only bring frustration and feeling of deprivation in this group. The informants showed awareness of this situation and emphasised the importance of enabling this group of customers to access e-Government.

> 'You have got to take people with this [e-Government]. So as soon as you say no, you cannot do that anymore, you must do it online, what we will do is tell people, how to do it online […]. I mean with people who are IT educated, they love it because this is what they will do, but for people who are not, it is a real fear factor and what we have got to do is empowering and enabling them to use it effectively.' (Strategic decision maker 1)

The importance of training citizens to become IT literate is quite high among the elements of *Equality Assurance*. The reason for this priority is the relationship between *IT literacy* and two other codes of the *medium of communication* and *income diversity of social groups*, because if citizens do not learn how to use a computer, they will keep visiting the council to satisfy their needs and even if internet computer access points become more available, these facilities would not bring any change in the situation due to lack of IT training.

Informants reported that the age of constituents requires them to choose different strategies to establish e-Government communication, because some age groups have

different digital behavior that may not necessarily be similar to other age groups. For example, one of the informants stated that:

> 'I do not know young people for instance, (you know) like my daughter would not dream, (you know) its either texting, e-mail wherever you want to go. It is (you know) to get them to come in, (you know) may talk to somebody, that is what we want to do […] (You know) again how they interact is completely different. So if you want to reach, so again the target audience actually does have influence on how we want to provide services as well. Because what suits one group of people does not necessarily suit another and also you are not reaching people if you do not do that.' (Business and IT enhancement decision maker)

Therefore, based on what has been said by informants, the decision makers would have to consider the age group of their service audiences when they plan to provide new services. Those age groups who are categorised as 'digital natives' (i.e. born during or after the general introduction of digital technologies) are expected to embrace and use e-Government much earlier than the group known as 'digital immigrants' (i.e. born before the introduction digital technology). Digital immigrants often need more help and support to be able to conduct e-Government.

> '[…] let's imagine that we have got a 75 year old one who wants a disabled parking permission. We could not just say you need to do it online, or yes we show you how we do it and will sit with him and we are doing with him. So if often we get half-way through it and then say no, you need to put your name in, you need to press that button and that kind of thing, it is kind of supporting people to do it […]. I know my parents they will be lost, if they were asked to do something online. I mean they have not really mastered how to deal with computer.' (Strategic decision maker 1)

The decision to provide e-Government requires the attention of decision makers to the age of their constituents. Although senior citizens may not need to be present in the council building to address their needs, the complexities of completing e-Government transactions may also challenge these citizens. This issue requires the attention of decision-makers to identify what is the best way of doing e-Government with different

age groups and how they can do it. In addition, the government failure to cover the needs of different audiences equals to reputational damage for the public sector administrators since the solution has resulted into inequality in the public.

The medium of communication, Income diversity of social groups, IT literacy and *age* are elements that could prevent citizens using e-Government. The decision-makers have to find the best solutions that facilitate citizens' engagement and to consider these elements at the time of reviewing any e-Government plan. This objective can be achieved by empowering citizens and careful design of e-Government systems. Finally, yet importantly, the council is a public sector organisation and it has to provide equal services and opportunities for constituents due to its legislative responsibilities. The management has to ensure that elements above are carefully defined and addressed in any new e-Government plan. Otherwise, it could have reputational risks for the council because of excluding a group of citizens from having access to government services.

4.3.3.3.2 Citizen Engagement

The citizens' preferences for a communication method are a matter that decision-makers of e-Government have to consider. Two types of attitudes towards the e-Government concept have been perceived. One group preferred the digital communication method while another group still prefers the face-to-face form of communication. The next section includes further discussions of citizens' engagement. The result of empirical data analysis revealed that the method citizens prefer to engage government services had an influence on decision-making approaches of managers when they intend to offer their services. The informants mentioned that they received a considerable number of demands from citizens to communicate with them online. The informants believed that citizens are expecting to receive the same level of online service provision as granted to them by other organisations in the city.

> ‘I occasionally get a letter from people who expect services to be online and I think that is the issue really. We are not compared to another local authority because most people do not experience the other local authority. What we are compared against are other large organisations in the city and if you are a customer and citizen transacting with other organisation in the city, and you can pay for things online and you can apply for things online and you come to the Council and you cannot do any of those things then that is frustrating. And I do get letters from people who just expect it and, if you think about it now, it is the norm to be able to do things online.’ (Strategic decision maker 2)

It is clear that the informants felt pressure to provide more e-Government functionalities. The customer feedback about the operation of city council departments, in particular, demanding an online option, are the signs of citizens’ request for more digitisation of council services. For example, one of the informants provided an example of a citizen’s request for having access to an online payment option:

> ‘The main ones are the customers’ feedback. They told us they want to be able to pay for different services in different ways, especially online.’ (ICT implementation administrator 2)

Despite the fact that a group of citizens expected the council to offer more online services and the council management was also willing to implement more e-Government functionalities, there is still a large number of citizens that still choose a traditional method of communication.

> ‘We want people to serve themselves first; that is quite a fundamental shift because we have still got a large proportion of people in the city that want to contact us by telephone or to actually walk in and see someone face-to-face. So what we want to do over next few years is actually change that profile. So more people use the web.’ (Strategic decision maker 2)

Despite the government intention to provide their services online and also the interest of certain groups of citizens , the issue of citizen’s engagement with e-Government

services, which is more about acceptance or rejection of online services, needs to be properly understood and addressed by decision-makers. In the past, when the concept of e-Government was first introduced, the level of citizens' acceptance of these services was quite low. Citizens preferred telephone and face-to-face types of interaction rather than online services. However, based on informants' perception, this situation has considerably changed and there are now more people interested in engaging with government services online (e.g. Strategic decision maker 1 and Strategic decision maker 2).

> 'So probably ten years ago when e-Government was first thought about, that was about making as many services online [as possible] and I think where we are now. Ten years ago, quite a lot of [the] public would not be familiar with IT and certainly not comfortable with engaging with government in [an] electronic way. They very much preferred to do that engagement by telephone or by coming in and visiting a government building in a face-to-face reception type of environment. Over that 10 year period, that is progress now to more of the public being comfortable engaging electronically; what that means is the acceleration of services being made available online.' (ICT strategic decision maker)

4.3.3.4 Section Summary

This section discusses technological factors, which emerged as one of the main themes. To be more specific, this section discusses three sub-themes in depth: IT risks, the scale of IT improvements and system accessibility.

The sub-theme of IT risks includes two main codes of security concerns and system failure risks. These two codes could have a negative impact on public sector administrators' perception since there is a high level of cautiousness around the topic of e-Government security and system failure in the public sector organisation.

Another point, which was highlighted by informants, was the scale of IT improvement. Two forms of IT improvement were identified that are small scale and large scale of IT

development. The scale of IT improvement includes two codes that are outsourcing and in-house IT infrastructure potentials. These two codes were highly required when there is a large scale of IT development required in the council. This might be like the result of lack of internal capabilities and the need to ensure the suitability of the final decision through consultation with an external partner. The last sub-theme of technological facto is system accessibility that covers two issues of equality assurance and citizen engagement. These two perspectives are highly important because all efforts to implement a new e-Government development and implementation is to provide customer access to government services. Without giving proper emphasise over these two factors, the e-Government would only bring the cost to the council. The next section (i.e. Section 4.3.4) address the influences of government policy on public sector administrators behaviour when they engage in deciding for providing new e-Government advance.

4.3.4 Government Policy Factors

This section presents and discusses the final theme, which has been identified as the result of thematic analysis namely, government and policy factors. It includes three sub-themes: central, regional and ICT green policy. Each one of these sub-themes could deviate or force public sector managers to take a certain type of behaviour and actions that could consequently result to a form of decision. Initially, when informants talked about government influences on their decision-making practice, they divided the concept of government influence into three perspectives: those of central and those of regional governments and also ICT green policy. The codes extracted for central government influence are *legislation*, *political landscape* and *political will*. In addition, the codes elicited from interview transcripts for regional government are *regional government agenda* and *regional collaboration*. Also, the main code for ICT green

policy was *carbon footprint awareness*. The final thematic map for this theme is presented in Figure 30. The next section contains descriptions of these three elements.

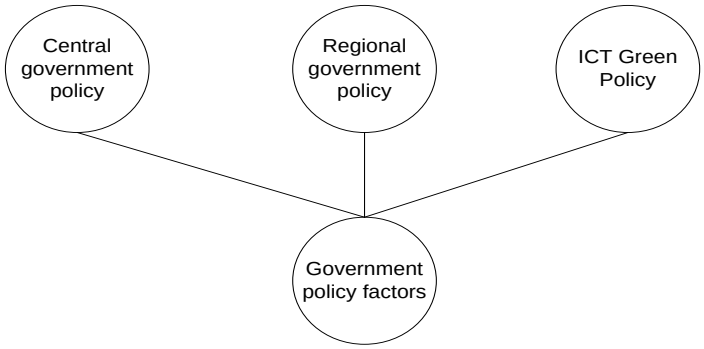

Figure 30: Concept map for government and policy factors

4.3.4.1 Central Government Policy

The legislation, political landscape, and political will are dominant aspects that have been mentioned by interviewees. Each one of these elements is described below.

Central government legislation was perceived as one of the influential elements that led the council management to react and provide the necessary improvements. According to informants, when legislation changes and the provision of new services becomes a part of the new legislation, then the managers had no choice but to fulfil the government's mandate.

> 'So one of them may be: there is a legislation change that does come in, that means organisations have got to do that, it is a mandate. You have got to do something, yeah, that can be anything. If you take children services: there is something comes out that says we have got to provide all school allocations online. If that was a piece of legislation, then that is a mandated thing.' (ICT strategic decision maker)

> 'It would depend on where the idea came from. It might be something that perhaps the government come up with, a new legislation which requires a big change in our processes. If that

> happens then we first have to study the proposal and try to figure out what we need to do.' (ICT and service enhancement decision maker)

Therefore, when a new legislation has been passed by the central government, the role of council management was described more as a facilitator and implementer of that change. Some of the government legislation, which was formed into national initiatives, (i.e. digital by default) required the council to adhere to those initiatives.

> 'There is a national context in terms of a government push for digital by default. It is definitely starting to influence, from the point of view that they are switching face-to-face services off from central government departments which is impacting upon us. So we have to get our heads around whether we want to be digital by default or digital by choice.' (Strategic decision maker 2)

Nonetheless, an interesting quotation that has been extracted and belongs to the *Legislation* code, is that the tight deadlines of national initiatives mainly transformed the council management into implementer of that change and the council did not have a complete opportunity to enhance the underlying processes, i.e. operational procedures of the council. Therefore, the digitisation initiative may not necessarily bring effectiveness and efficiency into the Council, because the core processes require considerable revision and improvement later on. One of the reasons for this situation was that there have been no possibilities of management engagement with the service section to identify the business needs of the service (e.g. Information and service development administrator 1 and Information and service development administrator 2).

> 'I think when we first started on this agenda, it was definitely technology driven, it was definitely driven by colleagues in IT, and there was a real push around e-Government services. […] and there was a drive to get things online by a certain date and actually, all that we did was we achieved that deadline. But we did not change any of the processes that were the steps behind it. So in effect, what we got was a set of manual process sitting behind the website and actually, we did not fundamentally change the way that we were working. So, I think there has been quite a shift now … so there has definitely been a shift from it being technology-driven to be more service-driven.' (Strategic decision maker 2)

Interestingly, one of the informants mentioned that government influence would not be considerable when it is viewed from the council level. This is however expected, because of different types of government systems existing in the UK.

> ‘So we get enough that push from customers and then we get the councillors and executive team making sure that we fully consider everything to make those changes. I am not sure the government’s drive is that much or that influential on what we are doing. At the council level we are obviously mindful if there is a ‘digital by default’ strategy and where that is going and the impact that is also having.’ (Strategic decision maker 2)

Last but not least, the changes mandated by central government often included financial packages that could add to the interest of Council management’s execution of those changes.

> ‘It was our IT teams who came along and said government requires us to deliver this. You will therefore build on the website a page around [the area of requested improvement] […] I was remembering that they came and said: if we do not deliver the [required development] page, we would not get a million pounds. […] I think we might, but that’s the sort of requirement upon us. We are driven from the top. There are all: we must achieve this target. You must therefore do this. ’ (Information and service development administrator 2)

Furthermore, the change of a political party may be accompanied by a shift in government priorities. The informants stated that each party that takes power would have their own plans and agenda that result in a halt or changes of an e-Government project’s direction.

> ‘Also, we find it’s the political landscape that can change. So you get so far down the line and certainly you can have a change of the party. Central government can change and then suddenly, there is a change in priorities. So actually, […] is it still meeting what they want us to do? […] So you can get all the way down and think, that is great and then it’s like, no, stop. We have changed our mind. We are not doing that now. […] So you know, you have done all this work and then

> that changes as well. So that might mean that you have to go back and look at technologies that you have got because you might have to re-design that. It might also change the political landscape. That could then change, obviously, the operational part because it could be that a different organisation is actually going provide that service. So (you know) at the moment we are looking at universal credit, so that looks like the council will be providing some of the benefits that the DWP provided. We have just had a decision on health. So some of the health people now come into the council, so that is changed.' (Business and IT enhancement decision maker)

According to informants, the changes in political landscape may also introduce an alteration in a way that operational responsibilities of that organisation would be defined.

> 'So if a central government department like DWP stop offering face-to-face services and move everything to electronic service delivery, then what impact does that have on local people and do we need to do something differently to respond to that change?' (Strategic decision maker 2)

The informants described the impact of the election and political manifestos on their e-Government decision-making behaviour. This code is not only limited to a central government perspective but also includes a regional government one as well. According to informants, from the local councillors' perspective, the result of the upcoming election was quite important. Therefore, it drives them to seek greater efficiency and effectiveness in their local Council.

> 'You know, local politics would be, you know, how I make sure, from the council leadership perspective, that I get voted in next time. We have an election, always in the forefront of those people's mind. I cannot get the biggest result. How can we show within the period/term that we have got benefit to the city or whatever, so I can get re-elected?' (Business and IT strategy decision maker)

Another element that was highlighted by informants is the impact of political manifestos on management engagement to deliver e-Government. The political manifesto is a series of promises that have been made by politicians at the time of election. The political manifesto was perceived as important, because any commitments

that had been promised by politicians and voted upon by citizens, become a legitimate objective to implement.

> ‘You still have a political will to do it, often not do it, so we talked about ‘Pest Control Service’ before and (sort of) the operational side of it says we cannot pay, we area traded service, we cannot pay staff to go and catch things for free in people’s houses, it will cost. Otherwise you know we have not got a budget to do that. However, the politics says we are going to do this, so we are going to do this as well. We cannot go back on that (you know), it is from our manifesto project as well, so that obviously goes into the decision making as well.’ (Business process improvement administrator)

Based on what has been stated by informants, the autonomous management in the council to implement e-Government was quite dependent on the source of requested change, the change which was mandated through legislation or introduced as a result of change in the political landscape that is going to be more forceful. Moreover, the role of council management in this scenario would be as facilitator and implementer of that change.

4.3.4.2 Regional Government Policy

According to informants, the regional government led to setting off on a different e-Government journey. The regional agenda was referred to as the City Council programme and policies to maintain the city. The informants reported their current Private Finance Initiative (PFI) to maintaining the city highway network as an example.

The informants stated that as a part of this agreement they have to provide a system that transfers constituents’ enquiries directly to Amey’s the contractor.

> ‘So, I mean, I got a case in point. We got a new, huge PFI with government to develop and repair and maintain Sheffield’s road systems and we are looking at how people can e-access that, so they contact us if there is pothole or faulty street light.’ (Strategic decision maker 1)

Therefore, it can conclude that regional government policy influences the projects' initiators to start new e-Government development (see Section 4.3.1.1.3). Moreover, it was found that *regional collaboration,* that the council has with regional governments, impacts on the management perception and implementation of e-Government in their organisation.

> 'We do visit other councils to see what they are doing and what they have developed and it is really effective. Now recently, I went down to Harlow to look at e-voting and how they got voters to register online, really good, really good, there is lots of learning there. I went with somebody from the election team and I am sure that is something we are looking at to develop here.' (Strategic decision maker 1)

In addition, it was found that the informants have a positive opinion with regard to working in collaboration with other authorities in the region because they expected that this form of collaboration will provide them with ideas and knowledge as to what to do and how to do their daily tasks. Moreover, it is anticipated that regional collaboration and work in co-operation could add to the strength of the organisation to deal with daily tasks.

> '[…] also central government put pressure to deliver stuff and also regional, we have regional working. So also within our Sheffield region and in Yorkshire and Humber. We work with other authorities. We do not work in isolation, we never work in isolation, we also talk about colleagues in different towns and cities, what are you doing and how you are doing this? So we exchange ideas, we exchange knowledge and it's better, that is in social aspects, when you are working in partnership, because a lot of councils work in partnership with the NHS, and we have got a lot of social pressures on that kind of partnership but in this economy we need to build them tighter. I mean make them stronger and instead of working as individuals.' (IS/IT implementation administrator)

As described by informants, the regional government influence is categorized into two types of approaches. First, is to provide e-Government support for regional agenda, that means providing e-Government support for an agreed agenda in the region. The second

approach is to learn best practice and adopt the skills that are beneficial to the organization to address daily tasks.

4.3.4.3 ICT Green Policy

Informants, through referring to the reduction of carbon footprint production briefly tackled the concept of ICT Green policy. They described the use of e-Government could reduce the amount of exploitation of natural resources. There is more and more attention to ICT Green strategy after the introduction of ICT in organisations. The informants showed awareness of their carbon footprint plan. It seems that they were aware that the use of e-Government can reduce their carbon production.

> ‘Also in terms of social and environmental [effect], this carbon footprint, and this would be the correct way of providing answers to customers if we can do it the electronic way then that is great. So we are not chopping trees down.’ (Service enhancement decision maker)

However, the informants did not expand on this idea and only referred to the reduction of their carbon footprint and reduced use of natural resources. The informants also stated that they considered the use of a website as one of the means for ‘reducing the amount of letters we [they] send out’ (ICT and service enhancement manager). In addition, they pointed out that they are considering paper-less operations and some initiatives are being conducted in this area.

> ‘We have got to massively reduce our paper records but we have still got to maintain the service to our customers and make sure that they have got the information that they need. And their access to some records that they need, for example all our planning applications can go through the website or the planning portal, which you get through the website; but we have got a massive amount. So all records we have to keep and we will also be scanning and getting more sorted and available online to people and all that sort of stuff, but it’s a massive piece of work. ’ (Business performance improvement decision maker)

Interestingly, the paper-less operation is connected with the carbon footprint. Because it reduces the processes of paper production, it solves the need for printing pamphlet and distributing flyers. Therefore, the adoption of a paper-less operation could have a positive impact on nature and it could reduce the amount of carbon production. It also linked to the efficiency of governance processes because less resources need to spend which is one of the objectives of perusing efficiency in public sector organisations (see Section 4.3.1.2.3.1).

