



**NPM, e-government and the modernization of public services in the
Sultanate of Oman**

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Date:

Abstract

This thesis critically examines the development and implementation of e-government projects in the Sultanate of Oman after 2003 when the government published its intention, in the spirit of new public management (NPM), to raise the quality and performance of key public services. At the core of the research is a comparative analysis of five in-depth case studies of representative service modernization projects driven by the introduction of new information systems. The goal of the research is to evaluate the performance of NPM inspired projects in Oman to learn lessons that might lead to beneficial changes in future policy and practice. The study considers *inter alia* the goals and strategy of the Omani government, the selections and design of modernization projects, problems of execution and obstacles to change, and the reasons for differing degrees of success achieved in meeting project objectives.

The five case studies of Omani e-government modernization projects were developed mainly from interviews conducted with officials in government departments at different levels of management and managers directly responsible for project design and implementation. Further interviews with experts and policymakers focused on government strategy, policymaking and project monitoring. These interviews were especially important in locating the five case studies in a wider strategic, cultural and historical context. Documentary evidence was gathered whenever possible on individual projects and on government's strategic plans and policies. Taken together, the researcher accumulated a large and rich collection of data sources, which were analyzed taking a bottom up, inductive, grounded theoretical approach, enabling the researcher to develop fresh theoretical perspectives, interpretations and practical recommendations.

The study is the first to document, analyse and evaluate the modernization of public services in Oman, and one of few to examine in-depth the adoption of NPM methods in developing countries. Lack of financial resources, failure to define appropriate measures of individual and organizational performance and lack of interest in training were found to be the main reasons limiting the success of projects. From a comparative perspective, however, degrees of success varied considerably, highlighting that proper planning, project management and training invariably paid dividends, explaining differences in outcomes. Finally, the research extends our theoretical understanding of NPM projects in developing countries, highlighting the importance of feasibility studies and stakeholder participation in formulating public sector improvement policies.

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Undertaking a PhD is by no means a solitary experience. Throughout all stages of writing this thesis, I have received considerable support, whether academic, social or emotional, from many individuals who have supported me along the way. I consider myself very fortunate to have these distinguished people around me. Therefore, it is my duty to thank and acknowledge those who have helped me along this path.

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Dedication

To the soul of my father, my Majesty, Sultan Qaboos bin Saeed, the builder of the Renaissance of Oman, I dedicate this humble effort. I owe an enormous gratitude to his Majesty. He provided us with love, peace and security. God bless him and let his soul rest in peace, “Amen”.

List of abbreviations

Name	Abbreviation
Body of Knowledge	BoK
Continuous Improvement	CI
Council of Ministers	CoM
Critical Success Factors	CSFs
Evaluation Reports (ER) –	ER
Foreign Direct Investment	FDI
Gulf Cooperation Council	GCC
Government Document	GD
Gross Product Domestic	GPD
Government Reports (GR)	GR
Higher Education Admission Centre	HEAC
Health Information System	HIS
Health Information Technology	HIT
Human Resources	HR
Information and Communication Technologies	ICT
The International Monetary Fund	IMF
Institute of Public Administration	IPA
Information System	IS
Information Technology	IT
Information Technology Authority	ITA
Key Performance Indicator	KPI
Liquefied Natural Gas	LNG
Ministry of Civil Service	MoCS
Ministry of Education	MoE
Ministry of Finance	MoF
Ministry of Foreign Affairs	MoFA
Ministry of Health	MoH

Ministry of Higher Education	MoHE
Ministry of Information	MoI
Ministry of Legal Affairs	MoLA
Ministry of Manpower	MoM
Ministry of National Economy	MoNE
Ministry of Social Development	MoSD
National Centre for Statistics and Information	NCSI
National Employee Recording System	NERS
New Public Management	NPM
Public Authority of Manpower Register	PAMR
Personal Health Record	PHR
Project Management	PM
Project Management Body of Knowledge	PMBoK
Project Management Institute	PMI
Public-Private Partnership	PPP
Project in Controlled Environment	PRINCE2
Patient Records System	PRS
Public Sector Information Technology Training Model	PSITTM
Public Sector Recruitment System	PSRS
Royal Oman Police	ROP
Statistics Book	SB
Supreme Council for Planning	SCP
Sultan Qaboos University	SQU
Total Quality Management	TQM
University Admission System	UAS
United Kingdom	UK

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Chapter One

Introduction to the study

1.1 Introduction

Since the beginning of Oman's renaissance in 1970, the Omani government led by His Majesty Sultan bin Said Qaboos has made considerable efforts to improve the lives of Omani citizens and develop its national human resources (HR), so that citizens can contribute to society to their full potential and consequently strengthen the national economy. To this end, the Omani government has adopted modern management concepts and practices under the banner of new public management (NPM) in the quest for reform and public service improvement.

NPM is used in the public sector to improve performance at the national and sub-national levels (Hood, 1991; Dunleavy and Hood, 1994; Hood, 1995; Ferlie *et al.*, 2000; Ferlie *et al.*, 2003). It is a combination of theories and practices related to public administration reform derived from several analytical perspectives (Brinkerhoff and Brinkerhoff, 2015). It focuses on values and ideas with the aim of improving quality, efficiency the, effectiveness, and productivity of the public sector using private-sector tools and techniques (Hood, 1991), especially in providing customer-oriented services (Bovaird, 2007). Oman has used innovative ways to visualize organizational change and communicate it through the implementation of NPM ideas, tools and techniques. Measures have been taken to improve government services by implementing information and communication technology (ICT) projects. The government's focus has shifted from internal government operations to more open and transparent citizen-centric processes that aim to provide more user-friendly services, especially given the digital revolution and significant improvements in ICT. It has begun to take advantage of the power of data to serve the public better and exploit

opportunities to achieve a knowledge-based economy. In this context, the Sultanate has worked to implement digital transformation projects and improve the delivery of government services through e-government projects to raise levels of performance and service quality, increasing efficiency as well as citizen participation in decision-making. This transformation has been greatly facilitated by the availability of innovative and cost-effective ICT solutions and the evolution of the Internet. Thus, the Omani public sector has become one of the dominant sectors involved in economic and social development, as in many other countries.

Oman's public sector has recognized that successful implementation of e-government will ensure improved processes within government agencies, leading to greater efficiency and better management and delivery of public services. However, for e-government implementation to be widespread and successful, public service workers must determine who the users of the services are, their expectations and requirements, and the intended benefits to citizens in each e-government project. In addition, strategies and practices as well as processes should be identified and prioritized to enable them to function digitally. Moreover, it is important to make changes and continuous improvements to public services, to streamline administration and capture user feedback. These changes must be compliant with international standards, considering the challenges associated with environmental issues openness and global competition.

Improving efficiency and effectiveness is important for individuals, not-profit organizations and companies to keep abreast of global developments. This study emphasizes the need to update the tools and techniques of public management organizations, to modernize bureaucratic systems and deliver higher levels of satisfaction for users. My purpose is to provide a critical evaluation of NPM-inspired public sector improvement projects in Oman in order to learn lessons that might lead to beneficial changes in policy and practice in the future. I accomplish this

through an in-depth comparative study of five e-government projects, examining how they were established, managed and implemented. Further consideration is given to measures of success and the tools and techniques of project management, including strengths and limitations. I identify the challenges that need to be overcome, and institutional changes needed to deliver successful e-government projects. Findings of this research might be applied in better conceiving, developing and implementing future e-government projects in Oman.

Hence, it is necessary to first highlight the Omani state as a developing country and illustrate the current situation of public sector organizations. Accordingly, in the following section (1.2), the research presented in this thesis is placed in the context of the Sultanate of Oman's strategy to improve government services. An overview of my research is presented in the next section (1.3), explaining its purpose, objectives, research questions, research design, significance and contribution. A brief conclusion follows (1.4) emphasizing the originality of the research and the gap in the literature it is intended to fill.

1.2 Research context

Oman was selected as the case study country. The rationale for choosing Oman as the exemplar of NPM-inspired e-government projects is as follows. First, the author of this thesis works in the Omani civil service sector. Thus, being an Omani citizen working to improve the public sector in Oman, there is a personal interest in seeking to understand the motivations of government, the ideology of NPM and the tools and techniques used in the delivery of e-government projects. The second reason is the lack of research focusing on NPM in Oman. Thirdly, e-government projects only began in Oman in 2003, and so there is considerable scope for applying any lessons learned in the future. In addition, the current literature does not adequately evaluate the actual work done on e-government projects to identify both good practice and areas for improvement.

The Sultanate of Oman

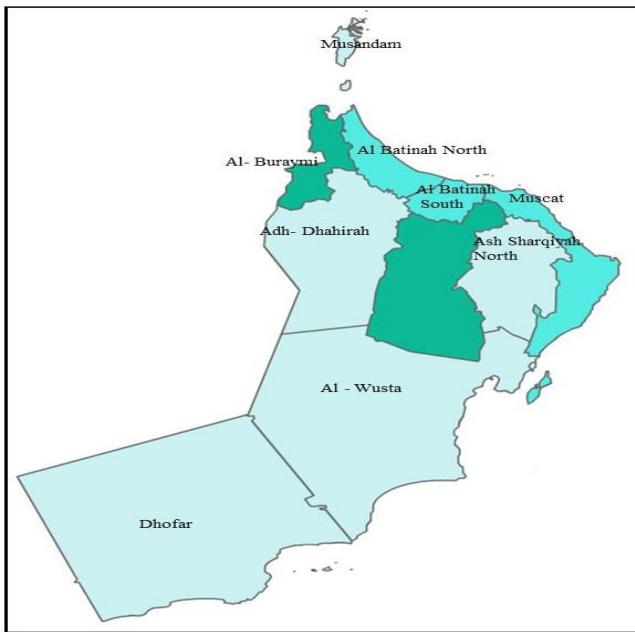
The Sultanate of Oman is an Arab country located in the southeast of the Arabian Peninsula and governed by a monarchy. It shares its boundaries with many states in the Gulf region and its history, culture, and tradition with the Arab world. It is bordered by the United Arab Emirates to the northwest, Saudi Arabia to the west, and Yemen to the southwest. It overlooks the Arabian Sea in the southeast and the Oman Sea in the northeast. Oman shares with Iran one of the most strategic water straits in the world, the Strait of Hormuz, which the world's oil tankers regularly pass through. This location opens a channel for political, economic, and cultural communication with others. Oman is the third largest country in the peninsula (MoI, 2018). It has a surface area of 309,500 km². As of 10 November 2019, the Sultanate's total population was estimated at 4,675,586, of whom 2,681,964 (57.40%) were Omani and 1,993,622 (42.60%) were foreign nationals (NCSI, 2019a). Arabic is the official language of the country and there is widespread use of the English language.

The administration of the Sultanate endorsed by Royal Decree No.114/2011 divides the country into eleven administrative divisions called Governorates. As shown in Figure 1.1., these are Muscat, Dhofar, Musandam, AlBuraymi, ADakhliyah, North Al Batinah, South Al Batinah, South ASharaqiyah, North AShariqiyah, ADhahira, and AlWusta (NCSI, 2012). The Governorate of Muscat is the political, economic, and administrative centre of the country. It is the seat of the government and headquarters of the state administrative apparatus. These administrative bodies include key state entities, ministries of the civil service, and other public authorities.

Oman has an open and oil-based economy. The development of the liquefied natural gas (LNG) industry, public investment in infrastructure, and growing diversification of the economy have helped Oman to moderate its dependence on oil (Issan and Gomaa, 2010). Omani policy-

makers increasingly focus on diversifying the economy, which is also one of the main targets for Oman in 2020 (De Bel-Air, 2015).

Figure 1.1. Map of Oman



Source: <https://www.ncsi.gov.om/Pages/omanmap.aspx>

According to Ashrafi *et al.* (2014), official announcements of the Omani government indicate that most of the foreign direct investment (FDI) into the oil and gas industry was used to boost the public sector. In the early 1990s, Oman was facing sluggish economic growth owing to the low performance of its public and private sectors, but the Omani government later undertook various initiatives to improve the situation. According to Temporal (2014), these initiatives aimed not only to increase trade with partner countries but also to utilize collective resources in the public sector for the benefit of the country.

Moreover, at the start of the twenty-first century Oman experienced a sustainable growth in gross domestic product (GDP) of 6 per cent for several years, boosting the public sector. Some

experts state that 3 per cent of the rise in GDP could be attributed to the impact of oil and gas exploitation and the remainder to public sector activities. As noted by Yu and Gibbs (2017), for a country like Oman, depending solely on strategies and efficient planning may not be sufficient to ensure sustainable growth in the national economy. Therefore, it is important that local and regional governments support the initiatives of central government. This realization resulted in the engagement of the public sector in the fields of tourism and construction. Oman has experienced setbacks, but the overall impact of oil and gas has been a boon for the public sector. Oman has shown considerable growth-based progress and development-based advancement since the advent of the rule of Sultan Qaboos in 1970. In the early periods of his rule, the government focused mainly on the development of administration in terms of compactness, integrity, and efficiency-based parameters of progress. In spite of these efforts, in the last 40 years the rate of development has declined, leading to periodic political and economic crises (Said, 2016).

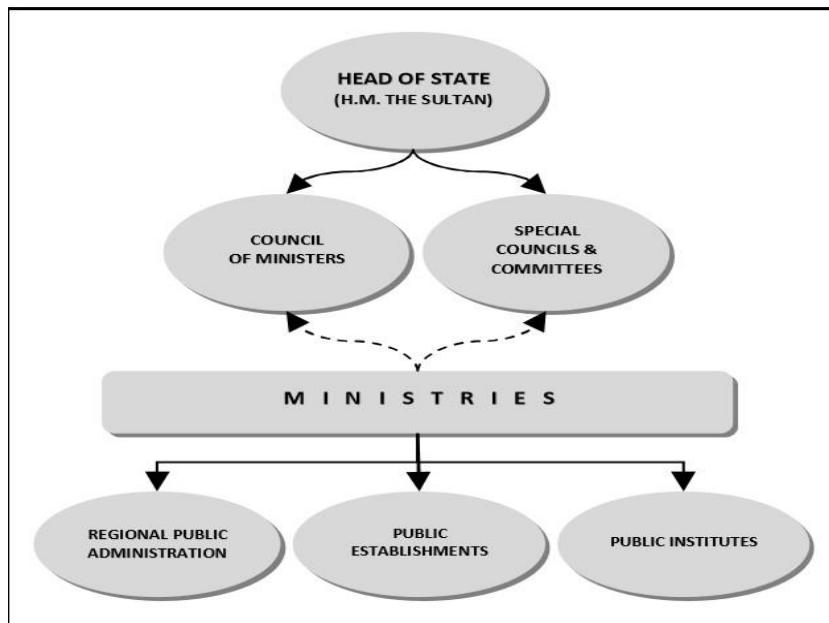
To stabilize the country's future, it is understood that reforms in administration and infrastructure are required. Reforms in all public sector fields have become a priority in developing the Sultanate of Oman since the declaration of the "Vision of Oman's Economy 2020". The government aims to ensure that the administrative system is open to change and that the civil service functions as a key agent of change. The government has also emphasized the need for reforms to promote equality, the standardization of production, and improvements in business-based information technology. These developments can help the nation face the challenges of globalization, information technology and sustainable economic transformation, and as well as the development of human skills which have become essential prerequisites for Oman's progress (De Bel-Air, 2015).

In addition, the primary objective of the “Vision of Oman’s Economy 2020” is to articulate and develop the strategies necessary to achieve a stronger and more effective private sector. It highlights the importance of promoting and supporting the private sector to play an active role in Oman’s economy. However, privatization on its own is considered incomplete without the development of national HR to guide Oman towards socio-economic development and prosperity (Zerovec and Bontenbal, 2011).

The Public Sector in Oman

The public sector in Oman, as part of government, consists of six main organizational groups, as shown in Figure 1.2 below.

Figure 1.2. Governmental structure in the Sultanate of Oman



Source: (Al Obthani *et al.*, 2013)

His Majesty (HM) the Sultan is the head of state, and he controls the government through: CoM and committees with various special purposes. These councils are composed of different ministers according to their specialization and experience. The Sultan is Prime Minister and appoints members of CoM who report directly to him. CoM assists the Sultan in the formulation and implementation of the state's public policies. The Supreme Council for Planning (SCP), headed by the Sultan, is responsible for approving the country's annual development budget and allocating funds to various government organizations.

Employment and wages in the public sector

Since the 1970s, Oman has witnessed steady progress in the political and socio-economic fields. However, the country has had to rely on expatriates to implement its ambitious five-year plans owing to the limited number of appropriately qualified Omanis (ILP, 2010). To reduce unemployment and limit dependence on foreign labour, the government has since 1988 pursued a policy of Omanization, aiming to gradually increase the participation of qualified Omanis in the labour market in both the public and private sectors. The Ministry of Civil Service (MoCS) has introduced an Omanization plan to replace expatriates with trained officials who understand the need for effective government and governance. According to Al-Badi *et al.* (2014), the proportion of Omanis employed within the public sector, excluding the Ministry of Health and Education, has recently risen to 86 per cent of the total workforce.

Despite these efforts, the Omani labour force remains unbalanced primarily in the public sector where supply outstrips demand. Omanis tend to resort to work in public service with the perception that it provides better incentives such as higher earnings, and better working conditions, pension benefits, and social security (Shah, 2006; Ali *et al.*, 2017). The inability of the public sector to absorb the Omani labour supply has led to a major problem of unemployment (Shah, 2006).

Moreover, as in other Gulf countries, the population of Oman has been growing rapidly pace owing to high fertility rates (Shah, 2006).

The results of a recent study conducted by the National Centre for Statistics and Information (NCSI, 2019b) on the attitudes of Omani youth towards work, indicated that the majority of young people, whether jobseekers or employees, still prefer to work in the public sector, despite their awareness of the lack of jobs and promotion opportunities in the sector. Half of the youth already working in the government sector agreed that they would move to the private sector for a higher salary. This means that the lack of incentives available in the private sector is one of the main reasons why citizens prefer to work in public services (NCSI, 2019b). Meanwhile the private sector has remained heavily dependent on expatriates. Table 1.1 shows the distribution of Omani and expatriate employees in both the public and private sectors in 2017, when the total number of employees in the Sultanate was 2,266,440 (NCSI, 2018).

Table 1.1. Distribution of employees in the Sultanate in 2017

Employees	Public sector	Private sector	Family sector
Omanis	195,680	238,688	-
Expatriates	36,383	1,502,808	292,881
Total	232,063	1,741,496	292,881

Source: (NCSI, 2018)

From the table, Omanis constituted 84.3 per cent of total employees in the government sector in 2017, compared to only 13.7 per cent in the private sector (NCSI, 2018). However, MoCS has recently put in place restrictions on employment of nationals in the public sector, except for replacement purposes, because of the availability of job opportunities, and better wages and social insurance coverage in the private sector. Despite this, private-sector enterprises continue to depend on expatriates in different fields. Oman's private sector needs to attract more Omanis especially in

key sectors such as banking which need to become more attractive for national citizens (Benchibasavenius (2015).

Training and qualifications in the Omani public sector

The training and development of public sector employees is crucial for any country because it affects bureaucracy and policymaking. Therefore, organizations today strive to make sustainable investments in human capital. It enhances their organizational performance and competitiveness, as well as keeping their employees sophisticated, productive, and involved (Rajasekar and Khan, 2013). The formal education system does not teach job skills and so staff may not have the skills, knowledge, abilities, and competencies to work effectively. As a result, many need intensive training to be able substantially contribute to the growth of the organization (Sanyal and Hisam, 2018). Therefore, government strategies aim to raise employees' knowledge and performance through the development of a sound training strategy and policy involving all stakeholders in organizations. Training and development must be considered a strategic priority, and the public sector in Oman is no exception.

The government of Oman has chosen to follow the path of e-governance and is working hard to achieve this goal. In its plan to promote the economic and social development of the country, Oman's Vision 2020 projects the future of the national economy. This transformation envisages that the role of government will be confined to the direction of strategic planning, while the private sector will play a larger role. The Omani private sector should thereby become the main driver of economic growth and provider of jobs so that it plays a full role in economic and social development (Rahbi, 2017). For this to succeed, government agencies and public sector organizations must facilitate the required transformation in developing an enabling environment for economic growth. Also, a change in the mindset and working practices of public sector

organizations will be necessary. Appropriate training for government employees can therefore play an important role in creating such an environment, facilitating a change in mentality and capabilities to bring synergies to the Oman business sector (Rajasekar and Khan, 2013).

This commitment at the national government level has translated into the establishment of a formal administrative training apparatus through the opening of training departments in each ministry, with functions such as training management, and the allocation of the necessary resources. The government is also making a major investment in training Omani youth. In the Eighth Five-Year Plan (2011-2015), the government allocated RO 100 million to the country's HR development programme. This included 1,000 external scholarships for Omani students to pursue post-graduate education and to study in specialized and technical disciplines. The aim is to develop the scientific capacity of Omani nationals who are expected to play a key role in the development of the country (Rajasekar and Khan, 2013).

Meanwhile, the government has established agencies for recruitment and the development of HR in authorities such as the Ministry of National Economy (MoNE), the Ministry of Education (MoE), the Ministry of Higher Education (MoHE), the Institute of Public Administration (IPA), the Ministry of Manpower (MoM), the Civil Service Council, and MoCS (Mamman and Al Kulaiby, 2014). Additionally, the Council of Ministers plays a key role in the formulation of HR development policies (Shayban, 2008). The Civil Service Council implements and monitors policies pertaining to the civil service and formulates regulations to boost Omanization and to develop the efficiency of the internal administration (Shayban, 2008; AlKindy *et al.*, 2016).

The IPA was established in 1977 with the aim of meeting the growing training needs of the employees in the state administrative apparatus. Over the years, the Institute's role as an effective tool in the management development process has evolved to include training, research,

consultancy, and information activities, thus becoming the main source of expertise for government agencies in the Sultanate (Shayban, 2008).

The MoCS is responsible for recruiting Omani jobseekers for the Ministries and Government Units under Civil Service Law and the development of performance in all components of the state (MoCS, 2019). Whereas the MoM is responsible for recruitment and policies that affect both national and foreign workers in the private sector (Mamman and Al Kulaiby, 2014). This institutional environment affects activities in the public and private sectors, and constrains and influences the behaviour of managers and HR practitioners, affecting what they can and cannot do (Mamman and Al Kulaiby, 2014).

The civil service in Oman

The MoCS was established in 1988 to supervise the implementation of civil service law and regulations in all government units (Shayban, 2008). Forty-two government agencies fall under the umbrella of the civil service, including 25 ministries (MoCS, 2019) five of which were selected for the purposes of this study. The MoCS deals with the management of the internal workforce and applies the rules and guidelines to covering the roles and responsibilities of government employees. The MoCS is also responsible for establishing the framework for the training and development of government employees (Shayban, 2008). Public officials and organizations are regulated by Oman's legislation developed through royal decrees issued between 1970 and 2010 which clarify all the legislation pertaining to the civil service, the role and behaviour of staff and how they will be treated and rewarded by their employers (Mamman and Al Kulaiby, 2014). According to AlKindy *et al.* (2016), the MoCS aims to modernize the civil service and streamline its processes to make the administrative infrastructure more effective and functional and less bureaucratic. The total number of civil service employees by the end of 2018 was 174,093, 87.5 per cent of whom

were Omani employees and 12.5 per cent expatriates (MoCS, 2018). Table 1.2 shows the distribution of employees by government units.

Table 1.2. Distribution of employees by government units

Government Unit	Omanis	Expatriates	Total	%
Ministry of Education (MoE)	73,013	8,984	81,997	47.1
Ministry of Health (MoH)	27,577	11,564	39,141	22.5
Ministry of Endowments and Religious Affairs	7,168	161	7,329	4.2
Ministry of Regional Municipalities and Water Resources	6,819	67	6,886	4
Other Government Units	37,782	958	38,740	22.2
Total	152,359	21,734	174,093	100%

Source: (MoCS, 2018)

According to Al Obthani *et al.* (2013), the MoCS is responsible for all relevant issues covered by the Omani Civil Service Law, which are largely HR management activities. The civil service system in Oman is governed by MoCS, the Civil Service Council and the Civil Service Law. These entities participate and implement civil service practices, and establish and develop policies and regulations governing the sector. (Al Obthani *et al.*, 2013).

The adoption of e-government in the Omani public sector

Oman has introduced numerous reforms and initiatives to enhance the efficiency and effectiveness of public services, in its e-government programme (Al-Busaidy and Weerakkody, 2009). In 2003, work began on the Digital Oman Initiative (later shortened to e-Oman) to transform Oman into a knowledge-based economy (Al-Mamari, 2013). The Omani government has recognized the remarkable turnover of e-government projects and invited the Gartner company to help produce a national e-government implementation strategy with the help of a team of highly skilled ICT

officials who were also members of the National Information Technology Task Force. The strategy focused on the development of Oman's knowledge society and e-government by providing citizens with adequate education in ICT and replacing traditional channels of interaction between the government and its components and subjects with a focus on providing public e-services (Al-Mamari, 2013). The aim is to stimulate the use of information technology and human capabilities in economic activities through enhanced efficiency, cost savings, and the transfer of knowledge and technologies based on products (ITA, 2007).

The national strategy is overseen by the Information Technology Authority (ITA), which was established in 2006 up as an independent body to oversee digitization in Oman and lead the e-government initiative. It works and provides support with public and private agencies to implement digital initiatives. It also promotes cooperation and coordination among different stakeholders, as well as reviewing HR plans and training IT staff within government agencies to build HR capacity.

In 2012, the ITA launched a new plan to move towards the provision of e-government services. Government agencies were given an ultimatum for full transition to e-service by December 2015 (Al-Mamari, 2013). However, participating organizations are not bound by law to follow the instructions of the ITA, which does not have the power to enforce the optional implementation standards. The ITA can only coordinate the efforts of various government units to implement e-government (Al-Mamari, 2013). It should also be noted that the specialties, allocations, and assets of the ITA have recently been devolved to the Ministry of Technology and Communications, after its establishment in 2019 in addition to the transfer of powers to the Ministry of Transport and Communications relating to the telecommunications sector. Therefore, everything related to technology and telecommunications is now overseen by the Ministry of Technology and Communications (MoLA, 2019).

Various government initiatives have clearly been adopted to achieve the e-government programme. The adoption of e-government tools was intended to completely transform Omani public sector agencies and to deliver benefits that were previously unimaginable (Al-Busaidy and Weerakkody, 2009). As a result of these efforts in the national context, the Omani government's preparation for e-government saw it jump from 112th position in international rankings in 2005 to 63rd in 2018, according to the United Nations e-Government Survey (alroya.om, 2018). It also realized a global achievement by winning first place in the world in three electronic projects in 2014 (Shayban, 2017), which we have chosen as part of the evaluation projects in our study. Yet, despite the Sultanate's progress, many e-government projects have been delayed or have even failed in implementation (Al-Gharbi *et al.*, 2014). Researchers have found that a large proportion of e-government implementation initiatives around the world fail or only partially succeed (Ndou, 2004; Stoltzfus, 2005; Nkohkwo and Islam, 2013; Dwivedi *et al.*, 2015).

However, for e-government implementation to be widespread and successful, the best strategies and practices must be identified and processes established and prioritized to enable government to function digitally (Jones *et al.*, 2007). According to Dwivedi *et al.* (2015), more in-depth studies are needed to identify how e-government projects can be successfully designed and implemented. Ideally, such studies should be longitudinal, following the life course of the project to understand and evaluate the dynamics at work, helping to determine what actions need to be refined or improved in developing and implementing an e-government project. That is the primary motivation for the present study.

1.3 Research overview

Research purpose

The main purpose of the research presented in this thesis is to identify barriers to the efficiency and effectiveness of ICT projects in Omani public sector organizations and to identify how these might best be overcome. Through the application of the NPM principles, to five major projects, I evaluate what went well and what went badly and why. By comparing projects, I develop recommendations for policy and practice that might speed up and increase the efficiency and effectiveness of future e-government initiatives in Oman.

Research objectives

The first objective of this study is to identify and evaluate ways in which the efficiency and effectiveness of public services in Oman can be improved through the application of ICT. The second objective is to determine how ICT could be implemented to improve public services more generally in Oman. Therefore, several types of projects from five different sectors (the health, civil service, higher education, manpower, and technology) completed between 2011 and 2015 are evaluated. In each case, the aim is to identify barriers and enablers of success within the context of prevailing organizational and institutional dynamics. This leads to a third objective, which is to highlight the lessons learned from the evaluation of the five projects, and how these might be applied in future projects. Based on the findings of the study, I offer a series of recommendations for policy makers and practitioners in the field of e-government. The goal is to identify the most important elements of public administration that can help improve the efficiency and effectiveness of public services and the quality of services provided.

Research questions

To achieve the main research goals stated above, this thesis aims to shed light on the following questions:

1. What are the main drivers of public service modernization in Oman?
2. How are e-government projects in Oman selected, designed, and controlled?
3. How effectively have e-government projects been managed and implemented in Oman?
4. How and to what degree have NPM principles informed e-government initiatives in Oman?

Research design

This research is focused on public-sector improvement projects in the Sultanate of Oman. It is based on the systematic comparison of five in-depth case studies – listed in Table 1.3. The research aims to identify the ways in which the efficiency and effectiveness of public services in Oman can be improved. Case studies were conducted of five major public sector change projects in Oman concerning the health, civil service, higher education, manpower, and technology.

Each of the projects selected was undertaken in an Omani public sector organization, operating under the auspices of the civil service, where there was a need to deliver new and enhanced services more efficiently and effectively and to apply socio-economic development programmes (AlKindy *et al.*, 2016; MoCS, 2008).

Table 1.3. Selected research cases

	Project 1	Project 2	Project 3	Project 4	Project 5
Project Name	The E-Health Application (Al Shifa) System	Central Recruitment System	Unified Admission System	Manpower Register System	E-Government Initiatives
Organization Name	MoH	MoCS	MoHE	PAMR*	ITA**
Project Functionality	Patients Record System	Public Sector Recruitment System	University Admission System	National Employee Recording System	Public Sector IT Training Model
Alias Name***	PRS	PSRS	UAS	NERS	PSITTM

* This is an independent body, following Civil Service Law and executive regulations.

**All functions, allocations and assets of the ITA were transferred to the Ministry of Technology and Communications by Royal Decree No. 63/2019.

*** For convenience, alias names have been used for these projects as descriptions according to the purpose of their establishment.

All selected projects are ICT projects, except for the e-government project designed to spread the culture of e-government in the country by training and educating different segments of Omani society. They involve electronic database systems designed to organize and streamline the work procedures of the organization concerned, replacing manual paperwork with technology. The projects were established to help Oman to implement its e-governance initiative of world-class e-government seamlessly integrating all Ministries and government entities to provide faster and more effective public services online by facilitating better interaction between citizens, businesses, and government.

These cases are examined in order to assess and discuss ways to improve the efficiency and effectiveness of Oman's public services using NPM principles. This identifies, evaluates, and compares what has been done in each situation. It constructs a theoretical framework explicating, how a programme or policy works. Subsequently, the findings are expected to assist Omani civil

service organizations in improving their facilities. Thus, the aim of the research is to identify barriers to and facilitators of improvement in an emerging economy context, by studying the extent to which selected projects adopt the advantages and tools of NPM for the purposes of reform. Further, the critical factors that lead to the successful implementation of improvement projects as well as obstacles to improvement and change are considered from the viewpoints of the project staff, as well as experts, consultants, and others involved in improving the public sector services in Oman. This theoretical framework can help us understand how and why an initiative should work. It involves an ongoing process of thinking about change and what it means for organizations working in specific contexts or sectors, or for specific groups of people.

My task as a researcher has been to co-construct with the agents of change the important factors contributing to the administrative reform in Oman. The research investigates what influence the philosophy of NPM had on this change management initiative. The study considers what was supposed to change and whether that change has occurred. For example, what factors may have impacted on the initiative and delayed its implementation. The empirical focus of this study will help policymakers to clarify factors that hinder the success of e-government projects and to develop appropriate solutions. E-government in Oman is in the early stages of implementation; therefore, subsequent projects could be more effectively implemented by drawing upon the lessons from this research.

Significance of the research

A critical review of the literature reveals a gap in knowledge concerning improving the efficiency and effectiveness of public services in developing countries. Most published studies of improvements in the public sector have been conducted in organizations in developed countries, especially in high-ranking journals, which means that the relevant fieldwork must be given more

consideration. Very few studies have examined how the public sector can be improved in developing countries (Abbasi and Al-Mharmah, 2000; Ndou, 2004; Common, 2008; Ansari *et al.*, 2010; Brinkerhoff and Brinkerhoff, 2015).

The present study is the first in-depth research on public service improvement in Oman. It evaluates the actual work that has been done there. Jha *et al.* (1996) suggested that evaluating the outcomes of change and taking informed action to improve processes are key elements of continuous improvement, especially because research that explores the application and outcomes of ongoing reforms in the public sector in developing countries is so limited. In most cases, government claims about specific reforms are the only evidence available, rather than clear analysis of the actual results.

This study considers several types of public projects undertaken in Oman in the health, civil service, higher education, manpower, and technology sectors during the period from 2011 to 2015, in order to identify, evaluate, and compare the work that has been done at each stage and to ascertain which indicators should be monitored and what further action is needed. It provides important data on these large projects in the country related to their assets, philosophy, design and methodology. At the time when the projects were established, it was not considered important to preserve key technical or administrative documents related to the assets of these projects and the stages of their implementation. This was one of the biggest difficulties faced by the researcher, as this information is not available in the documentation of these projects or from the ITA. Most of the key employees involved in the establishment of these projects have retired or moved to other governmental departments or private employment.

In evaluating the five projects, work processes, project management and obstacles to change are compared. In the literature, most studies evaluate single projects (Elhadi *et al.*, 2007; Amin *et*

al., 2013; Al-Gharbi *et al.*, 2014). Studies have been conducted on e-government in the Sultanate but these studies are purely descriptive rather than evaluative (Al-Busaidy and Weerakkody, 2009; Al-Azri *et al.*, 2010; Al-Rashidi, 2010; Al-Busaidy and Weerakkody, 2011; Al-Mamari *et al.*, 2013). In addition, this thesis addresses the extent to which the public sector in a developing country has adopted the principles of NPM to improve its services and increase efficiency and effectiveness.

Research contribution

There is a scarcity of studies on NPM in public service organizations in developing countries. This study contributes significantly to knowledge concerning efforts to improve the delivery of public sector services. It extends our theoretical understanding of NPM projects in developing countries by highlighting the importance of preparing feasibility studies. The participation of all stakeholders in policy formulation is also required to ensure the relative success of public sector improvement projects. Lack of financial resources, lack of defining measures of individual and organizational performance and lack of interest in training are highlighted as the main reasons leading to the failure of such projects. Also, the study's empirical contribution arises from its status as the first in-depth research project on public service improvement in Oman.

1.4 Conclusion

This chapter has outlined the background to the current research, which focuses on public-sector improvement projects in the Sultanate of Oman. It is based on a systematic comparison of five in-depth case studies. The study aims to identify and evaluate the ways in which the efficiency and effectiveness of public services in Oman can be improved. Case studies are presented of five major public sector change projects in the health, civil service, higher education, manpower, and

technology field in Oman. The chapter began with background information about the research and a brief history of attempts in Oman to improve government organizations. A discussion followed of the public sector in Oman, including the country's economy and the evolution of its public sector. Then, employment and wages in the public sector as well as training and qualifications for HR in the civil service in Oman were outlined. Details have been provided concerning the development of information and communication technology (ICT) and e-government projects and initiatives in the Omani public sector. The general approach used in the research was then described, including its purpose and objectives, focusing on the projects selected as case studies and the research questions, and finally the significance and contributions have been identified.

The current research identifies and fills a gap in knowledge about public sector improvement initiatives in developing countries, which is an under-researched area. It contributes to the existing literature on improvements in public service organizations in developing countries generally, and within the Omani public sector specifically. Chapter Two presents an extensive critical review of the relevant literature, theories, and empirical studies. Chapter Three explains how I gathered and analyzed the data in the five case studies. Chapter Four then provides an account of the drivers of public sector modernization in Oman. Chapters Five, Six and Seven respectively analyze the management, implementation, and relative success of public sector e-government projects in Oman and the extent of their adoption of the principles of NPM. In the final chapter, I offer recommendations for how e-government projects might be better managed and implemented in the future, and the theoretical and practical implications of my research are considered.

Chapter Two

Literature review

2.1 Introduction

This thesis identifies and addresses gaps in the study of public sector improvement initiatives in developing countries, which is an under-researched field of enquiry. It contributes to the existing literature on modernizations in public service organizations in developing countries generally, and within the Omani public sector specifically. This chapter constitutes an extensive critical review of the relevant literature, theories, and empirical studies. Four key areas are examined.

NPM and e-government are concepts often used in discussions about the modernization of government. Both refer to various types of reform of the public sector and to a certain degree address the same problems which confront public administration nowadays, such as lack of accountability, underperformance, and diminished levels of legitimacy (Homburg, 2004).

Thus, section (2.2) considers the philosophy of NPM which has had a profound effect on management within the public sector around the world during the last three decades and involves strategies that seek to improve the ability of public agencies to produce results by means of reinventing government. The theoretical and ideological background to NPM is examined first, and an explanation given for how this dominant paradigm has been implemented. In order to understand NPM, it is necessary to consider its nature, what it aims to achieve, and the typical mechanisms of change employed.

Section (2.3) then discusses e-government, defining the relevant concepts, indicating the aims pursued in applying this technology in the public sector, categorizing the types of e-

government services that can be used, and identifying the relationship between NPM and e-government. Section (2.4) focuses on NPM and e-government in developing countries and considers their advantages and limitations as an approach to public sector improvement in these countries. Section (2.5) focuses on the management and implementation of e-government projects. An overview is given of the concept of project management (PM), which is considered as a tool for improving the public sector projects. Section (2.6) then considers the management of change in government services provision, identifies the main issues involved, examines resistance to change and discusses change management in e-government projects in developing countries.

In order to provide an understanding of Omani improvement initiatives, section (2.7) details the evolution of contemporary public sector management in Oman, identifying its defining principles and practices. Consideration is given to the historical evolution, current role, and future direction of Oman's public sector, identifying the roots of current problems in order to assess proposed remedies through NPM-type reforms. The evaluation of reform strategies in Oman is discussed to help shed light on the environment in which Oman's improvement initiatives have taken place.

2.2 Philosophy of new public management

Public services play a key role in the well-being, sustainability and growth of communities, cities and countries. Public management initiatives to improve services such as health, education, policing, and local government is examined through various theoretical lenses in term of governance, innovation, change, performance and management (Hartley and Skelcher, 2008). Many governments have searched for ways to improve public services, and many reforms have been introduced under the banner of NPM (Hood, 1991), displacing traditional paradigms of public administration, notably in the United Kingdom (UK), Australia, and New Zealand. Accordingly,

NPM is a set of ideological assumptions, techniques and goals first adopted in the UK in the 1980s and 1990s (Hartley and Skelcher, 2008). NPM is used in the public sector to improve performance at both the national and sub-national levels. NPM is a mix of public management reform prescriptions and practices derived from several analytical perspectives (Brinkerhoff and Brinkerhoff, 2015). It aims to improve quality, effectiveness, productivity and efficiency in the public sector through the use of private sector tools and techniques (Hood, 1991), especially in the delivery of customer-oriented services (Bovaird, 2007). The history of NPM, its ideology, key features and mechanisms are examined next.

History of NPM

NPM is a relatively recent approach to managing public and government organizations. It was introduced in the UK in the 1980s in pursuit of efficiency, economy, and effectiveness, spreading rapidly to Australia, New Zealand and other parts of the world (Hood, 1991). Both developed and developing countries have given significant attention to NPM reforms in striving to improve performance in the public sector. Improvement remains a high priority and it is likely to be so for the foreseeable future (Hartley and Skelcher, 2008).

According to Drechsler (2005), the ideas behind NPM are Anglo-American, and have been strongly supported by international financial institutions like the World Bank and the International Monetary Fund (IMF). Originating in the 1980s with the neo-liberal governments of Margaret Thatcher in the UK and Ronald Reagan in the USA, NPM came to fruition in the 1990s (Drechsler, 2005). The underlying philosophy stands in opposition to the traditional conception of public administration as one of bureaucratic order, which had lost credibility by failing to satisfy public demands for better services (Hood, 1991). What was needed, critics argued, was thoroughgoing

reform, re-designing services to take advantage of technological change and new management techniques.

However, different countries have distinctive ways of implementing NPM (Hartley and Skelcher, 2008; Alonso *et al.*, 2015). Du (2007), for example, compared NPM reforms in the UK and China and predictably, found common elements in theory but considerable differences in practice. In China, underlying power structures dominated by the Communist Party mitigate against truly radical reform as traditional privileges are defended, so service redesign is not always accompanied by job redesign, which is fundamental in the UK. When governments take ideas from abroad, the full requirements of reform, especially requirements relating to authority and culture, are often ignored. This is especially true when endeavouring to transform public services in developing countries (Common, 2011).

Ideology of NPM

NPM recommends the breakdown of centralized, politically controlled, hierarchical structures in favour of decentralized, consumer responsive, competitive structures. NPM is thus a revolutionary concept. It seeks to engage service users more completely in decision-making processes by implementing democratic practices outside the realm of representative government; for example, involving users in service redesign and implementing more direct means of communication between service users and service providers (Bovaird, 2007). When public officials work in this way, they express a commitment to service ideals. Therefore, they learn new skills in policy development and implementation, treating citizens with dignity and respect rather than imposing services on them in a take-it-or-leave-it basis. Thus, citizens and government officials work together to identify and address common problems in a cooperative and mutually beneficial manner (Denhardt and Denhardt, 2015). Bovaird (2005) proposes that, to achieve good outcomes, a

substantial proportion of the social elements in NPM should be included in any initiative: stakeholder involvement in decision-making, honest treatment of users, willingness and capacity to do the work, sustainability, accountability, respect for diversity, and respect for the social rights of others.

NPM focuses on the application of private sector methods in organizing and managing the public sector, running government departments along corporate lines (Christensen and Lægreid, 2013). However, public bodies are not always able to transfer private sector systems and methods directly to the public sector. Such a process requires professionals and trained people who can evaluate the advantages and disadvantage of market-facing solutions, and determine when any particular method is appropriate in the local context (Walther, 2015). The two core points of NPM, as evident in the private sector, are management practices and financial discipline and frugality with regard to resource use. NPM involves getting better value for money from resources, including human resources, which requires a much tighter regime of financial discipline, coupled with the balanced application of private sector management tools, practices, and techniques (Mueller *et al.*, 2004).

Christensen and Lægreid (2013) maintain that NPM was developed to address deficits in the budgets of Western states; it was introduced to restrict public expenditure, raise taxes, terminate unwanted public tasks that hindered the working of government, reduce the costs of production, and alleviate the international financial crisis. So local authorities around the developed world have been involved in outsourcing public services, in times of financial constraints, in search of efficiency savings.

Alonso *et al.* (2015) conducted a study to determine if the reforms associated with NPM would lead to a decrease in expenditure and the number of employees in the public sector. The

study examined the impact of outsourcing and decentralization as two key elements of NPM that affect public expenditure. The findings were positive with regard to the degree of outsourcing in the public sector and government spending in the short term, and it was found that decentralization tended to decrease the size of government in the long term.

However, there are several factors leading to reluctance to embrace outsourcing, including the degree of control that contracting authorities can exercise over external service providers, as well as the inflexibility embedded in long-term contracts that prevent boards from changing service models or recycling efficiency savings to other regions. In addition, managers are less aware of specific outsourcing arrangements, which reduces their ability to manage and mitigate contractual risks (Eckersley and Ferry, 2019). Also, it is vital that the contractual terms are clear from the outset, identify what each should provide to the other party, when and in what circumstances (Miller and Lessard, 2007) to reduce risks (Sillince et al., 2006).

Key features of NPM

In developed countries such as the UK, with a history of NPM stretching over four decades, the phenomenon is best characterized as *progressive* (one stage follows from another) and *all-pervasive* (affecting all parts in the public sector). The fundamental goals listed in Table 2.1 remain the same but NPM projects have grown in scale and scope and no sector within public services remains unaffected.

Table 2.1. Generic goals of new public management

Goal	Meaning
Economical	Low cost
Efficient	Maximizing outputs within agreed budgets
Effective	Service users satisfied with quality
Ethical	Experienced as friendly, fair, and honest
Accountable	Service providers serve and report to service users
Responsive	Taking into account priorities of service users
Adaptable	Doing what is necessary to achieve positive outcomes

Source: based on Osborne and Gaebler (1992); Bovaird (2007)

In its broadest ideological sense, NPM represents a process of rolling back the boundaries of the state, consistent with the more general advance of the neo-liberal political project initiated in the 1980s and championed by Margaret Thatcher and Ronald Reagan. At the micro-level, this involves importing and disseminating private sector management methods and organizational practices within the public sector, reconfiguring services and supply chains to increase efficiency while maintaining or improving service standards. At the macro-level, it means breaking up and potentially privatizing monolithic services to increase competition and keep management vigilant and alert to the need for continuous improvement. The overall goal is to create, across the board, more competitive environments in which service providers seek to outperform rival organizations.

The distinction between micro- and macro-level features of NPM is illustrated in Table 2.2 using UK examples. This demonstrates that NPM is a multidimensional construct. In its full-blown expressions, managers operate in the market or highly developed quasi-markets and are supposedly inspired by organizational visions driven by and armed with private sector strategies, tools and techniques, performance-based incentives, and assessed according to targets, milestones and key performance indicators (KPIs). They should strive for quality and reliability, put the service user

first, and recognize the necessity of morale and teamwork in service delivery. NPM uses the private sector model of human resource management, focusing on reward systems based on merit, short-term contracts, and incentive schemes. Thus, performance in a NPM perspective is based on quality standards, performance targets and measurements linked to public service capabilities and expected outcomes (Hvidman and Andersen, 2013).

Moreover, according to Hartley (2005), public services in the UK government are considered governance innovations by including new political arrangements in local government and devolved government in Wales and Scotland. This is alongside changes in organizational form and arrangements for the planning and delivery of services through privatization and cooperation between public and private sectors, in addition to social participation innovations in service design and delivery.

Therefore, Hartley and Skelcher (2008) stress that the diffusion of innovation is especially important for public service organizations to spread good practices in the public sphere. All this is made possible through effective partnering skills and the ability to negotiate flexible service contracts fair to all parties, ensuring the development of trust between partners, and building a commitment to common goals (Alonso *et al.*, 2015). These ideals of NPM in its most expansive and mature form are the product of successive rounds of reform to make public sector organizations as similar as possible to their private sector counterparts.

Table 2.2. Features of new public management

Feature	Logic	References
<i>Macro-level features (sectoral)</i>		
Decentralization	Break up bureaucracies into smaller, semi-independent organizations with the power to respond to local service user needs	Wright (1994); Alonso <i>et al.</i> (2015)
Trusts	Publicly owned service delivery organizations created with own governance structures and independent decision-making	Mueller <i>et al.</i> (2004); Weiss (2017)
Contracting	Publicly owned organizations (trusts) compete for contracts in quasi-markets and outsource to private sector providers as part of their service provision	Miller and Lessard (2007); Alonso <i>et al.</i> (2015)
Privatization	Private companies granted access to quasi-markets to increase competition	Wright (1994), De Vries and Nemec (2013)
<i>Micro-level features (organizational)</i>		
Strategic differentiation	Each organization should have its own vision, mission and strategy to enable differentiation, innovation and competition	Sörlin (2007); Diefenbach (2009)
Service user feedback	Feedback on services should be gathered, analysed and published to encourage responsiveness to 'customers' or service users	Bevan and Hood (2006); Diefenbach (2009)
Key performance indicators	All aspects of organizational performance should be measured, including outcomes, costs and productivity	Bevan and Hood (2006); Hartley and Skelcher (2008); Diefenbach (2009)
Targets and milestones	To encourage continuous improvement, service providers should set stretching targets and milestones for when targets should be met	Bevan and Hood (2006); Diefenbach (2009)
Benchmarking	Organizations aspiring to improve should measure their performance against others and actively learn from better performing organizations	Bevan and Hood (2006); Diefenbach (2009)
Total quality management	Methodology for ensuring that systems, processes and practices consistently deliver to agreed standard	Vinni (2007)

Business process redesign	Methodology for seeking improvements in effectiveness, efficiency and economy	Mueller <i>et al.</i> (2004); Diefenbach (2009)
Risk management	Identification and mitigation of risks to prevent destabilization in the wake of contingencies	Nisar (2007)
Culture change	Reorganization of priorities, systems and incentives to support the quest for continuous improvement	Mueller <i>et al.</i> (2004); Diefenbach (2009)

Source: Author

However, some governments have focused more on citizen or user participation in service planning and there is greater interest in the co-production of services. These developments are evolving in terms of “network governance” (Hartley and Skelcher, 2008). Nevertheless, according to Hartley and Skelcher (2008), public service organizations are instruments of the state, and their effectiveness depends in part on the trust and involvement of citizens in the democratic state. Public service organizations must therefore be judged by their ability to deliver services as well as their contribution to the creation of a just and equitable society.

About a decade ago, a new kind of rationalization for reform was introduced in the public sector involving the use of modern information and communication technologies (ICTs) (especially internet technologies). Initially, it focused on improving and reengineering internal processes, but later also included the redesign of external relationships in order to improve public administration’s accessibility and the quality of service provision. In general, the latter reform goes by the name of e-government.

2.3 E-government

Given the rapid changes in global and local social and economic environments, and the technological revolution since the late 1990s (Bernhard, 2013), public sector organizations in both developed and developing countries have been forced to find ways to adopt technology in providing

services to users. There has been an increasing interest in public sector reform through the use of information technology as a platform for communicating and servicing citizens (Syed *et al.*, 2018), as many reform initiatives have been conducted using various strategies to achieve better efficiency, productivity and performance (Bernhard, 2013).

Since the late 1970s, new generations of technologies have become available, such as personal computers (PCs) and especially Internet technologies that have distinct transformative capabilities that, in specific societal and organizational dynamics, can be used to accelerate change in government activities. This section explores e-government in the context of business administration with a focus on non-technical organizational issues in order to understand the development of e-government and its implications for the public sector. The main concepts and aims of e-government are first explained, and then the types of e-government services provided in the public sector are described. Finally, the role played by e-government in delivering customer-orientated, cost-effective services as part of the NPM philosophy is examined.

E-government concepts and aims

E-government is defined in terms of digital information and online transactions and services for citizens (Schedler and Scharf, 2001). E-government initiatives use ICT tools and applications, the Internet and mobile devices to support good governance, strengthen existing relationships and build new partnerships within civil society (Ndou, 2004). As a part of the reinvention of government using technological innovations, E-government provides an incentive to develop high-quality, cost-effective services and better relationships between citizens and government (Ndou, 2004). According to Homburg (2004), these technologies are used for various purposes, such as to provide better delivery of services to citizens and improved interactions with business and industry, to empower citizens through access to information, and to allow more efficient government

management in general. The benefits can include less corruption, greater transparency and convenience, revenue growth, and cost reductions.

According to Ndou (2004) and citing Tapscott (1996), ICT represents a “paradigm shift” for businesses, governments and individuals. It replaces traditional bureaucratic models characterized by internal efficiency, functional rationality, departmentalization, hierarchical control and rule-based management with the requirements of a competitive knowledge-based economy. These include flexibility, network organization, vertical/horizontal integration, innovative entrepreneurship, organizational learning, accelerated service delivery, and client-driven strategy. These new paradigms are driving the transformation towards an e-government based on coordinated networking, external collaboration and customer service (Tat-Kei Ho, 2002).

According to the World Bank, e-government is defined as the usage by government agencies of information technologies, including wide area networks, the Internet, and mobile computing, to have the ability to transform relations among government agencies, citizens and businesses (Stoltzfus, 2005; Al-Shuaili *et al.*, 2019). Bernhard (2013) defined e-government as the use of tools and systems by government agencies that became possible thanks to ICT and affect the organization of public administration. From the definitions of e-government in the literature, the key element is the use of ICT tools to reinvent the public sector by transforming its internal and external operations and relations with customers and the business community.

E-government involves three broad areas of e-governance, e-services, and e-knowledge. E-governance relates to the link between citizens, stakeholders and government officials. E-services concerns the electronic provision of government services. E-knowledge refers to the use of communication technologies to provide and obtain information (Stoltzfus, 2005). According to Bernhard (2013), public e-services can be considered non-commercial innovations in every new

context, because, even if the service itself already exists, it is now produced and organized in a new way. According to Sarpong and Maclean (2011) innovation is a process in which an organization creates and identifies problems and then actively develops new knowledge to solve them. While Bernhard (2013) defined innovation in term of new products, production methods, technologies, markets or a new regulation of existing factors of production. Therefore, innovation in public services may be associated with organizational renewal, new forms of governance, organizational improvements, or digitization (Bernhard, 2013).

Types of e-government services in public sector

According to Ndou (2004), some researchers categorized government services into three main types according to different groups of users:

- Government-to-citizens (G2C) is necessary for citizens from the time of birth to the end of life. It involves free communication and interaction between government agencies and citizens to provide different services. This site can be accessed and information required searched for from any place at any time, which reduces waiting times for physical services (Al-Shuaili *et al.*, 2019). It also supports accountability, democracy and improved public services (Ndou, 2004).
- Government-to-business (G2B) entails communications between the government and business sectors concerning all private business activities. It allows companies to retrieve information from the government and to complete transactions with government entities to reduce transaction costs and streamline operations, thereby enhancing interaction with companies and industries (Ndou, 2004; Al-Shuaili *et al.*, 2019).
- Government-to-government (G2G) interaction occurs between government employees and local departments and in the exchange of services between government agencies, with shared

information between them (Ndou, 2004; Al-Shuaili *et al.*, 2019). Ndou (2004) adds a fourth category of government-to-employee (G2E) interaction, arguing that most researchers are usually included as part of the "government-to-government", while staff are internal clients of the organization. The needs and requirements of this group should also be taken into account.

- Government-to-employee (G2E) service involves the relationship between employees and their entities used to transmit information about employees such as training, personal information, leave, services and education through online interactions (Al-Shuaili *et al.*, 2019). This is an effective way to provide e-learning, bring employees together and promote knowledge sharing (Ndou, 2004).

Furthermore, Al-Shuaili *et al.* (2019) added a fifth type of government service to non-profits organizations (G2N), where a range of services is provided to charities, committees and non-profit organizations. Thus, the external strategic objectives of e-government services focus on citizens, businesses and interest groups, and the internal objectives focus on government agencies and government employees.

E-government is developing rapidly. Today, it is no longer possible to think of modernizing a country without e-government, whether in theory or in practice. However, implementing e-government is not just a technical issue. Experience in managing change in the public sector through instigating NPM reforms plays a significant role in successful implementation.

NPM and e-government

NPM mainly sees e-government as the foundation for new forms of communication and organization for public institutions and their stakeholders. Therefore, e-government is the sum of new possibilities for public institutions to communicate with others electronically. Various forms

of decision-making, business transactions, or communications through electronic networks can occur, which substantially change the way government operates (Schedler and Scharf, 2001).

E-government appears to influence information costs within and between organizations, and reduced information costs are expected to change the comparative advantage of governance mechanisms and institutional arrangements. In other words, because of the low costs of information produced by e-government services, public service organizations operating according to NPM have a comparative advantage over the unitary bureaucracy of the classic public management paradigm. The use of ICT provides many benefits in making administrative centralization and allocating administrative functions such as reporting, accounting, personnel, purchasing, or quality assurance, without sacrificing any of the benefits of decentralization. Consequently, major transformations that arise from changes in the information costs are fully compatible with the shifts inherent in NPM. The efficacy of the market has increased relative to precision and government control, which could lead to more outsourcing and privatization. The efficacy of process-oriented compared to functional structures has increased, and the efficacy of market and other self-organizing systems has increased relative to hierarchically coordinated systems, which could result in decentralization. Moreover the efficacy of a decentralized allocation of resources and after-the-fact control increases compared to centralized allocation and before-the-fact control, which could result in the use of performance indicators instead of classic budget mechanisms (Homburg, 2004). In essence, ICTs enable organizations to do what they want much more efficiently and flexibly.

In this context, Schedler and Scharf (2001) emphasized the organizational aspects of many reform projects with a focus on change management, considering important lessons for the implementation of e-government in the public sector in practice and theory. For example, change in administrative culture may take significantly longer than most project managers and champions

of the NPM have expected, and implementation barriers are cultural to a high degree. Thus, a sensitive approach to cultural change will be crucial for e-government as well. Moreover, the involvement of politicians is crucial, especially in the early stages of the reform process. In addition, an understanding of the differences between the public and the private sector and how they can work together is required. The two sectors are subject to different disciplinary regimes, and by understanding each other and sharing their views on NPM reforms, they can contribute to the delivery of effective public services.

In general, it seems clear that the soil for e-government has become fertile due to NPM reforms. The inclusion of e-government in the reform process can be a strong facilitating factor in promoting reform overall. Above all, it is necessary to focus on customers and their organizational consequences (such as department stores, complaints management systems, and life event supplies) as it is important for e-government culture. However, Schedler and Scharf (2001) indicated that e-government has a faster impact than NPM in many ways. For example, the non-political nature of e-government facilitates its introduction compared to the more ideological NPM. Also, strategy-driven reform such as NPM can be hindered by strategic discussions about its benefits, whereas no-one within the administration can deny the technological impetus for e-government. In addition, given the need to redesign processes in establishing e-government, real organizational change must be made within the single administrative office, which leads to a faster impact of e-government compared to NPM.

In summary, e-government can be interpreted in terms of reform that supports the ideas behind NPM and, with its technological apparatus, facilitates modernization as a whole.

2.4 NPM and e-government in developing countries

This section examines the adoption and diffusion of NPM practices and e-government in developing countries to identify the advantages and limitations of these approaches in achieving public sector improvement.

History of NPM reforms in developing countries

Governments in developing countries, especially those in the Middle East, tend to be overlooked by researchers in comparative public administration (Common, 1998). However, the practices of NPM that have emerged in developed countries since the 1980s have in more recent times attracted attention in developing countries engaged in rethinking their administrative, political, and budgetary systems in pursuit of economic growth. NPM has become the dominant solution to performance problems identified by public sector policymakers and reformers. Also, the transfer of private sector management tools and techniques in to the public sector has been helpful in providing a practical formula for reform and a normative vision of effective government. Despite their complex and diverse nature, NPM administrative reforms have been implemented in several countries under different labels (Du, 2007).

A precondition for financial assistance, such reforms have often been imposed by international financial institutions in structural adjustment programmes in the belief that they will increase flexibility and dynamism in the public sector (Ali, 2007). Consequently, less economically developed countries have been urged to adopt market-led policies and to restructure their public sectors based on the principles of NPM enumerated in Table 2.2. However, the results of these reforms do not present a picture of good health, as explained below.

The adoption of e-government in developing countries

Based on the foregoing, a variety of NPM techniques and practices have been experimented with in developing countries, including the creation of competitive environments through decentralization, use of contracts between purchasers and providers, and the introduction of performance measurement and quality control (Christensen and Lægreid, 2013). These techniques have been embraced with the reformation of many public sector undertakings managed by governments in areas such as education, health, tourism, and transportation. It is thus necessary for policymakers to have extensive knowledge of change management theory and practice, including technical and cultural parameters, to enable more timely interventions and to keep reform projects on track (Ansari *et al.*, 2010).

Also, in most developed and developing countries the power of the Internet and ICTs have been used in many different applications and systems. Some countries have succeeded in adopting e-government to provide services to the public, but the adoption of e-government in developing countries has been delayed (Stoltzfus, 2005) and its potential remains largely untapped (Ndou, 2004), with the most important challenges relating to human, organizational and technological problems (Ndou, 2004). Nkohkwo and Islam (2013) noted that the most common barriers to the successful implementation of e-government initiatives in Sub-Saharan African developing countries related to infrastructure, human resources, legal frameworks, Internet access and the digital divide and connectivity. Johari (2010) has also highlighted that the most common factors behind negative outcomes e-government initiatives in developing countries are due to inadequate specification of intended outcomes, political interference, deficient resource allocation, and lack of risk analysis and management.

Factors such as inadequate distribution of authority and responsibility, contractor selection, and project scheduling, and project documentation also loomed large Nevertheless, Ndou (2004) noted that e-government initiatives have flourished in some developing countries such as Brazil and India. Success in developing countries involves exploiting its benefits while accounting for unique circumstances, needs and obstacles by advocating for organizational structures and skills, new forms of leadership, and transformation through public-private partnerships. Thus, Ndou (2004) has identified important aspects to be taken into account in the successful design and implementation of e-government initiatives in developing countries, which are summarized in the following points:

- An assessment of e-readiness will allow stakeholders to understand the current state of telecommunications infrastructure, the legal and regulatory framework, the current level of human resources and skills, as well as the main constraints within the country of the benefits of ICT.
- Awareness should be raised in public and private organizations through the provision of appropriate training programmes, workshops, events, seminars and conferences.
- Experimental studies in specific contexts should be conducted to build on the experiences of others and encourage strong partnerships with private organizations, key donors, research organizations and universities to benefit from their experiences and expertise.
- Invest in human development by training staff to deal with new processes and activities that will give them incentives to prevent the brain drain of skilled people and facilitate their participation in decision-making. Basic training must be provided to community members so that they can use new facilities to access information and e-services.

- A comprehensive approach with a clear vision and strategy to overcome barriers to change should be adopted. This is achieved by integrating e-government policies with other development strategies and policies to ensure broad dissemination. The role of leaders, especially in the early stages should be promoted, to raise awareness, make ICT development a national priority, build and maintain broad public and private commitment and participation, and to seek viable solutions to ensure the effective participation of society in the information economy.
- Knowledge management and change should be prepared by creating knowledge management processes and tools to ensure that strategic information is easily stored and retrieved for better and faster decision-making, in the search for value-added and innovative services and solutions.

Limitations of NPM reforms in developing countries

The results of public sector reform in developing countries are mixed at best and success stories are rare (Brinkerhoff and Brinkerhoff, 2015). Nunberg (1995) argues that administrative reforms in developing countries are not driven by empirical research, and there is a lack of evaluation of the impact on performance, especially with regard to organizations and processes. Moreover, most administrative reforms in developing countries fail because the implementation stage is rarely completed (Polidano, 2001). In an extensive review of 49 developing countries, Goldfinch et al. (2013), found few documents linking public sector reform to implementation and the evaluation of outcomes.

In this regard, the World Bank (2008) reported a large failure rate of 55 per cent in public sector reform activities between 1999 and 2006. There are a lack of explicit theories and evidence-based research which examine the factors leading to success or failure in public sector reform

initiatives (Brinkerhoff and Brinkerhoff, 2015). Yet the pressure for reform following the acknowledgment of widespread corruption in developing countries continues to grow. The many challenges faced by reformers include: developing the capability to deliver quality services with limited resources to a diverse population of users; responding flexibly and rapidly to shifts in demand; ensuring safety and security of services; establishing learning partnerships with the private and non-profit sectors; and stimulating widespread and equitable economic growth and opportunities for citizens (Brinkerhoff and Brinkerhoff, 2015).

The limited impact of NPM in developing countries has caused consternation amongst donor agencies and nations who are seeking alternative frameworks to NPM orthodoxy (Brinkerhoff and Brinkerhoff, 2015). However, as with any evolutionary shift in theory or practice, the old is never completely removed by the new, and the post-NPM reform agenda is no exception (De Vries and Nemec, 2013). The ideologically driven NPM orthodoxy has provided a menu of reforms from which selections might be made to satisfy donors. NPM has in large measure survived even if shrouded in scepticism (Brinkerhoff and Brinkerhoff, 2015).

2.5 Managing and implementing e-government projects

This section focuses on the management and implementation of e-government projects, and the means employed to manage improvement. The literature on project management (PM) and its application in the public sector is reviewed. How public sector improvement projects are typically managed is then considered. Finally, the relationship between PM and IT software projects is discussed, where external parties can define the role that PM plays in project success or failure.

Definition of project management

In practice, the most common method of starting the ball rolling in both private and public sectors is through the formal establishment of a service improvement project led by a senior manager and supported by a team of specialists. Various PM tools and techniques are commonly used in the management of such projects, and PM has been recognized to be an efficient, effective approach to service improvement in developing countries (Abbasi and Al-Mharmah, 2000).

Due to its significance and ubiquity, it is useful to begin by explaining the concept of ‘the project’ before reviewing the factors influencing degrees of project success or failure. Here we define a project simply as a ‘body of planned work or an activity which is completed over a period of time and intended to achieve a particular aim (Abbasi and Al-Mharmah, 2000). Turner and Müller (2003) describe a project as a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavour managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change. Projects are thus social structures invented by a group of individuals (Morris, 2013). They also have other features pertaining to resources, timeframes, specific predefined objectives, and recommendations for change to deliver beneficial outcomes (Abbasi and Al-Mharmah, 2000).

Moreover, there is no general agreement as to the criteria by which the success of outcomes is judged (Shenhar *et al.*, 2002). Different stakeholders may interpret success differently because of varying perceptions and priorities which might lead to disagreements (Liu and Walker, 1998). Public sector projects have multiple stakeholders often with different priorities and assessments regarding the project success. Projects, therefore, need to be evaluated in financial, technical and human term and in considerable depth (Freeman and Beale, 1992).

Morris (2013) described all projects as following the same general development cycle managed from feasibility study to design, implementation, delivery and operation. Progress is essentially linear, and this life cycle distinguishes projects from non-projects (Morris, 2013). Abbasi and Al-Mharmah (2000) stressed that the project life cycle consists of three phases: planning, scheduling and controlling. Planning is an ongoing process which determines the work needed to deliver a successful outcome. The second phase is scheduling which determines when and how work will be done and establishes stages during which resources are utilized to perform the required work and milestones that mark their completion. The control phase is conducted during implementation and is the process of measuring progress toward the project objectives, evaluating the work performed and identifying what remains to be done to achieve the objectives, as well as taking corrective action. In order to measure progress, reports are submitted at different milestones to identify if scheduled work is on time.

The history of project management and development of the discipline

The invention of the concepts and tools recognized by the modern project manager as characteristic of PM were introduced in 1952 (Morris, 2013). However, in the 1970s the discipline began to be seriously affected by social, economic, political and environmental issues and in 1979 the International Project Management Association was formed. The project management 'Body of Knowledge' (BoK) was reformed to include the management of project scope, time, cost, quality, human resources and communications. In 1987, the IPMA officially published the first version of PMBoK, adding risk and contract/procurement, and then added to that integration in 1996 and project stakeholder management in 2013 (Morris, 2013). The PMBoK acts as a guide for its professional development programmes (PMI, 2001).

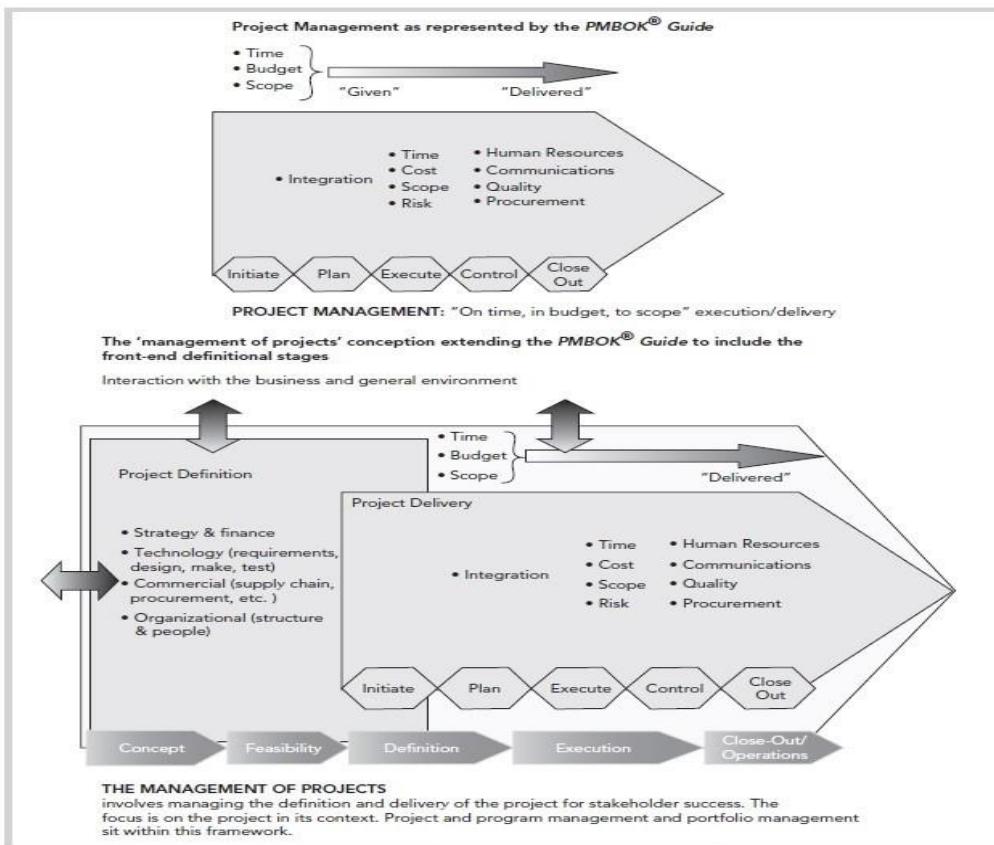
It is known to be difficult to implement information technology (IT) projects successfully, due to problems in accurately identifying project requirements and estimating the time needed to meet them. Therefore, software project managers developed the Agile Manifesto methodology whereby requirements are determined jointly by users and software developers in a team working on specified numbers of requirements, within short periods of time (Balaji and Murugaiyan, 2012); (Stoica *et al.*, 2013). Thus, agile software project management became popular (Morris, 2013) and overcomes some of the uncertainty of projects (Hasibović and Tanović, 2019). On the other hand, the PRINCE2™ framework, released through the UK Civil Service in 1996 became immensely influential and has been applied to many project public and private sectors in the UK (Morris, 2013; Mackenzie and Barratt, 2019). This framework is designed to separate projects into controlled stages while maintaining clear lines of accountability (Mackenzie and Barratt, 2019).

By the late 1980s and 1990s, PM research had expanded dramatically. A number of CSF studies had built a more holistic perspective on how to successfully manage projects (Jugdev and Müller, 2005). Therefore, the focus of researchers turned to the actors and the organizations working on projects. According to Hartley and Skelcher (2008), the complex changes involved in large-scale government initiatives have also led to a focus on leadership, the management of organizational change and innovation, and an examination of how managers and other stakeholders perceive and behave and the coordination of objectives, concerns, plans and activities of a wide range of stakeholders. Miller and Lessard (2001) in their study focused on efficiency and the effectiveness of performance in meeting the sponsor's business objectives and to deliver on time, on budget, and to the correct specification. It was noted that successes and failures in projects can be explained by the sponsor's ability to shape strategy and deal with contingencies, and partnerships. Consequently, a focus on the management of technical, market, financial, social,

organizational and other risks that affect performance effectiveness is now prevalent (Miller and Lessard, 2001; Miller and Lessard, 2007). Similarly, Flyvbjerg *et al.* (2003) identified the critical role of the sponsor and accountability as well as the need for risk assessment at the heart of decision-making, given that sponsors are often aware of their low initial budgets or are overly optimistic.