4.3.4.4 Section Summary

This section discusses one of the main themes emerged from the thematic analysis, namely, government policy factors. Specifically, this section presents and discusses the impact of central government policy, regional government policy and ICT green policy on management decision-making.

Firstly, central and regional government policy could influence the council's management team to implement a series of e-Government plan even if it has not initially been identified as a part of management teams' agenda. This could be through introducing a new legislation or defining a new PFI. Moreover, political promises could also lead the management team to initiate a new e-Government development plan.

Secondly, it has been found that ICT green policy is one of the issues that is being considered by management team. However, it has not been identified as extremely inflectional element at the time of decision-making. Nevertheless, the ICT green policy could lead to efficiency in the council that is highly recommended and valued by public sector administrators.

4.4 Chapter Summary

This section summarises public sector administrators' perceptions of the stages of e-Government development and implementation. It also concludes the stages of decision-making and factors that impact post-implementation decision-making. Table 14 summarises the key points for stages of e-Government development and implementation in the case study. Three main stages of e-Government development and implementation were identified, and the interviewees have highlighted that the current objective of the city council is to provide more transactional services.

The evolution of e-Government begins with the establishment of an online presence that is enhanced over time. The provision of transactional services and exploring mobile device opportunities are the next stages interviewees mentioned.

Table 14: Summary of evolution model of e-Government development and implementation in the city council

4.1 Setting the case: Evolution of e-Government development and implementation in Sheffield City Council (pages 186-203)	
4.1.1 Phase one: establishment of an online presence	• Early e-Government initiative: establishment of a series of webpages, mainly informational, with different layouts and structure • No need for physical presence • Initiatives to regulate and standardise the webpages • Disseminate information • Use social media to communicate with citizens and collect their opinions
4.1.2 Phase two: provision of a transactional presence	• Provision of transactional services • Wide range of transactional capabilities and complexities • Timing and length of project based on the size of change • Secure resources
4.1.3 Phase 3: multi-media presence	• Exploring opportunities to provide e-Governments services through mobile technology

In addition, the managerial processes that sequentially led to the provision of new e-Government services were described to further provide context for the central analysis. Providing informational context includes three stages: request to grant access to information, assess the request and publish the information through appropriate channels if approval is granted. The process of providing transactional context is more complicated and includes consideration of different factors. Table 15 presents the stages and elements considered at the time of decision-making.

Table 15: Summary of decision-making in case study

4.2.1 Processes for providing informational content (pages 204-210)	
4.2.1.1 Initiate a request to publish information	• Requests to grant access to information or to answer frequently asked questions • Internal and external requesters of information
4.2.1.2 Development and amendment of request	• Assessment of the current level of information available • Risk assessment of information publication • Acceptance or rejection of request
4.2.1.3 Closure of request	• Development and audit of information • Publishing information through the most appropriate media • Adherence to web standards if the web is medium of choice
4.2.2 Processes for providing transactional content (pages 210-223)	
4.2.2.1 Initiate a proposal to develop a new service	• Recognition of needs and requirements to enhance the system • Need identification channels: central government, citizens, staff and customer complaints • Internal and external stakeholders' influence • Perception of internal managers, leaders of the council, middle level managers • Potential of efficiency and effectiveness a project brings to organisation • Knowledge of service operation • Political initiative
4.2.2.2 Identify requirements of new service	• Understand and identify the impact of change on customer's journey • Assess alignment of change with customer's and business' perspectives • Evaluate the proposal against organisation’s corporate IT strategy • Scale of change

	• Elicit requirements through IS methodologies
4.2.2.3 Evaluation of available alternatives	• Scoring available alternatives based on four criteria of usability, editing perspective, accessibility standards and architecture perspective. • Financial implication assessment • Legal implication assessment
4.2.2.4 Best choice selection	• Level of management hierarchy involvement based on scale of project • Cost-benefit analysis of suggested alternatives • Alignment of solution with web strategy and corporate strategy • Organisational support
4.2.2.5 Solution implementation	• Technological development of solution • Configuration and maintenance of the system

The interrelated factors that public sector administrators perceive to influence the decision-making process concerning e-Government post-implementation were inductively extracted. Table 16 provides a brief summary of these factors, including the main theme followed by the factors in the second column. The page number is also added in the second column to ease the process of referring to the text.

Organisational management factors include corporate strategy, reputation management, project initiators, change management, human resource assessment and business performance enhancement. Cost-benefit assessment, budget, economic climate, and IT cost were identified as some financial factors. IT risks including sub-elements of security concerns and system failure risks, outsourcing and in-house IT infrastructure potential of scale of IT improvement. Two components of system accessibility, i.e., equality assurance and citizen engagement, were identified as technological factors. Finally, central government policy, regional government policy and ICT green policy make up the government policy factors.

Table 16: Summary of evolution model of e-Government development and implementation in the city council

4.3 Factors influencing public sector managers' post-implementation decision-making	
4.3.1 Organisational management factors	• Corporate strategy (pages 230-233) - Tool to regulate and justify attempts to improve council's e-government - Emphasis on corporate strategy initiatives rather than individualist attempts • Reputation management (pages 233-236) - Reputational risk of not adhering to national initiatives - Not meeting citizens' expectations - System failure - Transparency - Bad press • Projects' initiators (pages 236-240) - Bureaucratic - Sideways • Change management (pages 240-253) - Operational development degree: service and corporate levels - Timing of change - Communication -Eager and apathetic communicators -Fear of losing job • Human resource (HR) assessment (pages 253-256) - Job roles impact assessment - Legal impact on HR - Explanations of reason for change - Training support for new systems - Apply new skills in new job/role • Business performance enhancement (pages 256-262) - Efficiency of governance processes - Effectiveness of governance processes -Lean processes
4.3.2 Financial factors	• Cost-benefit assessment (pages 264-267) - Profitability assurance: financial savings, efficiency and effectiveness - Capacity assurance: impact on current business operation - Capability assurance: skills, resources, internal technical capabilities • Budget (pages 267-270) - Constraining force to choose the best solution - Budget-wise decision-making - e-government as cost-saving solution • Economic climate (pages 270-273) - Financial crisis - Seek greater efficiency and effectiveness - Risk aptitude - Organisation's operation method - IT budget spending behaviour • IT cost (pages 273-280) - Application cost: maintenance cost, licencing cost, staff cost - Hardware cost, device compatibility, continuity of providing services

4.3.3 Technological factors	• IT risks (pages 281-285) - Security concerns IT policies Data protection law and Information Access Law Information security Record management policy - System failure risks • Scale of IT improvement (pages 285-292) - Outsourcing Lack of internal IT capabilities - In-house IT infrastructure potentials Reduce application development cost Reduce maintenance cost Prevents silos of technologies • System accessibility (pages 292-301) - Equality assurance - Citizen engagement
4.3.4 Government policy factors	• Central government policy (pages 303-307) - New legislation - National initiatives (digital by default) - New e-Government mandate including financial incentives - Election and political manifesto • Regional government policy (pages 307-308) - Regional collaboration • ICT green policy (pages 308-309) - Less use of natural resources

The next section will discuss these findings, particularly focusing on how the higher-level themes- organisational management factors, financial factors, technological factors, and government policy factors -are interrelated and where the findings reported in this chapter stand in terms of theoretical contribution.

5. Discussion

This chapter contains an explanation and discussion of the findings of the present research study. Four main themes were identified: organisational management, financial, technological and government policy factors. This chapter aims to conceptualise the findings and compare the knowledge generated with existing knowledge in the field. As mentioned in the Chapter 3, this research study followed an inductive thematic analysis, which means that 'the themes identified are strongly linked to the data themselves' (Braun & Clarke, 2006). Therefore, the themes were fully derived from the collected data, as the early review of the existing literature did not lead to the identification of any decision-making factors that influenced specifically the post-implementation behaviour of public sector administrators.

Nonetheless, one must acknowledge the numerous studies in the field that highlight the potential benefit of e-Government development and identify elements that can act as barriers to the development and implementation of successful e-Government in a public sector organisation and the few studies that address e-Government initiatives without particularly focusing on the post-implementation stage. Although long lists of enablers and barriers of e-Government development and implementation exist, the objective of this research study is to identify and understand the elements influencing post-implementation decision making perceived by key players, rather than referring to general knowledge in the field. Moreover, the long list of elements that could assist or hinder the justification process of e-Government development and implementation did not address the phenomenon explored in this research study; in other words, the factors considered during post-implementation decision making. Moreover, what makes this

research study unique is its examination of influential factors from the public sector administrators' perspective rather than by reference to normative research studies. What can be considered a prominent contribution of this research study is the interrelationship between factors that are presented subsequently in this chapter.

The present chapter consists of four main sub-sections: Discussion of Factors (Section 5.1), Comparisons of Research Findings with Existing Models (Section 5.2), Reanalysing the Findings Using the TOE Model (Section 5.3), Comparisons of The Present Research Findings with Identified Factors of Stage-based Decision Making Models (Section 5.4), Implication of the Study (Section 5.5) and Conclusion (Section 5.6).

5.1 Discussion of Factors

Four main themes were identified as a result of conducting a thematic analysis; the final themes and sub-themes are presented in Appendix 5. Organisational management, financial, technological and government policy factors are the main themes of this study. Some of these themes are interrelated, and the detailed links between the themes are presented in Figure 31.

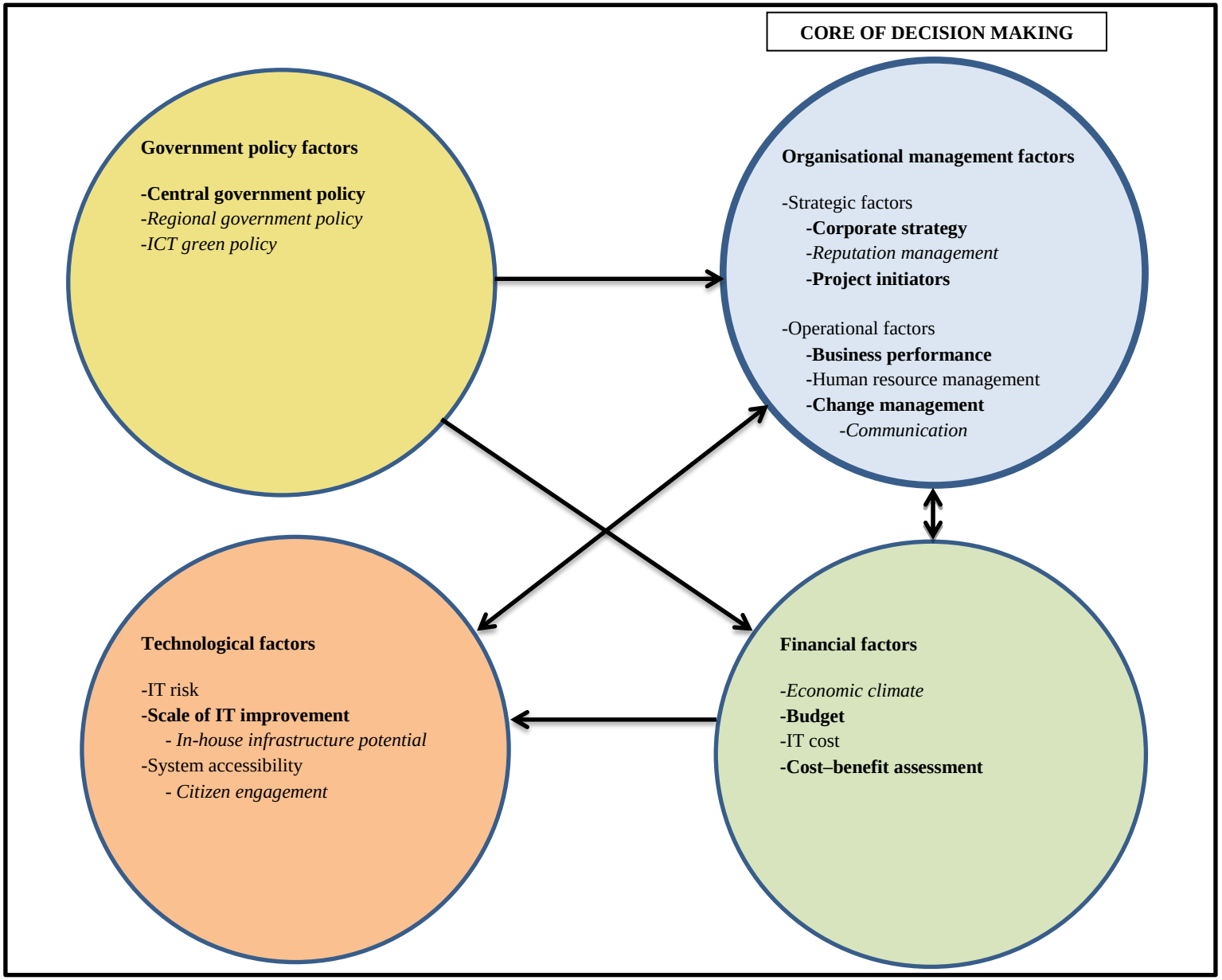

Figure 31: General map of themes

Four main themes were identified as a result of the thematic analysis, with these themes and sub-themes presented in Appendix 5. The main themes identified in this study revolve around organisational management, financial, technological and government policy factors. Some of these themes are interrelated and the detailed links between them are illustrated in Figure 31.

The findings of this study indicate the existence of interrelationships between themes. Moreover, a series of core and unique factors were identified, and are illustrated in the thematic map. Core factors are defined as elements that have been mentioned numerous times by study interviewees and which have links to the other factors in the map. These factors are identified in bold. The factors that are considerably new and have not been mentioned in previous studies are defined as unique factors, which are presented in italics.

Government policy factors affect organisational management factors. Specifically, changes to central and regional government policies can influence the initiators of post-implementation project plans, as they must respond to regional and central agendas. In addition, government policy factors impact upon financial factors; for example, regional or central governments allocate budgets to city councils to pursue specific e-Government plans. Furthermore, should a central government cut its planned budget, it could have an adverse effect on the city council's e-Government project. Regional government policy is identified as a unique factor; specifically, regional collaboration is one of the reasons to invest in advanced e-Government systems. Moreover, regional collaboration can impact project initiators since they observe good practice in counterpart organisations; thereby determining their investment in e-Government projects. ICT green policy is considered a unique factor because it has not been

identified previously as a driver of e-Government projects. Overall, the focus of ICT green policy was on efficiency and effectiveness, and the proper use of resources.

Organisational management factors are recognised as central to post-implementation decision making. The key decision makers reside in this area and it is a theme that receives more intelligence and influence from other factors. Moreover, external factors are highly influential in relation to the final decision. The external aspects of organisational management factors are financial, technological and government policy elements.

Organisational management factors have two-sided relationships with technological and financial factors. Such relationships are used to indicate mutually-influential themes. For example, IT risks in technological factors could impact on the reputation of management in strategic factors, while communication in operational factors could influence the scale of IT improvement. Financial factors impact other factors, such as project initiators and business performance. Corporate strategy is a core factor, because interviewees noted that such strategies are used as a guideline for e-Government initiatives. Reputation management is also a unique factor, which according to interviewees had the potential to facilitate or halt e-Government project plans due to the associated risks. Furthermore, less attention has been paid to the potential of reputation management on e-Government projects discovered in the current research. Project initiators are presented as core factors, as all e-Government projects are initiated from this point. E-government projects can be initiated as solutions to specific problems, following a government mandate or as an opportunity to enhance existing e-Government services. Irrespective of the causative factors, e-Government projects will be initiated and monitored by middle and senior level management; thereby emphasising the importance of the management role. Moreover, these are the project

initiators that define the scale of IT improvement. Corporate strategy could describe the criteria of cost–benefit assessment as government agenda defines the criteria to be considered. Business performance is defined as a core factor since almost all interviewees emphasised the importance of efficiency and effectiveness yielded by an e-Government project. Moreover, economic climate and budget-wise decision making demands more efficiency and effectiveness in an organisation. Change management is defined as a core factor because of the nature of its connection with the organisational management elements, technological and financial factors. Communication is a unique factor since the researcher has identified two bespoke forms of staff communication: apathetic and eager communication.

Among the financial factors, economic climate is regarded as unique as it dictates both opportunities and threats to an e-Government project. However, it has been observed that the issues such as financial crisis added into the importance of implementing cost-saving e-Government projects. Another core factor is the budget, due to its influence on organisational management and technical factors; for example, determining the scale of IT improvement. Cost–benefit assessment is key to any e-Government project because the management team must assess the e-Government plan, since the management must ensure the profitability, capacity and capability of such a project.

For technological factors, the scale of IT improvement is a core factor because it determines the effort required to provide the IT advancement and alludes to the scale of impact on organisational factors. Within the scale of IT improvement, in-house infrastructure factors are considered unique factors. This is because the interviewees' statement pertaining to the recent attention to using internal IT capabilities and preventing unnecessary effort to invest in technology that can address only specific

needs. Interviewees indicated that technology silos are created as a result of individual efforts and a lack of attention to internal capabilities.

Moreover, the influence of citizens is another unique factor due to its potential influence on project initiators. It was initially thought that citizens would use the e-Government portals straightaway; however, the reality was the citizens failed to engage with e-Government services. This situation has since changed and citizens are now asking the government to provide the same online services as offered by private sector organisations.

The list of factors influencing public sector administrators' post-implementation decision making to provide new e-government services were derived from a single case study of the Sheffield City Council. The present study is quite novel, as the literature review showed that e-Government studies have concentrated primarily on the evaluation, adoption and implementation of e-Government. In addition, the use of secondary data has dominated the investigation of e-Government (Joseph, 2013). Having reviewed existing e-Government literature, it would fair to state that previous e-Government studies have prioritised the technical aspects of e-Government, leaving the behavioural aspect under-studied. Due to a lack of integration, a more holistic comparison of these findings was undertaken with three identified e-Government initiative models, the TOE model and decision making factors, thus enabling a comparison of the findings of the present study.

5.1.1 Discussion of Factors Leading to Organisational Management Issues

The section describes the impact of corporate strategy, reputation management, project initiators, business performance and change management on e-Government post-implementation decision making.

5.1.1.1 Corporate Strategy

All interviewees strongly supported the importance of corporate strategies during post-implementation decision making. Strong and well thought out corporate strategy could help these organisations deliver their programmes, policies and services more efficiently. It should be considered that the corporate strategy plan can be defined through analysis of organisational resources that can be acquired to achieve organisational objectives (Behn, 1980). The research finding in Section 4.3.2.1 (cost vs benefit assessment) also highlights the importance of ensuring the organisation has the required capacity and capability in place before engaging in decision-making activity.