Morris and Hough (1987) presented a more comprehensive concept of CSFs combining the factors mentioned in the PMBoK guide and adding to it the importance of developing the front-end definition (*the parts of the project a user interacts with*) and the key role of the owner/sponsor in project management. Thus, the project management paradigm proposed by Morris (2013) and illustrated in Figure 2.1 defines the project objectives; working with stakeholders; managing and shaping the emerging front end; managing technical, business, control, organizational and human factors, focusing on effectiveness as well as efficiency; and comfort in a pluralistic knowledge base. Morris (2013) argued that the PM discipline includes setting-up the project and establishing it satisfactorily in its environment and with its stakeholders, focusing on both the sponsor's needs and society's challenges. PM should focus on improving the value to the sponsor and on shaping the context in which projects and programmes are formed and implemented, because PM on time will be a dynamic and powerful discipline that has a lot to offer society.

Figure 2.1. Project management paradigm



Source: Based on Morris (2013)

Moreover, with the spread of NPM reforms and the advent of public-private partnerships (PPPs) since the early 1990s, diverse stakeholders need to be kept abreast of progress. The use of PPP gives the opportunity to invest in more economic sectors and enhance infrastructure development. It has relieved the financial burden of governments in meeting the increasing demand for public facilities and services, while providing an opportunity for private investors to benefit from the government’s guarantees, tax exemptions and guaranteed investment returns (Osei-Kyei *et al.*, 2017). Researchers have played a vital role in exploring the best management techniques and practices that could enable project participants to achieve successful PPP implementation. Osei-Kyei *et al.* (2017) point to political support, strong private consortia, appropriate risk sharing,

community support and transparent procurement as key factors underpinning successful PPP projects.

Relationship between project management and IT software projects.

Information technology entails a set of processes, tools, and procedures such as programming, data transformation, data communication, system design and analysis, in addition to other associated types of equipment used in the assembly, processing and presentation of data. In this regard, an IT project includes a collaborative effort to ensure the planning, implementation and monitoring of various IT components upon completion in order to achieve the desired benefits. IT projects are critical and sensitive due to the inherent complexity of IT. They also require huge investments in the form of financial and human resources with expertise and skills, and a specific timescale to ensure success (Morcilio and Toress, 2016). Thus, for IT projects to be implemented successfully, they must be completed on time at the cost determined in the allocated budget, with comprehensive delivery of all the necessary functionalities. Due to the importance of IT projects, Morcilio and Toress (2016) noted that most (63%) projects in organizations are related to IT, followed by research and development (24%) and general construction (13%).

To develop and implement IT projects, it is important to integrate project management practices in IT project management. As with other projects, IT project management includes five critical phases of initiation, planning, implementation, monitoring and control which need equal professionalism and attention. Thus, the integration of project management results in reduced incidental costs, improved stakeholder and consumer satisfaction, and increased efficiency when the IT program is launched and used by clients (Dunmade, *et al.*, 2018).

In most organizations and governments, a single individual is appointed as project manager who leads and oversees the IT project until completion, providing a clear chain of command in directing other parties involved in the project's management and ensuring that all remain on course to achieve the successful completion of the project. The project manager's decision-making and actions depend on their individual approach to leadership (Tomomitsu, Carvalho, and Moraes, 2018). However, researchers such as Cunha, Moura, and Vasconcellos (2016) argue that the particular challenges encountered in managing IT projects require collective decision-making rather than decision-making by a single individual. Accordingly, there is a need for a collective approach to decision-making depending on the appropriate types of processes, tools and technology to be used, based on consideration of specific objectives and constraints. The process also requires structured guidelines in its approach.

Given the importance of IT projects in the private and public sectors, it is also important that project managers are qualified to lead the project management team through all stages of the project life cycle. The most important point is the efficient delivery of the project to the final consumer. Morcilio and Torres (2016) referred to Wrike's study showing that only 56 per cent of IT project managers were certified by the PMI as Project Management Professionals (PMPs), which tends to indicate that many project managers in the field may lack formal education in PM . High-performing organizations successfully complete 89 per cent of their projects, while low performers may complete only 36 per cent of theirs. Also, Capterra (2015) indicated where only 49 per cent of organizations had project management training (Morcilio and Toress, 2016).

On the other hand, according to Radujković and Sjekavica (2017), PM has been perceived as allowing the successful implementation of strategic changes within different sectors of the economy, and particularly in the public sector. They further affirm that IT projects can be

successful without PM, but the efficient and successful application of PM can significantly enhance an IT project's probability of success. Through PM, best practices in IT project management are applied. This includes aligning project objectives with the overall objectives of the organization's strategic direction and ways to solve challenges tactfully in the project context. Such challenges may include a change in technology due to the dynamic nature of IT. On the other hand, IT projects are temporary in nature due to the timeframe set and the delivery of defined benefits to specific stakeholders. However, despite their temporary nature, the impact of some IT projects could last for decades.

In summary, the application of project management tools is vital when designing and controlling project plans, defining the deliverables, budgets, and resources, and in assigning tasks to various members of the project team. Such tools help in minimizing the risks and challenges that might be experienced (Andersson and Chapman, 2017).

2.6 Managing change in government services provision.

This section reviews the change management literature, defining its concepts and discussing the methodologies employed for e-government projects in developing countries.

Change management

The topic of organizational change has received increasing attention in the project management literature, which previously provided little guidance on how to support planned change (Crawford *et al.*, 2003). This is surprising when projects are increasingly central elements of change, and act as powerful means of achieving change. So, projects can be seen as agencies of change, with a coherent set of goals for change (Turner and Müller, 2003). However, earlier studies of project

management largely ignore the complex and emerging characteristics associated with managing and implementing change (Crawford *et al.*, 2003).

Change is a multilevel and multifaceted phenomenon (Kuipers *et al.*, 2014) that involves the growth and/or development of one or more of several elements of an activity. In public services, these include service design, the structure of the public sector organization providing the service, the management of the organizations, and/or the skills required to provide and manage the service (Brown and Osborne, 2012). Change management can be defined as a structured approach to the transition of individuals, teams, and organizations from their current state to a desired future state (Sulistiyani and Susanto, 2018).

According to Levin (1998), organizational change is a complex subject. Achievements and outcomes in change management are difficult to predict, and experts often assume that many change projects do not achieve their ultimate goals. Meanwhile public sector organizations, unlike those in the private sector, are often seen as resisting change. They seek capacity to get things done but resist change which represents a different way of doing things. This is because scheduling and planning in the public sector has to consider logistical and political factors that impact on implementation. Accordingly, organizational change must be handled carefully, taking these factors into account, to achieve the desired outcomes (Al-Alawi *et al.*, 2019).

Therefore, change leaders and agents play significant roles in ensuring the success of the change process. They have a strategic function in dealing with resistance to change using methods appropriate to the organizational culture to enhance employee participation in the change process. This process is coordinated by the organization leader or change agents who have authority and act as change enablers. The demonstrates the task behaviour required to achieve the goal as well as integrating employees into the change process to make it easier for them to adapt to change.

Moreover, in successful organizations that achieve their goals, leaders play the roles of both traditional and transformational leaders in recognizing the need for change, and overseeing its management and implementation (Weiner, 2009; Fernandez and Rainey, 2017).

Furthermore, according to Brown and Osborne (2012), one of the critical components of the successful implementation of change is the formulation of a vision for the organization by strategic leaders who are motivated to advance the change agenda and possess an interest in communication, which is an important channel for change. The vision includes an image of the organization's future state, with a clear focus on the necessary actions to be taken. Managers and others who implement change programmes within organizations must recognize the importance of balancing the tension between maintaining adequate organizational stability to retain functionality and developing momentum in order to implement change. On the other hand, measuring results and charting the success of change initiatives implemented in public services and organizations may be difficult if clear indicators are lacking, such as the profits or improved outputs that will be identified in the private sector. Furthermore, the multiplicity and diversity of interests among stakeholders of public services creates greater complexity, and more subtlety among managers and members of organizations may be required when implementing change initiatives.

Resistance to change

It has been observed in many studies that organizations and their members resist change, even though resistance to change in itself is positive to some extent. It can maintain stability and predictability in behavior, and healthy discussion may be stimulated about the merits of proposed change which might lead to a better decision. Also, resistance can help change agents gather information and understand how to design a successful change process. However, resistance to change often restricts adaptation and progress. It can lead to costs and time constraints in the

process of change that are difficult to predict and control (Al-Alawi *et al.*, 2019). Thus, resistance should be understood as a set of situated practices that both enable and constrain change. This perspective highlights the ways in which resistance appears as negotiation and interpretation of organizational phenomena with which organizational actors may adhere to different meanings and contradictions. Therefore, resistance should be understood as a process of negotiation and ambivalence.

Courpasson *et al.* (2012) distinguish three steps that can transform resistance into productive processes. In the first, resistors refuse to act upon an administrative decision. In the second step, they declare their resistance and seek the support of top management to pursue a new agenda. In the third step, senior managers are forced to cooperate and participate in developing new policies. The tensions and contradictions inherent in this dialectical relationship can create possibilities for daily organizational change and transformation. In short, the repetitive actions and practices of resistors and the dynamic relationships between agents and receptors of change are very important in understanding resistance to change (Courpasson *et al.*, 2012).

For change management to be successful, individuals should be considered as agents or actors, and not as subjects. In normal cases, an individual can adapt to some extent to change by making certain adjustments in culture and character, showing some flexibility in principles and values. But radical changes that are directly connected to, for example, national cultural values such as religious, geographical, demographical and political factors are deeply rooted and often extremely difficult to change. Moreover, the change leader should be a transformational leader who has an optimistic personality with regard to taking the initiative, showing commitment to the change process, communicating with employees of the organization, motivating them and helping them understand the need for change in order to achieve their cooperation. Therefore, the active

involvement of top management during the change process is of utmost importance (Weiner, 2009; Fernandez and Rainey, 2017; Al-Alawi *et al.*, 2019).

Change management in e-government projects in developing countries.

The failure rate of e-government projects in developing countries is high. The majority of such failures are due to gaps between the design and the reality of the system concerned, as well as a lack of change management strategies (Ndou, 2004; Ansari *et al.*, 2010). Managing the changes involved in e-government affects all aspects of the project, including changes in IT, organizational structure, bureaucracy, people, business processes, government policies, and legislation. The main challenges facing change management in e-government projects in developing countries relate to lack of IT literacy among government staff, low budgets, lack of ICT infrastructure, and the diverse and unique culture (Ndou, 2004; Sulistiyan and Susanto, 2018).

According to Sulistiyan and Susanto's (2018) model, change management for e-government projects consists of seven components: defining the goal of change; forming change management teams; conducting gap analysis; establishing the desire for change; designing new environments; implementing change; and maintaining change. The goals of change are largely influenced by leadership and organizational demands and must be identified early to avoid controversy. What needs to be done should be clear from the start. The implementation team should be formally established. Also, there must be a desire for change among the workers, with their active participation and the creation of modern ideas. Meanwhile, gap analysis and an understanding of current and future conditions can be gained when implementing e-government. Ensuring that all requirements are met is a prerequisite before starting to implement the change. Finally, it is important to keep maintaining change with continuous improvement (Sulistiyan and Susanto, 2018).

2.7 Public sector improvement in Oman

Oman is one of the Middle Eastern countries that are similar in language, religion, and culture but which vary considerably in the pattern and pace of societal development. It is located in the oil and gas rich Gulf region that includes Saudi Arabia, Qatar, Kuwait, Bahrain, and the United Arab Emirates (Funsch, 2015). Oman, however, is less prosperous than other Gulf countries (Fromson and Simon, 2019) due to its relatively modest oil income, dwindling reserves, population growth, and unemployment levels (Peterson, 2004). Like its Gulf neighbours, Oman is exposed to the international reform movement loosely characterized as NPM and predictably responsive to such international trends. However, administrative performance in the country remains poor, and the Omani government has found it difficult to reform the bureaucracy (Peterson, 2004).

This section describes the historical evolution, current role, and future direction of Oman's public sector. The roots of current problems are analysed in order to assess the suitability of proposed NPM-style reforms. Past efforts made by the government to reform the Omani public sector are outlined before reaching conclusions regarding the unique character of the reform process and the possible future direction of Oman's public sector.

History of Omani public sector improvements and reforms

Oman has a relatively recent history as a nation state. Although its geographical isolation ensured Oman's independence long before its Gulf neighbors, its interior (the Imamate) and Muscat (the Sultanate) on the coast were divided until 1955, when the Sultanate assumed power with British assistance. British support was forthcoming during the Dhofar uprising (Fromson and Simon, 2019), which began in 1962 and lasted until 1975 (Common, 2008).

Oman effectively had been part of Britain's 'informal empire' in the Gulf which ended with its withdrawal from Bahrain in 1971. It is essentially a monarchical regime, and the governance of Oman and other Gulf countries has traditionally been marked by clan-based politics rather than popular legitimacy (Common, 2008). Common (2008) argued that their royal families, including that of Oman, monopolize the state and control its bureaucracy. State formation in Oman has involved the ruling families distancing themselves from the traditional bargaining with rival tribes and groups. Personal rule by the monarch overrides any wider policy inputs from society and consequently power is centralized above the ministerial level (Peterson, 2004).

Administrative reform in Oman since 1970

This section analyses the course of administrative reforms since the coming to power of the present Sultan, Qaboos bin Said al Said, in 1970. Before his succession Oman was generally regarded as backward and isolated (Peterson, 2004). His Majesty Sultan Qaboos has sought to modernize the country. In 1970, public administration was largely limited to defense, while Oman's principal enterprise, Petroleum Development Oman (PDO), belonged to the private sector (Peterson, 2004). Once oil revenues began to increase in the 1970s, public service ministries were created, principally in education, health, and public works. Attempts to modernize the public sector began with the establishment of a Civil Service Department in 1973, which oversaw the rapid expansion of the public sector (Shayban, 2008; Fromson and Simon, 2019). These were employed in the early days by Omanis returning from abroad, as well as expatriates returning from Zanzibar, as they had some degree of education (Peterson, 2004). Few Omanis received any education as a result of the country's poverty and the previous sultan's deliberate policy against formal learning (Peterson, 2004).

Modernization was hampered by poor educational levels and overstaffing which continued unchecked due to the emphasis placed on public employment as a means of distributing wealth (Common, 2008). This approach continued until 1994 when a landmark World Bank report was critical of governance in the Sultanate, and especially of what it believed to be inflated civil service salaries (Shayban, 2008). As in other Gulf countries, educated Omanis continued to prefer public sector employment.

A further impetus to change more recently has been rapid population growth driven by factors such as economic development, improved health care and low infant mortality, which has resulted in 60 per cent of the population being under the age of 25 (Ali *et al.*, 2017). The inability of the public sector to provide new employment opportunities for nationals has increased the unemployment rate (Shah, 2006; Fromson and Simon, 2019). The solution proposed by the government is to provide better job opportunities, wages, incentives, and other benefits for citizens in order to encourage them to work within the private sector. Despite this, private sector enterprises continue to depend on expatriates (Shah, 2006).

In 1996, the declaration of Omani Basic Law was announced, as a written constitution for Oman that had important administrative implications for political change. The Basic Law established a bicameral parliament which functions in an advisory capacity. The primary body is the Council of State (Majlis ad-Dawla) and the second is the Consultative or Shura Council (Majlis al-Shura) whose members have since 2003 been elected for three-year terms by universal suffrage. (Peterson, 2005, p. 15). Despite the liberalization of the Majlis al- Shura, it cannot be considered as a representative legislative body (Peterson (2004). Its competence remains limited to social and economic matters and the review of government policies but not the initiation of legislation.

Gandhi and Przeworski (2007) have criticized the consultative council in Oman for including those proposed by dignitaries, to mitigate against emerging threats from within the ruling elite and to keep potential competitors close. This was because the government had a major influence on the formation of the Shura Council's initial selection process, although this process has gradually changed to full popular elections. Prior to 2011, the Sultan appointed the Chairman of the Advisory Council, but the powers of the appointed Majlis al-Shura have since been expanded (Fromson and Simon, 2019).

In addition to the Basic Law, reform and modernization have also been promoted by the pursuit of national economic goals. 'Oman 2020' was launched in 1995 with the goal of significantly diversifying the economy and manufacturing and introducing privatization, reducing the oil sector's contribution to GDP to 9 per cent by 2020 and creating more jobs to employ increasing numbers of Omanis entering the labour market (Ali *et al.*, 2017). As in rest of the Middle East, the Sultanate relies heavily on the use of expatriates to support its booming economy (Mashhood *et al.*, 2009). The influx of expatriate workers from Asian countries such as India, Bangladesh, Pakistan and Sri Lanka have had a significant impact on the Sultanate of Oman. These workers are more productive and cost-effective (as cheaper labour), making it difficult to replace them (Fatiha, 2017). While the expatriate population in 2002 was 26 per cent, today it has increased to 44 per cent (Ali *et al.*, 2017). This dependence on expatriates can have long-term political, economic and social consequences. Consequently, many countries, including Oman, have begun to implement policies aimed at influencing the supply and demand of expatriates and indigenous workers (Mashhood *et al.*, 2009).

The Omani government aims to develop management capacity and human resources under the banner of ‘Omanization’ to encourage the employment of nationals outside the public sector. Targets were set for the employment of nationals in key enterprises and services. Creating job opportunities was seen to help economic development and increase the role of the private sector (Al-Hamadi *et al.*, 2007; Mashood *et al.*, 2009; Swailes and Al Fahdi, 2011). Omanization led to a temporary decline in growth in numbers of expatriates as a result of the introduction of new labour laws restricting their employment, the impact of social unrest in the region and the slowdown of the global economy, but this was short-term (Ali *et al.*, 2017).

Omanization was given a boost with the publication in 2003 of a United Nations Development Report (UNDP) stating that while the government of Oman employed 65 per cent of working Omanis, 95 per cent of employees in the private sector were non-Omani. The same report identified restrictive labour regulations, a poorly educated workforce, and poor work ethics in the national workforce as major barriers to business development (Swailes and Al Fahdi, 2011). However, the Omanization policy has been criticized. Valeri (2015) argues that senior officials in Oman have tolerated a high degree of nepotism in the government bureaucracy, resulting in recruitment to their ministries or agencies of members of the senior official’s own tribe.

In pursuit of Omanization, the government has sought to improve the education system by updating and increasing the number of vocational technical education centres with the aim of generating employment and increasing economic growth (Al-Hamadi *et al.*, 2007; Mashood *et al.*, 2009; De Bel-Air, 2015). Projected declines in oil revenues make this more urgent. The rapid expansion of public services is seen to have increased dependence on oil revenues while inhibiting private sector growth. There is often administrative overlap and duplication. As in other Gulf

countries, the focus of public management has been on the coordination and control of expanding public agencies (Al-Otaibi, 2006).

According to Common (2008), Oman's reform history can be briefly summarized as a rapid expansion and the production of rules and regulations to formalize and govern that expansion. However, the powerful elite have faced few incentives to reform. Political change is slow, constrained by strong organizations, culture and the weight of tradition. The bureaucracy so far has been largely immune from the extremes of NPM. The little reform that has taken place has tended to aim at improving organizational performance, rationalization and information flows (Bertucci, 2004).

In 2011, demonstrations swept in the 'Omani Spring' leading to administrative reforms and the creation of employment opportunities for Omani youth. In response to citizens' demands, His Majesty issued a decree to create public sector employment and enhance security in the country, which led to the creation of 50,000 new jobs in the public sector (Hvidt, 2013; Katzman, 2016). However, many scholars argue that the 'Omani Spring' was a missed opportunity. The creation of 50,000 jobs in the public sector occurred without proper foundation or strategies or real need (Fatiha, 2017).

The World Competitiveness Report 2016 ranks Oman at 66 out of a total of 144 countries and counts its inefficient government bureaucracy as the third worst, in reducing competitiveness through continuation of restrictive labour regulations and the lack of an educated workforce. Thus, Ghailani and Khan (2004) suggested that its educational organizations should play a significant role in providing the human capital equipped with the right kind of educational skills and competencies, in order to find employment in the private sector and render Omanization effective.

Moreover, according to Ali *et al.* (2017), one factor that hinders reform and the sub optimal role of the private sector in Oman is the lack of coordination between the government and the private sector in the formulation of Omanization policies. This has contributed to the continued high level of expatriate labour in the private sector. Therefore, the author proposed the introduction of a single body to regulate the labour market in Oman leading to an Omanization policy to correct distortions in the labour market. Making the private sector an attractive option for youth employment, should be supported by investment in training and development related to growth sectors, with greater public-private cooperation, and awareness campaigns to encourage nationals to pursue skilled and semi-skilled occupations (Ali *et al.*, 2017).

Actions taken by the government to improve the public sector

This section addresses the Sultanate's efforts at administrative development in the adoption of e-government projects, and reviews the challenges facing the Sultanate to achieve success in their implementation.

Due to the technological revolution, Oman has introduced many reforms and initiatives to enhance the efficiency and effectiveness of public services through the introduction of an e-government programme (Al-Busaidy and Weerakkody, 2009). The government's attempt to transform public services through the adoption of information and communication technology (ICT) started in 2002 with the establishment of the "Oman Digital" organization, under the responsibility of the ITA. This organization has since sought to facilitate and provide easily accessible services for users by adopting ICT in various fields such as health, education, business, manpower and other services. Oman has gradually developed its global ranking in this area but still lags behind other developing countries (Sharma, 2015; Al-Shuaili *et al.*, 2019).

As a result of these efforts, the Omani government's rankings of readiness for e-government jumped to 63rd place in 2018 in the global ranking, according to the United Nations E-government Survey (alroya.om, 2018). However, Al-Shuaili *et al.* (2019) noted that, although the Sultanate has developed its global position, it is still behind other Arabian Gulf states. Accordingly, the ITA must take the initiative to investigate barriers to the implementation of e-government in the country, turning policy into practice (Bernhard, 2013). Moreover, Frijns (2016) indicated in his study that most of the GCC countries still rely on traditional social and political beliefs and practices despite being considered modern countries. In most cases, this is reflected in the central position of the ruler of the state in whom decision-making is centered. This reduces the chances of a group decision-making approach to managing IT projects.

In addition, Al-Shuaili *et al.* (2019) pointed out that the e-government strategy could be improved by the participation of employees because they are responsible for the implementation. An appropriate leader should be appointed, and attention also given to the training of employees to enhance their confidence and that of citizens. Technically, the telecommunications network, Internet speed, coverage, and cost in Oman must be enhanced with the use of the latest technology. The study concluded that the Sultanate has achieved positive and direct benefits from the implementation of e-government.

Government vision and strategy for reform

Oman's rapidly dwindling oil reserves have forced the government to recognize the need to reduce the economy's dependence on oil, dismantle the rentier state and build a market economy. Omani policymakers therefore decided that "diversification and Omanization" was the only way forward. Reducing the public sector workforce, expanding the private sector and reducing subsidies were identified as particular priorities (Fromson and Simon, 2019). A series of high-level initiatives were

embarked on after the development of the Oman Vision 2020, and other human resource development programmes in the public and private sectors (Al-Hamadi *et al.*, 2007). In addition, the government is striving to transform public services through the adoption of information technology and communication by establishing of the Oman Digital organization in 2002 and other initiatives to improve e-government services (Sharma, 2015).

According to the Oxford Business Group (2000) report Oman's Vision 2020 focused on economic diversification through the encouragement of non-extractive industries, labour market reform and human capital development. Also, it set ambitious timetables to reduce the country's dependence on oil by 2020; with oil revenues to fall from 41 per cent of GDP to 9 per cent. Non-oil industries are supposed to reach about 81 per cent of GDP by that date. Most importantly, increased private employment for citizens should rise from 7.5 per cent in 1996 to at least 75 per cent by 2020 (Benchiba-Savenius (2015). The decline in oil prices has significantly affected the Omani economy. It recorded a deficit of 20 per cent of GDP in 2015 and 2016, with a GDP of \$65 billion compared to \$80 billion in 2014. This was accompanied by a balance of payments deficit due to lower revenues and increased imports. Public debt is still reasonable, at around 25 per cent, but it is rising rapidly and could eventually threaten the circulation of the Omani Rial (Fatiha, 2017).

In response to this economic crisis, reforms have recently begun under a new economic policy called The National Program for Enhancing Economic Diversification (TANFEEDH). This action-oriented programme related to the ninth Five-Year Development Plan (2016–2020) was launched at a six-week conference in 2016 with representatives from the public sector as well as various other segments of society. The aim was to facilitate growth in targeted sectors and to

strengthen the market and public sector simultaneously so that they could complement one another (Fatiha, 2017).

The history of public administration in Oman suggests that the modernization drive spearheaded by TANFEEDH has longstanding barriers to overcome. The programme is designed to facilitate significant improvements in public sector performance through reforms that bear the imprint of NPM, as well as strengthening the role of the private sector in the country, and providing opportunities for Omanis to work in and strengthen this sector and to create their own businesses. Hamid and Amin (2017) argued that commercial success for TANFEEDH is out of reach. The targets are unlikely to be met unless radical measures and concerted efforts are made to reorganize existing policies to provide more incentives for foreign direct investment and a more favourable pro-trade environment.

Fatiha (2017) pointed out that there are many barriers that make it difficult to implement the strategy properly, including that companies give strategic executives roles to Indians instead of Omanis. This has led to the spread of their networks and increased employment opportunities for citizens from their communities while they work hard for Omani employers. Meanwhile, they are investing at home and pressuring the Indian business elite to invest and establish joint ventures in Oman. Omani business families come under strong pressure because their interests motivate them to protect the jobs of expatriates, even though reforms under the TANFEEDH are intended to encourage the hiring of Omanis. In contrast, Omanis are less likely to be employed because they lack the same networks, motivation and attractiveness to Omani businessmen. This leads to frustration among the professional class, especially those who wish to progress and develop their careers (Swailes and Al Fahdi, 2011).

Swailes and Al Fahdi (2011) indicate that, for the development of administration appointments to jobs must be based on merit, otherwise injustice and inequality in society will prevail. However, these values seem to be in decline, and personal connections and social networks trump merit in practice. Despite a long history of reforms, Oman's public sector is still inefficient from the perspectives of citizens, government, and the international development community. Many factors have caused the decrease in the productivity of labour and the failure to achieve the objectives of the Vision. These include the reluctance of Omanis to join certain professions, which has reduced their capacity to face future challenges and integrate into the global economy.

In addition, the aims of Omanization have not been achieved which has hindered the replacement of expatriate labour due to the lack of involvement of citizens in market behaviour. Most top jobs are still held by expatriates. Therefore, the situation has regressed on many of the relevant indicators. Moreover, Al-Hamadi *et al.* (2007) revealed that Omanis believe that the civil service legislation associated with recent developments has the most significant impact on human resource management policies and practices in all organizations. Employees in Oman are also aware of the efforts being made to achieve Vision 2020 and the initiatives designed to develop different sectors to reduce the excessive dependence on oil. These may now be starting to pay off and thus provides some grounds for optimism.

On the other hand, investment in the private sector in the Sultanate has led to some migration of skilled labour and volunteer staff to the private sector, which has become a serious issue facing public organizations as the economy continues to expand. Competition for skilled employees has thus emerged in favour of the private sector. Swailes and Al Fahdi (2011) explained that this exodus to the private sector was generally due to the frustration and dissatisfaction with wage levels, management style and negative work attitudes. This has resulted in a lack of talent in

the public sector among both Omanis and expatriates. Thus, the public sector should seek to retain talented staff in key roles by, for instance, by increasing basic salaries, providing emergency salaries, linking promotion to performance, and improving management capacity. On the other hand, this loss for the public sector produces profit for the private sector, where the employment of talented citizens enhances performance and makes savings on the additional costs of employing expatriates. It is also a reflection of successful economic development and contributes to the achievement of Omanization.

However, despite the brain drain and the loss of talented staff, Oman's public sector has not changed its wage policies or management styles. There is little support for strategic training and development and a lack of trust, delegation, recognition, and intrinsic rewards, along with feelings of inequity. In addition, jobs have not been re-engineered to be more challenging, and career paths are still based on a relational model with slow promotion according to loyalty. The private sector is seen as offering good privileges, better reward packages and better management systems where promotion and rewards are closely linked to performance.

Along with the 2020 Vision, the goals of the 2040 Vision are also being promoted. The main committee is the same as for the TANFEEDH programme (Fatiha, 2017). Vision 2040 also stresses economic diversification and the employment of citizens in the private sector as well as the need to meet citizens' expectations of welfare while creating an economy that can withstand the impending post-oil era. Vision 2040 is a candid document that recognizes areas where reform has so far failed. It refers to moving forward on economic diversification and the mobilization of other sustainable sources of government revenue, the improvement of capacities and improving the qualifications of Omani workers to boost various sectors. Its goal is to reduce the contribution of extractive industries to GDP to 30 per cent (Fromson and Simon, 2019).

Some also see it as an opportunity to implement regulations that are more transparent and restrictive, while others see it as buying time and drawing the attention of the population away from the stalled TANFEEDH programme, which has no chance of completion by 2020 (Fatiha, 2017).

Fromson and Simon (2019) criticized the Vision 2040 document for failing to set specific targets to limit the growth of the total government wage bill, although proposed labour market reforms may be politically appropriate, but Vision 2040 will be no better than its predecessor in bringing about fundamental change. The new plan assumes that improving the quality of Omani workers will motivate private employers to hire them. Currently, expatriate labour in the country accounts for about 90 per cent of the workforce in the private sector in Oman whose ownership is dominated by the country's ruling elites. Sustained growth in the private sector may require low wages and large numbers of expatriate workers, while in fact private sector employment requires interventions to raise wages and impose the employment of Omani nationals and reduce foreign labour. At the same time, citizens will not work unless they receive wages comparable to those in the government sector (Fromson and Simon, 2019). Top private sector jobs remain confined to expatriates, with more basic jobs and wages for Omanis (Fatiha, 2017).

2.8 Conclusion

Whatever its failings and limitations, NPM has been a major force for public sector reform in developed and developing countries for four decades. It makes the case for good governance and responsive services and provides the macro- and-micro-level tools and techniques needed to substantially improve efficiency, effectiveness and economic performance in the public sector. To successfully implement NPM, certain preconditions must be satisfied, including an independent judicial system and acceptance of market-based solutions to public service provision. A change in

the mindsets of those with political power is also required, putting the interests of the public ahead of those of civil servants and political leaders. Failure to meet these preconditions has limited the success of NPM in many developing countries, as identified in section 2.2. Section 2.3 examines e-government and identifies its concepts, aims and the kinds of services involved. It also indicates the relationship between NPM and e-government. While section 2.4 discusses the issues of NPM and e-government in developing countries.

Section 2.5 focused on the adoption of PM as a technocratic solution to modernize services in developed countries. Various types of tools and methodologies were embraced to help projects succeed, such as the PMBoK programme, the PRINCE2™ framework, and the Agile Manifesto methodology. In addition, research has begun to build a more holistic perspective of successful project management. The importance of developing front-end definitions and the key role of the owner/sponsor is now recognized, as is detailed knowledge about the context in which management operates and the values and behaviour of project management participants. However, the use of management tools and techniques for project management in developing countries is still at an early stage. Various social, cultural, political and financial problems often lead to poor performance.

Section 2.6 deals with change management in public services. Specialists in project management adopt practices for implementing change, even when change processes themselves are not included in the goals and objectives of projects. The main focus in this section is defining change management, the reasons for resistance to change and the role that the leader of change plays in reducing resistance. Change management in e-government projects was then considered. The study shows a wide use of change management principles were used by both project management practitioners, as well as change leaders to instigate successful change.

To highlight the reality of administrative reform and the extent of endeavours to adopt the philosophy of NPM, section 2.7 describes public sector improvement efforts in Oman. The roots of current problems are analyzed in order to assess the suitability of proposed NPM-style reforms. Past efforts by the government to reform the Omani public sector are outlined and conclusions reached regarding the unique characteristics of the reform process and future directions for Oman's public sector.

The Omani government has sought administrative reform by framing policies and laws and establishing Omani Basic Law. Also, reform and modernization have been promoted through the pursuit of national economic goals with the aim of significantly diversifying the economy, encouraging manufacturing and privatization, and reducing the oil sector's contribution to GDP. The aim to develop administrative capacity and human resources was pursued under the slogan of 'Omanization' to encourage the recruitment of citizens in the private sector, along with increasing this sector's role. In addition, e-government projects were pursued as a means of providing high-quality and cost-effective government services and a better relationship between citizens and government. However, the results lag behind expectations. The success of e-government in Oman depends on the participation of all employees and stakeholders in the development of strategy, with attention given to the training of employees and citizens to enhance their confidence to use the infrastructure.

In response to economic difficulties, recent reforms have been initiated under a new economic policy called the National Program for Enhancing Economic Diversification (TANFEEDH). This programme is designed to facilitate significant improvements in public sector performance through reforms that bear the imprint of NPM, to strengthen the role of the private sector in the country, and to provide more job opportunities for Omanis. This was followed by the

Oman 2040 strategy, which recognized the areas where reform has failed and referred to moving forward on economic diversification and the mobilization of other sustainable sources of government revenue. This should be accompanied by improvements in the capacities and qualifications of Omani workers.

Despite the wider contextual changes and compelling international reform movements, change in public administration in Oman has proven slow and difficult. This is closely related to the national culture and institutional system, as in other developing countries. Despite the overall improvements in living conditions in Arab countries, including Oman, the availability of public funding has not translated into improvements in human capital and organizational capacity building. This should focus on a commitment to efficiency, transparency, performance management and ethics. On the other hand, it seems that the interests of individuals and their own affairs dominate the affairs of the country. It will not be possible to improve under these circumstances and policies unless the state can deal with these issues. The public sector requires reform in term of improvements in human capital and organizational capacity building as well as improving the application of performance measures. The role of the private sector must be enhanced, with coordination between it and the government in formulating and adopting Omanization policy.

Chapters Four to Seven consider attempts to improve Omani public services at the micro- or organizational level, focusing not on aspirations but on grass-roots approaches to public sector improvement. The five original, in-depth case studies presented cover a wide spectrum within the sector and the aim was to discover how these were commissioned, resourced and managed, what obstacles were encountered, and the results achieved. The opinions of experts on public sector improvement in Oman are also reported and compared with the case study findings. The aim is to

provide a nuanced and insightful account of past achievements and prospects for public sector improvement projects in Oman.

Chapter Three

Methodology

3.1 Introduction

This chapter explains the approach taken in this thesis to data collection and analysis and the conceptual and methodological ideas underpinning the research. It highlights the ethical and philosophical issues encountered. It outlines the research design, and specifies the sources, methods and procedures for collecting and analyzing data. Accordingly, seven important topics are examined in turn: philosophical issues; research design; case study method; data collection; data analysis; reflection on methodological limitation and research ethics. Therefore, the entire process followed in undertaking the research and deriving valid and meaningful conclusions of theoretical interest and practical value is explained in detail.

3.2 Philosophical issues

The research process can be described as a journey of exploration, where more is learned about the subject and relevant research methodologies. A main concern is to provide convincing arguments acceptable to the researcher's peers. Therefore, the audience should be persuaded that the approach taken in the research is justified and sound. This requires an understanding of the nature of the processes required to create knowledge in compliance with scientific methods, to claim that a significant and valuable contribution to knowledge has been made, and to ensure the integrity, reliability, and reproducibility of the study.

Since research in business and management is relatively new, there is great concern about the validity of the methods used and close attention is paid to claims that something material and valuable has been added to the body of accumulated knowledge. As a result, research methodology

is explicitly taught to students of business and management. Moreover, the methodology used in any study in the field of business or management research must be clearly stated, so that the results can be judged as convincing and reliable (Remenyi, 1996). Bearing this in mind, the relevant philosophical considerations in a study will determine how data should be gathered and analyzed. The adoption of a research philosophy depends on the nature, purpose, context and questions of the study.

Philosophical approaches are used in academic research to ensure that it is well-structured and of high quality (Easterby-Smith *et al.*, 2015). Theories of knowledge and methodology are fundamental in guiding and supporting social scientific research (Guba and Lincoln, 1994). The social research paradigm involves issues related to ontology, epistemology, methodology, and methods. Ontology concerns the reality of a phenomenon and the philosophy of its being (Blaikie, 2000). A researcher's ontological approach can be identified in terms of the issue under investigation and its political and social dimensions. A discussion can then follow about how social and political factors, while assumed to be real, actually exist. Accordingly, if the existence of something is assumed, then it can be known (Blaikie, 2000). Gathering and compiling knowledge relates to epistemology, where new and better models and theories are established to perceive and describe reality (Grix, 2002).

Meanwhile methodology involves ways of thinking about and studying social phenomena (Corbin and Strauss, 2014), including the methods, tools and instruments used to gather knowledge about that reality (Guba and Lincoln, 1994). Thus, Corbin and Strauss (2014) stress that a philosophical orientation reflects a worldview that underlies and informs methodology and methods.

3.3 Research design

The ontological premise of this research is interpretive, which means that the reality of improving the public sector depends on the constructions of actors in the field. There is no single reality that applies to everyone. Instead, reality is encountered through the interaction between the researcher and actors in the social world.

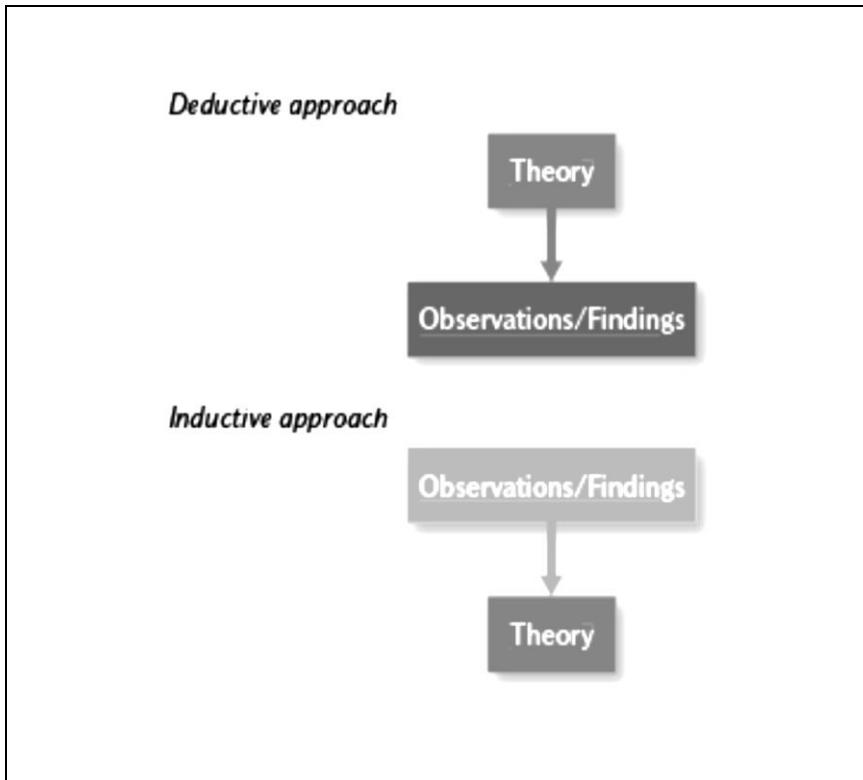
Moreover, the research focuses on questions such as the 'what', 'why', and 'how' of contemporary public sector improvement. Little was known about the success of change projects and the improvement of services in the Omani public sector when this study began. Thus, the research seeks to explore actions that might lead to change and improvement, and the mechanisms required to facilitate change. The research involved the researcher in planning and tracking changes over time in a variety of contexts, and in thoroughly understanding individual cases to determine what leads to greater or lesser success in modernization projects.

These kinds of questions are associated with an inductive paradigm. The investigation was thus pursued inductively, relying on a qualitative, interpretive approach using methods such as case studies, experiments, surveys and histories (Yin, 2003; Yin, 2009). Interpretive research focuses on building an emergent theory from a perspective that gives voice to interpretations of those who experience reality. Thus, the interpretivist epistemological approach is appropriate for this research, in which a flexible approach to data collection and interpretation is taken.

This helps in considering all the factors shaping the results, thereby reducing potential errors in the findings. According to Braun and Clarke (2013), research approaches can be classified at the broadest level as deductive or inductive. Deductive methods employ scientific techniques and are associated with a "positivist" or "functional" philosophical paradigm such as those in the natural sciences. In this method, the world is perceived as external and objective to the researcher who is seen as maintaining independence from the subject of the research. In the deductive approach, assumptions are made and phenomena reduced to the simplest elements and then abstract hypotheses and theories developed and tested, usually in a controlled manner (Ticehurst and Veal, 2000; Zhang and Wildemuth, 2009). This method predominantly analyses numerical data using quantitative techniques (Braun and Clarke, 2013).

In contrast, qualitative research of the type undertaken here describes and analyses the culture and behaviour of human beings and their groups from the points of view of those being studied (Bryman, 2015; Bryman, 2016). It shares the inductive perspective, which is exploratory, descriptive and explanatory. It also argues that there are multiple versions of reality, even for the same person, and that these are very closely related to the context in which they occur (Braun and Clarke, 2013). In this way, the researcher tries to explain a particular social situation without imposing pre-existing expectations, by asking questions, exploring issues in depth, and looking for emerging patterns on which to build theory. This model is, therefore, context-specific, with special attention given to the unique organizational characteristics and setting in which the research is conducted. Consequently, its use is associated with rich data which takes the form of words and images (Cassell, 1994). Bryman (2016) distinguishes between deductive and inductive approaches as in Figure 3.1.

Figure 3.1. Deductive and inductive approaches contrasted



Source: Bryman (2016)

Research methods associated with the inductive paradigm are most appropriate for this research, which explores e-government, NPM and public service modernization in Oman from the perspective of actors working in the field. In order to understand the subject in a broader and more robust way, several e-government improvement projects are compared in relation to the ideals and standards of the NPM principles. The next step is to explain the reasons that led to the success of some projects and the failure of others and to draw lessons in a critical way to help design future improvement projects.

3.4 Case study research method

In qualitative research, the degree of variety of sources of information in an inquiry depends on the subject investigated. The current research uses multiple case studies, which is one of many ways of conducting research in social science (Yin, 2009). A case study is an empirical investigation of a particular phenomenon within its real-life context using multiple sources of evidence (Robson, 2011; Petty *et al.*, 2012). According to Yin (1981), as a research strategy a case study may be defined as an empirical inquiry into a contemporary phenomenon where the boundaries between the phenomenon and its real-life context are not clearly evident which has the ability to answer "why", "how", and "what" questions. It is often associated with descriptive and exploratory research and possibly for theory building by generalizing results and conclusions made from specific cases studied. It provides tools for researchers to study complex phenomena that are contextually situated. Thus, it is a valuable method used to investigate community studies, innovative projects, organizational decision-making, family and individual life history, economic development, and housing and market structures, as well as programme evaluation studies (Yin, 1981) as in the current study.

The case study methodology is an umbrella term for a family of research methods that focus on an inquiry about a specific situation or event. A focus on specific cases allows the identification of detailed interactive processes that may be critical but are transparent. Thus, the case study aims to present a three-dimensional picture of the situation and clarify relationships, corporate political issues, and patterns of influence in a given context. Case studies are a very important approach in business and management research (Remenyi, 1996), as in this study.

According to Yin (2009), a case study can use a single-case or multiple case designs. Single case studies are used in a critical situation where the study is used to test a well-formulated theory, with a clear set of proposals and conditions to test their accuracy and suggest alternatives if necessary. It is also used in unique cases such as clinical research where the case may be so rare that knowledge is gained by documenting and analyzing it, as well as in typical cases that enable common processes, conditions, procedures and conditions to be captured. Moreover, it can be used when conditions allow the exploration of an area or phenomenon previously unreachable and also in longitudinal studies to monitor a single case at specific time intervals to map changes (Yin, 2003). Multi-case study designs are used in comparative research and are often more robust, because they provide opportunities for literal or theoretical replication, and help in understanding a phenomenon more broadly.

The current study of public sector improvement uses multiple holistic case studies of five change initiatives in different sectors in Oman (health, civil service, higher education, manpower and technology), which were largely completed during the period from 2011 to 2015 (except for that of the **NERS**, completed in 2019) and executed to simplify administrative services for citizens. These projects are considered ideal examples of service improvement projects in the Omani public sector. They have won global, international, and local awards such as the United Nations Award for Public Sector Improvement (E.Oman, 2018). Project selection followed a process of negotiation with the relevant authorities in Oman, and so the case studies should be defined as a representative, purposively selected rather than random sample. In the rest of this thesis, the case projects are referred to using abbreviations for ease of understanding, as shown in Table 3.1.

Table 3.1. Project functionality

	Project 1	Project 2	Project 3	Project 4	Project 5
Project Name	E-Health Application (Al Shifa) System	Central Recruitment System	Unified Admission System	Manpower Register System	E-Government Initiatives
Organization Name	MoH	MoCS	MoHE	PAMR	ITA
Project Functionality	Patients Record System	Public Sector Recruitment System	University Admission System	National Employee Recording System	Public Sector IT Training Model
Abbreviation	PRS	PSRS	UAS	NERS	PSITTM

Source: Author

Each project is designated as an information system (IS) project from different service sectors concerning e-government in Oman, except for **PSITTM** which is a training initiative for human resources development in the electronic era and is not an IS project or service. In this study, e-government is described as the use of information and communication technologies, and especially internet and web technology, by government organizations to modernize by providing faster and more effective public services online and by facilitating better interaction between citizens, businesses and government and to support or redefine existing and future relations with 'stakeholders' in the internal and external environment in order to create added value. The cases selected from different sectors were established to provide services related under the umbrella of the e-government programme.

According to Yin (2003), a multiple case study may involve literal replication, where the cases selected are similar and comparable results are expected. Alternatively, replication cases are selected on the assumption that the results will differ. Thus, using this type of study is analogous

to repeating a test and the findings from an individual case are compared with those from another situation. Assessed against the existing literature, the identification of contrasts and parallels between cases allows more variation, comparable relationships, and opportunities for generalization to be discovered, and testable theory to be developed which would not be possible from an individual case study.

Therefore, this study uses a multiple case study design. Five different improvement projects were selected from various government sectors to allow for a ‘logic of redundancy’. The data collected from different cases during fieldwork were compared, and lines of convergence and contrast between the sectors concerned were analyzed. This allowed the identification of similarities and differences between different cases and sources of data. However, in order to balance this account, it is necessary to briefly examine some of the limitations of case study research as encountered during my research. Firstly, the huge volumes of data seemed overwhelming, and it was necessary to select for analysis only the most important information and ignore material not directly relevant to the study.

Case studies are also expensive and data collection and analysis is very time-consuming. Moreover, they cannot answer many important research questions. Furthermore, as indicated by Hodkinson (2001), they usually do not lend themselves to numerical representation. Thus, case studies are not generalizable in the conventional sense, and with such small sample sizes the probability that findings are representative of larger populations cannot be established. Finally, the researcher's experience and intuition have a strong correlation with the reliability of the case studies, and their objectivity. The quality of case study research depends largely on the insights and thinking that the researcher brings to it.

So, like all good researchers, I have tried to provide sufficient evidence to support my conclusions, but a certain amount has to be taken on trust. Hodkinson (2001) noted that the researcher's experience, knowledge, and intuition are vital aspects of the case study approach. What questions should be asked, how should they be asked, and what do we need to observe and record?. We have to extract information on the issues that interest us from the data, and create stories about those issues and the people involved in our research, all of which depends on the researcher's experience and knowledge.

3.5 Data collection

Creswell (2013) proposes four main sources for qualitative data collection: interviews, observations, documents and audio-visual materials. The selection depends on relevance to the research question to be answered (Yin, 2009); (Creswell and Creswell, 2017). Data collection in this research is based on three techniques listed in Table 3.2.

Table 3.2. Data collection

Academic literature	New Public Management (NPM) – Project Management (PM) – process improvement in public sector – public policy/administration – E-Government initiatives
Fieldwork	Case studies in process improvement in the Omani public sector (five cases) Semi-structured interviews with experts, policy makers, field leaders
Grey literature (documentation)	Evaluation reports (ER) – government documents (GD)/ government reports (GR)- Statistics book (SB)

Source: Author

As shown in the table, the research employs a triangulation strategy to help identify and reduce bias at each stage of the process. Triangulation involves the use of different forms of data in a single research project, to ensure that what is deduced accurately reflects the reality (Shenton,

2004). Triangulation is a useful strategy that enables the researcher to verify and confirm the perceptions of the respondents and to search for contradictory evidence (Yin, 2003; Yin, 2009).

Data collection proceeded as follows: In the first phase of the study, basic information was gathered on public service improvement projects in Oman. This was to help the researcher to understand factors associated with success and failure before starting her field study. This involved desk research, reviewing and studying relevant documents, and conducting informal discussions with knowledgeable individuals to assess the situation in line with the stated objectives. At the same time, the relevant literature was reviewed and topics relating to public sector improvement were considered (NPM, PM), as well as E-government initiatives along with process improvement in the public sector, public policy/administration, and change management, in order to prepare and formulate questions for interviews and to develop a thorough understanding of the subject before starting the fieldwork. This phase of the research concluded with the selection of five modernization projects following negotiation with the relevant authorities in Oman. These cases covered a representative sample of e-government initiatives.

The second phase involved conducting interviews as the main source of data for each of the five case studies. Relevant documents were requested from respondents such as experts on improvement issues in the Sultanate or project staff from the selected projects, as well as evidence, reports and documents from the organizations involved. Documentary data served as important triangulation material and supplementary sources for understanding events and identifying discrepancies among informants and as a means of gaining additional perspectives on key issues (Miles *et al.*, 1994).

Interview

The data for this study were collected mainly through interviews. Interviewing is a good method for assessing the participants' knowledge and perspectives. It is better than surveys when examining complex issues, as in the current study (Creswell, 2013). The purpose of the interviews was to collect data on issues related to public sector and government initiatives in Oman. The interviewees included experts, policy makers, field leaders and key staff in government organizations involved in the projects from their inception. These organizations were chosen according to their respective experience in public sector improvement initiatives. Conducting interviews in these organizations enabled the researcher to examine and investigate the work processes involved. Key staff were chosen according to their job titles and responsibilities.

Interviews can be of three types: structured, semi-structured, or unstructured, which may be selected depending on the research questions and the philosophical and theoretical approaches taken (Gioia et al., 2013). The interviews were semi-structured and included open-ended and closed questions. Semi-structured interviews were chosen as they are a form of conversation between the interviewer and the interviewees about the subject of the study using mainly open-ended questions (Creswell, 2013). They are useful when exploring problems that are relatively new and little research has been conducted (Creswell, 2013). Also, semi-structured interviews are useful for gathering a wide range of information, giving participants a balance between order and freedom. The schedule is not constructed as a survey, but provides more uniformity across all participants than unstructured interviewing (Luo *et al.*, 2009).

Thus, semi-structured interviewing is a suitable method for this research because it is a relatively new research subject and there is a need to discover rich information. Finally, it should be noted that interviews are useful when the research subjects' activities cannot be directly

observed (Easterby-Smith *et al.*, 2008; Luo *et al.*, 2009). In this research, it would be hard to observe the drawbacks and limitations of these projects directly. The researcher was able to ask specific questions in depth about topics that they did not mention.

The information gathered from the interviewees and the documents provided were summarized, analyzed and commented on to indicate the significant elements where analysis can lead to rich findings. The interview method allows the researcher to probe deeply and to uncover new clues, open up new dimensions of a problem and to secure vivid, accurate and inclusive accounts based on personal experience (Easterby-Smith *et al.*, 2008). According to Sekaran (2006) the response rates are expected to be high in interview studies compared with other methods due to the presence of the interviewer who can eliminate confusion over questions.

The interviews lasted between 45 and 90 minutes. Overall, 46 interviews were conducted with 15 different experts and 31 selected project staff in different sectors of the Omani public sector, as detailed in Table 3.3. Interviews were conducted in locations chosen by interviewees to minimize inconvenience. Interviews were all held in their offices in Muscat during working hours in the morning, except for one evening interview at the request of the person involved. This was held in his private office in a training institute. The choice of place and timing by respondents helped foster a relaxing ambience conducive to openness (Maclean *et al.*, 2012; Gioia *et al.*, 2013).

Table 3.3. Division of interviews by categories

Total number of interviews	Experts	Project managers	Project members	Stakeholders
46	15	5	12	14

Source: Author

For an interview process to be successful, it is important to tailor it to the overarching research questions posed, consider participant needs, and design and pilot the interview schedule. Moreover, the interviewer must be flexible when working with various types of participants and contexts. He/she must be aware of the overall budget and timeframe, and ensure sampling is relevant to the research question (Gioia et al., 2013). As a researcher, I prepared in advance all the documents required for the interview, including official papers and letters from Newcastle University and the MoHE in Oman. The interview documents comprised:

- Interview questions.
- Case study cover sheet with basic data of the interview (type of interview, participant name, entity name, sector type, participant addresses, and time, date and duration of interview).
- Consent form for interview approval.
- A brief presentation about the research.
- Participant information sheet explaining the purpose of the interview, the reason for the selection of participants, the duration of the interview, consent to record the interview, and a statement of the reliability and confidentiality of the data.
- Official letters from official bodies of the field study (Newcastle University, Ministry of Higher Education in Oman).

In addition, I read books and articles on interviewing, attended workshops and watched some videos. I attended a two-week training course on project management to get a thorough idea of the key and important aspects of the topic before starting the interviews. I had participated in previous research projects that included interviews as part of my role in an academic institution. At the start of the interview, a short script was used explaining the aims and purpose of the project in order to focus and make the interviewee feel comfortable. I explained that interviewees could

withdraw from the interview at any time and that data were freely provided (Shenton, 2004). Respondents were asked for their permission to audio-record interviews, assuring the respondents of the confidentiality of their responses.

Participants were offered the opportunity to speak off the record with the reassurance that once they indicated explicitly that they wished to do thus, the recording would be suspended and, although their sentiments could be alluded to (with their permission), no direct quotes or potential indications of their identity would be offered. Along with recordings notes were taken using the respondents own terms, not ours, to help understand their lived experience (Gioia *et al.*, 2013). The interviews were audio-recorded, and the tapes were then transcribed verbatim, except for one interview that was not audio-recorded at the respondent's request, for which detailed notes were taken during and as soon as possible after the interview.

According to Creswell (2013), it is better to record the interview, because it is difficult to manage an interview and write at the same time. Creswell (2013) recommends that, even if audio or video recording devices are used, the researcher should take notes manually in case of technical failure. However, for the process to be ethical, it is important to gain permission for interviews to be tape-recorded for reasons of data collection. This was included clearly in the invitation letters to the participants. Furthermore, the researcher stated to each interviewee that the interview was anonymous and that their words or opinions would not be attributed to them. All reference to them or their organization was anonymized, and each participant was accorded a pseudonym (Maclean *et al.*, 2012)).

The interviews were subsequently transcribed and returned to the interviewees for editing. This enabled any mistakes or mistaken impressions to be corrected and offered a kind of transparency. Moreover, I explained to the interviewee that any personal stories, examples or

illustrations are always valued rather than simply giving abstract answers. Longhurst (2003) clearly states that participants should receive a copy of the transcribed interview for checking and that they may at any time withdraw from the study. Data were collected from interviews and from published and unpublished government documents. The role of the researcher here is to critically analyze and triangulate the data to confirm its validity (Braun and Clarke, 2013; Creswell, 2013).

At the time of the interview, the researcher asked interviewees for any documentation relating to modernization projects and the organizations in which they were conducted, such as annual reports and project bulletins. These documents were used as secondary resources. It is worth mentioning that most of the documents collected were obtained from experts, while the researcher was rarely able to collect documents for the selected projects from the organizations themselves or project staff. Representatives of the organizations argued that most of the main members of these projects had resigned and did not care about archiving documents. As a result, the official documents of these projects were purportedly lost in the organizations concerned.

The interviews yielded large amounts of data. Transcripts also demand complex data analysis. One of the difficulties encountered in this type of study is transferring the interview data from oral to written form and translating it from Arabic, which is the official language in Oman, to English. Thus, researchers need to bear in mind that translation decisions have a direct impact on the validity of the data and its reporting. Therefore, an expert translator in the field of administrative development was hired to provide accurate translations of interview transcripts prepared by the researcher. The translations were then reviewed by the researcher to ensure accuracy. According to Birbili (2000) when the researcher and translator are not the same person, the quality of the translation is mainly affected by the competence, experience, and the position the translator holds in relation to the researcher. Also, when collecting data in one language and presenting results in

another, various issues must be considered relating to the words present in each language, concepts that are not equivalent in different cultures, and differences between languages in grammatical structures. Cultural issues arise because translation involves converting ideas expressed in the language of one social group into that of another social group, necessitating a cultural decoding process. Interviews are an integral part of a place's culture. Therefore, when translating, one must keep the target social group and reader in mind (Halai, 2007).

In this case, I had the advantage of being from the same culture as my research participants. However, my target readership could be from anywhere in the world, and so I tried to make the translations understandable to general readers. Therefore, I was keen to seek the help of a translator specializing in the field of administration in the Sultanate and with extensive knowledge of Omani culture.

Moreover, all interviews were conducted in the Omani dialect of Arabic, which differs to some extent from classical Arabic. Therefore, care was taken in transcription to use classical Arabic, in which I have excellent skills. Having graduated in Arabic Language and Literature at undergraduate level, I was able to tackle all relevant grammatical issues. The transcriptions were then presented to the non-Omani translator. Issues of the translator's identity may arise concerning translation between languages in qualitative research. Temple and Young (2004) argue that translation by either the researcher or a professional may be correct depending on the research epistemology. If the research depends on an objective epistemology, where the researcher is merely a transmission tool, then translation by someone else can eliminate bias. Conversely, in a subjective research epistemology it may not matter if the researcher or someone else conducts the translation (Temple and Young, 2004). Crucially, when data are translated from one language to another in

social research, the researcher must be explicit in describing their choices, decisions, translation procedures, and resources used (Birbili, 2000).

Sampling

The snowball method was applied to select interviewees. Interviews were initiated with key project participants because the research focus suggested that sampling should begin with senior officials who play important roles in public sector improvement. These included ministers or undersecretaries, as well as top project managers who are critical players in perceptions of change in organizations (Fernandez and Rainey, 2017). As active participants in changes associated with public sector improvement, they represent key informants who have important insights into an organization's strategies and unique access to knowledge of organizational structures and actions, and are in a position to recommend additional informants at all levels (Fernandez and Rainey, 2017). Therefore, through them, other participants were identified and selected as people who contributed to the implementation of the specific projects which they were more familiar with, as well as experts in the field of public sector improvement. Apart from the main experts, the other participants were involved in improving services in the public sector. It is worth mentioning here that the researcher was able to choose appropriate respondents because of her practical experience in improvement policies and specifically in public sector training in Oman for nearly 30 years.

In addition, it was vital during data collection to develop informal relationships with team members and managers, in order to remain informed about organizational changes and the evolving experiences of those at the centre of events, or even after finishing the study. This is because we all work in the same sector and need to be close to each other for the benefit of the country. Building strong relationships with interviewees is also important and conducive to a peaceful and relaxing environment (Braun and Clarke, 2013) and the researcher asked them to suggest convenient times

and places for the interviews. Thus, the existence of long-term relationships helped foster an environment in which the interviewees felt more inclined to disclose deeper thoughts and feelings than they might otherwise have done. Trust is essential if ‘the inner world’ of meanings, ideas, feelings and intentions or experienced social reality of the interviewee are be accessed (Easterby-Smith *et al.*, 2008; Braun and Clarke, 2013).

For the research purposes of this study, two different types of interview protocols were developed for the four main categories of participant who were internal or external actors in the organizations concerned. The four categories are:

1. Key experts and policymakers from the national context (macro and external).
2. Top-level managers who had responsibility and authority to implement public sector services projects (micro and internal context).
3. Cadres working in these projects as staff members who had responsibilities in implementing the projects (micro and internal context).
4. Stakeholders in the projects as customers who utilized the e-services (micro and internal context).

Table 3.4 shows the question types and respondent categories.

Table 3.4. Question types and respondent categories

Question type	Questions (1) improvement issues in the country	Questions (2) Management of selected projects
Respondent categories	<ul style="list-style-type: none"> • Key experts and policymakers 	<ul style="list-style-type: none"> • Top-level managers • Cadres working in the projects as staff members • Stakeholders in the projects

Source: Author

The questions asked to experts differed from those for the project staff, due to the nature of the data being sought. Questions were carefully selected in order to elicit information from participants specifically to answer the research questions. Tables 3.5 and 3.6 identify question topics for both categories.

Table 3.5. Interview question topics for experts

	Question topic	Categories	Relevant themes
1	Personal background	Expert's role and responsibility	The driver of public sector modernization in Oman
2	Functional tasks	Organization role and strategy	
3	Reforms	Drivers of change and different tools and techniques used by Omani organizations to improve the services provided	
4	NPM elements	The extent of success in the change and the application to the advantages of NPM	E-government, NPM and management of change.
5	Challenges and resistance	Challenges and resistance to public sector improvement in Oman	Managing and implementing e-government project in Oman
6	Lessons and evaluation	Lessons and evaluation at the macro level	E-government, NPM and management of change.
7	Anything else interviewee would like to add.		

Source: Author

Table 3.6. Interview question topics for project members

	Question Topic	Categories	Related themes
1	Personal background	Member's role and responsibility	The driver of public sector modernization in Oman
2	Functional tasks	Organization's role and strategy	
3	Project goals	Organization strategy,	

		value of change	E-government project in Oman
4	Project definition	Organization strategy	Managing and implementing e-government project in Oman
5	Project planning	Project management in the planning stage	
6	Project implementation	Project management in the implementation stage	
7	Challenges and resistance	Obstacles to implementation	
8	Lessons and evaluation	Lessons and evaluation at the micro level	E. government, NPM and management of change.
9	Anything else interviewee would like to add.		

Source: Author

Table 3.7. Job titles and expertise of experts

Interviewee	Functional title	Field of expertise
A	Minister	Administrative development, administrative law and public and international relations
B	Undersecretary	Administrative development
C	Deputy Secretary	Strategic planning
D	Deputy Chairman of Majlis A' Shura Council	Expert in planning and community participation
E	Members of State council 2015-2019	Expert in economic and financial planning
F	Advisor at the Ministry of Finance	Financial advisor
G	Advisor at the Ministry of Commerce and Industry	Commercial adviser
H	Assistant Director General for Administrative Development - Diwan of Royal Court	Expert in administrative development
I	Chief Executive Officer at Institute of Public Administration (IPA)	Expert in administrative development and training

J	Deputy Chief Executive Officer at IPA	Expert in administrative development and training
K	Expert and Director of Training Department	Expert in administrative development and training
L	Strategic Expert at Omantel	Strategic expert
M	Expert - Economist of Supreme Council for Planning	Economic expert
M	Director, International Organizations Department - (Former Field Manager, State Audit Organization)	Expert in administrative and financial control
O	Director of Judgments Execution	Expert in law and justice

Source: Author

Participants had more freedom to speak on topics according to the situation and more time to express their opinions and put forward success stories, as they are experts responsible for improving the public sector. Also, the researcher was keen to interview experts in different fields, and selected projects according to sector. Table 3.7 shows the functional titles and field of expertise of the sample of experts. It is also noticeable that most of the sample occupied senior positions in their areas, either as experts or employees in the selected projects. This means that they had extensive experience in the relevant field. Table 3.8 shows the positions of the interviewees.

Table 3.8. Interviewees' positions

Informant and interview phase: hierarchical position			
No	Title	Experts, Decision Makers, and Field Managers	Project members
1	Minister	1	-
2	Undersecretary of the Ministry	1	-
3	Deputy Secretary	1	-

4	Deputy Chairman	1	-
5	Member of Council	2	-
6	Advisor	2	-
7	Chief Executive Officer	1	1
8	Deputy Chief Executive Officer	1	-
9	Expert	2	-
10	First Consultant Doctor		2
11	Director General	-	2
12	Assistant Director General	1	1
13	Director	2	12
14	Deputy Director	-	1
15	Assistant Director	-	1
16	Senior Implementation Executive	-	1
17	Senior Project Specialist	-	1
18	Head of Department	-	4
19	Team Leader	-	1
20	Specialist	-	1
21	Section Support	-	1
22	Administrative Affairs Clerk	-	2
Total		15	31

Source: Author

It should also be noted that most of the respondents had high levels of education, indicating that they were well-educated and have extensive scientific experience in addition to practical experience, as shown in Table 3.9.

Table 3.9. Educational level of interviewees

Degree		Prof	PhD	MSc	BSc	Diploma	High school	Total
Participant category								
Experts		1	4	7	3	-	-	15
Project Members	Project Managers	-	1	4	-	-	-	5
	Project Members	-	-	6	6	-	-	12
	Project Stakeholders		-	5	4	3	2	14
Total		1	5	22	13	3	2	46

Source: Author

All experts had a four-year college degree, with an average of 80 holding graduate degrees in different disciplines; a clear indicator of the high levels of educational attainment required at such functional levels. More than half of the employees at the selected organizations had a four-year college degree, with an average of 32.2 per cent of workers holding BSc degrees. The average number of employees holding postgraduate degrees in each company was about 51.6 per cent. All project managers held postgraduate degrees in different subjects as they were primarily responsible for these projects.

The stakeholders involved in these projects were key organizational actors that included these at different levels of government, or with scientific and technical expertise. Stakeholders in these projects do not adequately represent the general public, as the need was recognized, on both democratic and pragmatic grounds to engage the public properly in decision-making. It should be noted that the current study did not refer to the views of citizens directly, but their views are represented in the documents scrutinized for the purpose of the study.

Documentation

Yin (2009) indicates that documentation is valuable in establishing the context in which action takes place within case studies. Numerous publicly available documents have been studied, such as those related to government service improvement projects, policy documents, and annual reports of selected organizations as well as material from organizations' websites. In addition, the annual statistical summaries published by the National Centre for Statistics and Information were consulted. These documents helped the researcher to obtain information that was not available to the respondents in some projects, as they were new staff, and this information was not stored in organizational documents. Documents also disclosed the views of citizens on the services provided.

Table 3.10 contains a list of the main archival material used in the research.

Table 3.10. Archival documents consulted*

N	Author	Year	Document title	Document type**
1	MoLA	2019	Royal Decree No. 63/2019 establishing the Ministry of Technology and Communications	GD
2	NCSI	2019	Statistics on the number of job seekers in the Sultanate in 2018; 2019	SR
3	NCSI	2016; 2017; 2018; 2019	Statistical Year Books for the years 2016; 2017; 2018; 2019	SR
4	MoLA	1996	Basic Statute of the State: Royal Decree No. (96/101). Muscat: Ministry of Legal Affairs	GD
5	Oxford Strategic Consulting	2015	Oman Employment Report Insights for 2016	ER
6	ILP	2010	ILP: Sultanate of Oman, Decent Work Country Programme 2010-13.	ER
7	MoI	2018	Oman 2017: Oman 2018; Oman 2019	GD
8	MoF	2017	Statement of the State Budget for the fiscal year 2017	GD
9	MoH	2017	Ministry of Health: Executive Summary of the 2017 Annual Report	GR
10	ITA	2007	Information Technology Authority: Oman Digital Society Report.	GR
11	MoCS	2018	Annual Statistics of Civil Service Employees 2018: Ministry of Civil Service	SR

12	MoCS	2019	Report of the Ministry of Civil Service on the occasion of the National Day (49) glorious.	GR
13	Ashura Council	2019	Ashura Council Statement 13 (2017-2018)	GR
14	NCSI	2012	Census Data 2010. Muscat: National Center for Statistics and Information	GD
15	NCSI	2019	Study of the attitudes of Omani youth towards work: updating the knowledge structure on the attitudes of youth	GD
16	Oman's vision	2018	Oman's vision 2040	GD
17	Rahbi, T.a.	2017	Oman 9th Five-Year Development Plan and the Strategic Economic Sectors (2016-2020)	GD
18	MoCS	2008	Guidelines for Applying Quality Management System	GD
19	Shayban, A.A.	2017	Administrative Development in the Sultanate of Oman	GD
20	Shayban, A.A.	2008	Directory for Organizing Government Administrative System in Oman	GD
21	TANFEEDH	2017	National Program for Enhancing Economic Diversification (TANFEEDH)	GD

*see References

** Document types: ER= Evaluation Report; GD= Government document; GR=Government Report; SR= Statistics Report

Source: Author

3.6 Data analysis

One of the most important steps in qualitative research is the coding and analysis of data. According to Miles *et al.* (1994), displaying condensed data in a systematic way has immense consequences for understanding. Thus, it is important to conduct a full analysis, ignoring non-relevant information by focusing on and organizing the information coherently and in relation to the research questions. There are different strategies for data analysis in qualitative research. Some are highly structured and formalized, while others are more dependent on the researcher's own interpretation. There is no standardized approach to such analysis ((Gioia *et al.*, 2013). According to Braun and Clarke (2013), three basic frameworks for qualitative data analysis are searching for patterns, looking at interactions, and interpreting narratives. The most common approach is to focus on patterns in the data.

I take an interpretive approach to my research, and interpretive methods are predicated on the belief that reality is a social construction. Theories concerning reality are ways of making sense of the world, and shared meanings are a form of subjectivity rather than objectivity. In seeking a research methodology that would provide an ontological and epistemological fit with my interpretivist position, I used a constructivist grounded theory approach that guided the analytical interpretation of the research findings. Thus, the study uses bottom-up grounded theory to drive the themes and categories following the method championed by Corbin and Strauss (2014).

According to Corbin and Strauss (2014), grounded theory is a qualitative method whereby concepts emerge inductively from data. In this sense, concepts are grounded in data, creating the possibility of new insights emerging rather than being bound by pre-existing theories. This method can be used when you are working from the data outwards into principles or observations inductively, which means observing things in the data that stimulate ideas. It is on this basis that I developed my key themes, categories and constructs. In adopting a grounded theoretical approach to data analysis, I was able to make systematic comparisons between cases and derive generalizations conforming closely to observations (Corbin and Strauss, 2014).