In his own words, Behn (1980) had only to paraphrase a few words to render Kenneth's (1971) definition of corporate strategy applicable to public sector organisation. His definition is provided below:

> 'Corporate strategy is the pattern of major objectives, purposes, or goals and essential policies, programs and plans for achieving those goals, stated in such a way as to define what business the organization is in or is to be in and the kind of organization it is or is to be.'

The research interviewees placed considerable emphasis on the importance of corporate strategy (see Section 4.3.1.1.1). However, we know now that corporate strategy is not a stand-alone element; rather, it is fed and influenced by different elements. Elements

such as cost vs. benefit assessment, project initiators (i.e. senior management) and central and regional government policies and plans could dictate the next corporate strategy plan.

The research interviewees regarded corporate strategy as a rectifier and the cornerstone of their e-Government projects, for example, 'Strategic decision maker 2' said the Sheffield City Council had a corporate plan that is 'about making sure that we are targeting our resources in a right way' and it would be less likely that an e-Government plan would be accepted if it did not match corporate strategy (see page 231).

The research study interviewees identified corporate directors and the senior management team as the people who would trigger a change in public sector organisation (e.g. 'Information and service development administrator 2', p. 305). This finding is similar to the statement of Weill and Olson (1989) in that IT investment decisions could evolve through the emphases of senior executives on corporate strategy. The administration established by corporate strategy could prevent unnecessary investment in IT by establishing an evaluation framework and lead to more effective and efficient use of existing resources ('Strategic decision maker 2', p. 230). Therefore, when we refer to the claim by Beynon-Davies and Williams (2003) that IT can potentially empower public sector organisations to deliver their services more quickly with lower costs, we will see that public sector administrators also perceive the potential of new IT development and investment, and that could lead eventually to the implementation of new e-Government project. However, this is a corporate strategy plan that could act as a preventer of unnecessary investment in public sector organisations and acts as a motivator for these managers to better use their resources. This could result in the avoidance of the creation of technological silos. In fact, the creation of such silos could create an IT legacy as the development is implemented only

to address individualistic needs and greater means; in other words, corporate strategy has been forgotten.

The interviewees referred to previous e-Government practices as an individualistic approach and addressed only the technical needs of specific departments that highlighted their needs or asked to improve their e-Government services through various initiatives, such as bureaucratic or political movements (see Section 4.3.1.1.1). This could be one of the features of organisations that rushed initiatives because of legislation or political needs, leading to these organisations building services and technologies silos.

This feature might have been more noticeable in the early movement of e-Government development. For example, 'ICT decision maker' said thousands of web pages created for the city council during the early e-Government movement were very team-focused rather than service-focused, and they had to rationalise and reduce the number of web pages later on (see page 187-8). The individualistic approach was described as expensive and a waste of effort and energy in the public sector organisation, as the required services might have been developed in other departments, but without recognition due to internal, departmental decision making. Review of the present research study findings highlights the importance of establishing a robust and strong e-Government strategy to guide the management team towards providing an advanced e-Government. 'Business and IT strategy decision maker' also stated that the council had to revise its e-Government strategy, and as a result of this initiative the city council recruited an external vendor to write their web strategy plan (see page 289). These initiatives are important to ensure the suitability of the council's e-Government strategy.

5.1.1.2 Reputation Management

The importance of reputation management among the management team has been acknowledged. Each e-Government post-implementation project must be carefully studied for potential risks of project failure and its potential damage to the public image of the organisation if the project goes wrong or if sensitive content is published through e-Government channels. The potential benefits of e-Government projects are clear to everyone; however, failure of e-Government projects is one of the anticipated outcomes. The review of the e-Government literature led to the identification of many cases of e-Government project failure. The frequency of e-Government project failure and the fact that some of these projects were high profile public sector IS/IT projects in the UK led some researchers to call the UK public sector a world leader of ineffective IT schemes for government (Dunleavy, Margetts, Bastow, & Tinkler, 2008; p. 70). This is how an unsuccessful e-Government project could damage the reputation of an entity that has been known as a world leader of e-Government development and implementation. The limitation of access to government services because of the digital divide (e.g. 'Strategic decision maker 1', pp. 296-298) and service outage ('Service enhancement decision maker', pp.245-246) could also damage the public image of a public sector organisation.

It would not be wrong to refer to the high risk of project failure and high maintenance cost as elements of reputational damage. This can be considered an explanation for why the city council management team prefers to recruit IT vendors to develop its e-Government services or buy off-the-shelf products. This is because the management team has a guarantee that the final product is fully tested and tried and that possible bugs in the system have been worked out ('IS/IT implementation administrator', p.276), thereby potentially saving the organisation's reputation. Moreover, the failure of e-

Government projects could result in bad press (e.g. Dunleavy et al., 2008) and damage the reputation of the public sector. The final reputational damage would be to the management team, which would make it more introspective with regard to decision making.

Reputational damage contains not only customer-focused elements, but also regional and national schemes. If public sector managers do not participate in these e-Government schemes, it could result in reputational damage to the city council ('IT and operational development administrator', p. 234). Therefore, management concerned about its reputation not only limits e-Government initiatives but could also result in the initiation of a new e-Government. The government might start a series of e-Government initiatives resulting in the creation of a new e-Government in order to establish a positive image among its audience such as the public and other public sector organisations.

Transparency is one of the promised benefits of e-Government development and implementation. Silcock (2001) stated that IT implementation in the public sector provides a more transparent means of conducting business. In the present research study, maintaining transparency is highlighted as another priority for the management team, due to the possibility of negative consequences of public suspicion of the control and intentions by the authorities to categorically publish and disseminate information to the public (see Section 4.3.1.1.2). There is legislation that obliges public sector organisations to maintain transparency, for example, the Freedom of Information Act 2000 that allows the public to access information held by public authorities. 'Service enhancement decision maker' (p. 235) said that a public sector organisation could face reputational risks if '…it's not open and transparent'.

Therefore, public image could act as a barrier to e-Government post-implementation initiatives, as the management team could feel threats to its reputation. The public sector organisation is perceived as the most risk-averse organisation at a time when risk taking is a matter of concern for public sector administrators. Therefore, bureaucratic decision making is considered a tool to control the situation, ensure suitability and to consider the potential consequences of a decision. Bureaucratic decision making involves more members of staff, and a proposal would be reviewed more rigorously in bureaucratic decision making. This decision making will be applied once there is zero tolerance towards environment ambiguity. This type of decision making also helps to buy more time to collect information and reduce the level of uncertainty towards the subject of decision making.

5.1.1.3 Project Initiators

Based on the interpreted empirical data, initiation of an e-Government project depends on two internal forces within the organisation: bureaucratic and sideways initiators. Influence on e-Government post-implementation could come from corporate directors, councillors or cabinet members, who are considered a top management group; e-Government initiatives could also be begun by department managers and ordinary staff members who may discuss the operational needs of their service with their line managers or department managers. According to the interviewees' statements, more authority is given to bureaucratic initiators compared to sideways initiators (see Section 4.3.1.1.3); however, the scale of the change demanded is a key indicator for identifying mid-level managers' roles and control over e-Government initiatives. Maritan (2001) also mentioned that senior-level managers are more likely to be involved in high profile projects because the change scales require a wider view of the organisation internally

and externally, and senior-level managers have this view. Moreover, senior-level managers have a greater tendency to accept risk compared to mid-level managers.

According to Reddick and Frank (2007), strong, consistent and active leadership of top political and bureaucratic management is required in any e-Government initiative. If the initiative involves large-scale changes to the organisation, the decision will be made centrally. That centralisation would result from the financial, technical and organisational implications of large-scale e-Government initiatives requiring detailed analyses of the potential influences of an advanced e-Government.

Rose and Grant (2010) also stated that in considering the level of mutual agreement required to move public sector initiatives forward, the motivation of the most important critical stakeholders is critical to success. Therefore, bureaucratic initiatives have some elements of key stakeholder support or some level of consensus among key stakeholders. Nonetheless, the importance of communicating the idea of change cannot and should not be ignored. This can be only achieved through central decision making and senior manager involvement in the process of e-Government initiatives to identify, justify and rectify the potential consequences of e-Government development in their organisation.

Yildiz (2007) wrote that e-Government initiatives could be influenced in different scenarios, for example, the initiation of similar projects by other organisations or the influence of vendor firms to persuade senior-level managers of government agencies that they have to implement the e-Government project could be named possible reasons for project initiation. He also stated that the possible negotiations, various deals and side processes between government policy actors could provide a ‘semi-rational’ or ‘garbage-can’ decision-making environment in e-Government processes.

As the environments in these decision-making models are described as ill-structured, decision makers often prefer to rely on an intuitive, symbolic and political decision-making approach instead of systematic data and heuristics as assimilated in information and technology (Brown & Brudney, 2003). This could justify some initiatives from the senior management in the present case study, given the consideration of political elements and the implementation of law and legislation. In addition, implementing projects that have been implemented in other organisations is a means of reducing the level of uncertainty. The interviewees in the present research study also mentioned that they cooperate with other public sector organisations and plan to implement practices that they find beneficial (see Section 4.3.4.2).

The importance of both bureaucratic and sideways approaches in e-Government post-implementation initiatives is prominent. The nature of these initiatives may differ slightly, as the interviewees described bureaucratic initiatives as introducing a new form of e-Government development. Meanwhile, sideways initiatives, which begin within the department, contain operational recommendations requesting the development of new operational features for an existing e-Government development. Therefore, each of these initiatives covers a specific level of IT development in a public sector organisation. Weill and Olson (1989) stated that the force to help an IT investment to develop more quickly could originate from different management levels. Sometimes, the lower-level management is incapable of completing the transaction using the available resources; the initiatives for such improvements will be bottom–up, while a top–down approach would be based on incorporating strategy (Weill & Olson, 1989).

Nonetheless, the sideways initiative (i.e. middle and lower-level management initiatives) could be a channel for bigger changes in an e-Government development, providing solutions and recommendations for more effectiveness and efficiency in

government procedures. The only question which will remain is which of these initiatives will be given priority in a public sector organisation. The review of the interview data suggested that bureaucratic decision making will be more likely to be implemented first, as it comes through the central government channel and will be supported by legislation (see Section 4.3.1.1.3.1).

5.1.1.4 Change Management

Change management was identified as an important element of post-implementation decision making from the interviewees' perspectives (see Section 4.3.1.2.1). The scale of operational development and timing of the change influence the change management activity. The scale of change includes service and corporate levels. Service-level development involves less operational change in the council, and fewer bureaucratic mechanisms may be needed to support the development activity. However, corporate-level development has a larger scale of improvement and development of e-Government within the city council, which requires a more rigorous and well-structured system of development and implementation. The significance of corporate management team involvement in e-Government development and implementation becomes explicit when the e-Government post-implementation plan aims to evolve a system impacting the whole organisation. Therefore, the level of operational development could define the scale of involvement in an e-Government plan, and the project could be challenged if there is to be a larger scale of change within the council management, thereby requiring more management team involvement in rectifying the project challenges.

Another aspect of change management is the communication of the expected change. This aspect is about receiving sufficient support and communicating the idea within organisational boundaries. Top management endorsement and support of the project plan are highly desirable in order to have a successful project in public sector

organisations. This could help avoid the resistance and obstacles facing e-Government adoption (Altameem et al., 2006). Moreover, Altameem et al. (2006) recognised the importance of establishing awareness among e-Government stakeholders with regard to e-Government initiatives. They believed that this attempt could lead to the realisation of the benefits of e-Government initiatives. Consequently, this could minimise resistance among government employees.

Furthermore, Behn (1980) pointed out the necessities of the role of an organisation's leader to prepare and create an environment in which the decision can be accepted. 'ICT implementation administrator 2' (p.248) believed that a lack of communication in implementing any change would only lead to halting of the project. Moreover, 'Strategic decision maker 2' (p. 249) considered engagement and communication important, and that explanation of the impact of change on individuals and maintaining good relationships between staff and trade unions were quite important.

The interviewees of the present thesis confirmed the main roles of staff in identifying the need for improving existing e-Government developments, and described some staff behaviour as apathetic towards the government's call to participate in the e-Government improvement journey (see Section 4.3.1.2.1.3.1). To have conducive development of beliefs and attitudes within the organisation for developing a system, high user involvement is required (Hartwick & Barki, 1994). It can be said that one possible way to achieve this is to have strong and continuous communication with members of staff.

Failure to establish positive communication could result in delay or cancellation of an e-Government plan. Angelopoulos, Kitsios and Papadopoulos (2010) wrote that this huge investment could be problematic in any organisation, and that the complex political, managerial and cultural environments of a public sector organisation could also add to

the existing challenges of e-Government development and implementation. Aichholzer and Schmutzer (2000) and Fletcher and Wrigh (1995) named issues such as fragmentation, poor relations and communication between functional departments and senior management acceptance of strategic benefits of the new initiatives as organisational barriers to e-Government initiatives. This requires constructive and collaborative communication between the management team and the organisation's employees before the required changes can be implemented in a public sector organisation. This highlights the importance of establishing positive communication between staff and senior managers to empower the implementers to institutionalise the change in their organisation.

Heeks (1999) suggested that another way to change stakeholders' attitudes towards a new e-Government system is to use a reward system. The reward system might help to change attitudes and motivate employees with apathetic attitudes towards change in their organisation.

Altameem et al. (2006) referred to a vision, which is a road map of how the expected goals and objectives needed for successful implementation of e-Government can be achieved if there is to be an effort in the organisation to turn vision into reality. The findings of the present thesis also indicated that a lack of clear vision in the organisation could create a problem. To be more specific, this lack of clear vision could result in confusion among staff because they may not know the objective of an e-Government initiative. Therefore, a clear strategy is required to act as a motivating element in the organisation to achieve the goals and objective of the e-Government plan (Burn & Robins, 2003).

Another requirement in e-Government post-implementation decision making is to set an appropriate time scale. The interviewees believed in the impact of timing of an e-Government project. The worst scenario reported by interviewees was when an e-Government project implementation date was scheduled for the busiest operational time of their services. This inappropriate choice ended in disruption in the use of some services, and some services had to be taken offline to resolve the problem (see Section 4.3.1.2.1.2). Therefore, choosing the right time, i.e. when there will be less operational work overload, was one of the top issues raised by the interviewees. Choosing the right time could minimise the possibility of service disruption and reduce the potential level of budgetary, reputational, or operational damages to the council.

Moreover, choosing the right time could guarantee the availability of a budget to support an e-Government plan. Therefore, if the e-Government plan sets the development for a time when there is more money or when more budget is expected to be allocated to the city council, there will be more possibility of funding the project rather than if management chose a time near when the fiscal year budget runs out (see Section 4.3.1.2.1.2).

Furthermore, deciding to implement an e-Government project immediately might not always be the right decision due to the possibility of environmental changes in the organisation. The possibility of e-Government development in another department and the allocation of funds to the city council's departments or the whole organisation could be considered elements that could change the status of e-Government development, and could certainly change the decision makers' opinions.

5.1.1.5 Human Resource Management

According to empirical study analysis, e-Government post-implementation initiatives have a HR implication for the council, meaning any e-Government could result in upskilling staff capabilities, revising job responsibilities and eventually defining a new job or eliminating existing responsibilities within the organisation (see Section 4.3.1.2.2). Therefore, HR assessment is one of the important aspects of e-Government post-implementation initiatives. Public sector administrators have to evaluate all aspects of staff employability where e-Government initiative plans may be considered. This activity may require the involvement of various key players who directly or indirectly tackle the issue of HR in the organisation. For example, HR departments and trade unions are influential players in the city council in negotiations regarding the HR aspects of an e-Government initiative (see Section 4.3.1.2.2.1). The management team in the city council must consult and consider the recommendations of these parties to be capable of delivering an e-Government.

The concept of training is related with two other elements of the present research study: organisational support for change (see Section 4.3.1.2.1.3.2) and application cost (see Section 4.3.2.4.1). Training is often associated with resistance, and a new IT application will also lead to employee training costs. Inefficient training of employees to use IT has been named as one of the reasons for employee resistance to change (Norris, 1999). Although Norris's (1999) opinion regarding the lack of sufficient training and resistance could be true, the fear of job loss was found to be a stronger element in this research study (e.g. 'Strategic decision maker 2', pp.251-2). Moreover, the reason some city council staff choose the apathetic communication method can be justified here: that is, they fear losing their jobs.

A new e-Government development may require the improvement of staff skills, and many staff may not be willing to participate in this activity. The interviewees in this research study believed that one of the reasons for lower staff contribution and the preference for performing routine tasks is a fear of negative consequences of training, that is, a lack of adaptation to a new technological advance and the possibility of staff redundancies.

5.1.1.6 Business Performance

Efficiency and effectiveness of governance processes are two elements that the present study interviewees highlighted as important elements of e-Government post-implementation decision making (see Section 4.3.1.2.3). Perusing efficiency and effectiveness by harnessing IS/IT in public sector organisations has always been part of the e-Government agenda. For example, Layne and Lee (2001) and Torres, Pina and Acerete (2005) opined that the provision of G2G could bring efficiency and effectiveness to public sector organisations. Weerakkody et al. (2012) generalised this conception of e-Government benefit and stated that the desire is to improve organisational efficiency and to reduce costs and wastage. Meanwhile, providing citizen-centric public services at the local level is the main drive for making ICT-interrelated changes in public sector organisations. In addition, high operation costs persuade public sector administrators to invest in a new tool that has the capacity to reduce their operations expenditure (e.g. 'IT and operational development administrator', pp. 260-1).

The interviewees referred to citizens' expectations of receiving the same services as those offered by large organisations in the city. As stated in Section 2.1.1 and Section 2.2.2, there are mixed opinions about following the exact principles of e-business in public sector organisations. Authors such as Altameem, Zairi and Alshawi (2006)

promise quality improvement and efficiency in service delivery in e-Government initiatives as an expected outcome of following e-business initiatives, while Goddard and Riback (1998) as cited in Heeks (2006, p. 11) believed that following the same thinking of private sector managers would only bring problems to these organisations (see Section 2.1.1).

Private sector organisations have made considerable investment in IT to reduce transaction costs and rationalise organisational activity (Cordella, 2006; Picot et al., 1997), and their success in rationalising organisational procedures has acted as an incitement for public sector organisations to adopt ICT within NPM reform (Cordella & Bonina, 2012). 'Business performance improvement decision maker' (p.257) also mentioned that the aim of e-business efforts was to make processes better, cheaper and more streamlined and that the city council aims to achieve the same objectives to ensure efficiency can be attained in its organisation. Therefore, at the stage of decision making, managers need to ensure that their solution will streamline the processes, which leads to the elimination of old, cumbersome and time-consuming processes. The interviewees referred to their efforts to study the procedures of completing a task in their council and then their attempts to streamline the processes using less cumbersome tasks to complete a job (see Section 4.3.1.2.3.1). Public sector administrators endeavour to change processes, and organisational structure is actually one of the most critical requirements for successful e-Government initiatives responding to and addressing changes in information flow and job descriptions (Becker, Nichaves, Algermissen, Delfmann, & Falk, 2004). Various attempts at the case study site aiming at designing and implementing efficient and effective processes to conduct a daily task by both external and internal stakeholders of the government, were named by the interviewees. For example, the rationalisation of the procedure for publishing information through e-

Government was one of these attempts aiming to reduce conflict, redundancies and the need to redo tasks to disseminate information (see Section 4.2.1). Another effort to bring efficiency and effectiveness into the city council was made by reviewing the amount of information needed for a form to conduct a specific task. The positive effects of procuring more efficient and effective processes are obvious to public sector administrators, as fewer resources and less budget are required to complete tasks (see Section 4.3.1.2.3).