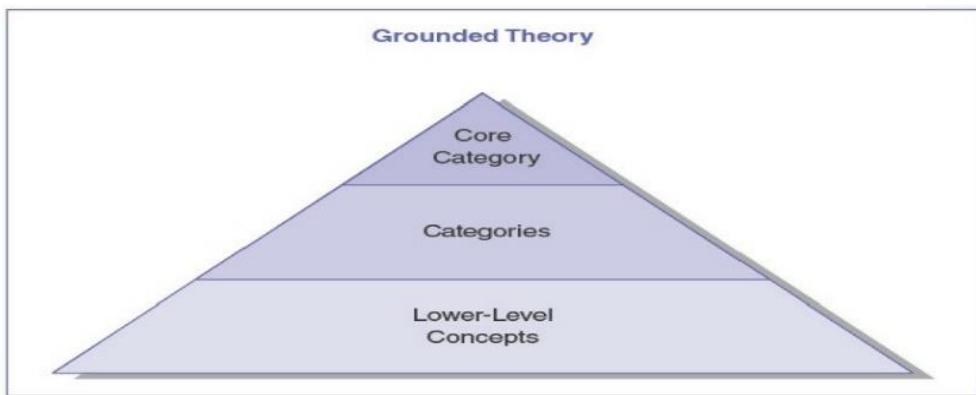
The main reason for choosing this bottom-up method of analysis method is because of the paucity of theoretically insightful literature relating to NPM and e-government projects in developing countries. According to Corbin and Strauss (2014), grounded theory is particularly useful for examining areas that have not previously been studied as the research can help in building new theory and in developing concepts for further exploration. Grounded theory, which aims to generate theory that is grounded firmly in the data collected, is appropriate when little is known about a phenomenon. Its aim is to produce or construct an explanatory theory that uncovers the processes inherent in the substantive area of inquiry.

My research explores important issues concerning the delivery of public services in Oman and is based squarely on data emanating from those with direct knowledge of the subject. It is inherently robust in being based on first-hand experiences rather than second-hand opinions. Willig (2008, p. 21) confirms that research questions about experiences, processes and structures is best approached using grounded theoretical methods rather than more abstract deductive alternatives. In other words, there are strong methodological reasons for adopting grounded theory as my predominant analytical approach.

Stages of analysis

According to Corbin and Strauss (2014), analysis refers to both the concept and the thought processes that go behind assigning meaning to data. Analysis means exploring and considering different possible meanings in the data and then recording the thought process in a memo. The meanings are also assigned and reset based on comparisons with incoming data to discern meaning, as well as brainstorming and experimenting with different ideas, eliminating some interpretations, and expanding on others before reaching a final interpretation. Figure 3.2 shows levels of construction in grounded theory.

Figure 3.2. Levels of construction in grounded theory



Source: Saldaña (2015)

Initial codes

According to Saldaña (2015), coding in qualitative research means assigning a term that symbolically refers to a distinctive, intrinsic, prominent, attractive characteristic, or part of a language-based or visual data feature. Coding is the critical link between data collection and the explanation of meaning (Saldaña, 2015). The purpose of coding in the analysis of data is to demonstrate the systematic nature of data collection and analysis and to show the inferential basis of findings and conclusions. My interviews, as explained above, were analysed using grounded theory methods as outlined by Corbin and Strauss (2014). In grounded theory, coding and analysis are often used interchangeably.

Each transcript was initially coded before the next interview was conducted (Corbin and Strauss, 2014). Thus, I started the analysis process after completing the first interview, which helped me to define the relevant concepts, validate them, and explore them more fully in terms of their properties and dimensions. I continued that way throughout the research process. This process helped to build an in-depth and broad interpretation of the development and implementation of e-government in Oman. I conducted the first two interviews with the experts, and after analysing these preliminary data I realized that I had to collect direct data regarding the projects. So, I began conducting interviews with project managers and employees and then expanded the interviews and included stakeholders in the projects, to form a comprehensive picture of the topic.

According to Corbin and Strauss (2014), the gathering of data based following analysis of previous data is termed theoretical sampling. Theoretical sampling is essential to constructing in-depth and broad theory. Initial coding allowed for a critical and analytical view of the participants' narration, rather than accepting their assumptions that could bear similarities to my own assumptions as a researcher. Thus, the initial coding reduced my own perceptions and assumptions.

As such, the initial coding process allowed for the emergence of concepts and enquiry lines that were followed up in other interviews.

During this initial stage, I carried out a microanalysis selectively, by creating a set of codes. The purpose was to explore the data, generate ideas, navigate the depth of the data, and focus on relevant portions of data that helped me to think laterally, outside the box. According to Corbin and Strauss (2014), microanalysis is a form of open, detailed and exploratory coding. It is designed to focus on specific parts of the data, explore their meanings in more depth and develop concepts in terms of their properties and dimensions. Moreover, I was also keen to delineate the context when collecting data and conducting the analysis, as all interviews were concerned with the topics of administrative improvement and service improvement projects in the country, from the viewpoint of experts, project managers, and stakeholders within the borders of the city of Muscat. This helped narrow the sample and minimize the chances of distorting the meaning.

Coding in the language used by the participants – as a researcher – helped me to understand participants' assumptions, and their perspectives. This helped me to keep abreast of my own changing interpretations. As such, this stage of initial coding is often referred to as open coding (Corbin and Strauss, 2008). Open coding strategies were applied to a range of data transcripts to enable the data to be deconstructed into new concepts and themes (Corbin and Strauss, 2008). More than 50 codes and categories emerged. These codes represented a broad range of concepts including those relating to the identification of tools and techniques to improve services (such as PM), category/event codes (such as different programmes and initiatives), conceptual codes (such as drivers of change), and theoretical codes derived from the literature (such as different work stages in PM, identifying obstacles to change). These codes were then applied to data transcripts and refined during an iterative process and later applied in identifying the work process in the case

study projects, which began to appear clearly in the second stage of the analysis. Appendix H shows an example of the initial coding process.

Categories and core categories (themes)

After specifying many codes as raw data, I converted the raw data into basic-level descriptive concepts. Basic-level concepts are used as a foundation for theorization. They provide the details, interest and contrast that make the theory relevant. Appendix I shows an example of the basic level concepts. Next, I grouped similar data (concepts) under one heading as high-level concepts (categories). According to Corbin and Strauss (2014), concepts are the bricks that form the structure of the theory. Concepts emerge from speech and contain cultural and personal meanings. Categories are more abstract terms that refer to major themes, to which a set of basic-level concepts relate. Categories group similar data under one heading, thus reducing the amount of data. Higher-level concepts are thus more abstract and provide the building blocks of emergent theories and interpretations. They help hold the theory together. As concepts move towards higher levels of abstraction, they gain greater interpretative power, meaning they can accommodate more detail within them. However, at the same time, they lose some of their specificity, becoming less granular.

In the end, a well-crafted theory is a blend of detail and abstraction. Codes were grouped according to their importance in relation to the interview questions. They were categorized into themes based on the research questions, giving an overview of the data at a more abstract level and to develop links between categories. For example, I grouped all the problems related to financial and economic resources under the name of economic problems, and problems related to employees under the name of human resources problems, etc. Thus, I reduced the many problems identified in the first analysis period down to six main types of problems. The same is true for work steps in projects, points for strategies and types of tools. Appendix I shows an example of the categories.

When conducting the analysis, especially in this stage, I used various analytical strategies such as making constant comparisons and asking questions of the data and preparing tables to facilitate the comparison process. Appendix J shows an example of the conceptual categories derived during this process.

The last stage of the data analysis involves recognizing relationships between categories and the generation of theory. Here, a more hierarchical approach is needed in categorizing the data that allows relationships to appear more clearly and research questions to be addressed more directly. Accordingly, I began to circle between emergent data, themes, concepts, and dimensions and build relationships more clearly based on research questions and referring to the literature. Accordingly, I developed my theoretical framework based on the data that I analysed. Four main topics of discussion were drawn from the research questions about the Omani strategy for public services, the governments' strategy for project management (origin, design, methodology and the logic of modernization projects), project execution and obstacles to change, and project evaluation and learning at the macro and micro levels. These topics were created systematically by arranging ideas and evidence and distributing them in categories within the main topics based on similarities and differences and the existence of observed relationships, as identified in Appendix K.

Memo writing and the refinement of interpretations

Memos are a specialized type of written records that contain the products of our analyses (Corbin and Strauss, 2014). Writing memos is an essential methodological tool of grounded theory. It prompts the researcher to analyse data at an early stage by identifying and recording the main ideas of interest, then carrying out comparison and continuous thinking around these ideas throughout the research process.

During my research, I found writing memos very useful in helping me to understand my data and being aware of my assumptions and possible interpretations of the data, as well as in identifying and developing the properties and dimensions of concepts and categories, and in making comparisons and asking questions. Thus, due to its importance, I began writing memos during the first analysis session and continued that throughout the process. Writing memos pushes the analysis forward and is thus as important as the process of data collection itself. Moreover, qualitative analysis involves complex and cumulative reasoning that is easier to track using memos. The current research was conducted over several years, and it would have been difficult to remember the development of ideas if not written in the form of memos, stored, and engaged with in continual internal dialogue and discussed with my supervisors, if required. Without such records, it would also be difficult to keep open lines of communication with others or to retrace the process by which conclusions were drawn (Corbin and Strauss, 2014).

However, the analysis can never be conclusive, regardless of how long the researcher works on the study. Since researchers are thinking about their data, they regularly expand, modify, and reinterpret interpretations with the emergence of new insights into the data with continuous immersion. According to Saldaña (2015), referring to Denzin and Lincoln (1998), the processes of analysis, evaluation, and interpretation are neither final nor mechanical. They are always continuous, emergent, unpredictable, and incomplete (pp. 275–276).

I accept that research findings derived through the application of grounded theory are always provisional and open to modification as more is learned about a subject. Practically, however, it is equally true that interpretations become more robust and more complete as the research process moves forward. In the end, the researcher must strive for what they believe is the best possible interpretation of the phenomenon they have chosen to explore and explain. Strong

findings based on systematic data collection and analysis have a value that extends from the realm of theory to the realm of practice. It has been my purpose throughout to reach conclusions and offer recommendations to policy makers and fellow practitioners that lead to improvements in the execution of e-government projects. This, for me, is an article of faith and a statement of purpose.

3.7 Reflection on methodological limitations

There are aspects that need to be mentioned that I did not take into consideration in this study in general. However, these points are beyond my control as a researcher because we are constrained by time and material factors, not to mention the surrounding environmental conditions, which have an impact on the evaluation of the research in general.

Even though case studies may not be representative, they can provide more than just an understanding of a unique circumstance. I prefer not to think of this as generalization, given this term's connotations of statistical significance. Instead, the issue is what case studies can tell us about situations beyond the actual case studied. Good case studies can do this in several ways. According to Hodkinson (2001), theory can be transposed to beyond the original sites of the case study, and where new thinking is generated it may have validity that does not entirely depend upon the cases from which it is drawn. Our theory of career decision making can be judged in other contexts and settings. Also, findings from one case can ring true in other settings.

For these reasons, the present researcher believes that one of the strengths of this study lies in the possibility of applying its results to other cases. However, a limitation of the study is that it examines public service modernization mainly through the perceptions of administrative staff, such as managers, project members, other stakeholders, experts, and policymakers. Although the overall findings of this study are generally consistent with those of other studies, the weight and importance

of specific administrative behaviour may lead to differences in findings when the perceptions of citizens – as the main beneficiaries of most of these projects – are compared to those of experts. However, their views were accessed through Shura Council reports as well as views expressed in official accounts and meetings, and more importantly through surveys that were distributed in these organizations to identify the opinions of respondents. Thus, the next step would be to repeat the study, but from the perspective of citizens rather than project employees.

Moreover, the current study examined improvement projects of different sectors in the Sultanate of Oman during the period from 2011 to 2015. Despite efforts made by the researcher to make the study as comprehensive as possible, it could not cover all relevant events that occurred during the implementation of these projects. Nonetheless, the results of this research could be applied to projects in other sectors. In addition, the scope of investigation could be extended to other countries similar in context to the Sultanate in the same geographical area, such as in the GCC, and the results of these countries could be compared.

3.8 Research ethics

When researchers operate in culturally diverse communities that may represent diverse perspectives, ethical challenges may arise (Ponterotto, 2010). The use of qualitative methods requires careful consideration of ethical principles and standards so as to create trustworthy human relationships in the research (Haverkamp, 2005). Ethical challenges in qualitative research may include questions of informed consent, the recruitment of participants and gaining access to diverse communities, confidentiality, and the role of researchers (Ponterotto, 2010).

Guillemain and Gillam (2004) noted that there are two major dimensions of ethics in qualitative research. The first dimension is procedural ethics to seek approval from a relevant ethics

committee to undertake research involving humans. The second dimension is ethics in practice-related to ethical issues that arise in the doing of research. In regard to procedural ethics, I gained approval from the University Ethics Committee to ensure that the required ethical standards were met. However, obtaining procedural approval did not prevent me from moving forward with thinking about ethical behaviour and ethics in practice. Guillemin and Gillam (2004) suggested that at the level of ethics in practice the concept of reflexology summarizes and broadens concerns about procedural ethics. When the responsibility for ethical behaviour rests with the researcher, there is still a framework for thinking about ethical conduct that is not completely separate from procedural ethics but is indeed an integral part of good practice for qualitative research.

Accordingly, I have ensured the integrity of the research and a commitment to the search for knowledge through honest and ethical behaviour. Simultaneously, I am aware of the importance of the fair sharing of the burdens and benefits of research across the entire community from the start, which is called distributive justice (Guillemin and Gillam, 2004). I have considered the implications of the research (Braun and Clarke, 2013), including who would benefit and its possible effects. I was already well-versed in various research paradigms and data-gathering approaches. Also, I was keen on the principle of respect for persons and the autonomy of individuals, which is mainly achieved through an informed consent mechanism alongside the principle of respect for privacy through rules related to confidentiality and secure storage of data. All phases of the study were planned in collaboration with supervisors, and prior to the research I attended an ethical research training workshop. I had already been involved with people from the same sector where the research was conducted as I work for a government agency that has been training Omani public sector staff for 30 years (Institute of Public Administration). I explained in advance to gatekeepers who controlled my access to their organizations the purpose of the

interviews, as well as to participants themselves. According to Ponterotto (2010), researchers must convince such actors that the study will benefit the community involved. I realize the potential impact of the relationship between interviewer and interviewee and that any data collection and analysis should not affect any working relationship outside the research process.

The interviews were held at times and places set by the participants based on their own circumstances, occasionally over several days. Participants were provided with written information about the project objectives. The purpose of the interview and why they were chosen was explained to them and an opportunity was given to discuss the project with me. Moreover, interviewees gave free and informed written consent to participate in the project, rather than simply conscripting them. Informed consent is essentially a personal process between the researcher and the participant, whereby the potential participant comes to an understanding of what the research project is about and what participation would involve. S/he is then able to freely decide whether or not to participate in the project (Guillemin and Gillam, 2004). Approval was explicitly requested at the beginning of each interview and interviewees were reminded that participation was voluntary and that they could withdraw at any time without explanation.

After the interviews, letters of thanks were sent to all participants as well as the gatekeepers. They were informed that all information supplied would be treated as strictly confidential, viewed only by the researcher and then anonymised, and that the interviews would be recorded (MP3) and would last between one to one-and-a-half hours. The interview data and supporting notes would then be transcribed and anonymized. The anonymization codes were stored separately from the interview data and are password protected. All digital data, including master copies, are securely stored on a password-protected laptop and backed up on an encrypted external drive. The data will be kept for six years, to include the duration of the doctoral study plus the period required to write

academic publications. The data will then be destroyed using DBAN software. Some of the participants asked for a copy of the questions in order to prepare for the interview. Some asked for a copy of the interview transcription to confirm the information recorded and to delete what they did not want on the record.

These projects are important to Oman and are managed and supervised by senior specialists. Interviews were conducted with senior officials and experts in the country who specialize in improving the public sector, such as ministers, agents and advisers. The second category was staff in the selected projects who were project managers, project members and stakeholders. This ensured the authenticity of data. Interviewing more than one category of participants helped in verifying and comparing data. To obtain more information, I used official sources available on the subject. I ensured that the findings of the analysis were shared and discussed with the research supervisors.

In summary, research is primarily an enterprise of knowledge construction. The researcher engages with participants in the production of knowledge. This is an active process that requires scrutiny, reflection and interrogation of the data, as well as the researcher, the participants, and the contexts they inhabit. So, research is considered to be a reflexive process, where the researcher must constantly evaluate their actions and role in the research process subject to the same critical examination as the rest of the data. The researcher actively constructs interpretations, and at the same time asks how these explanations came about (Guillemin and Gillam, 2004).

3.9 Conclusion

This chapter has explained the systematic approach employed for the gathering and analysis of data. It outlined the research process used to successfully complete this project. It began by discussing the research philosophy and then explained the methodological design of the research using an inductive case study approach. Data were collected using semi-structured interviews with key individuals. In addition, relevant unpublished documentation was consulted as well as a review of the academic literature. The chapter demonstrates the systematic methods utilized in the analysis of documents and interview data as well as the conceptual framework for the research. It outlines the development of the researcher's research skills by undertaking relevant courses and participating in conferences and peer reviews. Moreover, the chapter has detailed the researcher's reflection on the methodological limitation of the research. The procedures for ensuring ethical correctness are plainly stated in the last main section of the chapter.

In the next four chapters, we consider the main findings of the research before bringing the thesis together in the conclusion. We begin in the next chapter by placing the drive to modernize Omani public services in the context of government strategy for the economic and social development of the country.

Chapter Four

Drivers of public sector modernization and the role of the government in Oman

4.1 Introduction

This chapter considers some of the main findings of the research, and answers the first research question: *What are the main drivers of public services modernization in Oman?* An initial overview is given of the economic, social, political and administrative development strategy in the Sultanate. This is followed by a consideration of the significant drivers that have led to change and improvement, and the role of the government in implementing its strategy to provide services. Finally, the future direction of Oman's public sector is discussed, and conclusions are drawn regarding the unique characteristics of its modernization process.

This chapter begins by charting the impact of national economic, social, political, and administrative strategies on Oman's development and outlines the government's reform efforts. Therefore, section 4.2 provides a summary of the Omani strategy for public sector modernization. Section 4.3 explains the main impetuses for this in the context of national development priorities. Section 4.4 then discusses the Omani strategy for public service modernization, identifying the different tools and techniques used by Omani organizations to improve services. The final section identifies the future direction of Oman's public sector and draws conclusions regarding the unique characteristics of its modernization process.

The findings of the current chapter were generated by a process of triangulation in the analysis of data gained from interviews with experts in the Omani public sector in addition to the available documentation from different government institutions.

4.2 Overview of the economic, social and political development strategy of Oman.

The Sultanate of Oman is one of the more traditional Arab Islamic countries in the Middle East (Funsch, 2015). The country is a monarchy under the rule of Sultan Qaboos bin Said, who took on the role of prime minister and heads the foreign, finance ministries and defence (Peterson, 2004; Katzman, 2016). Since his accession to power in 1970, His Majesty Sultan Qaboos has sought to develop and modernize the country in what have become known as the years of Omani renaissance (Funsch, 2015). He was encouraged by the British who had educated him and persuaded him of the benefits of this strategy (Schottli, 2015), as emphasized by His Majesty:

“When I was entrusted to be the Sultan, I already had some views about how the country should be ruled. I had spent six years living in Britain [1958-64] experiencing work in different sectors. That background gave me a good basis for thinking about things differently” (Miller, 1997)

He inherited a large, underdeveloped country with a population of about 666,000, with only 3 schools, 12 hospital beds, 10 km of paved roads, 557 telephone lines and a per capita annual income of less than US\$400 (Looney, 2013). Therefore, initial steps taken by His Majesty included the establishment of the basic structures of modern government and a programme to develop educational and health facilities as well as building a modern infrastructure and developing the country's natural resources (Looney, 2013). Therefore, comprehensive economic, political, social and administrative development has formed the main objective for the Sultanate of Oman over the last four decades, aiming to achieve high levels of economic growth and stability, and to strengthen the overall capabilities of society. Since 1970, the Sultanate has witnessed major transformations

that have radically changed the country's economic situation. Despite the economic crisis which affected the whole world after 2008, Oman succeeded in tackling the ensuing problems. Financial measures were introduced, as in other countries such as the UK (Eckersley and Ferry, 2019), including gradual modification to the costs of some services so as not to harm citizens and to avoid recession, and the adoption of new policies in developing the public sector (MoI, 2018: 261). The Ministry of the Economy urged government agencies to rationalize their spending and optimize the utilization of resources (financial publication no2/2017). One administrative development expert noted that:

This crisis has been managed without taking serious actions to prevent confusion [...]. The reduction of the budget by 13% started in the past years, then 5%, 2%, and 1% last year. As the prices in the country are stable, they will come up with useful results. (Interviewee J, Government Deputy Chief Executive Officer and Administrative Expert, 25/02/2018)

Moreover, social development in Oman adopts the principles of equity, social integration, community participation and empowerment through knowledge and the development of human capital. These efforts come through a set of integrated organizational roles, through cooperation and coordination with relevant partners, to contribute to the improvement of output and services, related to social security, care for people with disabilities, and family development and other areas (A'Shra, 2018).

In recent years the Sultanate has adopted a stable approach to politics that has enabled it to move steadily towards a democratic future. The country's internal policy is based on the building of a modern, peace-loving nation, tolerance, equal rights and duties, and participation in state organizations on solid national foundations without discrimination, since all are equal before the law (MoFA, 2013). The Sultanate's foreign policy at Arab, regional and international levels always takes into account laws, customs, covenants and international treaties that will safeguard

international peace and security, resolve disputes peacefully, and avoid war and armed conflict (MoFA, 2013). Additionally, the personal attributes of His Majesty and his great wisdom and broad leadership qualities have also led to successful Omani political strategy. His Majesty's policies have enjoyed full support among Omani citizens and have earned him the capacity to influence and achieve impressive development results from a local perspective (MoI, 2018). According to one expert:

We hope to apply the wisdom of His Majesty the Sultan up to 1 per cent, especially the balance, wisdom and simplification because it is the basis in life. (Interviewee A, Government Minister, 06/06/2018)

Given his wisdom and broader mind, his majesty even attempted to arrange for a successor to take over the running of the country after him. Although some critics argued that the Sultanate should explain the regime's reluctance to appoint a prime minister or an inheriting prince for the country, especially now that the political environment has changed as well as the mentality of Omani youth (Valeri, 2015). His Majesty has attempted to clarify this, saying that:

“As for a successor, the process, always known to us, has now been publicized in the Basic Law. When I die, my family will meet. If they cannot agree on a candidate, the Defence Council will decide, based on a name or names submitted by the previous Sultan. I have already written down two names, in descending order, and put them in sealed envelopes in two different regions” (Miller, 1997).

Furthermore, the Omani government is concerned to develop its administrative apparatus, building and modernizing its administrative structures and establishing regulations in line with the country's political, economic, social and cultural requirements. Development has been a target of the Omani government since 1970, as promised by His Majesty, the Sultan, on the day he assumed power:

“I promise you to proceed forthwith in the process of creating a modern government. My first act will be the immediate abolition of all the unnecessary restrictions on your lives and activities “(MoI, 2015, 23/07/1970)

Despite a relative lack of resources, wealth and modest potential compared with its neighbours in the GCC, this has helped the country to remain stable, and has given it a distinguished position at regional and international level. A good example of this is the praise given by an economist working in Oman:

The Sultanate has an abnormal ability to acclimatize, which seems to be the result of the system of government and the social and inherited history of the country [...]. When I decided to come to Oman, my intention was to stay for one year only; but after that it proved to me that there was an experience which deserves me to be part of it. I am an academic and have worked as counsellor to the finance minister in Sudan. The desire to live this experience and learn from it, made me extend my stay in Oman for eight years. Now, I am applying what I have learnt. (Interviewee M, Government Economic Expert, 08/05/2018).

The administrative apparatus in Oman was designed to fulfil the objectives of economic and social development. This was to be achieved by the state introducing, merging and abolishing government units and changing their organizational structure when necessary. This approach has led to the building of an administrative body that is capable of achieving development goals and adapting to wider changes such as globalization and the revolution in communications and information technology, as well as crises related to oil as the main economic resource of the state. This imposed on the government the responsibility to restructure and rationally use the administrative system and improve its level of performance.

Forty-nine years later, Oman has been transformed and thrives with modern infrastructure, spotless streets, and a highly professional military that devotes much of its budget to civic action (Miller, 1997). Today, Oman is a country of moderate and realistic policies, inspired by a respected head of state with a long-term strategic vision. It has made enormous strides in developing its potential and raising the standard of living of its people (Peterson, 2004), as explained by His Majesty:

“I had promised on the first day of my rule to create a modern government. But I knew change had to be entered into slowly, very slowly [...]. We went from almost zero schools to more than a thousand and a university in 25 years” (Miller, 1997)

Looking to the future also requires realism. Business leaders are agents and protagonists for whom possibilities are meaningful only if they are actualized (Maclean *et al.*, 2012). They also do not succeed unless all relevant circumstances are carefully examined and strive not to remain out of the ranks of progress and prosperity. Therefore, there are drivers that require countries to forge ahead to achieve them for the sake of continuous progress and improvement. These drivers differ from one country to another and from one environment to another. The next section discusses the main drivers of change in the context of government strategy for the economic, social, political, and administrative development of Oman.

4.3 Drivers of change in Oman

Drivers of change vary over time and from one country to another according to internal or external and global or local circumstances. Multiple factors determine the way reforms affect different countries and each employ different activities, policies or programmes. However, the balance among the drivers of change is key to understanding administrative reform. This section details the most important drivers of change in Oman from the point of view of experts and consultants in the field of administrative development, as well as published statements in government documents and the secondary literature published on the topic.

In Oman they can be divided into two categories, according to the experts interviewed. Internal factors are controlled by the organization to some extent, such as new organizational goals or missions, new members of the organization, or staff dissatisfaction. Meanwhile external factors may be specific environmental factors such as customers, competitors and suppliers, or general environmental factors such as political, economic, social and technological conditions, which are

multi-faceted socio-economic, cultural and social phenomena (Walker et al., 2008; Rahim, 2007).

They are described in Tables 4.1 and 4.2 below.

Table 4.1. Internal drivers of development in Oman

Drivers	Internal factors
Responsibility: the employee is responsible for improving performance	Low performance, improving individual performance
Raising the efficiency of the government sector	Low performance, improving government performance
The incentives of employees	Employee dissatisfaction
Desire approaches to use knowledge scientific	Education and training
Defining a vision and mission for all government units	New vision and mission

Source: Author

Table 4.2. External drivers of development in Oman

Drivers	External factors (Direct/ Indirect Environment)	
Coping with a changing world	Globalization, economic changes	
Appropriate use of resources with the least expense and effort	Economic changes	
Requirements of the era; electronic government has become a necessity and reality	Technological changes	
Use of technology	Technological changes	
Administrative development	Administrative and political changes	
Great challenges in the country (Laws and regulations of the State)	Political changes	
Pressure on organizations from the state audit	Political changes	
Social pressure from citizens looking for employment	Social changes	indirect environmental factors

The problem of unemployment	Social changes	
Continuous improvement to satisfy customers	Customer satisfaction	
The highest quality and continuous improvement	Customer satisfaction	
Satisfaction of beneficiaries	Customer satisfaction	
The citizens' wishes: The Government listens to the citizens	Customer satisfaction	
Aspirations do not match with the beneficiaries' choice	Customer satisfaction	
Provision of simplified services to citizens	Customers satisfaction	

Source: Author.

The tables above suggested that the most important drivers of change in Oman are external, as stated by Al-Mamari (2013). In his study of the adoption of e-government projects in the Sultanate, Al-Mamari (2013) pointed out that the most important motives were coercive, mimetic, and normative forces encouraging conformity to international standards. This would enhance the effectiveness and efficiency of government operations by improving the quality of public services and the quality of interagency communication. In addition, there is the urgent need effectively to respond to the specific economic crisis arising from the expected depletion of oil reserves. In addition, the institutional dynamics arising from the global discourse on e-government and the knowledge-based economy (Al-Mamari, 2013) also led the government to recognize the need to modernize public services. The following section clarifies the government strategy for public services modernization and lists the initiatives taken by the government.

4.4 Omani strategy for public service modernization

This section describes the Sultanate's strategy for modernizing public services and explains the vision of the government. It also lists the most important services that the government has sought to provide, as well as the challenges faced in developing services.

Services and initiatives for public service modernization

Long held principles of public service hold that government should not be run like a business, but a democracy. Public servants should work on this principle and express renewed commitment to ideals such as the public interest, good governance and the expansion of democratic citizenship. They should learn new skills in the development and implementation of policies and treat their fellow public servants and citizens with renewed dignity and respect. Public officials also communicate with citizens and realize that they have much to gain by listening to the audience (Denhardt and Denhardt, 2015).

In 1995, the government of Oman adopted a new vision for the economy called Oman 2020 (Shayban, 2017). The government has worked to identify and set the future direction for development in the country, starting with a conference in June 1995 on the vision for the Omani economy by 2020 and the adoption of a long-term strategic plan, which was declared by Royal Decree (1/1996) (Looney, 2013). Many scientific and economic studies have been conducted in the Sultanate to enable the country to keep up with global technological development (Shayban, 2017; MoI, 2015: 360). The principle adopted was that the role of government should be limited to steering the strategic direction of the national economy. This relies on the private sector, which must be able to compete locally and globally, fulfil social and environmental responsibilities, and operate in a financially and economically stable environment (Al-Rahbi, 2017). Also, the government's focus has turned to economic diversification, following a national plan to achieve a gradual increase in non-oil revenues in addition to adopting new policies to develop the government sector (MoI, 2018).

Therefore, units of the administrative apparatus of the state seek to improve the performance of government services, and to simplify and develop work systems and procedures.

This includes evaluating services according to clear criteria and indicators to measure their quality in order to improve delivery and increase customer satisfaction. Thus, the Omani government's vision and mission focuses on providing government services efficiently and effectively to achieve high levels of citizen satisfaction, ensuring that all services are provided to clients in a good manner, and to make every effort to meet their requirements and implement best practices in a professional and transparent manner (MoCS, 2016). Therefore, the central concern of the government should be to satisfy the citizen, as mentioned by many experts:

The satisfaction of the citizen is one of the most important points which concerns the government (Interviewee J, Government Deputy Chief Executive Officer and Administrative Expert, 25/02/2018)

In every project I sincerely hope that the Omani citizen is given priority. (Interviewee K, Government Administrative Expert, 15/02/2018)

Numerous policies have been developed in different periods. Each period has its specific administrative improvement pattern according to the stage of the country's needs, which should centre on the citizen as has always been H. Majesty the Sultan's noble concern. (Interviewee H, Government Assistant Director General, 18/02/2018)

From an analysis of the data gained from experts and the grey literature, this study identifies three main themes which require attention in efforts to modernize government services efficiently and effectively to achieve high levels of citizen satisfaction. These are human resources, strategic planning, and performance measurement. This is shown in Figure 4.1

Figure 4.1. Interventions to modernize government services



Source: Author

According to experts in Oman, the most important element is the development of human resources:

I still say the most important element for the development of performance and simplification of procedures is the human resources element. [...] So, he is the most influential variable in improving services, according to my understanding [...]. The third thing is to simplify the payment of necessary or required funds [...]. We must change the regulations and have a budget for the development of work. From these elements the citizen will feel a shift in simplification of procedures, and this is what is required. (Interviewee A, Government Minister, 06/06/2018)

The main improvement factor is the human resources of the organization, as they are the actors who bring about change and improvement. If the human element is incompetent, neither technology nor system or policies would bring change and improvement. (Interviewee D, Government Consultative Council Member, 27/06/2018)

Moreover, to improve the organizational performance, it is important to change some aspects of strategy to facilitate the need for change. This is what the government has done, according to a Government Minister:

Administrative development changes by changing regulations and laws. The most important and difficult recommendation in the development seminar was the consolidation of salary scales and thanks to the generosity of His Majesty the Sultan we have begun to standardize things. (Interviewee A, Government Minister, 06/06/2018)

With regard to performance measurement and service improvement, one expert argued that:

There are two elements in the methods suitable for services improvement. What concerns me is the duties of the Ministry, and what are the services I provide. Here, there should be policies and performance indicators and measurements. The second thing is the services provided to the clients. [...]. Here, we recognize quality through three points: what are the documents you require from me? within how many days will this transaction be accomplished? what are the grievance procedures? Evaluation here is based on what you have achieved in a suitable time. This will be from the performance indicator system. (interviewee E, Government State Council Member and economics expert, 10/05/2018)

Also, continuous improvement is seen as a requirement helping development, one expert claims:

We must think beyond the customers' aspirations and desires to provide him with comfort and rest. Continuous improvement is an important requirement for all work, procedures, policies, and doing things correctly to satisfy customers. (Interviewee K, Government Administrative Expert, 15/02/2018)

The data suggest that the government has moved incrementally to embrace public service modernization as a main plank of public policy. The first step began with the use of technology to replace paperwork and streamline the work procedures of government organizations. This has transformed Oman into an advanced, world-class e-government nation by integrating ministries and other government entities to provide faster and more effective public services online and by facilitating better interaction between citizens, businesses and government. This is referred to by one expert:

I believe it is high time to use technology. It is noticeable that the customer gets all his services at his place without the need to go anywhere or to a service centre. Therefore, the important factor for the government now is to move into the practice of digital Government and extend it to smart government like that of Dubai. (Interviewee K, Government Administrative Expert, 15/02/2018)

Based on the foregoing, the most important development in public services was the announcement of the establishment of e-government in 1998. The government's efforts to transform public services through the adaption of ITC started back in 2002 with the establishment of a government organization called "Oman Digital", under the supervision and responsibility of the ITA (ITA, 2018). One of the most significant services of Oman Digital is the official portal for government services which was established in November 2009 as an additional step towards simplifying government services to individuals and businesses (E.Oman, 2018).

The Sultanate has also continued its efforts in administrative development. At the end of 2008, a royal decree was issued to improve administration in the civil service. This is concerned with the overall development of government performance, including all components of the state, not just the civil service. In September 2012, the Ministry held a seminar on mechanisms for improving government performance (MoCS, 2012). Following this, the Second Arab Conference

on Administrative Development was held in 2015, concluding with a set of recommendations for the development and streamlining of administrative procedures (MoCS, 2015).

One of the most important set of recommendation is contained in a services manual issued by the MoCS, in which all government ministries are obliged, according to a directive from the Council of Ministers, to list their services. It is provided on paper and in electronic forms and on the webpage of each organization and is available to all organizations and beneficiaries. However, one expert indicated that:

Most ministries have completed and defined their services, but I think for reasons that may be financial and related to the decline of oil, they are supposed to evolve and change these systems technically to be consistent with this service in cooperation with ITA. The ITA may need more funds to develop these services. (Interviewee A, Government Minister, 06/06/2018)

According to an expert in administrative development, 45 organizations have completed their listings in the services manual. Furthermore, the Directorate General for Quality in the MoCS is helping organizations in setting their vision and mission, and how to improve and manage the provision of services to meet the requirements of the new ISO 2015 specification. One government minister indicated that:

Now we are more than a party concerned with administrative development [...]. Among the recommendations of the performance development Symposium, is to define a vision and a mission for all government units, and almost all of them have identified their vision and mission. (Interviewee A, Government Minister, 06/06/2018)

This study noted that the MoCS has made these facilities available for public services to modernize and to provide help to all government organizations. However, it does not have an authority to oblige organizations to use these facilities. This is confirmed by two experts, who explained that:

There is no authority in charge of follow-up. Each organization does that separately. (Interviewee K, Government Administrative Expert, 15/02/2018)

The MoCS has no authority to impose anything on other Ministries. The services manual, for example, which was issued in response to the directive from the Council of Ministers, [...]. At present 45 organizations have completed their services manual. The next step is to see how to implement the plan and how to improve the procedures. We in MoCS do not have the force of compulsion. (Interviewee B, Government Undersecretary, 30/05/2018)

However, the government has initiated many policies to improve the work at the macro and micro levels. Committees that were formed at ministerial level emphasized the improvement of specific services. There has been growing competition between government organizations in providing services, especially after the creation of prizes and awards, such as the Sultan Qaboos Awards for Electronic Excellence, and the Electronic Government, and Quality Prizes which have helped in improving organizations and their competitiveness in providing better services (Shayban, 2017).

One of the ideas for modernization is the creation of a single platform providing all services. Some agencies have applied this to their service, such as the Ministry of Commerce in the field of investment, which includes all organizations concerned with awarding Investment Licenses. Also, the Ministry of Housing has integrated all processing of housing procedures in one place. This is in addition to many other complementary projects between government organizations, such as that between the ROP and the Ministry of Manpower, and the foreign/regional connections projects such as that between the ROP and the UAE police. However, one expert argued that citizens:

still complain about the length of the procedures and the review by several parties to obtain one service for long periods and procedures, and this is what one citizen personally told me that he reviewed eight destinations for one service and each party is delayed in procedures for long periods. (Interviewee F, Government Financial Advisor, 16/05/2018)

Furthermore, customer services departments have been established in all government units as noted by one expert:

Customer services departments are very important and have become compulsory in all organizations. Now there is no organization without a department or section or subsection. Even organizations like the Institute must have customer services even if it is manned by

only one employee. (Interviewee J, Government Deputy Chief Executive Officer and Administrative Expert, 25/02/2018)

Customer service departments established according to the instructions of His Majesty the Sultan in 2011, must register citizens' applications and follow them in order to facilitate procedures for citizens. In this context, His Majesty, in 2012, set up a governmental communication office called the "Platform of Government Communication" at the General Secretariat of the Council of Ministers to activate the role of government organizations in their communication with the community, in order to enhance partnership and cooperation. This centre monitors the performance of government and receives views from all segments of society about the public services provided to citizens. It writes regular reports for the Council of Ministers on the quality and provision by the authorities of those services. So every citizen can feel that his voice is heard and that he is a first partner in developments and is familiar with events in the country (Shayban, 2017).

To achieve this, the centre held the first forum on government communication in October 2017 aiming to contribute to improved communication between government organizations and society. A further aim was to keep abreast of developments in modern communication techniques, and empowering employees through the exchange of experience and knowledge, discussions of challenges and the development of solutions. In addition, success stories such as the British and Singaporean experiences were shared. The centre also launched electronic windows for community communication, which are consistent with the ongoing efforts of all organizations to create an integrated system of government communication and to reach the community directly in line with global developments and standards in this area (Oman daily, 2017).

Meanwhile, some organizations care very much about measuring the satisfaction of the beneficiaries of services, and one expert stated that:

There are indicators that have been created to improve performance and accountability in the public sector. Surveys conducted by the statistics centre about customer satisfaction are an example. However, the statistics centre is supposed to publish these results of the monitoring of the degree of satisfaction with the services provided. In addition, many organizations have distributed questionnaires to assess the quality of services. Also, some individuals ask through social media about the provision of services. (Interviewee C, Government Deputy Secretary, 05/06/2018)

Another expert argued that:

The level of provision of services is a very important indicator [...]. We should move from customer service to customer care, to customer experience, to making the customer happy. (Interviewee L, Government Strategic Expert, 28/02/2018)

4.5 Looking to the future: (Oman 2040)

Preparing suitable mechanisms for the implementation of development plans is the basic condition for achieving their objectives. This requires: legislative and organizational development and reform, and an accurate and comprehensive information system based on precise and measurable development indicators to monitor and evaluate the efficiency and effectiveness of implementation (SCP, 2016). The government of Oman has undertaken a series of policy measures aimed at ensuring the future financial sustainability of various public sectors organizations. A new economic policy called the National Program for Enhancing Economic Diversification (TANFEEDH) was introduced in 2015 (Fatiha, 2017). This is an action-oriented programme as part of the ninth Five-Year Development Plan 2016–2020. Its main objective is to facilitate growth in manufacturing, tourism, transportation and logistics, and the finance and services sectors.

Key players in each sector are brought together to reach consensually agreed plans for implementation. The aim of the development plan is to follow up implementation and issue periodic reports identifying obstacles to implementation and solutions to overcome them (TANFEEDH, 2017). TANFEEDH is based on the Malaysian model of economic development. The Performance Management and Delivery Unit of the Malaysian government has been contracted to provide

technical support to the Secretariat General of the Supreme Council for Planning in Oman (Fatiha, 2017).

In addition to TANFEEDH, a new mechanism has been applied for defining the commitments allocated in the Ninth Plan for all projects. Also, a mid-term evaluation of the Ninth Plan has been undertaken to revise the estimates on which the plan was based for local, regional and international development. Moreover, the Secretariat General of the Supreme Council conducts monitoring and evaluation with the use of KPIs, set up to measure the extent of progress. One of the significant developments is the establishment of the National Information Resources Management by the NCSI, to manage and document economic, social and sectoral data. Furthermore, there has been a revision of the legislative framework of laws and procedures affecting the business environment and the investment climate.

Despite these commitments made by the government, a study by Hvidt (2013) indicated that there are several structural barriers to diversification in GCC countries which are related to the growth of the global economy, the duplication of economic activities and barriers to interregional trade. In addition, these bodies easily abandon existing policies when they are exposed to pressure and return to established ways of doing business through sponsorship and the main role of the public sector. Therefore, the prospects of diversifying economies through politically difficult economic reforms suffer major setbacks.

However, it is believed that this may change in the future due to the progressive implementation of diversification strategies (Hvidt, 2013). Oman's budget deficit was estimated to at OMR 3.3 billion (\$8.6 billion) in 2016. Having recognized the budget constraints, the government is reducing subsidies significantly. It is also seeking to increase employment in the private sector rather than in the public sector. Oman is also trying to position itself as a commercial

centre. It has executed large infrastructure projects in this regard, such as the construction of the port in Duqm as a means of transportation and energy, and even in part a military centre (Katzman, 2016). Despite the decline in oil revenues, the Sultanate's financial and economic situation is generally stable, as shown in Table 4.3.

Table 4.3. Achievements in socio - economic development in Oman 1970/2017

Indicator	1970	1990	2015	2017
Population (in 000) / Omani	658	1,321	2,345	2,505
Population (in 000) / Expats	~0	304	1,814	2,055
Oil extraction in 000 b/day	332	685	981.1	970.6
GDP at current prices (Mn.R.O.)	104.7	4,493	26,500.3	27,216.4
GDP per capita in R.O	159	2,764.9	6,003.7	6,165.9
Number of schools	16	779	1647	1809
Pupils in general education in 000	7	356	724.4	770,481
Students in higher education Institution in 000	0.4	6.614	*136.5	**141,790
Girls in general education % of total Pupils	16.2%	46.4%	49%	49%
Water Production	0.16 bn. Gallons	13.373 bn. Gallons	333.8 (Mn.M3)	400.7 (Mn.M3)
Number of hospitals	2	52	70	76
Omanization in the Public Civil Sector	1630	44024	229,467	232,063
Omanization in Private Sector	***20500	207000	1,583,462	1,741,496

* Role of private sector in national economy has expanded and strengthened.

** Infrastructure has been brought to advanced modern standards over much of the country.

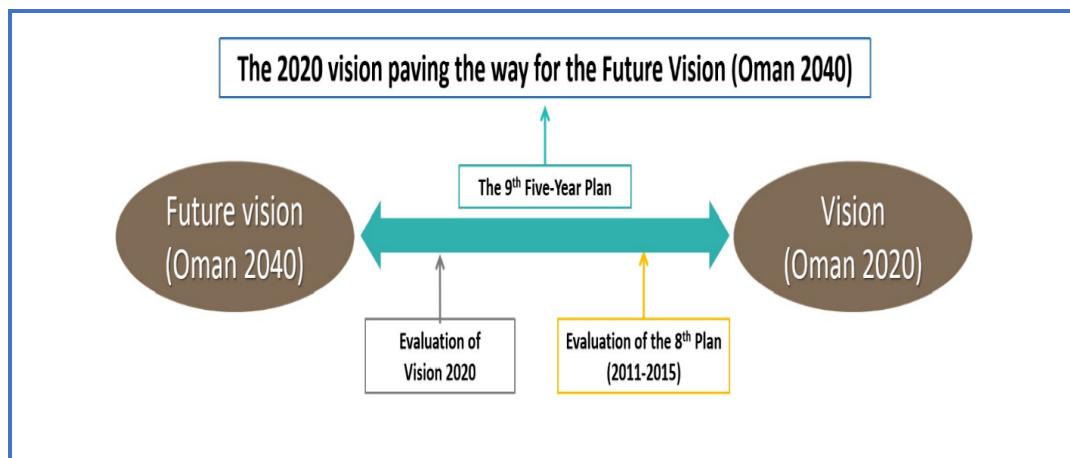
*** Omanization in private sector in 1972.

Source: Data from(Rahbi, 2017) and Oman NCSI

The Sultanate continues its development programmes aiming to maintain economic and social stability, create an attractive environment for investment, strengthen partnerships with the private sector and support small and medium enterprises. In May 2017, His Majesty the Sultan expressed his satisfaction with the progress achieved in the country's comprehensive development process in terms of economic and social dimensions, as part of the efforts of the state to maintain the level of services provided to citizens (MoI, 2018).

Oman has succeeded in maintaining steady GDP growth, in line with its Eighth Development Plan targets, largely driven by non-oil sector growth combined with declining levels of inflation (Rahbi, 2017). Lessons learnt from Vision 2020 and the Eighth Development Plan, such as adopting a focused approach for each economic sector, redoubling efforts to develop the private sector, creating national champions to drive growth and build national human capital, have helped Oman to become ready for the 2040 Vision (Rahbi, 2017). Therefore, the 2020 vision is paving the way for the Future Vision (Oman 2040), as identified in figure 4.2.

Figure 4.2. 2020 vision for Oman



Source: (Rahbi, 2017).

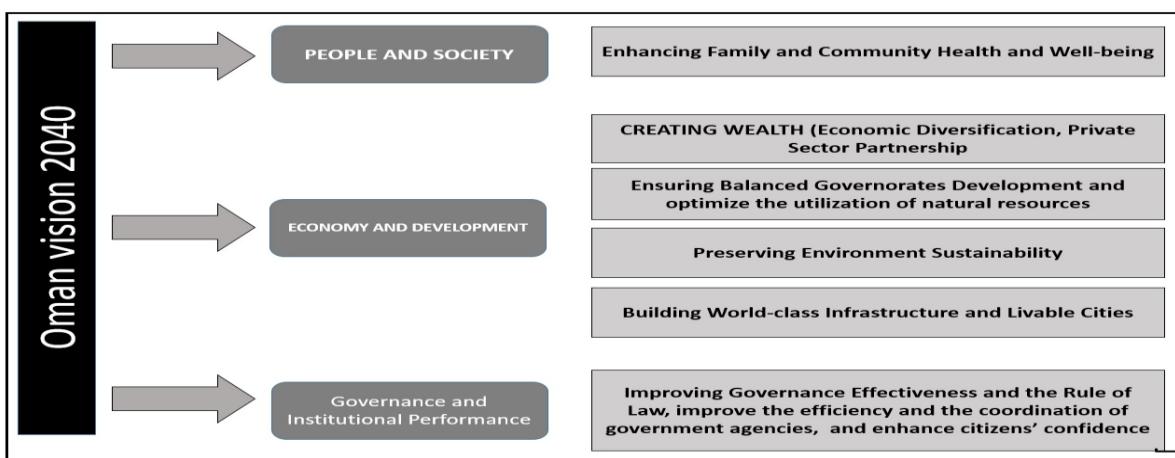
According to one expert:

The current plan is to review successful and failed projects. Through this we can identify the points of success and preserve them, and the points of weakness for which corrective action will be taken. The government is now reviewing Vision 2020 to identify what has not been accomplished and why, so that such shortcomings can be avoided in Vision 2040 (Interviewee I, Government Chief Executive Officer, 15/02/2018).

Vision 2040

The government formed a committee to develop a new vision, "Oman 2040", involving economic and social developments at the local, regional and global levels and to plan further development and achievements in accordance with an ambitious work system. The Oman 2040 vision is based on the themes of people and society, economy and development, governance and institutional performance, as shown in Figure 4.3 (Oman Vision, 2018).

Figure 4.3. 2040 vision for Oman



Source: based on information at <https://2040.om>

From the figure, government performance is one of the main elements of Oman 2040, and the government has been working to achieve citizen satisfaction as defined in this study. Various experts interviewed have noted relevant points such as societal participation, decentralization, the role of the private sector and different initiatives to develop the country's economy as well as the

evaluation of individual and institutional performance. With regards to social participation, one expert emphasized the Oman 2040:

approach towards partnership between the private sector and society with the participation of public sector organizations [...]. This is referred to as “societal participation”. Also, decentralization has been emphasized in the Oman Vision 2040 (Interviewee D, Government Consultative Council Member, 27/06/2018)

Societal participation has become an imperative in the country, as evidenced in the Shura Council (Majlis al-Shura) elections in the country where the government has substantial influence over the initial selection process. However, this process has gradually been transformed into a full popular election. An expert on the Shura Council referred to these changes among council members:

Things have improved and become better than before. During this period, we had seven PhD holders, 14 master's degree holders, and 34 to 45 bachelor's degree holders. This is proof that the society has started selecting persons those who can play its role in these councils. Moreover, The Shura Council System, as a parliamentary organization, has improved greatly by adopting systems that improve the interaction with the citizens. (Interviewee D, Government Consultative Council Member, 27/06/2018)

Also, one expert added that:

The government cannot cope without the support of society. Society is cooperative and has helped the government to adjust well to these conditions with the help of its cohesion and unity. (Interviewee G, Government Commercial Advisor, 28/05/2018)

Similarly, another expert stated that:

For the Oman Vision 2040, we considered the people's points of view and their orientations. We also have a website where anyone can enter and comment online. We suggested the government should abandon its present role in society and the private sector, and focus instead on organizing, following up, supporting and evaluation (Interviewee I, Government Chief Executive Officer, 15/02/2018)

To involve the Omani community in formulating Oman vision for 2040, different tools have been used by the government such as the participation of 300 segments of the society and experts from other countries in the Future Foresight Forum held in December 2017. Also, the implementation of virtual labs and workshops aim to encourage Omanis to participate in the project and voice their

opinions regarding future trends in Oman (Oman Vision, 2018). Citizens will take care of the broad public interest, be active and participate, and take responsibility for others. So, citizens will do what they are supposed to do in a democracy: they will run the government. They will contribute to improving society, as well as to their growth as active and responsible persons (Denhardt and Denhardt, 2015).

With regards to decentralization, an expert identified that:

Within the Oman Vision 2040 and the centre of government and organizational performance, there is talk about giving wider authority to the in-charges in the governorates in implementing projects and issuing licenses (Interviewee C, Government Deputy Secretary, 05/06/2018)

In this regard, another expert emphasised that:

We are a big country with branches as governors and mandates everywhere and this makes a difference. Therefore, it is supposed to provide service in all these branches and the most important challenge is the material aspect. I think that most government agencies now have sites that offer their services online, and I think that the parties should open branches or services in the commercial centres even during the evening, it is better for the citizen and to facilitate the procedures. We are seeking these services, and many have begun to implement them. We hope to see these services and administrative projects light up at some point (Interviewee A, Government Minister, 06/06/2018)

Other significant points identified include improving government performance. Therefore, different initiatives have been developed by the government to achieve efficiency of performance, such as the initiative of program budgets linked to performance. This initiative is in the Ministry of Finance. It is a type of financial control system. It links between agency activities and actual outcomes that constitutes performance (Melkers and Willoughby, 1998).

In addition, two more initiatives are included in the performance programme, which are the individual performance system and the institutional performance system. Individual performance is evaluated based on the results and the objectives linked to incentives. Thus, evaluation will be

objective. Meanwhile, institutional performance is evaluated according to the European Excellence System. The evaluation highlights points of strength and weakness which are compared with institutions regionally and internationally of similar functionality. Many other initiatives have been launched such as a national project for improving government performance by focusing on leadership training for executive level staff (managers, section heads or below) and the leadership programme for the director generals. All these programs have been developed to empower Omani human resources and to improve their efficiency, capabilities and skills, and to enhance leadership abilities through training. In this regard one expert indicates that:

The government emphasize that with Oman Vision 2040 many initiatives have appeared, and the challenges began to change to some extent because of some of the initiatives. The support and follow up (TANFEEDH) became a neutral body playing a compromising role between the government organizations or even with the private sector. It is also involved in solving all the problems and obstacles that face implementation of change project the government organizations. If a problem is not solved the issue is referred to the Minister of the Royal Diwan. Eventually a directive will be issued to solve the problem (Interviewee B, Government Undersecretary, 30/05/2018)

The role of the private sector is emphasized in Vision 2040, and a programme called the Partnership between the Government and the Private Sector is a very high-level programme run by seven ministers and several businessmen working under the supervision of the Royal Diwan Court. This programme has called for improvement in the investment environment and for the development of expertise in the government sector. In addition, the government has provided many opportunities for the private sector, as identified by one expert:

Doors have been opened to attracting expertise from the private sector through secondment or direct employment contracts. Also, retired young experts were given the opportunity to work in government projects. (Interviewee C, Government Deputy Secretary, 05/06/2018)

Accordingly, the achievement will need to adhere to the goals of the 2040 vision in order to improve the level of delivery of these services and thus increase customer satisfaction, as stated by one expert:

Through implementing the abovementioned initiatives, and applying the referee system, and selecting, qualifying and assessing the competencies a holding them accountable, we will have a clear works, clear results and transparency for the people to get involved, and get delegation and ease the authority. The Organizational, not the personal, and development of the IT based infrastructure. This is what makes the work go on and correctly. (Interviewee B, Government Undersecretary, 30/05/2018)

4.6 Conclusion

This chapter answered the first research question: ***what are the main drivers of public services modernization in Oman?***

The Sultan's thought and political strategy have had a profound impact on his governance. Since accession to the throne, he has formulated a clear vision to help transform Oman by investing oil revenues after 1970 and working to shape the modern nation-state in its present form. Oman's administrative and infrastructural development has occurred at a rapid pace to keep up with developments in science and technology and to meet the requirements of the era. Moreover, all kinds of services for citizens are provided, including health and education. The economy of Oman has been able to cope with economic and financial pressures and budget deficits have been managed efficiently, although there has been some impact on overall economic performance. Sources of pressure, responses and management strategies in most Gulf countries are similar, which suggests that current investment volumes and development plans represent genuine economic diversification which will reflect positively on the economic performance of the Sultanate.

Many internal factors such as new organizational goals or tasks, new organizational members and employee dissatisfaction have caused the government to change its strategy and modernize public services. There are also environmental factors pushing the government to implement public service reforms. These include pressures from clients, suppliers, political, economic, social, and technological factors and institutional dynamics arising from the global

discourse on e-government and the knowledge-based economy. Meanwhile coercive, mimetic and normative forces encourage conformity to international standards (Al-Mamari, 2013). This can enhance the effectiveness and efficiency of government operations by improving the quality of public services and interagency communication. These drivers have led the government to strive for change and to develop a strategy for modernizing government services to lead the Sultanate to join the ranks of other developed countries. Accordingly, the Omani government has made many efforts to improve its services at the micro or macro level, as described in this chapter.

The government has embraced public service modernization as a main policy, replacing paperwork with ICT, streamlining the operations of government organization, and evaluating services according to clear criteria and measuring their quality in order to improve delivery and increase customer satisfaction. A programme of e-government was announced in 1998, and the official portal for government services was opened by Oman Digital in 2009 as a step towards simplifying government services to individuals and businesses.

The government's vision in this regard focuses on providing government services efficiently and effectively, and to make every effort to meet the requirements of clients and to implement best practice in a professional and transparent manner. The MoCS services manual lists all government ministries services, and helps organizations formulate their missions and to improve and manage the provision of services to meet the requirements of the new ISO 2015 specifications.

A system of prizes and awards, and the establishment of customer services departments in all government units has helped them improve and increase competitiveness in providing better services. The Platform for Government Communication and the launch of electronic windows encourages public organizations to communicate with citizens and enhances partnership and cooperation as well as allowing service user satisfaction to be assessed. Conferences and training

event are helping to develop administrative performance and to train leaders and staff. The TANFEEDH programme followed up the implementation of improvement plans and issued periodic reports identifying obstacles to the implementation of and solutions to overcome them, despite its failures in other respects. However, the government still faces many challenges in modernizing the public sector. Issues of human resources, strategic planning and performance measurement continue to affect the development and modernization of government services and, in order to appreciate the reasons for this, the next chapter examines in greater detail how are e-government projects in Oman selected, designed, and controlled?

Chapter Five

E-government projects in Oman

5.1 Introduction

Chapter Four discussed the significant drivers for the modernization of Omani public services in the context of the government's strategy for the economic, social, political and administrative development of the country. Its intention is for Oman to become a first-class modern economy and society that maintains its distinctive traditions while aspiring to achieve a higher degree of equality in relations between men and women (Shayban, 2017). Improved and modernized public services are fundamental to the achievement of these goals. Modernization requires various tools and techniques to progress, the most important of which is project management as a technocratic solution. However, all solutions exist within social contexts and thus there is a commensurate need for changes in human relations. Therefore, organizational efforts at transformation may fail due to inattention to social issues rather than purely technical or systemic problems (Hornstein, 2015).

This chapter aims to answer the second research question of the study: How are e-government projects in Oman selected, designed, and controlled? To do so, five public sector projects in the health, civil service, higher education, manpower and technology fields are examined. These projects were developed as part of the implementation of e-government in Oman. In developing countries, e-government is seen as a means of achieving developed status. The Sultanate of Oman has invested heavily in the development and diffusion of e-government over recent years. Its main objectives, as elsewhere, are to enhance the delivery of public services, improve information flows to citizens, promote productivity among public servants, and encourage citizen participation (Heeks, 2001; Nkohkwo and Islam, 2013; Heeks and Stanforth, 2015)

This chapter examines five large projects which aim to provide services related to their organizations under the umbrella of the e-government programme, and determines how they were selected, designed, and controlled.

The first section investigates the origins of and rationales for selecting these projects, while section two details their design and considers how the project teams were set up and the resources allocated to them. Attention then turns to project specifications, timescales and budgets. Finally, the methodologies used in the projects are explained. In order to understand how these projects changed over time, section three discusses the logic of modernization projects and how they are controlled.

Information was collected from interviews with various project members in the organizational hierarchy. Most of the projects selected have lasted for over ten years and many of the early contributors are no longer involved. The interviewees were experts involved in the projects from their inception, and further information was gained from available documentation. In addition, some specific information was gained from other experts in the Omani public sector.

5.2 The selection of e-government projects in Oman

This section traces the origins of these projects since their inception, and the reasons for selecting each project and giving priority are explained. The selected projects are first described in detail, including the main purpose of its establishment, and the work process involved. All projects were undertaken in Omani public sector organizations, which has rules and guidelines to clearly communicate the roles and responsibilities of government employees and facilitate training and development. The MoCS has been keen to modernize to make the administrative infrastructure more functionally effective and less bureaucratic (Al Kindy et al., 2016).

Table 5.1. Projects' identity/ definition

	PRS	PSRS	UAS	NERS	PSITTM
Project Name	The E-Health Application (Al Shifa) System	Central Recruitment System	Unified Admission System	Manpower Register System	E-Government Initiatives
Organization	Ministry of Health (MoH)	Ministry of Civil Service (MoCS)	Ministry of Higher Education (MoHE)	Public Authority of Manpower Register (PAMR)	Information Technology Authority (ITA)
Project Definition	Non-centralized system to register the journey of the patient from the time he/she registers to the time he/she receives treatment	Electronic central recruitment system where all recruitment related matters are handled electronically	Centralization of admission to higher education organizations.	Manpower database in the Sultanate which contains data for all employed individuals and jobseekers, as well as data for expatriate employees. It also lists job opportunities available	To establish the Oman Digital Society starting with three initiatives: National PC – implementing programmes in the knowledge community and for government employees.
Work Process	Electronic services	Electronic services	Electronic services	Electronic services	Training programmes
Project Functionality	Patients Record System	Public Sector Recruitment System	University Admission System	National Employee Recording System	Public Sector IT Training Model

Source: Fieldwork analysis

Each project is designated as an information system (IS) project, except for **PSITTM**. All concern e-government in Oman, although some were established prior to the introduction of e-government, as noted by the manager of the **UAS**:

Because the project started before the introduction of the electronic government, we suffered a lot at the beginning. When the e-government was introduced later, the infrastructure was greatly enhanced. (Interviewee 13, Project 3, Manager, 10/05/2018)

The government has begun to develop initiatives to establish the Oman Digital Society. These initiatives are designed and implemented to introduce people to e-government and to spread the culture and policy of e-government by training and educating different segments of Omani society.

This started with three initiatives:

- National PC Initiative: Distribution of PCs to the entitled categories of citizens that have been identified according to priority of need (Sultan Qaboos University (S.Q.U) students, families of social security, computing teachers) aiming to increase the number of computers and consequently internet users in the Sultanate.
- Implementing programmes in the knowledge community centres in different parts of the Sultanate for the community.
- Government IT training and certification for all government employees.

These are training initiatives and not IS projects or services, as defined in Table 5.1. For the purpose of the current study, the third initiative above was selected for evaluation. It differs from the other projects in not being intended to provide an electronic service, but instead having the more general goal of human resource development for the electronic era.

Project rationales

The transformation of government services from traditional to electronic means witnessed in the Sultanate has had a significant impact on the functioning of the public sector. This is because the origin of each project is linked to the needs and objectives of the country.

The second five-year plan (1981–1985) witnessed many development efforts in the country and an unprecedented expansion in the health and education sectors (MoNE, 1981). These are considered to be key given the growing population and the rise of the knowledge economy leading to a premium placed on competences, skills, creativity and innovation (Berg et al., 2017). Therefore, an unprecedented expansion occurred of public education, health services and the civil service, as shown in Table 5.2.

Table 5.2. Education and health statistics in 1980 and 1985

Sector	Field	1980	1985
Education*	Number of schools	388	606
Education*	Number of students	108,000	221,000
Education*	Number of teachers	5800	11002
Health**	Number of hospitals	29	24
Health**	Number of doctors	514	958
Health**	Number of beds	1.784	2.928
Civil Service*	Number of civil servants	38840	66648

Sources: Data from Shyban (2017) * and the Ministry of Health Annual Statistical Report 1995**

This led to the establishment of several health centres in the country, including the Royal Hospital which was the first national referral hospital in Oman, and various schools and higher education centres such as the Sultan Qaboos University. The government also sought to develop its human resources through establishing qualifications and training to develop expertise in scientific and professional fields. Innovative ideas acquired from developed countries were transferred to meet the requirements of Oman.

Computerization started in 1987 in the Ministry of Health (MoH), at the Royal Hospital. In 1990, a specialized and dedicated IT unit was created, and the **PRS** was conceived as part of an

integrated system for the Ministry in 1990 to document patient medical information. The idea came from specialists in the MoH, who had travelled abroad to acquire fellowship certificates and gain experience. They wanted to apply what they had learned from abroad to improve the delivery of services in Oman. They noticed that patient files were often not properly stored, and some were missing. Therefore, they asked officials to resolve this issue. This in turn confirmed the importance of the authentication of electronic files to ensure their proper maintenance and ease of access. This was especially important given the increase in the numbers of health centre across the country, as well as the growing numbers of patients. Therefore, the idea of electronic records evolved over time. As defined by one stakeholder:

I was employed in the Ministry in 1993 and travelled abroad to get a fellowship certificate and returned in 1994. During my work as head of Al Wadi Al Kabeer, I noticed that the files were improperly kept, and some went missing. I informed the director general of the issue. He, in turn, informed the IT director general and asked me to start working in the medical centres. (Interviewee 6, Project 1, Stakeholder, 24/05/2018)

Work began on the system in 1997 when the first computerized health centre was opened which used an internally developed system. In 2004, the Information Technology unit of the MOH was upgraded to become the Directorate General of Information Technology (DGIT). The e-Health strategy of the MoH is called Al-Shifa. Each healthcare organization has Al Shifa customized to fit its specific requirements (Elhadi *et al.*, 2007). Over the years, the system has changed gradually in many phases to establish a national e-health records system.

The **UAS** was conceived due to the development of general and higher education in the country, and an increase in the numbers of schools and universities. This resulted in the separation of the Ministry of Higher Education (MoHE) from the Ministry of Education in 2004. The long-term strategic development goals for 1996–2020 included the strengthening of the role of the private sector in the national economy and the development of human resources, which resulted in

the emergence of many private higher educational centres. This led to much duplication of work and a lack of coordination between organizations, especially with regard to admissions and registration. Accordingly, the Higher Education Admission Centre (HEAC) was established in 2005 under the supervision of the MoHE. Its objectives were to coordinate the process of students' admission to institutions of higher education, to establish a database of applicants and to provide competent planning agencies in Oman with statistical data.

The idea for the **UAS** came from experts in registration and admission in the MoHE who had studied in the UK, Eire and Jordan. They copied British UCAS and Irish admission systems and customized them to achieve the objectives of the HEAC because the models used in developed countries cannot be applied directly in developing countries due to social, economic and cultural differences (Chen *et al.*, 2006; Ansari *et al.*, 2010; Vasrlander *et al.*, 2016; Syed *et al.*, 2018). When endeavoring to transform public services, many governments in developing countries take ideas from abroad but often ignore local requirements, and thus fail to succeed (Common, 2011). Thus, one project manager stated that:

The idea is an experiment taken from the British UCAS. There is a difference between the systems; the Omani system is technologically more advanced than the British and Irish systems, which are manual as acknowledged by the experts in two the countries. The idea of the Omani system originated from employees of the Ministry. (Interviewee 13, Project 3, Manager, 10/05/2018)

The first step was to provide the organizations concerned with the opportunity to participate in the project from the start. Also, consultants were appointed to manage the project under the direction of an Irish expert from the Irish Admissions Board. The team of 8-9 employees implemented the project. The assistant director general of the HEAC at that time was also director of registration and admission in one of the higher education institutions and worked with the team, as noted by a stakeholder:

We had an Irish expert (Mr. Jones) who was also the source in the research and implementation process. There was also Mr. Adnan Al Haj and Ms., Zamzam who acquired their experience from their studies. Their research helped in the success of the project (Interviewee 16, Project 3, Stakeholder, 13/05/2018)

The **PSRS**, **NERS** and **PSITTM** projects were selected in a decision made by the Cabinet of Ministers. The **PSRS** was established to develop civil service operations in order to achieve the objectives set out in the strategic vision of the Oman 2020 economy, Accordingly, the system was adopted in the civil service units starting in 1997 with a decision of the Cabinet of Ministers in its session No. (19/97), as a project member noted:

The idea for the system was based on a study carried out by the Higher Committee for Vocational Training and Labour and was submitted to the Cabinet of Ministers. Accordingly, the Council adopted the resolution in 1997 (Interviewee 7, Project 2, Manager, 07/ 03/ 2018)

It aimed to select the best cadres to work in the civil service and to establish rules for equality and justice, moving away from favoritism in the selection of citizens to fill positions, and to standardize work procedures in all government units to which civil service law applies. With the help of the Institute of Public Administration, the Ministry of the Civil Service (MoCS) assumed the task of establishing this system, defining its rules and procedures and training staff. Each government organization informs the MoCS about their job requirements and the MoCS undertakes the task of reviewing needs, announcing vacancies, and conducting tests and interviews. This procedure continued until 2011 and the establishment of the Manpower Registry to become key player in all recruitment processes in the country.

The idea for the **NERS** arose in 2011 when reform demonstrations swept the Middle East, including in Oman, leading to numerous demands from citizens for the provision of employment opportunities. The Sultanate subsequently witnessed rapid developments associated with the implementation of the eighth five-year plan for development (2011–2015). Among the advances

was the establishment of the PAMR as a central organ of the Cabinet of Ministers which was an integrated database for the labour force in all administrative units and private sector establishments. The PAMR is entrusted with establishing a database of citizens seeking work. As pointed out by the project manager:

The responsibility came at a time of certain activity in the field of manpower in the Sultanate following the 2011 job seekers' riots. The Registration authority was created in that tense situation and was able to carry out its duties of listing job seekers in each of the 61 Walayat in 2012 (Interviewee 19, Project 4, Manager, 03/06/2018)

PSITTM was established in 2002 following the adoption of the e-government project in Oman in 1998, when the National Committee for Information Technology was formed as part of the national strategy for the Digital Society of Oman. The strategy aims to activate Information and Communication Technology (ICT) to enhance e-government, enrich the business sector, and empower individuals to deal digitally. The ITA was established in 2006 and the Oman Digital Programme was launched under its supervision, as noted by a project manager:

The project was launched in response to the recommendation of the Ministerial committee on Oman Digital Strategy for the years 2005 – 2006. Accordingly, the IT Authority was set up in 2006 with the aim of creating Omani Digital Community capable of carrying out the transformation process of services from paper to digital form. Since its establishment, the IT Authority has launched numerous initiatives with the aim of achieving the objective of Oman Digital. It started by working with the government organizations in changing the procedures from paperwork to electronic as a first step (Interviewee 25, Project 5, Manager, 20/02/2018)

The concepts of the **PRS** and **UAS** projects came from knowledge gained by experts and officials during their education abroad, and the **PSRS**, **NERS** and **PSITTM** were based on direct decisions of the highest authorities in the country. Table 5.3 shows the dates of project commencement and their founding teams.

Table 5.3: Project initiation and teams

	PRS	PSRS	UAS	NERS	PSITTM
Year began	1997	1997	2006	“Power” 2011 – “Nmir” 2015	2013
Set-up team	MoH specialist and IT department director general	CoMs after study carried out by the Higher Committee for Vocational Training and Labour	Experts from HEAC and other relevant organizations and an Irish expert	Cabinet of Ministers	Cabinet of Ministers (CoM)

Source: Fieldwork analysis

Each of these projects was significant to the modernization of Omani public sector services, as evidenced by the interest of the country's decision makers in establishing them and obliging government agencies to implement them by royal decrees and through decisions of the Cabinet of Ministers, as shown in Table 5.4.

Table 5.4. Decrees and decisions issued for the projects

	PRS	PSRS	UAS	NERS	PSITTM
Royal Decree	Royal Decree No. 42/2004 raising the organizational level of the computer department in the MoH to the level of a general directorate named "Directorate General of Information Technology"	Cabinet of Ministers decision No. 19/ 1997 to implement the Central Recruitment System	Royal Decree No. 104/2005 establishing the unified admission centre	Royal Decree No. 98/2011 establishing the Public Authority of Manpower Register	Royal Decree No. 52/2006 establishing the Information Technology Authority
Date published	07.04.2004	03. 06.1997	21.12.2005	18.01.2011	31.05.2006

Source: Fieldwork analysis

It can be concluded that the **PRS** and **UAS** were not devised by senior executives but by middle managers and delegated to middle managers, but the decision to implement the e-government project was made by senior management in both projects. The **PSRS**, **NERS** and **PSITTM** projects were mainly initiatives of senior management, and the work was then delegated to middle managers for implementation. This clearly indicates that there was strong senior executive sponsorship for e-Government in all these case study organizations. Bannister (2001) also contends that decision-making in the public sector is often political and not always based upon economic criteria.