To define streamlined processes, management still needs to collect information about the current organisational procedures in order to be able to design new processes that support an e-Government plan. The information, possession of which will be crucial, is the current state of the organisation and identification of the areas for development and improvement. This information can be collected from front-line staff or those who are doing the task. Two types of communication behaviour are identified in Section 4.3.1.2.1.3.1: eager and apathetic. The eager communicators in the council will easily provide the required information to improve services. However, apathetic communicators might make the identification of requirements difficult because of their reluctance to share information and contribute to the organisation's agenda.

Despite the difficulties and dependencies of the business performance element, achieving efficiency and effectiveness motivates managers to invest in new e-Government advances for streamlining their processes, especially when the budget is tight and fewer resources are available to the city council to allocate to operations.

However, the management team always tries to have an organisation with more efficient and effective services that legitimise e-Government initiatives, even if the fiscal year does not allow for spending budget on extra projects.

5.1.2 Discussion of Factors Leading to Financial Issues

5.1.2.1 Cost vs. Benefit Assessment

The interpreted empirical data outlined in Section 4.3.2.1 demonstrates how the three elements of profitability assurance, capacity assurance and capability assurance shape the decisions of public sector administrators. One of the most important aspects of e-Government development is generating income or saving money. Therefore, a report on the potential monetary benefits of an e-Government project plan could shape a positive environment and gather support for the e-Government project. Weill and Olson (1989) stated that identifying the return of IT investment is difficult and that there was low confidence among the organisations they studied. There is considerable investment made when implementing IT; however, there is very little evidence that the expected return has been received. Therefore, although the expected benefits of IT investment are difficult to achieve, the interviewees of the present research study highlighted that they would consider this element during their decision making.

Capacity assurance is another element addressing the change suggested in an e-Government plan to ensure that the change does not have detrimental consequences for the organisation's services. This is also related to choosing an appropriate time for the change and ensuring that the change does not limit or have a negative consequence on the operability of the service. Harmon, Rosen and Guttman (2001) stated that 'no organisation can afford to put everything else on hold while it redesigns its software architecture, infrastructures and IT development group'. Therefore, any problem arising during a new e-Government development could render the public sector organisation inefficient, which is the least attractive situation for public sector administrators. This could even bring about reputational damage to the organisation.

Finally, capability assurance is quite important, as the management team needs to gain confidence that the organisation has the necessary internal capabilities, such as the ability to use the existing IT infrastructure and the trained IT staff to support the process of change. If there is a positive perception of each of these two elements among the management team, it is more likely that the management team will support the e-Government initiative, and vice versa. However, a negative response to these elements does not imply that the e-Government plan will be rejected, but that more preparation has to be considered before a final decision is made.

It has to be kept in mind that new applications in e-Government development have to integrate with the existing legacy systems and create an environment that can respond to ongoing changes in the organisation. From a technological perspective, elements such as processors, displays, printers, scanners, gateways, wireless networks, storage devices, etc. should be considered, then, issues such as budget, resources, personnel issues, politics and other elements have to be considered (Clark, 2003).

The heterogeneity of computing environments in the public sector has made the integration of various IT components within and outside organisation boundaries time-consuming and costly (Chen, 2003). The lack of an appropriate IT infrastructure could impede a public sector organisation from developing its technological capabilities and providing online services and transactions (Angelopoulos et al., 2010). Nonetheless, what the present thesis has found is that IT infrastructure is one of the elements considered during the process of e-Government post-implementation decision making (e.g. Section 4.2.2.5.1 and Section 4.3.3.2.2). The management team will try to ensure the compatibility of the existing IT infrastructure with a newly suggested e-Government plan and identify the IT infrastructure that needs to be procured to support the e-Government development plan.

5.1.2.2 Budget

The empirical data analysis clearly indicates that the budget is one of the most important elements of not only e-Government development projects but also IS/IT-related investment (see Section 4.3.2.2). Clarification of budget costs is one of the important elements of e-Government post-implementation projects, and failure to do so could damage the reputation of the organisation. This failure could lead to a council being accused of sloppy use of tax payers' money and wasting public resources when there is a particular need to save money.

The amount of funding various government agencies receive defines the level of ICT investment they can implement in their organisation. The level of IS/IT investment decision making is in fact constrained and is based on the level of funding the organisation has secured (Choudrie, Weerakkody, & Jones, 2005; Weerakkody, Jones, & Olsen, 2007). This is similar to the statement by 'Business performance improvement decision maker' (p. 268) in that departments in the city council that have secured sufficient budget are capable of operating a new e-Government plan.

Furthermore, Clark (2003) believed that governments these days are more under pressure to do more with less. This expectation has resulted in considering ICT as a means of increasing efficiency and productivity. Therefore, although the budget perspective could limit e-Government initiatives in an organisation, it could also motivate the management team to consider ICT as means of delivering the expected benefits with lower financial costs.

Funding has always been acknowledged as a barrier to the adoption and implementation of e-Government. The importance of this element has been also highlighted by earlier e-Government researchers, such as Bonham, Seifert and Thorson (2001) and Heeks

(2001). Budget cuts as the result of the financial crisis could have a severe impact on public sector administrators' willingness to participate in the provision of new e-Government development. The reason could be the possibility of e-Government failure and possible accusations of budget mismanagement.

Nonetheless, an organisation's fiscal year budget and department budgets are two elements that could ultimately guarantee or dismiss the chance of e-Government post-implementation decision making in a city council. For example, 'ICT implementation administrator 1' (p.267) commented on the need to secure enough funding in the council in order to be capable of initiating a second phase of e-Government development plans in the city council. Nonetheless, the scale of the e-Government plan is related to the level of budget needed to support the project. The departmental budget availability could provide assurance to a management team that a project can be funded within the department and that the initiative can take place without any delay or worry about its monetary aspects. However, the fiscal year budget could be double-sided for public sector managers, as sometimes some financial resources remain at the end of the financial year, and management could use this money for extra activities. Some e-Government initiatives could be funded this way. However, other scenarios are possible, including the organisation being faced with a lack of financial liquidity and spending the rest of the year under austerity measures.

5.1.2.3 Economic Climate

A shortage of money to spend on new or ongoing projects and the need to act more effectively and efficiently were conveyed to public sector managers as the result of the financial crisis. The findings chapter reported two contradictory behaviours that resulted as the consequences of this event (see Section 4.3.2.3). The first result of the financial crisis was an austerity measure, leading to councils having less money to spend. So, in

the UK, this has resulted in assigning tightened measures to review and control e-Government projects to ensure that tax payers' money is invested wisely in ICT projects (Cabinet Office, 2011). The observations of the present research study interviewees also indicated signs of budget-wise decision making in their organisation. For example, 'Business and IT enhancement decision maker' (pp. 268-9) described their e-Government projects decision making as now more budget-wise and there is more responsibility on managers to administer their organisational budget.

Conversely, e-Government plans are known as projects that eventually bring prosperity, effectiveness and efficiency to the public sector organisation (e.g. Weerakkody et al., 2012). However, there are many examples of projects that went wrong and failed due to the complexities of e-Government projects (e.g. Heeks, 2008 and Standish Group, 2013). According to the present research study findings, operational cost deduction could be achieved by providing lean processes and services that demand fewer supporting resources (see Section 4.3.1.2.3.2). Development could eliminate redundant processes and consequently fewer staff will be required to support the processes. Although the interviewees recognised the budget aspect of the financial crisis, the need to operate efficiently and effectively is much stronger. The 2010 Cabinet Office report also predicted a barrage of pressure on public sector organisations demanding cost-efficiency from these organisations as the result of financial crisis.

The present study findings indicate that although budget is an essential part of any e-Government development, and the lack of budget could result in a delay or shortage of e-Government projects, the feeling of investing in a new e-Government development requiring less support and operational cost can always act as a motivator to advance an e-Government development plan (see Section 4.3.2.3).

5.1.2.4 IT Cost

The technological costs of e-Government initiatives were highlighted as an important aspect requiring proper attention and consideration. Issues such as providing adequate licensing for improvised technology advancements and a new e-Government plan are necessary actions that must be tested and evaluated properly. An e-Government solution could sound lucrative and quite cheap, but the software and hardware required to support the plan could be very expensive. This means that although the e-Government plan is very attractive, the support costs cannot be afforded, thereby jeopardising the likelihood of the plan proceeding. Irani et al. (2005) argued that local and central government willingness to reduce administrative and operation cost has been the main drive to develop and implement e-Government infrastructure.

The cost of IT equipment licensing could vary due to the operational scale of e-Government development. If it will be based on the provision of software for a section, department or individual users in the city council, the cost would be less. However, licensing IT equipment on a corporate scale could have greater monetary impact for the council. Therefore, it is expected that the management team will tread more carefully where the scale of equipment licensing is great.

Many organisations invest and adopt open source products to reduce licensing costs. The high cost of licensing motivates many organisations to adopt open source licenses (Meystre & Müller, 2005). This is in fact an interesting finding because the Sheffield City Council interviewees also stated that they adopted a new open source CMS. However, no one mentioned the potential benefit of having this system in place. The only point, which was raised in the interview, was that the consultancy company had suggested the new application and after reviewing the application, the organisation decided to invest in the open source CMS application (‘ICT decision maker’, pp.288-9).

The interviewees stated more points with regard to the IT cost of e-Government development. These included the expense of maintaining the implemented system and the maintenance costs of in-house e-Government development. Both of these elements could have a negative influence on e-Government development processes and the state of mind of e-Government decision makers. The interviewees of the present research study specifically stated that the implementation of an e-Government solution may be cheap from an implementation point of view but could have high maintenance costs for the council to keep the system running. Therefore, the management team might consider this a disadvantage and decide not to support the proposed plan. The second type of maintenance risk is the corrections of an in-house e-Government development. The interviewees stated that the process of debugging and correcting malfunctioning processes could be very costly for the organisation, while e-Government development bought from an outsourced provider contains a lower possibility of failure, as it has been tested for years (e.g. 'IS/IT implementation administrator', p.276). Moreover, even if an e-Government development is going to fail, it will be covered and maintained by the provider of the e-Government solution. Therefore, there would be less up-front cost for the organisation.

The interviewees mentioned that another IT cost to be considered and assessed at the time of decision making is staff training and support costs.

Based on the interviewees' statements, any form of e-Government development could render the existing technology outdated, and compatibility issues of new e-Government with an existing e-Government development should be considered by decision makers (e.g. 'Service enhancement decision maker', p.277). This issue can be tackled from two perspectives, namely the application's features and the hardware aspects of the new e-Government development. A new application could lead to a new cost (the required

hardware devices to support the system). The existence of different e-Government development in an organisation and e-Government system legacy could have financial implications for the organisation. That means that the IT infrastructure must be updated and replaced with new technology in order to be useful to the new e-Government development.

5.1.3 Discussion of Factors Leading to Technological Issues

5.1.3.1 IT Risks

The interviewees specified two IT risks that could challenge their e-Government initiatives: information security concerns and system failure risks (see Section 4.3.3.1). Clark (2003) mentioned the Australian government's e-commerce strategy, established in 1998, which emphasised the development of a legal and regulatory framework to aid e-commerce. Two points in this framework include securing the confidence of all Australians and providing at least the same level of protection offered through e-commerce channels. In this thesis, ensuring users of e-Government are confident that the data provided by them will be handled with complete compliance with government confidentiality regulations and the attempt to define different security protocols to access e-Government platforms by internal stakeholders are indicative of government efforts to provide a safe and secure system for its stakeholders (e.g. 'ICT strategic decision maker', p.283).

Altameem et al. (2006) named securing government information from unauthorised access as one of the most important elements of e-Government implementation. If security were compromised, it would result in unauthorised access to sensitive information and feelings of distrust among the service users. In this thesis, the importance of maintaining the security of data that is submitted and stored through e-

Government was highlighted by the interviewees (e.g. 'Business and IT strategy decision maker', pp.283-4). To tackle information security concerns of an e-Government initiative, the public sector administrators highlighted a series of activities such as mitigation of the level of information security risks through the assessment and evaluation of e-Government proposals, assurance of adherence to system login policy and identification of the security level of stored data, and fulfilment of the requirements of the record management policy (i.e. IL0, IL1, IL2 and IL3) are listed as activities that could be pursued by the management team. The need to adhere to the security and privacy of e-Government strategy is one of the most frequently cited challenges of an e-Government plan (Layne & Lee, 2001). The abovementioned challenges can only be addressed by providing rigorous security and a strategy plan and continuously updating the strategy plan based on government regulations and policies.

Another risk is the possibility of system failure. IS/IT system failure is the most common form of e-Government challenge that could occur throughout the process of e-Government development and implementation. Public sector administrators have to make decisions knowing that there is a substantial legacy of high project failure in public sector organisations. This situation places public sector administrators under continuous pressure, especially when there is a need for more transparency and accountability in public sector organisations (McGrath, 2002; Whitfield, 2007).

According to Angelopoulos et al. (2010), decision makers could save a vast amount of tax payer money and prevent funds wastage by identifying the projects that are most likely to fail or that have some potential to fail and then acting to moderate the situation or to reject the project plan, preventing further cost to the organisation.

For example, a few operational features of e-Government development may fail, and the interviewees directly pointed out the potential reputational damage this event could cause (e.g. 'ICT decision maker', pp. 283-4). Nonetheless, the risk of e-Government failure was not highlighted as an element that prevents new e-Government development decision making, but doubtless, it has its own impact on the minds of public sector administrators. The possibility of system failure would be considerably greater for large-scale, multi-stage projects than for small ones. Therefore, the management team's concerns about system failure should be emphasised accordingly.

5.1.3.2 Scale of IT Improvement

Another point highlighted by the interviewees was the importance of identifying, assessing and evaluating an e-Government development plan based on the scale of IT improvement. Providing an access point to available e-Government services would not have considerable technical implications for the council management team and is more likely to be approved and proceed compared with an e-Government plan containing large scale e-Government development.

Moreover, the scale of technological difficulties could indicate the scale of IT partner involvement. If the e-Government development contains an extensive level of technological development, it is more likely that the management team has to have its IT partner on board, including a consultancy company to assess and manage the e-Government plan. The reason for involving an IT partner in the decision-making process is the lack of in-house technological capabilities, and the justification for involving a consultancy company is to ensure that adequate knowledge and information is presented to the management team for implementing the e-Government plan.

Nonetheless, the results of empirical analysis showed that the use of an existing e-Government development was considered during e-Government decision making (see Section 4.3.3.2.2). Reusing an existing technological capability could lead to money saved and avoid technological effort duplications. Giving attention to existing IT infrastructure was also proposed by a corporate guidance policy. In fact, this approach prevents the creation of unlinked e-Government development islands that do not communicate with each other.

Clark (2003) stated that in the past, interoperation was not considered in the ad hoc development of departmental applications. This has resulted in various problems in organisations, such as duplication of data and functionality and difficulty in getting different applications to correspond and work together. The interviewees in the present thesis also referred to an individualistic initiative in their organisation as a source of extra cost to the organisation (e.g. 'IT and system enhancement administrator', p.231). In addition, some e-Government developments in the organisation were designed for the same purpose but had different data entry systems and do not communicate with each other ('IT and operations administrator', p.230).

In addition, the use of an existing IT infrastructure would avoid public sector administrators having to allocate a high budget for keeping the system operational.

5.1.3.3 System Accessibility

Equality assurance and citizen engagement were two aspects highlighted by the interviewees of this thesis (see Section 4.3.3.3). The management team stated that they are quite careful that the e-Government development does not disadvantage any member of the public. Different criteria, such as medium of communication, income

diversity of social groups, IT literacy and age, were named as elements that could complicate efforts to ensure user access to e-Government.

The fact that our society includes aging and disadvantaged populations who are more likely not to be IT-educated and unable to use the complex system operation no doubt prevents public sector administrators from choosing an e-Government solution as the ultimate channel to provide their services, as the main objective is to have 100 percent engagement with constituents. Therefore, these characteristics of e-Government users could lead to their lack of access to e-Government and the consequent digital divide between the affluent and non-affluent members of the public (Jaeger & Thompson, 2003).

For example, with regard to having access to medium of communication, 'Information and service development administrator 2' (p. 293) said that the users of one of the provided e-Government services were actually those who could hardly access e-Government services. This indicates the importance of giving enough attention to the elements of equality assurance, as although the proposed e-Government plan could be interesting, the issue of user access has to be ensured first. The money could be allocated and the solution would be implemented, but then the e-Government development would remain unused.

IT literacy is another factor that the management team considers at the post-implementation decision-making. There are still groups of citizens that are not very IT-literate, and this issue was clearly highlighted by the interviewees. The interviewees said that they recognise this challenge, and in order to ensure that the target populations can access their e-Government development they have provided computer and internet facilities in their building with a group of mentors to assist citizens in using the e-

Government services (e.g. ‘Strategic decision maker 1’, p.296). Rose and Grant (2010) stated that it is significantly important that to ensure that customers are able to use e-Government. As stated previously, close mentoring and face-to-face support could facilitate or enable customers to use e-Government services in the near future.

In addition, the empirical data analysis resulted in the identification of the impact of age on users of e-Government development and implementation (see page 298). The interviewees acknowledged the potential impact of e-Government development on users of different age groups. That means that senior citizens would more likely need support and mentoring to be able to use e-Government developments, while young members of society would have adopted IT more than the first group and are expected to be dominant users of e-Government services. Nonetheless, the government acknowledgment of this situation indicates that it is aware of the IT behaviours of different age groups and that the decision to provide a new e-Government development has to be made based on the technological abilities of these age groups to use the online services.

Moreover, the interviewees mentioned that they always keep in mind the sort of communications method citizens prefer to have access to during their decision making, as there is still a considerable number of people who prefer face-to-face communication (e.g. ‘ICT strategic decision maker’, pp.300-1). However, Altameem et al. (2006) believe that e-Government initiatives will be quickly adopted if the advantages of e-Government are identified and presented to stakeholders. In his book *Diffusion of Technology*, Rogers (1995) stated that people will adopt the technology if they find that the use of these services will save time and money.