5.3 Design of the e-government projects

This section outlines the project designs, identifying how they were set up, focusing on project specifications, and taking into consideration the hard and soft side of the projects, such as project management tools and techniques as a hard side and, simultaneously, the establishment of teams as a soft side. The budgets of the projects are also defined. Finally, the methodologies used to implement the projects and their rationales are explained.

Projects design

Most projects are IS projects, apart from the **PSITTM** – and have been designed to provide electronic services easily, transparently and fairly for citizens. Therefore, the technological specifications of these projects are shown in Table 5.5.

Table 5.5. Project technological specifications

System Technological Specification	PRS	PSRS	UAS	NERS
Platform	Oracle	Oracle	Oracle	Oracle
System Language	SQL	SQL	Java	Java
System Development Tool	Oracle 12c Standard	SQL+, putty, ssh	Oracle JDeveloper 10g	Visual Studio/ SourceTree

Source: Fieldwork analysis

As shown in the table above, different systems have different functions. However, all the projects use the Oracle platform, which is a relational database management system (RDBMS) and one of the most trusted and widely used relational database engines. It is built around a relational database framework in which data may be directly accessed by users or an application front-end utilizing structured query language (SQL). SQL is a development tool and language for manipulating and retrieving data stored in a relational database, as used by **PRS** and **PSRS**, or by using a high-level programming language such as Java, as in the case of **UAS** and **NERS**.

The **PRS** is a client-server system fully integrated and built on the Oracle 9i database and developed with Oracle 12c Standard. The system uses a single list that represents the core components of an electronic medical record. It provides online access to information about acceptance, discharge, transport, radiation, lab test results and other information according to user access privileges. The system was constructed by MoH staff in the IT department and was not bought off-the-shelf. The reasons for this were explained by a project member:

At the beginning, the previous director put in great effort and faced many challenges from the Ministry and from other organizations that tried to make him purchase a ready-made

system, but he resisted these pressures and continued developing the project gradually until it reached the stage we are at now (Interviewee 2, Project 1, Member, 21/05/2012)

The system was created by examining best practices from abroad to suit the local environment. It complies with user requirements and supports the easy electronic exchange of medical information among health organizations and in compliance with e-Health's internationally recognized standards, namely the HL-7, the CEN/TC-251, the ISO-215, and SNOMED-CT. Short messaging (SMS) and email services are integrated into the system and are used to inform and remind patients about their appointments at health care organizations. The project adopted the Personal Health Record (PHR) system, which contains critical information about patients. Its use helps to improve all of the basic functions of HIS such as scheduling, patient information capture and retrieval, care plan management, drug management, patient education, quality assurance, and financial transactions. This also helps in achieving increased coordination between different health care providers and consumers, and promotes the use of guidelines and policies to improve the speed of access to medical records (Elhadi *et al.*, 2007; MoH, 2017).

The **PRS** is an integrated system with subsystems for all units; the cardiac unit is a system unit in the Shifa System, and the laboratory is a system, and so on. Even within the laboratory, there are sub-systems such as for blood, bacteria, viruses and so on. Also, in case any part of the network malfunctions, the system is designed so that unaffected units can continue working using internal links because the system does not tolerate complete stoppages or delays. Each unit has its own separate characteristics, specialization and requirements, and an independent number which is different from the others. Currently, they are working on registering all data and procedures using National IDs to unify the numbers.

The **PSRS** involves a combination of the human resources systems of the MoCS and the **NERS**, where the data recorded in these systems is taken to feed the **PSRS**. There is also no data entry system used by the Ministry because the system is accessed and the data is obtained by the **NERS**. The system was designed by MoCS employees to centralize recruitment under the supervision of the MoCS. The program was designed on Oracle Database 11g, using the SQL programming language with different developer tools such as SQLplus.

The **UAS** is a client-server system. It is fully integrated and built on the Oracle database using Java programming and developed with Oracle JDeveloper 10g. The idea originated from some Ministry staff and was based on their experiences in other countries such as Britain, Ireland and Jordan. The project was assigned to a system development company where the system was designed. The main concept of the system is the centralization of the applications process for admission to higher education institutions using a single application form. This system presents study programmes, admission requirements and the number of student places. An application is presented to all organizations at the same time and results are published simultaneously. The system provides higher education institutions and the foreign missions with the data they need.

NERS listed manpower and jobseekers in the public and private sectors except for the military and security services. The Register Authority then became financially and administratively independent of the Ministry of Manpower in 2011. The register project was established and is supervised by the ITA to create an integrated database for government organizations, the military, civil service, and employees in the private sector as well as jobseekers. After a period of research, the ITA prepared an integrated national system for centrally managing all jobs in the Sultanate in both the public and private sectors. The aim was to create a comprehensive system with all services provided to jobseekers, using modern technology.

Accordingly, the ITA produced a tender that was open to local and global companies. The project was awarded to a Singaporean company called Sharepoint (which is still working on the project). The system was built in Microsoft Windows using the Oracle database with the SQL language and developer tools such as Sharepoint, RDP, and SQL. The main objective of the project is to achieve the government's future vision as stated by the ITA authority:

to put the jobseeker, the contractor and the middleman on the electronic platform and enable them to communicate electronically till the recruitment, follow-up and assessment is accomplished. They were keen to accomplish this integration and make the process of looking for a job easy and achievable by using digital technology (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

However, the goal of integration has not yet been achieved due to several reasons which are explained later.

From the above it can be noted that most of the projects have been designed on the universally recognized Oracle database as the world's fastest, most scalable and reliable database management systems. The projects have been designed either by the staff of the organizations concerned, as in **PRS** and **PSRS**, or by assigning the project to companies specializing in the development of systems through the issuance of tenders. Projects were previously established and supervised by the same organizations, as noted in the **UAS**. This situation changed after the establishment of the Information Technology Authority, and the service projects were then under its supervision, as with the **NERS**.

Project resources

From analysis of human resources data in these projects, it is noted that many of the programmers and workers in these projects are Omani, but there are also expatriates involved. Table 5.6 shows the number of Omani and expatriate workers in each project.

Table 5.6. Project resources

Staff		PRS	PSRS	UAS	NERS
Omani	Programmer	103	5	5	4
	Others	22	28	48	2
Expatriates	Programmer	71	1 in HR system	2	9
	Others	-	1 IT expert	-	-

Source: Author

Due to the large size of the **PRS** project, which is used by all employees in the MoH such as doctors, nurses, technicians and administrators, the number of staff involved is very large compared to the other projects. The 125 Omani employees represent 63 per cent of the total staff with 71 (37%) numbers of staff from Asia. These expatriates were recruited through agencies. It should be noted that there are other directorates of information systems in the ministry working on other sites in the Sultanate. The total information technology workforce in the ministry numbers 580, including 115 (19.8%) expatriates.

Meanwhile the number of staff in the **PSRS** project includes five Omanis out of 28 employees in the employment department, two expatriates work in HR, which has a relationship to **PSRS**, one of whom is an Egyptian national on a fixed contract from the Oracle company to conduct follow-up on the system and the other is a Lebanese national appointed on a temporary contract as an IT expert with a high salary (about RO. 3000). Both of these expatriates are from Arab nations. The program is designed in Arabic for employees in the public sector who use Arabic in all official correspondence in the civil service as the official language of the country.

Seven programmers are working on the **UAS** system: five Omanis and two expatriates from Asia, with a total of 48 employees in the centre. The case of **NERIS** is different. In addition to the staff of the PAMR working in supervision and follow-up and as programmers, of whom two are Omanis, other functions were outsourced to a Singaporean company under the supervision of the ITA, to work on the design of the program along with the PAMR staff. Of the 13 employees working for this company four are Omanis on permanent contracts, while nine are expatriates on short-term contracts. The PAMR employees have expressed dissatisfaction with the company's employees, and relations between them seem to be non-participatory, as indicated during the interview with a PAMR staff member.

As a foreign company, they don't work according to our goals and vision. We deny the foreign company some data which are classified as state secrets. I never prefer seeking help from foreign staff because the Omani employee, from my point of view, is the one who knows what we need in the country. We are not happy with the system [...] This is what we wanted from the company but unfortunately the company couldn't do it. We, the Omanis, tried to apply the new ideas with the data which we have established and, thank God, the process was successful. (Interviewee 28, Project 5, Member, 29/05/2018)

This distrust of expatriates corresponds to Ali and Al Badi's (2013) emphasis that the outsourcing of information systems projects can lead to problems due to differences in business objectives and organizational structure. However, the partnership between the ITA and the company seems to be more positive. The literature confirms the importance in contracting of cooperation and a good relationship between the government and its contractors. Competition in contracting often does not yield the desired results in the delivery of public services since contractors are encouraged to reduce the costs of services, regardless of the results whereas cooperative or relational contracting can complement competitive contracting and can help improve the quality and delivery of public services (Oh and Park, 2017).

Some of the case study projects such as **NERS** have used outsourcing, which is considered an important element of NPM, to reduce expenditure and the number of employees in the public sector. However, some participants argued that the use of foreign companies led to the duplication of work and delayed the completion of projects, and thus increased cost. Outsourcing may not always reduce costs because of poor communication and lack of trust. This may be due to unclear contractual terms. The contract should specify the respective areas of responsibility of the parties (Miller and Lessard, 2007).

Therefore, the use of processes such as outsourcing in the public sector requires trained professionals and staff who can assess the pros and cons of solutions and determine when any particular method is appropriate in the local context (Walther, 2015). Accordingly, IT professionals stress the need to control technology by providing the required level of internal control to manage its impact on project management performance, which would help to influence employee behaviour in such a way that allows the achievement of organizational goals (Bernroider and Ivanov, 2011). Managers in the **NERS** project may have been unaware of the specific outsourcing arrangements, which reduced their ability to manage and mitigate contractual risks (Eckersley and Ferry (2019).

All of the selected projects employ expatriates, and the economy of Oman in general as in the other Gulf countries, relies heavily on foreign labour (Mashhood *et al.*, 2009). Expatriates are recruited through agencies and issued with rolling contracts, which is one of the features of NPM that is clearly derived from private sector management to deal with human resources by decreasing expenditure and the number of permanent employees. However, the interviewees claimed that the appointment of employees through contracts is necessary to ensure that the projects are successful, because the economic conditions in the country, especially after the financial crisis, required this. One participant pointed out that:

The financing and the programmers are on contract with their companies. We must renew their contracts annually because we are still short of competent Omani programmers. Sometimes we need the expertise for internal programming (Interviewee 13, Project 3, Manager, 10/05/2018)

Therefore, if the contracts of the programmers expire and funding is insufficient for renewal, this will damage the projects since staff are not competent and have inadequate training; hence the reliance on expatriates to deliver projects and services. This corresponds to Chen *et al.* (2006) finding that, regardless of the limitations of technological infrastructure and the financial capabilities for e-government, developing countries are constrained by levels of competence and know-how in developing effective strategies to support government initiatives.

Most of the expatriates employed in the **PRS**, **UAS** and **NERS** projects are from South and East Asian countries, such as India, Bangladesh, Sri Lanka and the Philippines. They hope to earn better wages to improve the lives of their families (Kapiszewski (2017), and are more productive and cost-effective than Omani staff, making it difficult to replace them (Mashhood *et al.*, 2009; Fatiha, 2017). Workers from other Arab countries demand higher wages, as noted in the **PSRS** project. At the same time, Oman is most welcoming to expatriates, because Omanis are friendly, the atmosphere is warm, and expatriates prefer to work there (BBC news, 2017). The Sultanate gains from the recruitment of expatriates from Asian countries, but there are some limitations:

The contract documents they have are in English, but we want them in Arabic as the users speak Arabic (Interviewee 29, Project 5, Member, 29/05/2018)

Poor communication among project members may cause problems, especially since the official language of the country is Arabic. The expatriates do not speak Arabic, and this negatively affects the success of projects. According to Bourdieu's (1990) concept of practice, language is an important factor for any kind of practice in the world in building the relationships between actors or agents. These interrelations combine with the use of language to shape social systems (Lapsley

and Pong, 2000), as communication and social interaction or conversation is a means of constructing social reality (Sillince et al., 2006).

Another weakness identified in the public sector case study projects is staff departures. Staff are hired through the labour market because of the good pay in the private sector but they lack knowledge of the public sector (no training, no incentives), as many participants claimed:

The resignation of employees is a problem. We have a production line depending on these employees because the replacement is not like the original employee. [...]. The expat graduate with more than 5 years' experience is paid RO. 600, whereas the experienced Omani is not offered the same. When the Omani gets the experience, he/she would look for a better opportunity somewhere else because of the lack of incentives (Interviewee 1, Project 1, Manager, 17/05/2018)

More than 30 employees have resigned from the Centre. There is a high turnover among the specialists who can easily find outside opportunities and thus leave the organization (Interviewee 16, Project 3, Stakeholder, 13/05/2018)

This is a sign of a problem that has not been recognized by senior management, and organizational responses to skill shortages are not adequate at times of need.

One recommendation of this study is therefore that the public sector must pay competitive salaries. For the best people, high pay rises, and a reward structure is required to maintain the highest level of talent in the management of projects by people who will often be young, dynamic and very capable. When organizations have such people, they should be rewarded. The people that remain in the public sector may be less dynamic and lack the required skills (Disney and Gosling, 1998; Syed *et al.*, 2018). Swailes and Al Fahdi (2011) found that public sector organizations may suffer from the loss of skilled and educated staff to the private sector. Most of their sample had moved from IT or engineering departments in the public sector to join companies in the fields of oil and gas, construction or manufacturing because the rewards and benefits in the private sector were better (Swailes and Al Fahdi, 2011).

Public sector workers are less likely to move to the private sector if they are given similar financial rewards and benefits (Kapiszewski, 2017). One reason for remaining in the public sector is that pensions are good relative to pay levels (Delfgaauw and Dur, 2007; Syed *et al.*, 2018). Therefore, it can be recommended, as suggested by Swailes and Al Fahdi (2011), that the public sector should seek to retain talented employees in key roles by increasing basic salaries, linking promotion to performance, and improving management capacity.

Project budgets

Most project members, stakeholders and even managers themselves did not possess the information required to define appropriate budgets, despite being core members of the project. Some of the case study projects were established by IT staff, as shown in Table 5.6. The organization responsible did not pay the full project cost, except for the salaries of employees and the purchase of equipment, such as in the **PRS** and **PSRS** projects, as stated by project managers:

The programme cost us nothing except the human effort and the support of the ministry in buying the equipment and the other requirements [...]. We may have saved more than 40 million RO when we achieved this project (Interviewee 5, Project 1, Stakeholder, 24/05/2018)

The **NERS** was very expensive, at about 5 million RO, as emphasized by the project manager and official from the ITA:

I think it is in the range of 5 million because such projects have long-term plans as they extend for three years and continue with us until they are completed (Interviewee 19, Project 4, Manager, 03/06/2018)

Table 5.7 shows the budgets of the projects.

Table 5.7. Project budgets

Project name	PRS	PSRS	UAS	NERS
Project building	The system was made by MoH staff in the IT department	The system was made by MoCS staff in the IT department	The system was modified from UCASS	The system is bought off the shelf
Project budgets	The estimated cost is about 3-5 million RO	It was fair and not much compared to what it offers	It was about 70,000 RO	In the range of 5 million

Source: Author

From the interviews with project managers, it seems that the ICT budgets were insufficient to support existing ICT infrastructure, let alone implement new systems. Such projects are expensive and require strong infrastructure to serve large segments of society:

I think the budget was unfair. It should have been higher because the system concerns a large section of society (Interviewee 16, Project 3, Stakeholder, 13/05/2018)

It is also noted that the systems built by the project's own employees were less expensive than those purchased or developed working with external experts. However, many project members were not aware of the costs involved, which could negatively affect project success.

Project methodology

Business leaders rely on a wide range of project management methodologies to analyse the methods used and implement best practices in order to achieve efficiency and effectiveness and allow replication (Hasibović and Tanović, 2019). As the projects in this study were designed to achieve e-government in the country, they used software methodologies rather than project management methodologies, as shown in Table 5.8.

Table 5.8. Project methodologies

Project Methodology	PRS	PSRS	UAS	NERS	PSITTM
	Waterfall model	Waterfall model	Waterfall model	Agile software development	Agile software development

Source: Author

An official from the ITA, said:

No study is approved without a comprehensive methodology [...]. Previously, the waterfall methodology was used for all projects, because projects they were slow and not limited by time, but now we are using the agile methodology which has been circulated for all projects in the government (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

The waterfall method was used for project management in the early stages of administrative development in the Omani public sector. In this method, tasks flow in sequence, and a task must be completed before starting the next (Balaji and Murugaiyan, 2012). Therefore, teams work with a detailed plan and have a full list of characteristics and tasks that must be completed in the next few months or over the entire project life cycle. This depends on the initial analysis of requirements and careful planning. Strict change control management and prioritization is applied, which leads to a long process until all steps are achieved and the project is executed. However, by the time users receive the product, their needs may have changed, so either the requirements or scope must be changed, or the function of the delivered product must be accepted as insufficient. A critical issue in project management concerns whether or not project managers should be responsible for ensuring that the requirements are appropriately identified (Morris, 2013).

Given rapid technological progress and the new strategic decision of the Sultanate to implement e-government and the provision of e-services, rapid responses to changing requirements to ensure customer satisfaction are crucial. Software development experts, represented by the ITA in Oman, switched to the use of the Agile methodology in 2013. The use of Agile methodology

requires a team able to adopt to changing requirements (Balaji and Murugaiyan (2012), and the system involves a new way of interacting with consumers. Teams work towards goals but remain flexible, communicate with all stakeholders, and change product requirements when necessary, which is a core requirement for e-government.

The ITA official confirmed the reasons for the transition from the waterfall model to Agile:

In Dec 2013, the first Agile model of software project management was applied in Oman as part of the Invest Easy Project. The reason for this change was to ensure that large-scale e-transformation projects get result faster and the public benefit from the project faster (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

E-transformation projects, unlike other software projects, are large-scale and expected to run for years. If the waterfall methodology were applied, government and citizens may need to wait for years after the contract is signed to reap the benefits from the program.

Another reason is that the government has better control over cash flows, as defined by an ITA official:

In an Agile model, the government is able to split the payments over various milestones and payments are more realistic and based on the value the government is getting at that point in time (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

Moreover, the Agile model uses an adaptive approach where there is no detailed planning and the only clear future tasks are those related to the characteristics that must be developed. The team adapts to dynamic changes in the product requirements. The product is frequently tested, minimizing the risk of major faults in the future, as mentioned by the ITA official:

With the Agile model, the system and services requirements are captured and refined in each sprint/iteration/milestone, thus ensuring a better-quality product/service. (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

Based on that, many benefits can be achieved:

Lots of results are achieved by changing to agile methodology such as: providing better and faster services, better utilisation of teams and resources and updating design and system architecture incrementally (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

The advantages of the Agile methodology can be summarized as follow:

1. Providing better services with each iteration.
2. Ability to improve and refine services (continuous improvements) with each iteration, resulting in better quality service.
3. Updating of design and system architecture incrementally, thus ensuring scalability in an optimized manner.
4. Better utilization of team and resources (certain iterations need only certain department resources) and after that resources can be released from the project.
5. Government cash flow optimized.
6. Faster adoption of the system by the public as they become aware of the system and start using basic services. When the government rolls out more services, the public adopts the new services faster as they have already experienced using them.

Balaji and Murugaiyan (2012) and Stoica *et al.* (2013) also suggest that movement from traditional to Agile software development, leads to strategic advantages and market success.

In general, Agile development responds to the needs of developers when faced with diverse requests from customers. The economic environment is increasingly dynamic and provides diverse business opportunities, which requires organizations to have the ability to adapt, take advantage of opportunities and focus on the beneficiaries. However, the Agile model does not concentrate on creating documents for the product, as the source code itself represents the documentation. Thus, developers tend to insert more comments in the source code for clarification and explanation. Therefore, they must fully understand the project, asking many questions of experienced developers. This may delay completion and lead to increased development costs.

The waterfall model emphasizes the production of documentation, so there is no concern about ignorance of the project details or not having a knowledgeable developer (Stoica *et al.*, 2013).

None of the core participants in these projects were aware of these methodologies; the documentation held by those who worked on the projects at the beginning was not passed to staff who succeeded them. One respondent stated that:

I do not know where the documents relating to this project are, because the previous team has left the project [...]. We used to depend on the annual reports which we produce as documents (Interviewee 13, Project 3, Manager, 10/05/2018)

This is one of the most important problems facing project managers in Oman. Projects members are not familiar with project management methodologies, which is one of the most important factors in enhancing the effectiveness of projects and increasing the chances of success (Joslin and Müller (2015). Basic information about project design was not shared, even though involving users in service re-design and implementing more direct means of communication between all parties are key points in NPM (Bovaird (2007).

One of the most important problems researchers in Oman face is a lack of official documentation concerning reform efforts. Tayeb (2005) and Common (2008) also noted in their studies that one of the problems faced by researchers is the lack of official documents related to reform efforts in Arab countries. This stems from a culture of management based on ‘talking, not writing’ consistent with Arab cultural characteristics and practices (Tayeb, 2005; Common, 2008) Consequently, there is little published information about policy decisions. Information tends to be unreliable and restricted, with most decisions based on the personal preferences of senior leaders. Furthermore, official publications lack detail on implementation and aim mainly to satisfy public expectations, “the emphasis is objective- rather than procedure-oriented” (Common, 2008: 179).

5.4 Logic of e-government projects

This section focuses on the logic of modernization projects, providing an understanding of how these projects have changed over the years, asking what are the projects trying to do? How does that achieve the goals of modernization in the organization? What is it replacing? And what do they want to achieve?

It is therefore necessary to explain the stages of project development, the changes that have taken place and the extent to which goals have been achieved.

PRS

The organizational framework of medical centres in Oman contains three sectors: primary medical care centre, medical polyclinics, and *Walayat* (states) and governorates hospitals such as the Nizwa and Ibri hospitals; the general hospitals such as Khawla, and the Royal Hospitals. The aim of the

PRS was to track the journey of each patient from the time of registration to the time of treatment.

The system was developed gradually starting at the primary medical centres, then including the *Walayat* and governorates hospitals, and finally covering the general hospitals. The work was started at the general clinics, then moved to the dental and antenatal clinics. The system experimented with the paperwork and electronic method of registration. Gradually, paperwork was abandoned, and the work was completed in 1998 using IS systems, after which all 15 types of clinics in primary medical care were incorporated in the system. The version applied now is “Shifa 3 plus,” which is the unified version.

Currently, the system is supporting 240 medical units. The system brings together in electronic patient files all the work conducted by the different categories of doctors, nurses, and technicians, so that everybody applies the same set procedures for providing services. The secrecy

of patient's data is assured because nobody can access the file except doctors and other authorized personnel, whereas it was possible for other employees to read paper files. The data are available to ministry staff conducting research. There is also an alert system where the Ministry is immediately notified of special cases that require immediate attention, such as Swine-Flu. The program also highlights sites of the occurrence of diseases or infections, which enables the Ministry to assess situations and take the necessary action. The Ministry also benefits financially by monitoring and controlling the dispensing of medicine, which previously could not be tracked. The Ministry's policy is to upgrade medical services based on information provided by the **PRS** system. However, the system cannot be accessed by patients, although patients are supposed to be a part of the healthcare service system (Hicks *et al.*, 2015), as defined by a project member:

We hope the Shifa system will be connected to the patient so that he/she could use it to ask any medical question [...]. This will save the patient the trouble of going to clinics him/herself (Interviewee 1, Project 1, Manager, 17/05/2018)

PSRS

Before the 1990s, the recruitment of staff was left to each Ministry to perform on its own. They advertised vacancies, and conducted interviews, and then selected and appointed candidates. However, due to the poor handling of recruitment by some organizations, central recruitment was entrusted to the MoCS in 1997. The Central Recruitment System initially used paperwork. All organizations that had approved vacancies informed the MoCS to advertise the position, the grade, the pay package and other terms and conditions. Vacancies were advertised several times each year. The process of recruitment was changed in 2001-2002 to a fully electronic and centralized process to ensure transparency and fairness.

The system consisted of online tests and personal interviews which were later replaced by written tests. The test questions are drawn from a list of questions for all specializations. The results are displayed on screen immediately after the test is completed. In August 2017, a new recruitment system using SMS was then introduced, enabling jobseekers to apply for jobs in the civil service by sending an SMS text with their manpower registration number.

UAS

The Unified Admission system was established to organize the admission and enrolment in higher education institutions of students who had completed the general education diploma in secondary schools. Applications are sorted based on the number of vacancies available on each course, the choices of students and the most qualified applicants in terms of examination results.

The electronic system connecting all organizations was established to replace the traditional paper method and to stamp out the nepotism that had previously been prevalent. Employees are now unable to interfere with the data.

The work process of the **UAS** system starts by receiving the applications to pursue higher education studies. The data and grades of the students are received from the Directorate General of Educational Evaluation in the Ministry of Education. Students are invited to register and choose their preferred programmes. After the second semester, students can change their courses according to the final marks. After the selection process the student is allocated a place. Previously the student was able to make 30 choices, which was later raised to 40. From 2017 the choices have become unlimited. Selection is conducted three times. If the student is not offered first choice, he/she can enter a second-round of selection, and then a third-round. Registration in the system is now accomplished by either: written, online and mobile application.

NERS

The Register was first established by a department of the Ministry of Manpower and was confined to registering civil service staff. In 2003, the Ministry of Manpower took charge of the general census of the Oman population and in cooperation with the MoCS and MoE generated a unified registration form to collect all necessary information. This form was used until 2011.

In 2011, the PAMR was established under the control of an independent body under the direct supervision of the Council of Ministers. The shortfalls of the existing register were highlighted, and so the military, security, private sector, and secondary sectors such as fisheries, farmers and crafts people were added in order to provide comprehensive data on jobseekers. The Royal Decree of 2011 stipulated the creation of an electronic database linking all organizations. The PAMR process starts with the entry of data of the citizen in a simple form on screen.

The PAMR project was subsequently expanded to include the government organizations, called “Nmir”. The Nmir project is more advanced, because the database now contains data for all employed individuals and jobseekers, as well as data for expatriate employees. It also contains information on job opportunities available in the market. The project is national and seeks to achieve the goal of establishing a single employment centre in the Sultanate that organizes training and related qualifications to help Omani citizens to get jobs. All the necessary procedures will be in one place. All government and private sector organizations will benefit from this centre, which is like a housing complex where every ministry resides.

PSITTM

This was launched in response to project recommendations of the Oman Digital Strategy for the years 2005–2006. The IT Authority was set up in 2006 with the aim of creating an Omani Digital

Community capable of carrying out the transformation process of services from paper to digital work.

The first stage of the project was from 2009 to 2011. It began with the National PC Initiative explained earlier. The second stage from 2012 to 2013 was to train and develop Omani society to eliminate digital illiteracy. The third and final part of the project began in 2013 to train and develop the IT capabilities and competencies of employees so as to ensure the full cooperation of government organizations and training organizations that deliver the relevant courses. For this purpose, in cooperation with specialized international organizations, the ITA started providing training courses for employees to be accredited with digital literacy certificates such as the ADCL, IC3 and Cambridge Certificate.

The focus of the project was initially on the civil government organizations, followed by the military and security organizations such as the Royal Oman Police (ROP). The ITA also expanded the training offered, firstly from the Certiport (IC3) Company which was the representative of the IC3 Certificate in Oman at the time, to any organization that held the Certificate which could register with ITA as a contractor to deliver courses throughout Oman.

The projects also involve the organizations expanding their services throughout the Sultanate to achieve the principle of decentralization in the provision of services. This is a key element of NPM to break up bureaucracies into smaller, semi-independent organizations with the power to respond to local service user needs and to make the services easier for citizens to use (Alonso *et al.*, 2015), as identified in Table 5.9.

Table 5.9: Decentralization in the case study projects

	PRS	PSRS	UAS	NERS	PSITTM
Branches	All regions of the Sultanate with health organizations affiliated to the MoH	Muscat	The presence of centres in each Walayah	Muscat, Sohar and Salalah.	The presence of company branches in the different regions of Oman.

Source: Author

The projects all have different branches to provide services in different regions of Oman, except for the **PSRS** which is in Muscat and the **NERS** for reasons explained by the project manager:

Our plans included opening branch offices in all Walayat in the Sultanate [...]. We could not complete the project because of the economic crisis which halted our plans (Interviewee 19, Project 4, Manager, 03/06/2018)

The project members of **PSITTM** chose 32 training centres in different branches, as one member indicates:

Companies have been chosen based on tendering, one of its main conditions was the presence of company branches in the different regions of Oman since the beneficiaries were spread all over the country (Interviewee 27, Project 5, Member, 20/02/2018)

Over the years the organizations concerned have been innovative in modernizing the services. According to Bekkers (2007), electronic government focuses on the use of modern internet-based technologies to deliver public services in a more efficient and friendlier way to citizens and companies. All these technological innovations enable governments to redesign information, processes and transactions with citizens and companies to improve business processes and information processing. The organizations have developed different ways to provide their IS services. Table 5.10 shows different ways of registering in the project systems.

Table 5.10. Registration

	PRS	PSRS	UAS	NERS	PSITTM
Registration in the system	<ul style="list-style-type: none">•Online application• SMS	<ul style="list-style-type: none">•Online application• SMS•Mobile application	<ul style="list-style-type: none">•Written application•Online application•Mobile application	<ul style="list-style-type: none">•Online application•Mobile application	<ul style="list-style-type: none">• Courses in training institutes

Source: Author

The use of these technological developments in the projects stimulates public involvement, since these modern ICT projects have rapidly and substantially penetrated the primary processes of public administration. The ICT projects have the capacity to process increasing quantities of data and communications in a speedier and more intelligent way to achieve both efficiency and efficacy benefits. At the organizational level, these projects have increased communication between existing work processes, as well as improving the relationship within public administration in relation to staff, especially in the **PRS**, **PSRS**, **UAS**, and **PSITTM**. However, **NERS** has lost this advantage to some extent due to the competitive relationship between the PAMR staff and the staff of the company running the system. Also, the difference in the languages used by the Omanis and expatriates has created a barrier to communication. The implementation of the projects has increased access, transparency and fairness, enabling people to share information and communicate with each other at any time and in any place so that organizational, functional, geographical and temporal boundaries become to some extent obsolete.

The technological and organizational attributes of these projects have been used to reframe practices and to contribute to innovation and change in public administration in the social interventions in the **PRS**, **PSRS** and **UAS**, and the political interventions in the **NERS** and

PSITTM. To most Omanis, the modernization of public services is purely technological. But modernization could also mean liberalizing the economy in conjunction with technology. Therefore, the scale of investment that has been made in delivering improvement needs to be determined. This is discussed in the next chapter.

5.5 Conclusion

Chapter Five has answered the research question: *How are e-government projects in Oman selected, designed, and controlled?* Five projects in different areas of the public sector have been examined in the health, civil service, higher education, manpower and technology fields. The chapter has explained the selection, design and control of these five projects, all of which are linked to the national five-year plans and part of the programme for the adoption of e-government in Oman. They were conceived by experts, consultants or senior staff, as in the case of **PRS** and **UAS**, or were commissioned by government decision-makers as in the case of **PSRS**, **NERS**, and **PSITTM**. All projects other than **PSITTM** were designed using the relational database management system Oracle, which supports many of the world's fastest, most scalable and reliable databases. These systems used the programming language structured query language (SQL) in the **PRS** and **PSRS**, and Java as a high-level programming language in **UAS** and **NERS**. The projects were designed either by staff in the organizations concerned, as in the **PRS** and **PSRS**, or via outsourcing in the case of the **UAS** and **NERS**.

Many of the programmers and workers in the projects are Omani, but various expatriates have been appointed on contracts. Most expatriate staff are of Asian nationalities and speak English, such as in the **PRS**, **UAS** and **NERS**, and their wages are lower compared to expatriates from Arab countries. However, it was noted that these expatriates and Omani employees communicate poorly, because the official language in the country is Arabic. In contrast, there are

expatriates of Arab nationalities in the **PSRS**, because the program was designed in Arabic for employees in the public sector who use Arabic in all official correspondence in the civil service.

However, the appointment of employees through contracts is one of the challenges to the success of these projects, because of the economic conditions in the country. When their contracts and organizations fail to secure financing, the programmers leave. The Omani staff are not sufficiently competent and have inadequate training. There is a serious lack of Omani competency in the field of IT in the public sector.

The **NERS** uses outsourcing to a Singaporean company to work on the design of the program along with the PAMR staff under the supervision of the ITA. It was noted that the relationship between PAMR staff and the company's employees is ineffective partly because their relationship is competitive. In contrast, the partnership between the ITA staff and the company seems to be more positive. The literature confirms that competition in contracting often does not yield the desired results in the delivery of public services. While relational contracting can promote cooperation, outsourcing may not reduce costs due to the duplication of work, delayed completion of projects, poor communication and lack of confidence among staff.

Staff departures are an issue in the public sector. Staff are hired by the private sector because wages are higher, and they lack knowledge of the public sector. Thus, it is recommended that the public sector should seek to retain talented employees in key roles by increasing basic salaries, linking promotions to performance, and improving management capacity. There is strong competition for skilled employees, as the Omani economy continues to expand, and skilled public employees are targeted by the private sector (Swailes and Al Fahdi, 2011). Therefore, pay rises and an appropriate reward structure are required in order to retain them in management. Ndou (2004)

emphasized that investment in human development and training staff to deal with new processes and activities and giving them incentives would help to prevent the brain drain to the private sector.

This study has also observed that the systems built by project members are less expensive than those purchased or produced in conjunction with external contractors. However, it was noted that many project members were not aware of the relevant budgets or cost, which can negatively affect their success.

Two kinds of software methodologies have been used in Oman: the waterfall methodology was used in the **PRS**, **PSRS**, and **UAS**; and the Agile methodology was adopted by the **NERS** and **PSITTM**. The waterfall method is, however, slow and by the time users receive the product, their needs may have changed. Therefore, software development experts in the ITA introduced the Agile methodology in 2013, which can deal with more diverse requests from customers. However, in this regard, it was found that project members in this study were not aware of project management methodologies. Further, documentation for the project designs was not shared, even though involving users in service re-design and implementing more direct means of communication between all parties are key points in NPM.

The logic of the modernization projects was then discussed, providing an understanding of how these projects controlled and have changed over the years. The objectives of these projects and how they related to the goal of modernization was explained, and the extent to which the organizations concerned decentralized was considered. It was found that most of the organizations have branches in different regions, to facilitate the provision of services to beneficiaries; except for the **PSRS** which is based only in Muscat and the **NERS** which has three branches in Muscat, Sohar and Salalah. Finally, it was noted that the IS project systems can be used via paper-based, online and mobile applications.

The concept of modernization in Oman has generally been associated with the use of information technology to reframe practices, and to liberalize the economy in conjunction with technology to achieve the best value. This raises the question of whether these services have been provided efficiently and effectively to meet customer needs while offering the best value. This is considered in Chapter Six, which deals with how these projects have been managed and implemented as well as identifies the obstacles that prevent change.

Chapter Six

Management and implementation of e-government projects in Oman

6.1 Introduction

Governments in developed and developing countries are encouraging the use of project management and developing approaches that will bring success, which has been linked to the ability to select appropriate management methods to implement strategic change in the public sector (McElroy, 1996). The Omani government has addressed the effects of the financial crisis by designing a strategy focused on managing its projects well, using various techniques.