Moreover, the interviewees mentioned that they received substantial calls to provide their services online at the same level of quality as their private sector organisation counterparts (e.g. 'Strategic decision maker 2', p.299). Clark (2003) also stated that more pressures are anticipated to force public sector organisations to deliver their services online. One of these pressures could be from citizens who use government services. Altameem et al. (2006) stated that private sector organisations meet customer expectations with good quality and excellent speed. The same level of service is also expected from public sector organisations, including accessibility 24 hours a day, seven days a week.

Nonetheless, the situation has improved, and there are more users of e-Government services. Although face-to-face and online communications are an ongoing discussion among scholars and public sector administrators, the interviewees mentioned that they rarely want to lose sight of face-to-face communication. This is because they are aware that there is still a group of citizens who want to interact with the government face-to-face or do not have access to an adequate means for interacting with the government digitally.

5.1.4 Discussion of Factors Leading to Government Policy Issues

5.1.4.1 Central Government Policy

The influence of central government policy on e-Government post-implementation decision making for both informational and transactional e-Government projects was made clear in the statements of interviewees of the present thesis (see Section 4.3.4). Government legislation mandates and national policies oblige the public sector administrator to provide a new form of e-Government development within a specific

timetable. This development could be to provide a new piece of information or a new type of transactional activity, such as requesting road repair online. The central government agenda in the UK was to go fully online and provide online interactions by 2005 (Beynon-Davies & Williams, 2003); however, the date of this plan was revised and revisited a number of times. Irani et al. (2005) also argued that the central government policy obliged different government bodies to implement online systems.

Weerakkody and Choudrie (2005) highlight the fact that sometimes public sector administrator e-Government initiatives are based on unrealistic project deadlines, which are set for national e-Government initiatives by the central government. However, these project deadlines have to be rescheduled and the objectives of these projects have to be re-planned to fulfil the earlier plans and objectives defined by the central government. Nonetheless, the influence of the central government on public sector managers' initiatives cannot be ignored. However, working solely to meet a deadline may result in poor operational infrastructure, and the organisation may not be necessarily reformed to support the new technological development potentials ('Strategic decision maker 2', p.304).

Moreover, the present thesis interviewees pointed at the financial package supporting the e-Government initiatives that also act as a motivating factor for public sector administrators to implement the recommended e-Government development ('Information and service development administrator 2', p.189). With regard to allocated funding of e-Government initiatives planned by the central government, Griffin and Halpin (2005) stated that if the local government fails to respond to policies and regulations set by the central government, it would result in withdrawal of the funding allocated to the local government for such initiatives. Therefore, the monetary aspect of central government influence could act as a driving force to implement a new

e-Government, while failure to adhere to central government initiatives leads to financial loss.

All interviewees agreed that change in the political landscape could end with changes in organisational priorities and deviation from operational support for e-Government development plans (‘Business and IT enhancement decision maker’, p.305). The change in political landscapes and national e-Government schemes make it difficult for public sector administrators and decision makers to follow the local government plan, and continuous changes to an e-Government plan could easily lead to the decision to implement obsolete technology (Ferlie, Hartley, & Martin, 2003; Weerakkody & Choudrie, 2005). Management decision making could change after a new political party is elected and a new government with a new agenda takes office. Change in the political landscape could also lead to the halting of ongoing projects because of the priorities of new political agendas.

In addition, political will, both at regional and national level, has been identified as a source of e-Government initiatives, pushing public sector administrators to provide and deliver new, timely developments. Sources of political pressure could be upcoming elections and responding to promises made during a political campaign (e.g. ‘Business process improvement administrator’, p.306).

The possibility of e-Government failure was discussed earlier, and the possibility of reputational damage has been highlighted. However, interestingly, the Performance and Innovation Unit (2000), in one of its four supporting principles for e-Government projects, points at learning quickly from mistakes and establishing ambitious goals, which indicates that the central government already aware of the risks of e-Government

projects; however, they support e-Government projects and persuade local public sector managers to embark on this journey.

5.1.4.2 Regional Government Policy

The present thesis interviewees highlighted regional government policy influences on e-Government development initiatives (see Section 4.3.4.2). For example, sometimes a government project contains a provision for e-Government content to support regional government plans. The highway Private finance initiative (PFI) project was named as an example in which the public sector administrator had to decide whether to set up a new e-Government plan to support the PFI project.

The interviewees acknowledged the importance of regional and central government initiatives and mentioned their attempts and efforts to establish cooperation with regional and central governments to develop and implement e-Government strategy (IS/IT implementation administrator, p.308). Teo et al. (2003) describe the adoption of G2G as changing rapidly and completely unpredictable. This means that change in a part of a regional or central government could impact on others. An example of such a scenario was found in our case study, namely the city council plan to provide some Department for Work and Pensions (DWP) services (‘Strategic decision maker 2’, p.306). According to ‘Strategic decision maker 2’, if the DWP stopped offering face-to-face services, it could prompt the city council management team to adjust its e-Government plan.

Another issue that could impact public sector managers’ perceptions is regional collaboration between the city council and other regional governments. Regional collaborations could be a motivating factor for public sector administrators to positively respond to the regional agenda and provide similar e-Government capability in their city

council. Jaeger and Thompson (2003) stated that a lack of coordination between different levels of government could have a significant impact on public sector administrators' efforts to achieve success in their e-Government initiatives. Nevertheless, improving communication and collaboration between different levels of public sector management are the expected result of establishing online transactions between different levels of an organisation (Gil-Garcia et al., 2007).

5.1.4.3 ICT Green Policy

The Green ICT Delivery Unit (2013) named reduced travel, enhanced collaboration and finding a better solution to reuse and recycle IT as the expected outcome of government initiatives. Carbon footprint awareness was also mentioned by the research study interviewees (see Section 4.3.4.3). The fact that fewer resources may be needed to support government activities was one of the highlights of the interviews. Although carbon footprint awareness was mentioned, it is not recognised as a key issue in e-Government projects. Nonetheless, going online and providing more e-based services demand the extraction and use of fewer resources to support public sector operations, which could confer financial benefit to the organisation. Therefore, adhering to an ICT green policy could be considered one of the positive elements that a management team can claim it considered during decision making.

5.2 Comparison of Research Findings with Existing Models

As stated in the previous section, this section discusses and compares the factors identified in the present research study with existing studies in the literature that have also attempted to discover the factors that influence public sector administrators' decisions to provide new e-Government services. However, what makes the present research study different from the existing literature is its emphasis on studying post-implementation decision making. A near majority of local councils in the UK have implemented and adopted a form of e-Government development. Therefore, of greater interest is how the decision will be made by the council to continue and provide a new form of e-Government development.

A new literature search, particularly in the context of e-Government, was conducted to identify potential subjects for the discussion chapter. This aims to help build the discussion chapter based on comparison of the present study findings and the existing literature. The most relevant literature that this researcher could identify was the subject of 'e-Government initiatives', where three research studies, two PhD theses and one journal article attempted to identify influential factors of e-Government initiatives in the public sector organisation. The components of the models presented in the three studies were compared with the present study findings. Although the context was slightly different from the focus of the present study, this was the most relevant e-Government literature that matched the objectives of this thesis. The e-Government initiatives studies are explained in Section 2.3.

The discussion in the second part of this section will be based on one-to-one comparisons of the factors of the selected models with the present thesis findings.

5.2.1 Lee and Kim (2007)

Lee and Kim (2007) investigated the perception of government authorities with regard to IS/IT initiatives in the US. They identified two categories of problems and solutions. Financial, organisational, technical, HR and expectations were identified as sub-categories of problem, while change management, relationship management, risk management, plan management and 'on your own' were recognised as sub-categories of solutions.

This research study, like Lee and Kim's (2007), identified the problem of budgeting and the importance of the fiscal year of the organisation as elements which could limit e-Government initiatives in the city council. The interviewees stated clearly that they must wait to see which department has secured enough funds, after which they could decide on the forms of e-Government advances they could provide. However, that situation may not necessarily result in the implementation of the worthiest project.

In the present study, it was determined that organisational management factors is the core of post-implementation decision making, highlighting the similar observation by Lee and Kim (2007) that the importance of organisational matters is much greater than that of technical matters. Lee and Kim's (2007) findings on scattered effort and communications problems that relate to the smokestack problem also match the present study findings, as the interviewees mentioned that there are different communication behaviours among staff and that a group of staff members were unwilling to initiate communication and share their opinions. Nonetheless, two communicator behaviours identified in this study are unique from that in Lee and Kim's (2007) model, i.e. eager and apathetic communicators. Moreover, the interviewees stated that there were different efforts within the council (the exact term used was 'individualistic approach') that the interviewees found costly, and some of these systems were not in

communication with each other. Nonetheless, in this research study, the interviewees referred to the new strategy in the council as the application of corporate strategy, in which decisions would be made centrally. This approach will save some effort and energy, as the decision in corporate decision making will be made more holistically. Therefore, the decision makers would have better understanding of the organisational capabilities of the city council.

Lee and Kim's (2007) findings on vertical synchronisation or integration relate solely to the system of governance in the US; the present study was conducted in the UK, and no such perspective was detected from among the interviewees' statements. Nonetheless, the underlying point raised by Lee and Kim (2007) is the importance of synchronisation of different systems despite having different systemic and technological characteristics. This research study also discovered that understanding the technical and IT infrastructure implications of an e-Government development plan is necessary and that managers need to ensure that the technological aspects of the e-Government proposal are in line with the existing technology.

The present study captured the different perspectives of HR management as compared to that of Lee and Kim (2007). Although the concept of training was identified in the present study and that of Lee and Kim's (2007) model, the management emphasised the importance of providing an adequate level of training and of upskilling staff to use technology. The interviewees referred to a period when training was provided to staff, and a considerable number of employees left their jobs after the training. This researcher had no explanation for the subsequent staff reduction. The statement of Lee and Kim (2007) with regard to the problem of retaining qualified staff in an organisation could provide a justification for why the staff left their jobs. The staff may have felt that they could use their new skills, leading to their leaving their jobs. What

was captured in the present study which is new is that aspects such as legal issues of HR development for a new e-Government development and support of staff to use the new e-Government tools must be considered from the perspective of public sector managers. Nonetheless, the interviewees stated that they consider staff training for any new e-Government development to be fully implemented by the city council.

With regard to Lee and Kim's (2007) finding that escalating commitment and project delay are two items in the expectation sub-category, the present study findings indicate that the interviewees were concerned about the high expectations of their customers to provide online access to their governmental services. Moreover, some of these expectations were generated by the central government, which again obliges the council to initiate its improvement plan. Nonetheless, the perception of the interviewees was much more positive than that of Lee and Kim's research study participants. The present research findings could match the escalating commitment highlighted by Lee and Kim (2007). Therefore, the management team is under constant pressure to improve its services and provide new advances. Another issue was project delay. The interviewees also described a situation in which they had to delay a project because of technical and operational matters. However, this was explained as a routine expectation in planning e-Government projects and not as an extraordinary headache to tolerate. Generally, the present study findings had a different focus from what Lee and Kim (2007) describe about expectations.

The concept of re-engineering in Lee and Kim's (2007) study is quite close to the code of business performance in the operational factors sub-theme. In this code, efforts to provide efficient and effective processes in the city council were addressed. This describes the initiative for re-engineering and improving e-Government in the organisation.

Lee and Kim's (2007) viewpoints on external relationships and the use of elected officials' experience is similar to that discovered in the present study in that establishing links and receiving advice and suggestions from external entities is important. From an internal perspective, there was strong emphasis on receiving sufficient support from key stakeholders in the council. This type of support is considered necessary to ensure the continuity of the e-Government plan. From an external viewpoint, the interviewees highlighted two aspects: firstly, the importance of establishing communication between the city council and other local authorities to utilise the experience and knowledge existing in these organisations; secondly, consultation with external partners was mentioned, but not in Lee and Kim's (2007) study.

What was in this research study with regard to IT risk was more or less similar to Lee and Kim's (2007) study, albeit with a slight deviated perception with regards to IS/IT risks. In fact, the findings of this research study are more technical than that of Lee and Kim's (2007) study. The present study indicates that system failure risk was considered one of the burdens of e-Government initiatives and could open the opportunity for scrutiny of the city council's decisions and bring reputational damage to the organisation. What was further identified in detail were security concerns, which were not identified by Lee and Kim (2007). In addition, the interviewees stated that they were fully committed to implementing e-Government. This differs completely from Lee and Kim's (2007) perception of management as bureaucratic and less engaged with providing new e-Government, and that there is a requirement for incentives and rewards to continue e-Government initiatives.

Lee and Kim's (2007) sub-category of plan management includes the two items central planning by the IT department and localised planning. In the present study, two types of e-Government initiators were identified: bureaucratic and sideways. A bureaucratic

initiative addresses the initiation of an e-Government plan by senior managers, who are often influenced by central government agendas and plans. However, a sideways initiative is mostly based on communication between departments and staff within the council. What differentiates Lee and Kim's (2007) study from the present study is that Lee and Kim (2007) focused on federal and state governance. However, the present research study was more concerned with decision making in a local authority.

This researcher did not detect any of Lee and Kim's (2007) 'on your own' category, which includes no CIO or the emergence of IT champions and initiators. However, the case study site has a very clear departmental structure that obliges different bodies in the council to assess, evaluate and initiate a new form of e-Government development. For example, the interviewees stated that they have business information solution teams and transformational teams that are responsible for providing access to new e-Government services and within departments; these are the managers who raise the need for assessment and the provision of new e-Government development and who submit their requests to the business information solution and transformation teams. Nonetheless, the present study identified two initiators that eventually could play the role of IT champions. However, this is more likely to happen at senior-level management than middle or front-line management. In particular, when the agenda is tabled by the central government, senior-level management can act as the IT champion in the organisation.

Lee and Kim's (2007) noted that federal government IS/IT projects are more likely to be implemented, and the projects are also funded. Again, although there is a difference between the geographical context of Lee and Kim's (2007) study and the present study, the present study found that the central and local governments influence the city council, which results in the initiation of a new e-Government development plan. Through their mandates and agenda, the central and local governments could oblige the

city council to plan for e-Government development, and these bodies often fund these initiatives.

5.2.2 Khasawneh-Jalghoum (2011)

Khasawneh-Jalghoum's (2011) research study was about identifying factors that hinder and support e-Government initiatives in an Arab culture, in Jordan, to be specific. Her model of e-Government initiative in Jordan is presented earlier in Section 2.3.2. The factors Khasawneh-Jalghoum (2011) identified in her research study were categorised into two groups of drivers and barriers of e-Government initiatives. Khasawneh-Jalghoum (2011) defined political, economic, socio-cultural, legislative and regulatory, environmental, organisational and administrative as the seven major categories that drive e-Government initiatives in Jordan

Khasawneh-Jalghoum's (2011) political drivers included three themes: expectations of reducing red tape, support from the monarchy, and service decentralisation. The present study findings indicate that citizen engagement and demand for access to advanced e-Government solutions with the same level of complexity offered by private sector organisations spurs public sector administrators to move towards providing advanced e-Government services. Moreover, the demands and expectations from within and outside the organisation to have more efficient and effective services results in the initiation of e-Government development.

This researcher did not find codes that would be similar to Khasawneh-Jalghoum's (2011) findings which address the influence of the royal family, travel to the capital for using public services, decentralisation and e-Government as tools of persuasion for internal and external investors as a drive to initiate e-Government services. Nonetheless, the present study interviewees believed in the constructive impact of e-Government

initiatives that reduce the need for conducting face-to-face transactions and making phone calls to do business with the council.

Khasawneh-Jalghoum (2011) referred to a high level of literacy and a high percentage of young people in Jordan as the initiating tool to begin a new e-Government development, as these audience groups are expected to use this technology. The present study found the existence of highly IT literate, digitally savvy and young customers who consider an online option their first choice to do business. On the contrary, this researcher found a group of city council customers that do not fit in the first category and who require considerable support to use e-Government services. This support, such as providing IT equipment, training, and monitoring and assistance in using the services are necessary to ensure that the e-Government initiative will be successful and used in the future. Another point to raise is that Khasawneh-Jalghoum (2011) took for granted that citizens would like to use online Government services. However, the present study results indicated that citizens' levels of engagement towards the concept of e-Government varied. Some citizens would like to use an online option, while another group of customers preferred to have face-to-face communication. Therefore, this finding emphasises the importance of ensuring customer ability to use government services online, whether or not they are IT literate. However, the general perception is that the IT-literate category is more likely to try the online option first.

With regard to the holy month of Ramadan, Khasawneh-Jalghoum referred to short tempers and low performance levels among staff, and she stated that e-Government could be used as a tool to improve the performance of government employees. This finding has cultural and geographical implications and cannot be used in the context of the UK.

Khasawneh-Jalghoum's (2011) social inclusion initiative and the plan to carry out traditional methods of communication because of the possibility of excluding less privileged citizens was also observed in the present study, where the city council management was quite cautious about the consequences of its e-Government initiatives and were worried about whether its e-Government plan would deprive or limit the access of a series of city council customers to government services. The interviewees emphasised the necessity of making the traditional lines of communication available for those who do not have access to government services online. In addition, they mentioned their digital initiative, which provides a series of computers in the city council building and a group of assistants to help and support city council customers in conducting their business online.

Khasawneh-Jalghoum (2011) determined that e-transaction law in Jordan positively influenced and encouraged the government to progress in the e-Government area. The present study findings also show the influence of central and local governments on the process of initiating new e-Government development. It has been noted that legislation, politician agendas, regional initiatives and ICT green policy could oblige city council management to provide the requested advancement. Therefore, different government laws and regulations at different jurisdictional levels could lead the city council management towards providing new forms of e-Government.

Khasawneh-Jalghoum (2011) found that IT private sector organisations were the key support for public sector organisations to lead e-Government in Jordan. The present study discovered that the council relied heavily on its IT provider contractor. Nonetheless, the management team did not perceive this as a form of one-sided dependency to a private sector organisation. The interviewees stated that they were actively looking for other partners in the field to collect and receive their opinions of

and support for their e-Government advancement journey, such as other local governments in the region.

In addition, the interviewees mentioned the time they visited other councils and found good practices that could be implemented in their organisation. Moreover, they mentioned the importance of collaboration and communication with other councils to enhance their e-Government services. This is similar to Khasawneh-Jalghoum's (2011) competitive environment findings in that the other regional and national governments initiatives were being considered as case studies to compare and contrast their advancement, technology and innovation for enhancing e-Government services.

In the study of UK city council administrators, it was also found that the management team perceives that citizens' attitudes towards e-Government services have changed. Previously, customers were reluctant to use online services when e-Government services were introduced. However, the interviewees believed that the attitude has changed and there are now more customers willing to engage with the government electronically. Moreover, it was discovered that timing could also act as an element in providing more advanced e-Government services, as the tendency and willingness inside the council to change the traditional processes and scale of IT improvement will grow over time. Khasawneh-Jalghoum (2011) also made a similar statement with regard to the element of time in that it could solve the adoption challenge of e-Government initiatives. Although the process might be time consuming, e-Government will ultimately be adopted by the users.

Khasawneh-Jalghoum (2011) named national incentives as a role player for initiating a new e-Government development. In the present study, the closest code that could be related to this topic is the adherence of city council management to national

digitalisation initiatives, which was expected to establish a good reputation for the city council among other public sector organisations.

Moreover, resistance to change, lack of innovative incentive, lack of appropriate authority to enforce decisions, weakness and variations of ICT infrastructure within institutions, certain religious beliefs, reluctance to make risky decisions and lack of e-trust could complicate the achievement of change within an organisation (Khasawneh-Jalghoum, 2011). Khasawneh--Jalghoum also mentioned that to have positive engagement of employees with a new change in the organisation, training and promotional campaigns could help to spread the news about the new change and encourage employees to interact with recent and evolving technology. In the present study, employee resistance to change and fear of losing their jobs that resulted in reluctant engagement with change was found to be one of many obstacles to e-Government enhancements. Moreover, communication, timing and degree of operational developments were found to be elements of change management. In addition, the scale of operational development could have many implications for changes in the organisation, such as HR management and IT costs that have to be considered comprehensively.

Khasawneh-Jalghoum (2011) stated that the bureaucratic system in the developing countries includes many complexities and renders e-Government initiatives slow and complicated. The present study found that the bureaucracy of e-Government initiatives is established based on the complexities of e-Government development, which define the number of roles in management hierarchies that will be involved in the process of initiating new e-Government services. This means that large-scale e-Government development could be more time-consuming and more assessment may be needed to minimise the uncertainties of e-Government initiatives.

Khasawneh-Jalghoum (2011) noted that new ministerial appointments could slow down or change the direction of e-Government initiatives. The present study interviewees mentioned issues such as change of political agenda, politician promises and upcoming elections as an impetus for e-Government development. Therefore, this motivating element would not be categorised as a barrier if it is managed and planned carefully. In fact, this scenario could help in developing better services more quickly if workers plan wisely.

Khasawneh-Jalghoum (2011) named the high cost of computers and internet connection in Jordan as barriers to e-Government initiatives. The extreme poverty in areas of the country means that access to computers and the internet is perceived as luxurious and unnecessary for the families in these areas. This issue is addressed in the present study in the sub-theme of equality assurance. It has been found that poverty is one of the elements of the digital divide, and can easily exclude a large population from using government services online. The present study interviewees stated that they considered this situation when they attempted to make a decision. More specifically, one of the interviewees referred to users of a city council service who cannot (and could not) access government services online. However, there is the belief that this situation has improved, and currently the low-income population can access government services in libraries or at friends' and relatives' homes.

Khasawneh-Jalghoum's (2011) socio-cultural category includes religious belief, preaching without practicing, *wasta* (i.e. using one's connections and/or influence to get things done), change resistance, lack of ownership and corruption. Among the listed factors, some such as *wasta* and religious belief are unique to the context of Jordan. The only factor in common between Khasawneh-Jalghoum's (2011) study and the present study is resistance to change, where it has been noted that this can be partially addressed

by communicating the change through the right channels. Change in an organisation is described as changing the processes, upskilling and training staff and potentially making redundant some processes and tasks. Therefore, with any idea of change in the organisation there will always be feelings of resistance and opposition. As a solution to rectify this scenario, one of the interviewees stated that the idea of change should not being seen as a change to people, but that the change has to be made with the help of the people.

Khasawneh-Jalghoum's (2011) technological category includes weakness and variation of public sector infrastructure, digital divide and improper use of technology. She also mentioned the variability of government agencies' technological infrastructure that may not necessarily match other institutions' IT capabilities. The present study interviewees also pointed out the necessity of evaluating an e-Government plan from an IT infrastructure perspective, as well as IT costs, including application hardware costs. However, IT costs have a financial rather than technological perspective.

Khasawneh-Jalghoum's (2011) legislative and regulatory category included lack of authority to enforce decisions and lack of e-trust, which exists mainly among citizens, and security and privacy. None of the present study interviewees referred to the lack of authority to enforce decisions or lack of e-trust as factors influencing their e-Government decision making. Khasawneh-Jalghoum (2011) referred to security and privacy concerns in that there is a need for assurance of system and device security and that online transactions would not compromise user security and privacy. The present study findings address the issues of maintaining the security of the information that would be stored in the city council servers. In addition, adherence to record management policy was named as another element in ensuring that the security and privacy of such information is completely addressed.

Khasawneh-Jalghoum's (2011) organisational category included turnover and isolated entities. Low salaries in Jordan's public sector organisations and competition from the private sector to hire the most qualified employees were the factors Khasawneh-Jalghoum (2011) identified as barriers of e-Government initiatives. The present study also found that some council staff left their jobs after training. It can be hypothesised that they found better positions in other sectors after completing their training.

The lack of cooperation and poor sharing of information between different public sector entities is another obstacle to e-Government initiatives (Khasawneh-Jalghoum, 2011). The situation in the present case study was slightly different. The city council previously implemented e-Government projects in isolation, without consultation with different departments within the council. This situation has resulted in the development of systems that were not linked to each other. However, this situation has changed, and decisions are now made corporately to avoid unnecessary effort and investment in IT.

Administration, which has many steps to follow before e-Government is implemented, was named as a barrier to e-Government initiatives by Khasawneh-Jalghoum (2011). Administration includes actions such as building an appropriate infrastructure, preparing employees for a change, changing the current processes and eliminating overlapping processes. Khasawneh-Jalghoum's (2011) interviewees believed in changing many existing systems in the organisation and that they had to be improved before going online. Therefore, this process is gradual rather than immediate. The present study findings also indicate after responding to many central government deadlines and initiatives for putting services online, the city council noticed that many processes behind the online processes remained untouched, which could not result in providing the promised efficiency and effectiveness of e-Government services. This finding confirms the importance of the gradual development of e-Government and the

necessity of reforming the backbone processes of e-Government systems at any possible opportunity to ensure that the final system will provide the promised benefits.

5.2.3 Al-Rashidi (2013)

Al-Rashidi's (2013) study addressed the identification of factors that influence internal stakeholders and e-Government initiative development in Kuwait among three public sector organisations. Al-Rashidi's model included three main categories: political factors, technical factors and organisational factors.

Al-Rashidi (2013) emphasised the importance of the leader's role and referred to the frequent change of managers, similar to Khasawneh-Jalghoum (2011), in that it could slow e-Government implementation. He stated that the influence of a political leader is much stronger at the initiation of e-Government development and then it gradually decreases as the project progresses and then gives way to the IT department leaders. In comparing Al-Rashidi's (2013) findings with that of this thesis, one could state that the leadership role is quite important in e-Government initiatives. The influence of politicians in initiating a new e-Government advance is also one of the present study findings. However, encouraging e-Government initiatives in the studied city council is not limited to politicians but also to the management team within the council (senior-level and mid-level managers), who also influence e-Government initiatives. The role of senior-level managers is especially important because of the need to gather support for new e-Government initiatives. The city council technical staff is only involved when there is a call for change from the city council departments and the management team, transformation team and politicians.

Al-Rashidi's findings (2013) with regard to securing finances before the pre-implementation of e-Government initiatives show that it is extremely important in that

he anticipated that it might even take more than years and this could lead to the postponement of e-Government initiatives. The findings of this thesis also confirm the importance of securing a sufficient budget. In fact, the present study interviewees claimed that they have had to wait and see which service within the council has a sufficient budget to start e-Government initiatives. Moreover, this situation may not always lead to the worthiest project being chosen, but rather the project that the available budget can support. Therefore, the timing of a project is quite important, because if the project were selected when there are insufficient funds available, it could lead to a delay or even halting of the e-Government initiative.

Al-Rashidi (2013) named awareness and clear strategy as factors that impact on e-Government initiatives; however, plans with political support still needed to ensure their implementation. This thesis also identified the importance of corporate strategy to e-Government initiatives. Nonetheless, Al-Rashidi's (2013) findings have more project management implications, while in the present thesis strategy has a management focus.

Al-Rashidi (2013) identified the importance of political will in e-Government initiatives. Although political will is important, no follow-up to a specific e-Government initiative has been reported. The findings of this thesis also indicate that political power and will play a key role in e-Government initiatives in the local city council. In fact, this is a political desire that could result in a series of e-Government initiatives which may not have been considered before.

Al-Rashidi (2013) found that legislation, such as digital signatures, and laws for e-Government, such as e-transactions and computer crime laws, can be considered the main support for e-Government initiatives. The present study also discovered the role of e-Government legislations as a driver of e-Government initiatives. Nonetheless, the view in the present study was not concentrated on establishing the legal infrastructure to

initiate new e-Government rather than the provision of a new form of services through e-Government channels.

Al-Rashidi's (2013) mentioned that stakeholders require more politicians to enforce their e-Government strategy. No comments to the effect that more power is required to be delegated to the management team were recorded from among the present study interviewees.

Al-Rashidi (2013) emphasised the importance of e-Government having a clear scope. Scope as defined by Al-Rashidi (2013) shows that the focus is from the beginning-to-end process of the workflow to any initiative and also the stakeholder's role in that initiative. This is more about how resources are coordinated during the implementation of new e-Government. However, the focus of the present research findings was based more on establishing a clear and structured web portal that addresses citizens' needs and that responds to the local council administrator agenda. The present study interviewees further discussed the need to clearly define the needs and alignment of the e-Government strategy with organisational strategy and central government policies and to streamline the processes.

Al-Rashidi (2013) identified bureaucracy and documentary cycle as elements that slow e-Government initiatives. This issue was not raised by the present study interviewees. This might be because documentation of IT/IS requirements and the perpetration of agendas to support and prioritise IS/IT implementation were seen as routine. This might be related to cultural differences between Kuwait and the UK. A related point and one that was also mentioned by the interviewees is the long procedure of obtaining approval for some e-Government initiatives in that different teams and departments within the organisational hierarchy have to contribute to the process. Nonetheless, documentation around these meetings did not come across as an issue.

Similar to Khasawneh-Jalghoum (2011), Al-Rashidi (2013) found qualified IT employees important; however, he emphasised this need in the two phases of implementation and post-implementation. The present study interviewees also emphasised the importance of having qualified IT staff in place. The interviewees highlighted the fact that they considered the use of consultancy companies in areas in which they did not have the required expertise. This approach aims to cover the area in which the organisation does not have the appropriate skilled staff to respond organisational needs. Moreover, the interviewees stated that they have an outsourced partner to support some of their IT needs. As with Khasawneh-Jalghoum's (2011) and Al-Rashidi's (2013) interviewees, the present study interviewees mentioned the superiority of private sector organisations as compared to the public sector in terms of utilisation of IS/IT and highlighted the demand from the public to receive services similar to that provided by private sector organisations at the moment. In addition, the interviewees mentioned IT training for employees.

Al-Rashidi (2013) found that the lack of adoption was the result of a lack of security and privacy. The issue of data security and categories of information security level in the council were explained by the present study interviewees. What differentiates the present study findings from that of Al-Rashidi's (2013) is the lens through which security is viewed. Al-Rashidi (2013) saw security as more customer-oriented. However, the present study interviewees highlighted three main issues with regard to security: the security risk of being the first initiators and as the result having to develop a system that is not properly tested and validated in terms of performance; another highlighted point was data security risk and technology security risk.

The importance of having stable and reliable IT infrastructure was mentioned by Al-Rashidi's (2013) interviewees. Legacy system impact has always been seen as an

impact of obsolete systems in e-Government development. However, if these old technologies had been selected wisely, they could have an empowering influence rather than a negative effect on the e-Government agenda. The reason for stating this is that the present study interviewees highlighted the benefit of having the Customer Relationship Management (CRM) system in the council in that they could respond to a series of e-Government change requests.

The necessities of IT training for staff and citizens to use e-Government services were identified as an element that could indicate the success of e-Government (Al-Rashidi, 2013). The importance of staff training was also highlighted in the present study. However, what was further discussed about the surrounding aspects of training is employee resistance to these forms of training because of the fear of job loss. Al-Rashidi (2013) also reported resistance to change as an element impacting e-Government initiatives. He then summarised the reason in two elements: lack of desire to learn new methods to perform daily tasks, or privacy and data security reasons.

Al-Rashidi (2013) named support from top management, full involvement of the IT department at different stages of the process, involvement of actual system users, focus on beneficiaries' needs as BPR elements that are important factors of successful e-Government initiatives. In the present study, the interviewees stated the importance of top management support, a skilled IT support team and the involvement of actual users of the system from the process of identifying needs. However, one of the most challenging tasks at that moment and which might be difficult to accomplish was the involvement of people who would benefit from this system, that is, the citizens. The reason might be that the local city council does not provide its services to a single group of users as the private sector might. Public sector organisation services have to be provided to all citizens, and involvement of all beneficiaries of this system might not be

practical with the timescale of e-Government projects and the resources these organisations have in place to complete their e-Government development agendas.

Al-Rashidi (2013) observed resistance to change among government officials first in that this issue was addressed later; he also reported that most resistance occurred at the pre-implementation phase because of worries about data security and privacy in the organisation, which legislation and IT training could help tackle.

Nevertheless, the present study views resistance to change from a different point of view, that is, any e-Government initiative will face some resistance within the organisation departments. There will be some sense of discomfort, especially among the ordinary staff for whom the new advancement could revolutionise their operations. The attempt to introduce a new change has to be explained properly to two groups of audiences within the council: senior-level managers and ordinary staff. Any changes in the organisation may need internal support from the higher echelons of the organisation's management team in order to receive sufficient support in the event the new e-Government idea faces challenges and resistance within and outside the organisation. Furthermore, the staff resistance to change is almost expected mainly because of the feelings of the possibility of job loss. The present study interviewees explained that to minimise the impact of resistance to change, the organisation vision has to be explained properly to the staff. In addition, an attempt to upskill the staff capabilities was named as another action that the management team needs to consider to reduce the level of fear among employees. Additionally, a clear action plan would reduce the number of false starts and sufficient resources would lead to less frustration among staff. Moreover, organisational incentives were named as a criterion that should be considered properly to manage resistance within the organisation and to make a successful attempt at providing e-Government development.

Nepotism is an issue highlighted by Al-Rashidi (2013) and Khasawneh-Jalghoum (2011); however, the present study interviewees made no statements regarding an enforcement/reward system or even the possibility of an employee leaving the organisation to pursue a career in a private sector organisation.

Al-Rashidi (2013) identified cooperation as another important factor that influences e-Government initiatives. This matches the present thesis findings in that the interviewees emphasised the importance of receiving support from within the council to operationalise e-Government initiatives. The cooperation is also not limited to city council boundaries: seeking communication and support from other city councils were also mentioned by the interviewees.

Al-Rashidi (2013) said it is important that new e-initiatives take priority over traditional services, adding opportunities for success and that it is essential at the post-implementation phase. The present study interviewees mentioned that e-Government initiatives are and have been their priority because of public demand, central government rules and regulations and internal management initiatives. However, the word 'prioritisation' could be somehow controversial for public sector organisations in particular. This is because according to the interviewees, many people still do not have access to digital media, and the prioritisation of the digital agenda could easily exclude many people from accessing government services and would only result in injustice to the public. It has to be said that the evolution of both traditional and digital services have to be considered at the same time rather than prioritising one over the other.

5.2.4 Summary of Three e-Government Initiative Studies

Three e-Government studies which aimed to discover the factors influencing e-Government initiatives are identified and explained in this section. These findings cover

the majority of factors listed by previous researchers as elements influencing e-Government initiatives. Nonetheless, the present study findings are more inclusive and present the interrelationship between the different elements of e-Government post-implementation decision making in addition to identifying a series of new elements influencing e-Government decision makers. Elements such as reputation management, communication and degree of operational development in change management, green ICT policy, economic climate, cost vs. benefit assessment, in-house infrastructure potential in scale of improvements and citizen engagement are the new elements identified, and they can be considered the contribution of this study to the body of knowledge. Some findings by previous researchers do not match that of the present study because they relate to the culture of the case study location. For example, *wasta* and *Ramdan* are two unique elements that have implications in Arab culture.

Khasawneh-Jalghoum (2011) and Al-Rashidi (2013) began their research studies based on developing a framework and then confirming their framework by analysing interview data. This means that they already knew what issues they needed to investigate at the time of their data collection, and this approach shaped their data collection and data analysis processes. However, the approach used in the present research study is in line with that of Lee and Kim (2007). The data were interpreted solely by applying inductive thematic analysis and the preconception of this researcher did not affect the data analysis and the process of identifying themes and sub-themes.

5.3 Reanalysing the Findings Using the TOE Model

Tornatzky and Fleischer's (1990) framework focuses on how the firm's context influences the adoption and implementation of innovation. As discussed in the literature review chapter, the TOE framework is inclusive of the technological, organisational and

environmental contexts that influence decision making around technological innovation. Moreover, Tornatzky and Fleischer (1990) consider connections between their three context factors.

The technological context espoused by Tornatzky and Fleischer (1990) comprises two elements of availability and characteristics. Availability, which comprises technologies in use and those internally available or available on the market but not in use, is thought to influence the adoption of innovation. This study found that city council managers take into account their current e-Government systems when they consider e-Government projects. They take into consideration their IT infrastructure and evaluate the constraints and opportunities of the existing system, when a new e-Government project is being assessed. Three forms of innovation exist outside the organisation; namely incremental, synthetic and discontinuous changes (Baker, 2012). In regard to the findings of our study, the interviewees referred to different projects within the organisation containing the aforementioned innovative forms. An example of a discontinuous characteristic emerged from the need for a new content management system in the council; consequently, the old system was discontinued and replaced with a new one (e.g. 'Service enhancement decision maker', pp.244-5).

In terms of organisational context, Angeles (2013) states that organisational context includes several descriptive characteristics: 'firm size; the centralization, formalization, and complexity of its managerial structure; the quality of its human resources; and the amount of slack resources available internally; formal and informal linkages within and outside the firm; decision making and internal communication methods; and boundary spanning mechanisms to communicate with the external environment' (Angeles, 2013). In this research study, the researcher identified the importance of bureaucratic decision making with respect to large-scale IT improvements. This means that decision making

will be centralised, similar to the mechanistic structure outlined by the TOE model. The TOE model highlights the importance of communication alongside senior management involvement to foster and lead organisational change. The present study similarly found that senior managers had to communicate the importance of change and secure support for their e-Government project. Notwithstanding, our study failed to identify slack resources and size as factors of organisational context. The researcher speculates that this might be because the city council under scrutiny in this study was a large organisation with numerous resources; therefore, the case was already situated and included the elements of slack and size.

The environmental context of the TOE model includes industry characteristics and market structure, technology support infrastructure and Government regulations. In terms of industry characteristics and market structure, the TOE model is more applicable to private sector organisations. Nonetheless, this relates to how the external environment of an organisation impacts upon its adoption of innovation; for example, competition and industry development speed. The industry life cycle is similar to the economic climate emphasised in our current study, which could have both positive and negative influences on e-Government post-implementation decision makers.

The support infrastructure for technology leads to innovation in firms. Skilled labour often commands high wages, thus forcing firms to innovate; moreover, if skilled labour, consultants or suppliers of technological services are available, the speed of innovation could increase. In the present study, interviewees noted a tendency to achieve efficiency and effectiveness, thus reducing the cost of providing services (see Section 4.3.1.2.3). Furthermore, study participants highlighted the use of IT consultants and suppliers, in accordance with the TOE model (Tornatzky & Fleischer, 1990).

The impact of government regulations innovation is described as being both beneficial and detrimental. In our study, government policies were found to carry the potential to facilitate or impede e-Government post-implementation decision making. Nonetheless, the constructive impacts of government regulations on e-Government projects are more obvious, because e-Government ultimately emerges out of government regulations. However, central government cost-saving agendas can slow down the budgeting of e-Government projects.

Evaluating the model the current study from the perspective of Tornatzky and Fleischer's (1990) framework suggests that the model incorporates each of the contexts articulated by the TOE model, with the exception of elements such as slack and the size of organisational context. Nonetheless, the model examined in this study contains new aspects for consideration; for example, corporate strategy, reputation management, business performance, human resource management, timing of the change management, green ICT policy, IT costs, cost–benefit assessment, IT risks, in-house IT infrastructure potential and outsourcing of the scale of IT improvement and system accessibility. Therefore, this model not only includes most of the features of the TOE model, but actually expands upon it with a number of new elements.

5.4 Comparisons of the Present Findings with Factors Identified in Stage-based Decision Making Models

After having reviewed stage-based decision models, several influential factors regarding decision making activity were identified and presented in Section 2.2.3.3. These factors are used as the basis for a discussion to highlight the differences and similarities between these factors in relation to the findings the present study.

Table 17 provides a point of comparison between the various factors as described in the literature. The factors described in the current study's model cover all those pertaining to stage-based models. Three factors (i.e. risk propensity, lack of subject knowledge and distinct feature of cognitive system) are described in previous models that are not identified in the present research model. Although interviewees in the current study stated that they consider the risks and different mechanisms, such as cost–benefit assessment, are designed to address this challenge, the individual risk propensity was not mentioned by those interviewed for this study. Simon's (1960) type of task and environmental characteristics are individualist and cognitive-related; however, the factors identified in this study were equally characteristic of the environment and could shape decision making behaviour. This scenario is similar to Dewey's (1910) nature of task and functional potential. Therefore, those factors of the current research study that could be relevant to Simon's (1960) and Dewey's (1910) model are identified by 'R'.

Factors such as scale of IT improvement, IT risks, system accessibility, IT risks, green ICT policy, central government policy and regional government policy, do not feature in previous studies. However, the word of 'external environmental influences' might have been used for factors such as central and regional government policy; albeit not mentioned specifically in previous models. Another example of a new factor identified in this research study is the importance of reputation management; that is, part of strategic factors that have not been mentioned in previous models.

Table 17: Factors comparison table

Current research study	Daft (2010)	Drury (2004)	Maritan (2001)	Mintzberg et al. (1976)	Simon (1960)	Dewey (1910)
Strategic factors	✓	✓	✓	✓	R	R
Operational factors	✓		✓		R	R
Central government policy				✓	R	
Regional government policy				✓	R	
Green ICT policy				✓	R	
Economic climate		✓		✓	R	
Budget	✓	✓			R	
IT costs					R	
Cost–benefit assessment	✓	✓			R	
IT risks					R	
Scale of IT improvements					R	R
System accessibility					R	
Risk propensity	X		X			
Lack of subject knowledge				X		
Distinct feature of cognitive system					X	

Note: The factors, which identified influence in post-implementation decision making, are presented in the first column of Table 17, under the label of current research study; other models are listed in the adjacent columns. If the factors of the current research study are identical to other models, that model will be identified by a tick sign; however, if the factors in the previous models differ from the findings of this research study, they will be presented in italics in the first column and marked with an X. Factors that are relevant to the specific factors of this research study, but not mentioned directly, are presented in 'R'. Moreover, the space in the table represents the factors of this research study that are not mentioned in previous models

The factors suggested by previous stage-based decision making researchers support those identified in the present study. However, the current model adds to the previous models, since factors such as IT risks and system accessibility were found to impact upon the post-implementation decision making behaviour of public sector administrators. Moreover, the factors identified in the present study are unique because they address factors influencing post-implementation decision making behaviour. Factors indicated in previous models were only general and served to support the explanation of stage-based decision making.

5.5 Implication of the Study

As the present study findings indicate, public sector administrators' decisions are influenced by organisational management, government policy, financial and technological factors when they engage post-implementation decision making. The decision-making framework developed in this research study could be used by public sector administrators to review their focus on factors they consider at the time of e-Government post-implementation decision making and could also lead to more thorough analysis of the situation as the result of the interrelations identified between each sub-theme. The identified interrelationships could be used as a tool for public sector administrators to drive their e-Government post-implementation agenda better than before because they would now have a tool that determines how each theme could influence and impact on other themes and how one factor could expedite, slow or change the direction of e-Government decision making.

There are four practical implications for the present research study, based on four themes identified in this study. Each factor is briefly discussed in following paragraphs.

There is a need to consider corporate strategy, reputation management, project initiators, business performance, HR management and change management within the organisational management factors when public sector administrators engage in the process of decision making. This requires an updated corporate strategy that guides the initiative of these managers toward enhancing their e-Government services. Business performance and change management are the important drivers of operational factors inside the organisational management boundary and each could lead the managers toward a new form of e-Government development or slow the process. Nonetheless, government policy, technological and financial factors influence managers when they

review the strategic and operational factors of the organisational management theme that could escalate or halt an e-Government post-implementation plan. For example, central government policy could lead to project initiators making an e-Government post-implementation plan their main priority. However, budget could impact on the timing and degree of operational development of change management from the operational factor perspective. Therefore, the people in charge of organisational management of their organisation have to consider the impact of factors from within and from government policy, financial and technological factors, which to them would be the external factors.

Government policy factors are central, regional and ICT green policies. These factors determine the future of organisational management and financial factors. The managers, who are in charge of organisational management and finances of their organisation, have to be vigilant with regard to their e-Government agenda and ensure that their e-Government post-implementation plan is in line with central and regional government policies and set their milestones based on central and regional governments. The present study findings indicate that government influences from outside the council have led to many implementations of e-Government.

With regard to financial factors, public sector administrators need to remember that central and regional government e-Government plans could be a good source of funds to support their city council e-Government post-implementation initiatives. If the city council plan matches what central government is aiming for, it could acquire the required budget for the project. In addition, IT cost determines the level of hierarchical organisation that initiates the e-Government post-implementation. Therefore, managers could obtain better consultation and speed up project tracking by allocating it to the correct level of management once they have obtained estimation for IT cost.

The managers should always consider the possibilities of IT risk, namely system failure and security concerns. These have to be reviewed and managed by the management team, as system failure may demand more budget and could inflict reputational damage. Therefore, more attention has to be given to these areas. Moreover, when engaging in large-scale IT improvement, the managers have to communicate the change clearly and ensure that the timing is right. The large-scale IT improvement may include considerable changes in the organisation's operations. Therefore, the impacts have to be well-thought out prior to any engagement to e-Government post-implementation plans.

Therefore, the developed model could be used beyond what is presented in this research thesis. This model could help managers who engage in post-implementation decision making determine the elements they have to consider when making their decision and the external and internal factors that could alter their decision making. This means that managers can make more informed decisions because they can collect information from the areas identified in this research study.

5.6 Chapter Summary

The findings of this thesis have been discussed and integrated with the previous e-Government studies in this chapter. In particular, it presents the factors influencing e-Government post-implementation decision making and the influences of these factors on other identified elements. Three e-Government studies that attempted to identify factors influencing e-Government initiatives in public sector organisations have been reviewed, while the similarities and differences between these models and the findings of this thesis have been discussed and explored. Furthermore, the identified factors have been compared with the general knowledge in e-Government studies.

The purpose of the present study is to provide insight for both researchers and practitioners conducting e-Government post-implementation decision making and to facilitate this decision-making activity by identifying factors managers are required to consider. Academic research in the first decade of e-Government studies was dominated by studies concentrating on observing and evaluating the output of e-Government initiatives. It includes analyses of local, state and federal agency websites, identifies the types of online services provided by government agencies and highlights the best practice to follow for benchmarking (Yildiz, 2007). These studies were useful, but the majority are of a descriptive nature. Yildiz (2007) differentiated the output- and outcome-oriented e-Government studies as follows: output-oriented e-Government studies aim to examine the output of e-Government efforts, websites and online government services that are the artefacts of e-Government initiatives. However, the goal of outcome-oriented studies is to demonstrate which e-Government performance indicators have improved as the result of a particular effort. Yildiz (2007) stated that there is a lack of process-oriented studies. He described process-oriented studies as studies based on collected primary data and extensive fieldwork that use interviews, participant observation and archival analysis to understand theories and e-Government processes to and generate theories. One way of generating theories is to collect and analyse the stories of people who work in government organisations (Yildiz, 2007). This approach is described as inside–out.

The next chapter concludes this research study, and provides a brief summary of the findings, answers to the research questions and limitations and recommendations for future work.

6. Conclusion

This chapter comprises four sub-sections: Summary of Research Findings (6.1), Responding to Research Questions (6.2), Contribution to Practice and Theory (6.3), Limitations of this Study (6.4) and Future Works (6.5). As mentioned in previous chapters, this research study is designed to investigate factors influencing public sector administrators' decision-making in the post-implementation development of e-Government projects. The main objective of this study is to identify the elements under consideration at the post-implementation stage of e-Government development and implementation projects. The decision to study the post-implementation stage of e-Government development and implementation was taken after acknowledging that the majority of local authorities in the UK have already developed a form of e-Government services. Therefore, the agenda of e-Government studies has already moved beyond issues such as early implementation and the adoption of e-Government services to the current focus on enhancing such services.

6.1 Summary of Research Findings

Based on the research study findings presented in Chapter 4 of this thesis, four main categories influence public-sector administrators' decision-making: organisational management factors, financial factors, technological factors, and government policy factors. These themes are the elements impacting public sector managers' decision-making when they engage in post-implementation development decision-making activity of e-Government projects. Moreover, the interrelationship between factors identified could help to understand how one factor could be impacted by another factor from another category. In addition to identifying factors influencing public sector

administrators' decision-making, the trend of e-Government evolution and development and the stages of e-Government decision-making within the Sheffield City Council are identified. A brief summary of the research study findings related to the main objective of this thesis is provided below.

- Strategic factors: As a result of data analysis, a series of elements are identified that mainly moderate and organise e-Government post-implementation decision-making activity. Corporate strategy, reputation management and project initiators are identified as moderating factors. However, sometimes these elements may impede or enhance the intention to implement new e-Government services. For example, reputation management is one of those factors that could directly lead to an initiation or cancellation of e-Government initiatives. The evaluation of public-sector administrators in regard to the benefits of e-Government post-implementation projects for enhancing public-sector organisations' reputations could identify the type of decisions that will be taken by those who are in power. Reputation management is under the influence of IT risk from technological factors such as a system failure or security breaches that could undermine the city council e-Government and open a window for scrutiny and questioning of the council. On the other hand, adhering to central or local government policies could identify the City Council as a pioneer of government policy implementation and good practice and enhance its reputation among other councils in the region and nationally. Financial factors are also identified that influence public sector administrators' decision making. For example, the economic climate has driven public sector administrators to provide more efficient and effective services as a consequence of the smaller budget available to managers.

In general, strategic factors have constructive impacts on public-sector administrators' decision-making, especially when decisions are about to be made regarding the implementation of new e-Government services. Nonetheless, bureaucratic e-Government initiatives could be considered a way of providing the opportunity to control the risks of e-Government projects. This is because of the existence of various principles that are set out for bureaucratic initiatives. This approach slows down the decision-making activity and buys more time for public-sector administrators. Having more time for decision-making equals more time to reduce the ambiguity and uncertainty surrounding the e-Government post-implementation initiatives. Technological factors are also identified as influences on managers at the organisational management level. For example, IT risks could slow-down the managers' move towards e-Government because they would not like to be known as an implementer of a faulty system. Corporate policy is also identified as shaping the criteria of cost benefit assessment. Also, ensuring that the system is accessible to citizens is another concern of public sector administrators and could do reputational damage if the e-Government excludes a group of citizens who do not have access to online services.

Moreover, corporate strategy could provide some information and guidelines for public-sector administrators that could reduce the level of uncertainties in the organisation by allowing them to validate their e-Government post-implementation initiatives. Furthermore, this could also improve the public-sector administrators' confidence when e-Government decision-making is a matter of concern and also facilitate the decision-making activity.

- Operational factors: The research findings indicate that elements such as business performance, human-resource management and change management could prolong the public-sector administrators' activities, requiring them to collect more information about the influences of e-Government initiatives and then manage the procedures of change. Communication is an extremely important aspect of e-Government post-implementation decision-making. The e-Government post-implementation initiators have to disseminate information to reduce the level of tensions, which might be created as a result of planning for new e-Government post-implementation initiatives. The high level of tension might be the result of observing previous e-Government initiatives that may have ended with staff layoffs. Moreover, establishing a proper communication channel among different levels of an organisation's hierarchy, providing staff with information and highlighting the advantages of e-Government projects could reduce the insecurity, ambiguity and uncertainty levels among some of the employees. The advantage of establishing positive communication will be more support and contribution in the process of e-Government post-implementation initiatives. The management team of e-Government initiatives also needs to assess the level of training and identify the human-resource needs of new e-Government initiatives. Training needs and human-resource assessments should be conducted by providing proper training sessions to support the e-Government initiatives and ensuring skilled human resources to support the e-Government processes, which are created or modified as the result of e-Government post-implementation projects. This is going to have an impact on the IT cost of operational factors since the new application implementation will bring the need for IT training into the organisation, and thus has to be considered by managers.

The revision of job responsibilities is particularly essential because the old processes and new processes could be totally different. This is linked to the technological factors, to be more specific, the scale of IT improvement. Therefore, there might be a need to assign a group of employees to a series of new processes that are recently created as the result of a new e-Government development. The degree of operational development and timing of e-Government post-implementation projects could also dictate the level of management involvement needed to provide a required e-Government advancement. In other words, those e-Government initiatives that require fewer operational changes could be considered for implementation by public-sector administrators even if they are introduced during the busiest period of an organisation's operation. However, proper timing of the e-Government post-implementation initiatives is still important because an interruption in a department's operations can be costly, especially if this organisation is going to be part of the public sector. Moreover, timing is a related budget issue that is part of financial factors, because their might be a possibility that the budget is not secured at the time and the management team has to wait. Also, the e-Government post-implementation projects will be assessed for the efficiency and effectiveness these projects could offer to the public-sector organisation, and if the project produces the benefits the public-sector administrators are expecting to achieve, the project is more likely to be approved and accepted for further considerations and later implementation and development in the organisation.

- Financial factors: Any e-Government post-implementation plan includes some financial expenses that public-sector administrators have to cover for providing advanced e-Government services including application and hardware costs.

Therefore, the budget allocation needs to be considered for supporting e-Government post-implementation projects. Somehow, this needs to be considered as one of the challenging tasks that need to be performed by public-sector administrators. The reason for this difficulty is that the public-sector administrators are under severe pressure to cut operation costs and save considerable amounts of money every financial year. Moreover, during some financial periods, the public-sector administrators do not have sufficient budgets to fund their e-Government initiatives, and this is considered a big challenge that needs to be addressed properly. This situation could become worse as a result of the financial crisis, which has raised public-sector administrators' concerns regarding investment in a form of e-Government initiatives that can provide efficiency and effectiveness for the organisation and reduce operational costs. Therefore, a series of cost and benefit assessments will be performed to assure the profitability of e-Government projects and build confidence that the required levels of capacity and capability exist within the organisation. Financial factors impact organisational management factors like economic climate, budget and IT costs, and technological factors such as scale of IT improvement. Nonetheless, it will be influenced by government policy factors that for example dictate the budget available to invest in e-Government

- Technological factors: The scale of IT improvement defines the extent to which public-sector administrators can use their internal technological capabilities. Therefore, the e-Government improvement proposal will be assessed based on comparisons of required levels of IT improvements with the existing IT capabilities. If the existing capabilities can be used to implement a new advancement, it is more likely to be realised. However, if the existing

infrastructure does not support the e-Government proposal, further assessments have to be conducted to assure the success of the e-Government plan. Nonetheless, every e-Government initiative contains some risks, such as system failure and system security risks, that are identified by the research interviewees as challenges that the public-sector administrators have to respond to during their e-Government post-implementation initiatives. Moreover, equality assurance and citizen engagement have to be well thought out before the e-Government post-implementation plan is put into practice because a lack of consideration in these two areas could bring a lack of engagement and an abandonment of e-Government services by customers. The technological factors such as scale of IT improvement impacts on organisational management factors, for project initiators in particular and is also influenced by financial factors at the same time.

- Government policy factors: Public sector administrators' decision-making will be shaped through policies that are set by central and regional government. Central-government policy, regional-government policy and green ICT policy guide the public-sector administrators towards their future e-Government plans and strategies. This study found that one of the main drivers of e-Government post-implementation initiatives is government policy. The public-sector administrators must adhere to the policies set by governments and implements the expected e-Government services within a pre-defined timeframe. That leads decision-makers to start a new e-Government plan. Government policy factors are interrelated with organisational management factors and financial factors. This is the central government and regional policy that could secure funds for the next e-Government in the City council, whilst government policies shape

project initiators' perception toward e-Government at the same time. For example, senior managers' initiative to implement e-Government was partly initiated because of the central government plan and milestone set for the city councils to achieve.

6.2 Responding to Research Question

This research study is being conducted to respond to the research question presented below:

- **What factors influence the decision-making process in a UK local council in the provision of e-Government services?**

In addition to finding an answer to this question, additional in-depth knowledge about the chosen case-study site is provided. The information is provided in two areas: the historical evolution of e-Government development and implementation, and decision-making activities in the Sheffield City Council.

Three stages of e-Government evolution in the Sheffield City Council were identified. Providing informational, transactional and mobile-based content was identified as the trend of e-Government evolution in the case-study. The interviewees of this research study have stated that they have provided informational and transactional functionalities, adding that they are enhancing the created capabilities and considering providing mobile-based access to their e-Government services for the benefit of their constituents.

The data analysis identified two approaches of e-Government decision-making, informational and transactional. Although informational decision-making has its own

importance and rigidity, it contains fewer bureaucratic procedures than transactional decision-making.

However, these two findings have not been discussed thoroughly in this research study. They remain important findings because they clarify the decisions public-sector administrators will take and in what type of environment.

The research project identifies, in total, 12 elements to consider at the time of post-implementation decision-making of e-Government projects. These elements have emerged from the four categories discussed above.

6.3 Contribution to Practice and Theory

This research project aims to identify factors influencing post-implementation decision-making by public sector administrators providing new e-Government services in the UK. Moreover, this thesis contributes to the body of knowledge by listing factors that are considered by public sector administrators during the post-implementation decision-making and discovering the interrelationship impact of identified themes. Various elements and factors have been highlighted by previous researchers and e-Government practitioners, which may influence development and adoption; however, none of these studies have tackled identifying factors that are considered to develop and enhance the provisioned e-Government project development. Few e-Government initiatives studies were found i.e. Al-Rashidi, 2013; Khasawneh-Jalghoum, 2011; Lee & Kim, 2007 that concenterated on general terms of e-Government initiatives, and those identified were not specifically focusing on the e-Government post-implementation that is the focus of this research study. Morover, the other characterisic that makes this research study unique in comparison with the current e-Government initiatves studies is the interrleationships identified in our research study. Therefore, this thesis contribution

will be based on introducing a series of factors that public sector administrators perceive as essential elements to be tackled and addressed when the development and enhancement of new e-Government services is a matter of concern, and also how different themes could shape a decision of managers.

The factors identified in this research study contribute to the field of e-Government decision-making and e-Government post-implementation development and enhancements. As stated in previous sections, e-Government scholars are interested in discovering which factors influence the adoption and development of e-Government and the cycle of e-Government development and implementation in public sector organisations. Different stages and phases of providing e-Government services have been recommended. Nonetheless, one area has received less attention, and that is the public sector administrators' actions in the provision of e-Government. Moreover, the previous studies were conducted in Arab countries and the USA. This study explores UK public sector administrators' perception regarding their e-Government initiatives to provide better services. Therefore, this is one of the few studies that address the perceptions of UK public sector administrators specifically. Yildiz (2007) stated that the activities that occur between the initiation and result of e-Government initiatives are less studied. This oversight has even been named a black box of e-Government. This study provides insight into the perceptions and considerations of public sector administrators when a decision to enhance e-Government has to take place. This research project examines elements influencing the decisions of public sector administrators at the post-implementation phase of e-Government projects in the UK City Council. Moreover, this research project provides a theory which consists of factors that have an interrelationship and could determine the public sector managers' decisions at the post-implementation stage.

This research study has identified unique factors such as types of communicators, ICT green policy and citizens' engagement. Also, the use of the Maritan (2001) model in the context of e-Government is new and could be considered unique to this research study. The theory created in this research study can be used by public sector administrators to consider e-Government post-implementation plans to collect information, assess and understand how different factors could influence their information and collect enough evidence to be able to take more informed decisions based on factors identified in this research project. Also, the model developed in this research project can be used as a theoretical basis for future e-Government decision making and also e-Government post-implementation studies in the UK and other countries.

In addition, according to Joseph (2013), there are not many interpretivist studies in the field of e-Government. Therefore, the use of interpretivist approach is another contribution of this research.

To conclude, the perceptions of public sector administrators and their considerations to enhance e-Government development have been seldom studied. The development of e-Government includes different phases and stages. These phases and stages are the outcomes of public sector administrators and initiatives. Nonetheless, to provide new e-Government services, there is a management team that makes decisions and takes appropriate measures to enable access to e-Government services.

6.4 Limitations of this Study

As with any social-science research project, this research study contains a series of limitations:

- The time limitation for completing this research study has limited the number of organisations that the researcher could study. This thesis was limited to conducting interviews in only one organisation: Sheffield City Council. The use of a single case study has been justified by providing the explanation that the nature of this research study is as an exploratory study, and the use of Sheffield City Council as a case study could fulfil the objectives of this research project. Nonetheless, the use of more case studies could provide the possibility of generalising the research findings.
- The researcher has chosen to interview middle-level and senior-level managers to investigate the phenomena of research interest. Although the use of this interview population has been common in previous e-Government decision-making studies – because middle-level and senior-level managers are the main key players in decision-making activities – the involvement of other staff could provide a broader picture of the organisation's employees' perspectives in regard to post-implementation decision-making. However, front-line managers were interviewed in this study and indicated in their answers in regard to the process of decision-making, and identifying key factors considered during the decision-making activity, that they do not know what is being considered by their managers at the post-implementation decision-making stage because they are not involved in this process.

- This research study could benefit from using a mixed-method approach to generalise the early understanding of factors influencing public-sector administrators' decision-making (factors/influences?) identified through this qualitative study. Use of a questionnaire survey within the region and other geographical constituencies in the UK could provide valuable knowledge. That knowledge could include elements considered mainly by public-sector administrators and a rating of their priorities according to public-sector administrators' perspectives. These could then be compared with the results based on the organisation's managerial hierarchy.
- Due to the high sensitivity of collected data and the promise not to reveal the identity of interviewees, the researcher has to limit the information presented in this thesis. Some comparisons that could reveal the identity of interviewees are removed and other forms of information, such as the job titles of interviewees, are not presented.

6.5. Future Works

There are several areas in which the findings of this research study could become the subject of future investigations and may produce valuable knowledge about e-Government post-implementation initiatives. Three proposals for future study are identified below.

- The results of this research study identify the trends in e-Government development and implementation in Sheffield City Council. However, an interesting avenue of research would be to investigate trends of e-Government evolution in other local city councils and then provide a report on different e-Government evolution trends in other local authorities.

- Moreover, this research study has led to an identification of different stages of e-Government decision-making activities. However, the researcher did not have time to investigate which of the identified factors are more considered at different stages of e-Government decision-making activity. This is due to of a lack of time and the expectation to complete a PhD study within the period of three to four years. A natural continuation of this study would be to investigate the link between factors and different stages of e-Government decision-making activity.
- Finally, it is expected that different managerial levels of an organisation consider different perspectives. The future research should focus on the investigation of what elements would be considered by different managerial positions.

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Appendix 1

Introduction

- Thank the research participant for his/her attendance in this research study.

- Explain the research aims that this research has been designed to investigate the factor influence a public administrator's decision for improving their e-Government services.

- Referring to the introductory e-mail which has been sent earlier that all data which will be gathered at this interview will be anonymised.
    - This means that the name of interviewee will not be appeared or reported on any documents, reports and academic materials.
    - This means that the researcher will treat all responses fully-confidential.
    - The recorded audio will be only accessed by the researcher and the research supervisors for the purpose of this study and any further research related studies.
    - Since the research participant decision to attend in this study was fully voluntarily, the research participant is free to decline answer certain questions or ask to halt the interviews at any time of interview process.

- Ask the interviewee <u>to read the information sheet</u> (which sent earlier) and <u>consent form</u> and then sign the consent forms (one consent form for researcher and one for research participants).

- Ask permission from the interviewee to <u>turn on the audio recorder</u>. For getting ready to start asking the interview questions. Inform the user where stop button is and they can press it at any point in time during the interview.

- Ask the interviewee <u>if there are any questions that he/she would like to ask</u> before the interviewer start asking his questions.

Introductory questions

1- Could you briefly describe the role(s) that you have in the Sheffield Local Council?
Follow-up question:

a. Which of your daily activities is related to operating, changing and improving e-Government services?

2- How have the processes and ways of doing e-Government changed in the Sheffield council since you have joined it?

Trigger question:

a. What types of new services have been offered through the local council website?

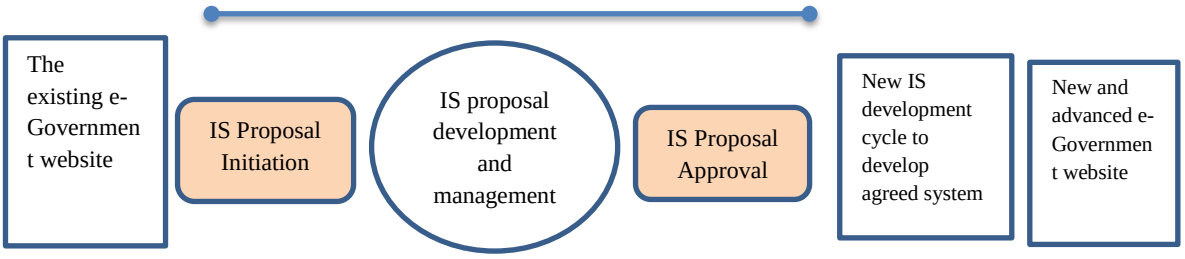
General decision making question

3- How are e-Government improvement's proposals initiated and developed by the Sheffield Local Council?

4- How are proposals finally approved?

Identifying factors/aspects influence decision-making for improving e-Government services in the local councils

- General model presentation



Information System decision making process for developing new e-Government systems.

- ***Initiating a project***
  - ***Organisational***
  - ***Operational***
  - ***Social and environmental***
  - ***Technological***

5- At the stage of initiating a proposal for improving e-Government services, what are the main ---------- aspects/factors influence decisions to accept or reject initiated proposals?
Trigger questions:

- Organisational: How about organisation aims and business strategy, structure, culture?
- Operational: How about internal operations and service to citizens of Sheffield council?
- Social and environmental: How about regional and national policies, social, ethical and environmental responsibilities of local council?
- Technological: what kind of technology is available, what forms of technology will become available? the staff view point about new technology? What needs and organisational barriers technology can respond? How technology can be affordance ?

Follow up questions:

a. Why are these aspects/elements important?
b. How do these aspects impact decisions for improving e-Government services?
c. Which organisational roles/ individuals may influence the council to initiate new e-Government service proposals? How ?

- ***Finalising a project***
    - ***Organisational***
    - ***Operational***
    - ***Social and environmental***
    - ***Technological***

6- At the stage of approving proposals to improve e-Government services, what are the main ---------- aspects/factors that the decision-making team considers?
Trigger questions:

Organisational: How about organisation strategy, structure, culture?
Operational: how about internal operations and external operations of Sheffield council?
Social and environmental: How about social, ethical and environmental responsibilities of local council?
Technological: what kind of technology available, what forms of technology will become available ?

Follow up questions:

a. Why are these aspects/elements important?
b. How do these aspects impact decisions for improving e-Government services?
c. Which organisational roles/ individuals may influence the council to finalise its new e-Government service proposals? How ?

7- Do you think that there are more categories that need to be considered, in addition, to what has been already identified?
Follow up questions:

a. What is the name of new categories?
b. Why are these categories important?

8- From your holistic perspective, which of these categories are most important in the improvement of e-Government services?
Follow up question:

a. Why do you think the aforementioned perspective is important?

Appendix 2

Information School Research Ethics Panel

Letter of Approval

Date: 13th November 2012

TO: Reza Mojtahed

The Information School Research Ethics Panel has examined the following application:

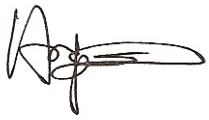
Title: An identification of decision-making factors in the post-implementation development of e-government websites: A study of local councils

Submitted by: Reza Mojtahed

And found the proposed research involving human participants to be in accordance with the University of Sheffield's policies and procedures, which include the University's '*Financial Regulations*', '*Good Research Practice Standards'* and the '*Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue'* (Ethics Policy).

This letter is the official record of ethics approval by the School, and should accompany any formal requests for evidence of research ethics approval.

Effective Date



Dr Angela Lin

Research Ethics Coordinator

Appendix 3

The University Of Sheffield.

Research Information Sheet

Dear participant,

You are being invited to take part in the research project

An identification of decision-making factors in post-implementation development of e-government systems in the UK: A study of Sheffield local council

Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

1 – What is the research project's purpose?

The objective of this study is to identify the factors that public administrators consider to be influential at the stage of post-implementation decision-making for developing new e-government services. Post-implementation decision-making refers to the process of debugging, modifying, enhancing or even postponing improvement of existing electronic-based e-government services.

The provision of new e-government services (i.e. post-implementation) derives from the concerns of IT staffs and members of the local councils. This research aims to discover and explore the obvious or hidden reasons that underlie post-implementation decisions.

The contribution of this research will be identifying factors, which empower the public administrators and also make them aware of elements needed at the phase of post-implementation, to achieve a more stable and accurate decision. In addition, this research aims to discover how different factors contribute to different decisions (i.e. to modify, debug or improve).

2 – Why have I been chosen?

You are being invited to participate in this research as a local public administrator involved in the post-implementation decision making for providing e-government services. Your knowledge as practitioner and as expert in e-government development is welcome to identify the influential factors and trends of e-government development decision-making in the UK.

3 – Do I have to take part?

The decision for taking part in this study is entirely up to you. If you do decide to take part, you will be given this information sheet and also the consent form will be provided to be signed by you. You can withdraw at any time without fear or prejudice and without it affecting any benefits that you are entitled to in any way. You do not necessarily need to provide any reason for your decision.

4 – What will happen to me if I take part?

Your attendance in this study entails engaging in a semi-structured interview with the purpose of understanding your personal opinion and perception of developing and improving e-government services. The estimation for doing the interview would be around 30 to 60 minutes. During the interview process, you will be asked to express your opinion about factors that influence post-implementation decision-making and your opinion about the impact of various variables on final decision-making to provide new electronic-based government services to citizens. Your interview will be digitally recorded and thereafter the recording will be transcribed. All information which gathered during the interview process will remain strictly confidential.

5 – What do I have to do?

For preventing any disruption or restriction in your personal or professional lifestyle, the interview time will be set according to your best convenience, in a free and comfortable environment.

6 – What are the possible disadvantages and risks of taking part?

Since the identity and affiliation of participants will not be recorded, your participation in this study does not imply any identifiable risks or disadvantages. The risk for invasion of your privacy is very limited and it will be tried to avoid in any mean. Questions were also designed as not cause harm, distress or discomfort. If you feel uncomfortable answering any of the questions, feel free to express your concerns. You are, of course, free to decline answering such questions. You are moreover encouraged to refrain from disclosing any information that you may consider defamatory, incriminating, or otherwise sensitive.

7 – What are the possible benefits of taking part?

Your participation in this research will lead to expand the knowledge regarding possible elements impact on decision making at the post-implementation stage. In addition, it will lead to understand the context decision making at the post implementation stage will perform. From a broader perspective, the result of this analysis can help to establish a guideline regarding the elements needs to be mostly considered at the moment of decision-making for developing new e-government services.

8 – What happens if the research study stops earlier than expected?

It is not expected that the research project will go over the planned time-frame or stop earlier than planned. In this is the case, participants will be informed of reasons and consequences.

9 – What if something goes wrong?

If you wish to express any concern or make a complaint regarding the conduct of the research project, please contact the researcher's supervisor.

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10 – Will my taking part in this project be kept confidential?

All the information that is collected about you, as well as any information that you give during the course of the research will be kept strictly confidential, as assured to all participants in the consent form. You will not be identified in any reports or publications. During analysis, you will be assigned a code, allowing complete anonymity. Your interview but not your name will be recorded and transcribed, with all records being kept for a period of 5 years with the researcher or the project supervisor in a secure place. After this period, all transcripts will be destroyed.

11 - What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

The objective of this study is to identify a genuine knowledge regarding which factors have an impact on the decision making for post-implementing a new form of e-government services. Your contribution will provide knowledge for identifying factors that shape decision making at the post-implementation stage. Since the researcher is not involved in organisation, the only medium for achieving the objective of this study is through your participation and the sharing of your knowledge, experiences and opinions.

12 - Will I be recorded, and how will the recorded media be used?

The audio recordings of your activities made during this research will be subject to participants' informed consent and used only for transcription and analysis purposes. No other use will be made of them without the participant's written permission, and no one excluding the researcher and his supervisor will be allowed access to the original recordings. Audio recordings and all digital documentation will be stored in a password protected account accessible by a user account for the researcher. Back-ups will be onto removable storage located within a lockable cabinet or else onto password protected networks at the University. All electronic files will be stored in a password protected account for a period of 5 years.

13 - What will happen to the results of the research project?

The results of this research will be published in a doctoral thesis. Information gained during the research project may additionally be published, in the form of interview transcripts, in academic journals, books and conference papers; and used for subsequent research. In all of the aforementioned circumstances, the participant's name, affiliation and position title will never be used in relation to any of the information provided. Participants will be notified of the publication of results in the doctoral thesis, and if desired the summery of research result will be provided.

14 - Who is organising and funding the research?

N/A

15 - Who has ethically reviewed the project?

This research is undertaken in accordance with the Research Ethics Policy of the University of Sheffield. It has been ethically reviewed and approved by the Ethics Review Panel of the Information School.

Contact for further information:

If you have any questions regarding any aspect of this project, please do not hesitate to contact the researcher concerned or his supervisors, who will do their best to answer your query. Contact details are listed at the end of the document.

Thank you for your help with this research.
Kind regards,

Contact details:

Mr. Reza Mojtahed
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Appendix 4

University of Sheffield

Participant Consent Form

Title of Research Project: An identification of decision-making factors in the post-implementation development of e-government systems in the UK: A study of local councils

Name of Researcher: Reza Mojtahed

Participant Identification Number for this project: Please initial box

1. I confirm that I have read and understand the information letter dated *[- -/- -/- - - -]* explaining the above research project and I have had the opportunity to ask questions about the project. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. ☐

Lead Researcher contact details:

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3. I understand that my responses will be kept strictly confidential. I give permission for members of the research team to have access to my anonymised responses, and to publish anonymised excerpts of my interview. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. ☐

4. I agree for the audio files recorded from me to be transcribed and the transcriptions may be reused by the researcher in future research. ☐

5. I agree to take part in the above research project. ☐

Name of Participant (*or legal representative*)	Date	Signature
Name of person taking consent (*if different from lead researcher*) *To be signed and dated in presence of the participant*	Date	Signature
Lead Researcher *To be signed and dated in presence of the participant*	Date	Signature

Copies:

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the letter/pre-written script/information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be placed in the project's main record (e.g. a site file), which must be kept in a secure location.

Date: 11/05/2012 Applicant name: Reza Mojtahed

Appendix 5

Organisational management factors	Strategic factors	Corporate strategy		
		Reputation management		
	Operational factors	Project initiators	Sideways	
		Business performance	Bureaucratic Effectiveness of governance processes	
			Efficiency of governance processes	
		Human resources management	Training	
			Human resources assessment	
		Change management	Communication	Organisational support for change
				Communicators' behaviour
			Timing	
			Degree of operational development	
Government policy factors	Central government policy			
	Regional government policy			
	Green ICT policy			
Financial factors	Economic climate			
	Budget			
	IT costs	Application costs		
		Hardware costs		
	Cost-benefit assessment	Profitability assurance		
		Capacity assurance		
		Capability assurance		
Technological factors	IT risks	System failure		
		Security concerns		
	Scale of IT improvements	In-house infrastructure potential		
		Outsourcing		
	System accessibility	Equality assurance		
		Citizen engagement		