This section aims to answer and the third research question of this study: ***How effectively have e-government projects been managed and implemented in Oman?*** It examines five public sector projects in the health, civil service, higher education, manpower and technology fields. These projects were developed to implement e-government in Oman. How these projects were selected, designed, and controlled was discussed in Chapter Five.

This chapter considers the work processes involved, determining how the projects were run and the changes desired. Thus, the Project Management Institute's PMBoK Guide (Crawford *et al.*, 2003) is used to explain the work processes employed in developing e-government, and important issues are identified using the management of projects paradigm proposed by Morris (2013). This is concerned with defining the project objectives, working with stakeholders, managing and shaping the emerging front end and managing technical, business, control, organizational and human factors, with a focus on effectiveness as well as efficiency (Morris, 2013).

The chapter is divided into three sections. The first discusses the stages of work in these projects, from their establishment until launch and execution. Section two deals with the challenges faced and the third section assesses the projects and identifies the degree of success achieved in each based on the PMI approach.

The information necessary to answer the research question was collected from interviews with various project members in the organizational hierarchy. They were experts involved in the projects from their inception, and further information was gained from available documentation. The information gathered from the interviewees and documents consulted is analyzed, and work that has been done in these projects is evaluated by comparing the different projects based on the approach developed by the Project Management Institute (PMI).

6.2 Examining Omani project execution based on the project management approach

This section presents the progression of project management in government services for the public sector in the selected projects. It analyses the gradual implementation of these projects developed by different Omani organizations to achieve the aim of unified public services management in the country. It determines the nature of the management processes in terms of their integration and interactions, and the purposes they serve. Project management processes are grouped into the five categories of initiating the project: planning; execution; monitoring and control; and closing.

Successful project management entails actively managing the interaction involved to meet the requirements of the sponsor, customers and other interested parties. However, the most experienced project management practitioners recognize that there is more than one way to manage a project. The required categories groups are guides to the application of appropriate project management skills during the project (PMI, 2001).

This section explores the project management processes, and tools and techniques used in the public sector projects in Oman. It examines the influence of non-technical leadership practices such as taking responsibility and encouraging stakeholders to embrace change in IS projects, because the people and not processes or systems, deliver projects. Therefore, the section focuses on both non-technical and technical aspects.

Successful project management requires the integration of non-technical with technical practices such as risk, time, and quality management (Kaminsky, 2012). Accordingly, the section details the work processes at the different stages of these projects starting with an overview of projects as outlined in the previous chapter.

An overview of the selected projects in the study

In explaining the work processes in the different stages of these projects, it is important to list the project members, stakeholders and beneficiaries in each project (see Table 6.1) determined in Chapter Five, before linking them to the topics addressed in this chapter.

Table 6.1. Project members, stakeholders and beneficiaries

Project Members	PRS	Employees working in the department, medical staff, and all medical specializations.
	PSRS	Director General of Information and Statistics in MoCS, PAMR, Technology colleges belong to MoM, Colleges belong to MoHE, Private schools in Maseerah and al Wusta region, SQU and MoE.
	UAS	Higher education institutions and MoE
	NERS	Cabinet of ministers, ITA, MoM, MoHE, MoE, MoCS, MoF, NCSI, ROP and military sectors
	PSITTM	ITA, government organizations and training organizations
Project	PRS	Medical staff and medical specialists
	PSRS	Government organizations in the civil service system

Project Beneficiaries	UAS	Higher education institutions and companies contracted by the ministry to design the system
	NERS	Cabinet of ministers, ITA, MoM, MoHE, MoE, MoCS, MoF, NCSI, ROP, Military Sectors, Ministry of Agriculture, The Authority of Craft Industries and any entity related to the Omani workforce.
	PSITTM	ITA, government organizations and training organizations
	PRS	Employees of the MoH, patients, decision makers and some government organizations
	PSRS	Government organizations of the civil service, citizens, some non-civil service organizations and private sector
How They Benefit	UAS	Student or guardians, and higher education institutions
	NERS	Citizens (jobseekers), all government, military, security and private sector.
	PSITTM	The Employees seeking to benefit from the course
	PRS	Providing a medical databank for the Sultanate through which can be conducted research and scientifically based decisions reached. Ministry of Awqaf for pilgrimage data. RPO because the data is entered under ID numbers. Ministry of Social Development as regards the disabled.
	PSRS	Employing citizens in government organizations under civil service law. Gaining the confidence of non-civil service organizations such as ROP. Private sector organizations who opted to apply the testing system.
	UAS	To get a place in higher education institutions, and to achieve justice, equality and transparency for all sections of society.
	NERS	To provide the best way for jobseekers to obtain a job with transparency and confidence in the government. They can also obtain their curriculum vitae from the system as an official document. Decision makers provide them with data that helps them work.
	PSITTM	They get certificate. Also, to improve the skills of the employees especially in using IT.

Source: Author

Each project is built with a clear vision to meet needs associated with different services and to simplify procedures. Also, another aim is to help the government conduct studies and reduce the cost of delivering services to customers, through the application of expertise in public administration and with staff working as teams, as staff or professionals in public administration. Some act as stakeholders or entrepreneurs working to reap the benefits of e-service along with project members, but have been key members from the outset in some projects such as **PRS** and **UAS**:

The idea came from us and the administration was very cooperative. (Interviewee 6, Project 1, Stakeholder, 24/05/2018)

I feel it is a nice feeling to be one of those who established the Higher Education Admission Centre and be a part of this organization [...]. and be able to present a proposal unopposed, especially when that proposal was for the general benefit. (Interviewee 17, Project 3, Stakeholder, 14/05/2018)

The main aim of the above projects using information and communication technologies is to offer citizens and businesses the opportunity to interact and conduct business with government by using different electronic services. Table 6.2 reviews the usage of these projects.

Table 6.2. Project service use

	PRS	PSRS	UAS	NERS	PSITTM
Service use	Internal (G2G) “Shifa 3 plus”	Internal (G2G)/ External (G2C)/ (G2B)	Internal (G2G)/ External (G2C)/ (G2B)	Internal (G2G)/ External (G2C)/ (G2B)	Internal (G2G)/ External (G2C)/ (G2B)

Regarding the scope and impact of projects, three main target groups are using these services, which are the government, citizens and businesses and other interest groups. The external strategic objectives focus on citizens, businesses and interest groups, and the internal objectives focus on the government itself. As shown in Table 6.3.

Table 6.3. Service users

Extent of use		
(G2G)	PRS	MoH employees, Ministry of Awqaf, ROP and MoSD
	PSRS	All civil service organizations and some of non-civil service organizations
	UAS	MoHE, MoE, MoSD, and MoM
	NERS	Government decision makers providing them with data
	PSITTM	Government organizations benefiting from the services through training their employees at the expense of the ITA
(G2C)	PRS	-
	PSRS	Jobseeker
	UAS	The student or the guardian
	NERS	Jobseeker
	PSITTM	Employees in government
(G2B)	PRS	-
	PSRS	Private sector using the testing system
	UAS	All education institutions
	NERS	Private sector companies providing them with data
	PSITTM	Private training institutes

Source: Author

Also, the public e-services provided in these projects can be considered as non-commercial innovations, even if the service itself already exists, because they represent a new way of producing and organizing services (Bernhard, 2013). Moreover, according to Kennedy and Fiss (2009), it is better to investigate the motivations for adoption at different points in time during the diffusion of innovations in order to better interpret the adoption process based on clear motives rather than using inference. Therefore, the following sections examine the process of the management of e-government projects from their inception, through implementation and evaluation to give a deeper understanding of the life cycle of the e-government project development.

Project management in the initiation process

This section analyses the initiation of the projects from the perspective of its members and stakeholders. These processes are carried out to identify a new project, or a new phase of the current

project, and obtaining permission to start the project or phase (PMI, 2001). The output of the first phase is a clear definition of the project goals to be explained to all parties, which then influence the other phases of the project life cycle, as well as the project scope and the success of the project at completion. Moreover, the goals must be verifiable and measurable and must be aligned with the organization's mission, vision, strategy and goals.

Project management in initiation phase

Since most of the projects have lasted for over ten years, many of the early contributors are no longer involved; most later members indicated that they had no information about the definition stage. Therefore, the study relies mainly on the few interviewees who were involved in the projects from their inception.

In general, members of **PRS** and **UAS** noted that the atmosphere in the beginning stage was cooperative and relationships among all parties were good. Goals were announced during that period, except for some procedures which were later corrected. The concept of the project itself was formulated by all members, who played significant roles in creating the policies according to which the work is now carried out.

However, Al-Gharbi *et al.* (2014) indicate that there was no predefined plan for the **PRS**. No official business case was formulated to justify the need for the project. The definition of the project was also unclear, as an initiative of unknown scope and without specific stakeholders. Thus, it can be concluded that there was no formal start-up process as defined in the PMI approach to project management. Similarly, a stakeholder indicated that there was no existing research supporting this project, although it was conceived by experts:

I consider it as an idea and practices, they introduced into the country without any prior studies. [...] it is better to study the project and its positive and negative aspects before

implementing it. It is also important to review similar practices [...] and make use of the experiences of others and conduct a comprehensive study of the situation to lay a solid foundation for the project (Interviewee 5, Project 1, Stakeholder, 24/05/2018)

The members of **UAS** emphasized that one of the factors that helped the success of the project was the review of previous studies, as well as benefiting from the experience of other countries. The decision to establish the project was based on the results of this research:

The planning was good because they were researches prior to establishing the system and implementation process [...], these research studies helped in the success of the project (Interviewee 16, Project 3, Stakeholder, 13/05/2018)

The **PSRS**, **NERS** and **PSITTM** projects were established by direct orders of the Cabinet of Ministers, and some discontent among stakeholders was expressed. Some of them described a lack of participation in the projects from the outset and that decisions were imposed on them by organizations, such as the MoCS, because they were mandatory decisions that all of the civil service organizations were obliged to follow. However, these organizations cooperated with stakeholders in finding solutions to problems that arose:

For us, we were forced because we are under the umbrella of the civil service (Interviewee 11, Project 2, Stakeholder, 24/06/2018)

Our organization was not invited at the beginning of the project, but they were listening to our point of view later (Interviewee 23, Project 4, Stakeholder, 05/06/2018)

Even the project members themselves echoed this point:

My role is executive manager and supervisor of all the specializations of the project. The responsibility came at a time of a certain activity in the field of manpower in Oman following the 2011 jobseekers' riots. [...]. We consider the points of view that conform with the Registration Authority's responsibilities [...], we arranged a chain of meetings with the HR Director General and the specialists in the government and private sector in that time which aimed to acquaint the attendees with the situation (Interviewee 19, Project 4, Manager, 03/06/2018)

The ideas come from the management and we (the employees in IT) implemented them (Interviewee 29, Project 5, Member, 29/05/2018)

According to Sarpong and Maclean (2012), most software projects start with very little clarity and carry ambiguous task specifications. Often this is a major problem at the beginning of the project, which drives the team to attempt to innovate new meanings and ideas to obtain strategic insight into the future of the new product. However, Bovaird (2007) proposed that stakeholder involvement in decision making from the beginning helps lead to good outcomes. Generally, this involvement improves the likelihood of shared ownership, acceptance of delivery, and customer and stakeholder satisfaction.

Organizational readiness for change is an important precursor to the successful implementation of change. This is achieved by persuading all employees and stakeholders of the need for change and explaining the contradictions between the current and targeted performance levels, demonstrating dissatisfaction with the current situation, creating an attractive vision for the future, and enhancing confidence that this future state can be achieved (Weiner, 2009).

Promotion and publicity

In their study of e-government diffusion in Oman, Al-Busaidy and Weerakkody (2009) suggest that it is important during the implementation of major e-government projects to create sufficient propaganda to encourage organizational support. Accordingly, different types of publicity have been used by these organizations to acknowledge the need for the system, as defined in Table 6.4.

Table 6.4. Project publicity

Promotions or advertisement	
PRS	Used to sit with the employees who were running the system to show them the methodology of doing the work.
PSRS	Holding a seminar, carrying out awareness campaigns through pamphlets, television and radio advertisements and publication of news on the ministry's website.
UAS	Promotional workshops, through advertisement and other audio-visual media.
NERS	There was no marketing plan before the project, which was launched immediately after the issuance of the Royal Decree. After one year, they hired a consultancy company to publicize the project
PSITTM	A marketing plan in cooperation with the information sector.

Source: Author

The advertisements for the **PRS** were aimed only at MoH employees and specific people who would be running the system to show them the methodology involved. The rest of the other employees and the public were not included.

Promotion was extensive, however, for the **PSRS** and **UAS**. For **PSRS**, there was a seminar on recruitment, awareness campaigns and pamphlets distributed at recruitment exhibitions, a website, and television, radio and smartphone publicity. Similarly, the promotion of the **UAS** was conducted through seminars and lectures across Oman to all sectors of the population to acquaint them with the programme and how to use it. Moreover, external marketing was used through participation in conferences outside Oman, as one stakeholder described:

I personally participated in two conferences: one in Vienna and another in Monte Carlo. (Interviewee 16, Project 3, Stakeholder, 13/05/2018)

There was no marketing plan before the **NERS** project, because it was launched immediately after the Royal Decree. Promotion was arranged one year after establishing the project, when PAMR hired a consultancy company to publicize it. According to a stakeholder:

I think that was two years after launching the project. They informed us of the goal of the project and what was required from each organization. (Interviewee 23, Project 4, Stakeholder, 05/06/2018)

An ITA official stressed that one of the authority's policies was to start capacity building, and test the system before a campaign. Therefore, before marketing the project, certain procedures had to be carried out, as indicated by a project member:

Before starting the project, we conducted an experimental study with about 100 jobseekers. We asked them to use the system so that we could ensure its adequacy and get feedback and recommendations, which we then used to produce the project in its final form for launch. (Interviewee 21, Project 4, Member, 20/ 5/ 2018)

The **PSITTM** was advertised using the same steps as it was also an ITA initiative. However, the late promotion of these projects caused problems at the beginning, such as misunderstandings in Omani society about their objectives and among some organizations which thought that PAMR had usurped some of their jurisdictions. Furthermore, despite efforts in promotions project, members noted that awareness among the public was low in some cases, such as with the **PRS**,

NERS and PSITTM:

Awareness of society about these programmes is inadequate, and people are unaware of the benefits in store for them. (Interviewee 2, Project 1, Member, 21/05/2018)

Meanwhile other projects were keen to plan and prepare good publicity. The **UAS** and **PSR**, for instance, were promoted widely across society using external marketing.

The initiation processes were well defined in the **UAS** and **PSITTM** because the PMI approach for project management was adopted. A study was conducted to define needs and formulate clear and specific goals from the beginning. This ensured participation and good communication with stakeholders. The projects were publicized through all possible means of communication and explained to beneficiaries. However, there were some weaknesses with the **PRS** since no initial studies were conducted, leading to unclear definitions and plans which had to be corrected later. The lack of involvement of stakeholders in decision-making in the **PSRS** and

NERS led to miscommunication. This issue was solved later in the **PSRS** project but has continued with **NERS**.

Project management in the planning process

Planning is a central component of modern project management. Commonly accepted professional standards, such as the PMI Guide for PMBoK, emphasize the need to invest in processes and procedures to support planning, to reduce uncertainty and increase the probability of success. In addition, the PMBoK encourages project managers to believe that, although planning does not guarantee success, if it is lacking it could cause failure. Nowadays, with advances in computerized planning tools and the boom in project management training, a certain level of planning is carried out in all projects, even those projects that eventually fail (Dvir *et al.*, 2003).

Planning processes are required to define the scope of the project, refine the objectives and identify courses of action required to achieve the aims by documenting the necessary procedures to identify, prepare, integrate and coordinate all sub-plans. The project management plan becomes the main source of information on how the project is planned, implemented, monitored, controlled, and closed (PMI, 2001). The seven outputs of the project planning process consist of its scope, and the management of resources and procurement, time, communication, risk, cost and quality management.

Project scope

The identification of its scope requires a detailed description of the project, which in turn cannot be defined without some basic understanding of how to create the specified project (PMI, 2001). The scope of the case projects may expand to involve adding new services and simplifying procedures. One manager in the **PRS** noted that the system expanded continuously because

requests were constantly changing. Also, there were international obligations to provide certain information to the International Health Organization and this information had to be added to the system if not already available.

The scope of the **PSRS** expanded due to a change from the old system when reviewing applications. Also, the administrative machinery for subsequent stages required different levels of competencies to be selected. The scope of the **UAS** has gradually expanded because numerous international systems in the field of education needed to be applied to the Omani system for students who had studied in different countries. Recently, it has expanded because:

This time they added experimental sorting. What I notice is that whenever they expand, they become better and better, and the procedures become easier for the student and guardians. (Interviewee 18, Project 3, Stakeholder, 13/05/2018)

The same has happened with the **PSITTM**:

We expanded the scope of the project [...] in the first stage the focus was on civil government organizations; in the second stage military and security organizations. (Interviewee 24, Project 5, Manager, 20/02/2018)

All this evidence confirms that the scope was not defined from the outset but changed depending on requirements and services that were subsequently developed. Regarding the **NERS**, the ITA authority noted that they expanded its scope because they changed the original idea and started with a completely new project. They had conducted research, and the vision was already there and clear to everyone from the beginning. However, one stakeholder in the **NERS** argued that:

The project expanded widely because some organizations were not ready yet, thus, readiness for the project as a whole was not complete until now. (Interviewee 30, Project 4, Stakeholder) 05/06/2018

Organizational readiness indicates commitment to change and the shared resolve of members of the organization to follow the action paths involved in implementing it. Implementing complex organizational changes requires teamwork involving many people, all of whom contribute (Weiner,

2009). Thus, it is important to ensure the readiness of organizations before starting the expansion of scope, and there must be an alternative plan in case of delays. All these points need to be considered from the beginning, which did not occur with the **NERS** where issues such as lack of data from some organizations were not taken into account. This caused delay in the implementation of the new project, resulting in increased costs. Public sector organizations must conduct meticulous cost-benefit calculations before embarking on a reform project, but equally they are capable of interpreting results and shaping meaning in response to the political imperatives (Fiss and Zajac, 2006).

Communication management

In the planning stage, team should determine the most appropriate way to implement the project, decide who will participate, what resources are necessary, the overall approach to work, and the phases to be involved. What is expected at each stage should also be determined. An administrative review is often conducted to determine the activities in each phase, giving time to check previous assumptions, review risks and define more detailed processes to complete delivery (PMI, 2001).

By analyzing the interviewee data, it was found that the general administration of the **PRS**, **PSRS**, **UAS** and **PSITTM** projects in the planning phase were excellent, supportive and cooperative in term of development, maintenance, and support. Also, the communication between members and stakeholders was very good, as they cooperated in the provision of services and immediately addressed all the problems encountered especially in the **PRS**, **PSRS**, **UAS** and **PSITTM**. The stakeholders in these projects were key members of the **PRS** and **UAS** and participated in their establishment. However, in the **NERS**, the relationship between project members and stakeholders was not good. This may have caused delays, according to both parties. Also, the relationship between project members and employees working in the outsourcing

company that designed the system was uncooperative. Building strong relationships is an effective approach to achieve success in any business environment (Jalkala *et al.*, 2010).

The general aim of e-government is to achieve strategic change through these projects. Therefore, communication with staff is necessary to persuade them of the need for change, and to participate in the change process. In addition, there must be an awareness of individuals' possible reactions to change so that they can be helped through difficulties from the beginning (McElroy, 1996).

Project specifications, and resources and procurement management

A study conducted by Dvir *et al.* (2003) indicates that the success of a project is positively correlated with investment in the definition of requirements and the development of technical specifications, especially in the eyes of the end-user. From the analysis of data, the specifications for these projects were simple in the early stages but later became more appropriate and met the requirements of end-users. Therefore, the appropriate resources were in general available. There may have been shortage of funds due to financial constraints and a lack of human resources, but in general, staff attempted to meet the requirements of all beneficiaries with the resources available and have sought assistance from the private sector to help meet some requirements.

Participants in the **PRS** indicated that certain specifications at the beginning were not catered for, possibly because the section involved was newly established, but now the specifications are satisfactory. Whenever they started worked in any area, staff arranged for resources to be available to implement the new system. However, one member indicated that they are still facing challenges regarding human resources, due to employee resignations and the difficulty of finding experienced replacements, among programmers and doctors, especially when

the incentives offered to them were inadequate compared to those in the private sector or in other countries. He also noted that:

Now we are trying to arrange things but we do not have specific supervisory employees for all these procedures. The number of employees working on the system is small compared with the volume of work [...] many employees are resigning, and staff are working under intense pressure with no incentives for the government employees [...]. (Interviewee 2, Project 1, Member, 21/05/2012)

There is clearly a significant shortage of human resources, which has led to pressure at work and staff discontent, especially with the absence of incentives in the government sector. Swailes and Al Fahdi (2011) also emphasized that turnover among qualified staff, especially in pivotal roles, is a problem because it leads to the interruption of services.

At the same time, members of the **UAS** project indicated that they still faced many issues. The main obstacles were financing, and the programmers contracted with external companies. Also, the **UAS** centre requested private sector assistance to provide resources. In 2004, the system was new and incomplete. Over the years, great efforts were made for private companies to provide equipment for the remote regions and, because it is a national project, Omantel responded positively and donated 60 modems in 2007. These were deployed in distant governorates and schools which became registration centres in regions where internet coverage was weak.

Meanwhile a stakeholder in **PSRS** explained that the specifications were available, and the new building of the Ministry is prepared for all these necessary procedures. They had designed and built four halls for the tests containing the latest equipment. In the **PSITTM** efforts were made by project members to meet the requirements of end-users, for equipment, and all the needs of course participants were met. It seems that the specifications were not sufficient from the point of view of beneficiaries at first; however, the authority improved the situation as follows:

We were not happy about the training hall; otherwise the equipment and other requirements were satisfactory and because of the discontent of some of the participants, the courses were moved to the ministry building. (Interviewee 31, Project 5, Stakeholder, 29/05/2018)

According to Lipovetsky *et al.* (1997) a most important dimension of project success is benefits to the end-users. Therefore, end-user involvement should start in the first stages of the project and continue until its successful completion. Furthermore, formal planning is in the hands of the project manager while the development of requirements and specifications depend on tight cooperation with the end-user.

Members of the **NERS** project indicate that specifications and resources became available only gradually; for example, the electronic cloud was not included at the beginning but was included later because the ITA was not ready. As with the other projects, they experienced shortages in specialized staff to manage the project and they did not have sufficient resources:

The person who lately became in charge of supervising the work of the project doesn't have English language skills and therefore faces difficulties in communicating and handling documents in the English language. (Interviewee 22, Project 4, Member, 20/ 5/ 2018)

In this regard, the ITA official indicated that they tried to improve the infrastructure, but there were still financial and human resources shortages in many organizations:

We have 86 organizations and if we waited for all of them to be prepared before we started, we would not be able to achieve anything because the organizations do not have the required financial and human resources. (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

Therefore, in all cases except the **PSRS**, the specifications were available, and the staff worked with what they had from the beginning, but they still face shortages in human resources.

Time management

The timing of these projects varies depending on their objectives, and they are all are part of the long-term e-government plan. Subsidiary goals have been set for development in stages, which

might change according to the long-term objectives. Therefore, it is noted that the management of time depends on the objectives set. The **PRS**, **PSRS** and **UAS** projects began before the implementation of e-government in the country; thus, a lack of infrastructure readiness led to long delays. Also, the waterfall methodology used is a lengthy process until all steps are achieved and the project is executed.

Additionally, Al-Gharbi *et al.* (2014) admitted that the main elements of proper planning for a viable and successful project were missing in the **PRS**. Members set goals based on the tasks they were set but without time or cost constraints. There was no predetermined time frame linked to their goals. This may have been evident at the start of the project, but over the years staff sought to address and solve the issues, as evidenced when the project won many local and international awards as one project member indicated:

It was difficult in the past, but we have started putting a timetable for all types of work in a proper and scientific way. Supervision and control are existent as each employee entrusted with a task is requested to execute it within a specific time and standard. In case of delay, the employee is subject to questioning. (Interviewee 2, Project 1, Member, 21/05/2012)

The **PSRS** is a combination of the HR and the Nimr systems, which were bought off the-shelf as a ready-made system, and thus were launched within one year. The **PSRS** project members emphasized that the goals had been set which were based on the specified tasks and took into account time and cost constraints. This was explained by one stakeholder:

I think that they have put the plans and defined the goals because the application of the system did not start immediately in all Ministries, but it started in stages. (Interviewee 12, Project 2, Stakeholder, 24/06/2018)

After the application of e-government, the methodology used changed to the Agile methodology, which achieved results more rapidly and allowed the public to benefit from the project earlier.

However, different factors affect time management, such as financial problems, good planning, participation by all parties, and teamwork.

The **NERS** and **PSITTM** project were using the Agile methodology, and so the timing is dependent on the customers' requirements. The reason for the long duration of the **PSITTM** project was due to its expanded scope, which means that it was tailored to the stakeholders' requirements. The **NERS** started as a simple system in the MoM which was then developed by PAMR employees based on the requirements at that time. As part of the electronic transformation, the project developed through participation between PAMR, which was responsible for management and follow-up, and the ITA, who provided funding. The research, implementation and contracting were handled by the ITA. The tender for some work was awarded to an international company which worked with them for six months and advised that there must be integration between many organizations. But the project started late due to the financial crisis, and so the period was extended, as defined by a project member:

The plan was for five years but this target was not met because the project started late. It started as five years but there were expansions as a result of assessments and changing statistics. (Interviewee 22, Project 4, Member, 20/05/2018)

Based on that, PAMR were working with two strategies: one for the system which was prepared by them when they were in the Ministry of Manpower ("Power") and the other when they worked separately from the Ministry until they achieved integration ("Nmir"). After completing this project, they handed it over to the contracted company to ensure success. The ITA, on the other hand, continued working with other organizations to complete integration so as to achieve the electronic transformation. This was supposed to be completed at the end of 2019 according to the project plan, but the project is not yet ready, purportedly due to the non-readiness of other government agencies, as claimed by the ITA official:

The degree of data availability in the organizations is another problem which led to the delay of the project, and we could not determine the specific duration for overcoming it because we did not know when the organizations be able to provide us with the data [...]. If we review the integration map, we will find that each organization needs not less than 26–27 other organizations. Therefore, we decided to defer with integration the present problem and make use of the time by launching the new system with whatever shortfalls it contains, with the intention of rectifying them later. (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

From the above, it seems that the **PRS** and **NERS** projects did not consider time management in the planning stage, while the **PSRS**, **UAS** and **PSITTM** set goals based on duration and cost and worked to achieve them accordingly. Table 6.5 shows the duration of the projects.

Table 6.5. Duration of the projects

	PRS	PSRS	UAS	NERS	PSITTM
Establishment year	1994	1997	2004	2011 “Power” 2015 “Nmir”	2009
Implementation year	1997	1997	2006	2011 “Power” “Nmir”: not yet implemented	2013
Current status	Shifa 3 plus operational	Operational	Operational	“Power”: operational “Nmir”: incomplete	Completed

Source: Author

Risk management

Most of the respondents identified that the issue of risk management had been considered from the beginning, especially climatic risks such as the “Jono” storm, which led to project members considering a standby duplicate copy of the systems that would work automatically if the original failed for any reason.

The **PRS** project members admitted that some unforeseen risks had materialized, such as an electricity failure during the Jono cyclone, but they overcame this by temporarily reverting to

paperwork; the data of which was fed into the system later. Hacking was ruled out because the system is centralized in the Ministry and nobody can log in and tamper with it. However, some medical centres do not have the equipment to mitigate some risks. One member indicated that:

Because of the high cost, some medical centres do not have electric generators to avert the risk of electrical failure (Interviewee 6, Project 1, Stakeholder, 24/05/2018)

In the **PSRS** project, members noted that some potential risks occurred, such as overloading of the system because everyone wanted to register at the same time. They solved all technical and risk factors, especially in the new building, because the system was made to specifications. Participants in the **UAS** project indicated that technicians were aware of potential problems and took all necessary precautionary measures. One of the characteristics of this system is that if any disaster occurs, the back-up copy will switch on. Reserve copies of the system are available at the Nizwa Technology College and the National Technology Authority. However, all these procedures were applied after “Jono”, as one member noted:

I remember when cyclone Jono hit Oman in 2005 [...]. We did not think of risk management. Therefore, we started moving the servers to the buildings of the National Survey Authority compound because it was on high ground and a safe location within the Ministry of Defence. The good thing was that we had a reserve copy kept in two safe places (Interviewee 16, Project 3, Stakeholder, 13/05/2018)

Also, participants in the **NERS** project argue that they considered risk management and tried to provide solutions to problems that could potentially arise. One solution would be to provide an alternative site to continue the work if the present system broke down, but they had not yet received any response from the ITA, as noted:

We have a standby copy but we do not have a standby system to continue providing the service; if the system stops, we must wait until we use the standby copy [...] but we did not receive any response from the ITA till now [...]. Generally, even if the system stops it won't be for more than one day. We can control the situation with what is available to us [...]. Nevertheless, we insist that we are in need of a system that secures the continuity of the system. (Interviewee 24, Project 4, Member, 10/06/2018)

With the **PSITTM** the main risk was not related to the system but the possible rejection of the idea and site by the public. Also, some problems appeared during implementation and afterwards, such as the failure to complete courses by employees, which therefore denied opportunities for other employees to benefit, but they took such possibilities into consideration from the beginning.

Attention to risk management was clearly not considered during project planning in relation to the **PRS** and **UAS** until the systems were affected and then they had to find solutions. This could be attributed to the fact that such conditions had not occurred for over 40 years. Meanwhile **PSRS** project members indicated no recent problems as a result of Jono. The **NERS** tried to find solutions to all potential technological risks through the **ITA** as the responsible body. The participants reported that all risks were dealt with immediately, including in the **PSITTM** project.

However, after the Jono storm, most organizations thought more seriously about taking precautionary measures. Risk management must be considered when planning projects, which are national systems in the service of the community. For example, Omantel as well as the **ITA** must be ready to respond to any risks and solve problems immediately, as stated by the **NERS** manager:

ITA has the general responsibility to the government, and we seek their help in such risk cases. (Interviewee 19, Project 4, Manager, 03/06/2018)

Moreover, it seems that not all risks in these projects were electronic or environmental in nature. Many risks seem to have been related to human resources, such as sudden resignations and the lack of appropriate alternatives, leading to delays in the **PRS** and **UAS** projects and the lack of community acceptance of the project and the questioning of its credibility in the **PRS**, **UAS** and **PSITTM**. The unavailability of the data and unpreparedness for the necessary infrastructure in Oman affected the **NERS**, as stated by one stakeholder:

We noticed the presence of many risks such as the unavailability of data, and the unpreparedness of the infrastructure in Oman. (Interviewee 23, Project 4, Stakeholder, 05/06/2018)

However, these risks must be considered prior to making the decision to implement a project. Risk assessment is supposed to be at the heart of decision making (Flyvbjerg *et al.*, 2003).

Quality management

TQM is a set of principles that can be applied to all departments or functional areas within an organization (Chowdhury, 2014), involving the harnessing of soft and hard practices to engage management, employees, suppliers and customers in an effort to continuously improve the quality of products and services (Jaca and Psomas, 2015). This section determines the extent to which TQM departments participated in the case study projects in their organizations, and the roles they played in their success.

The **PRS**, **PSRS** and **UAS** project members acknowledged that quality management is the responsibility of the Ministry. However, these projects started before the TQM department was established. In the **PRS** project, the quality system was responsible for the notification system as well as checking programmes before submitting them to top management.

In the **PSRS** project, the quality department works based on indicators of achievement measured at each stage often setting goals. Also, in the **UAS** project the quality department's duties are to ensure that all services approved by the Ministry are executed efficiently and effectively. In addition, there is a Quality Committee headed by the MoHE and the Directorate General. Its aim is to explore how to improve work in the Directorate General, especially after the Ministry's participation in the excellence competition and winning a prize awarded by the European Organization for Excellence.

Members of the **PSITTM** project noted that there is a TQM section whose role is to evaluate quality after the completion of the project. However, the stakeholders indicated that, during the course of the project, many issues appeared but were not solved because ITA supervision was weak; and they depended the private training organizations.

Members of the **NERS** project reported that a TQM section had been established and its responsibilities determined. However, the section has not yet been activated by the MoCS:

The quality section is responsible for evaluating and reviewing the authority's services. The section reports to the CEO. At present we are coordinating with the MoCS to activate this section. We are also working towards getting ISO certification in cooperation with the MoCS. (Interviewee 21, Project 4, Member, 20/ 5/ 2018)

It is noted from the above that the quality sections in some projects work correctly, as in **PRS**, **PSRS** and **UAS**, while proper supervision is lacking in the **PSITTM**. However, focus on quality has only recently begun in the Sultanate, and there is evidence of the establishment of service projects without consideration given to quality, as noted in the **NERS**. Thus, it is confirmed that quality should be a requirement of all government agencies in streamlining administration and increasing the efficiency and effectiveness of services (Getsch and Davis, 2014). Therefore, the MoCS is seeking through its Quality Directorate to assist the authorities in establishing quality departments. However, MoCS is unable to oblige the other parties to do this, as mentioned in Chapter Four.

Cost management

Many of the interviewees had no idea of the project cost, and therefore could only give estimates. Members of the **PRS** project admitted that, they could not even estimate the cost which changed daily. They thought it may be about 3-5 million RO, because the system was created by the efforts of staff, so that only the salaries of employees and equipment were involved. Some stakeholders

indicated that health care projects are usually costly if bought off-the-shelf, and so more than 40 million RO may have been saved.

The same point was made about the **UAS**, **PSRS** and **PSITTM**. The estimated cost of the **UAS** was about 70,000 RO, which seems reasonable given the workload involved. Assistance was sought from the private sector in the provision of certain equipment and services, resulting in lower costs. Interviewees from the **PSRS** and **PSITTM** did not know the real cost of the project, which they assumed amounted to equipment, buildings, and salaries.

Project members pointed out that the first **NERS** system 'Power', cost nothing except the salaries of employees and equipment, because it was designed by the PAMR staff. After working towards integration, the cost of the new 'Nimr' version was about 5 million RO paid by the ITA. However, project members of the PAMR thought that this cost was too expensive. They said they could have set up and expanded the project using their employees instead of contracting the work to a consultancy company. Nevertheless, the ITA official noted that PAMR staff could not complete the project due to lack of financial and administrative resources. He estimated that, excluding operations, the cost of the project was about 2.4 million RO. The project operation depended on the degree to which PAMR staff were able to cooperate, how long they would be dependent on the consulting company and maintenance issues. The overall cost of this and complex project may therefore be in the range of 4 to 5 million RO.

It can be concluded that the real costs of these projects could not be calculated with any certainty was because their goals were not linked to the expected costs of completing each stage. According to Irani *et al.* (2005) managers tend to be myopic when considering information system (IS) investment decisions, primarily because they do not have a sufficiently robust framework by which to evaluate their benefits and costs. Moreover, managers tend to give little or no attention to

the hidden or indirect costs surround in IT adoption, which may be up to four times greater than direct IT costs. Ignoring indirect costs may lead to costs creeping up or project failure over the long term. Many companies only realize the significance of additional cost factors after the project has started, when it may be too late to stop the momentum due to internal and external political pressures. Moreover, poor decision-making may exclude the broader, costs and benefits, thus leading to significant financial losses. Interestingly, in both the public and private sectors, the costs associated with such losses are invariably passed on to customers through increases in prices in the private sector or in taxes in the public sector (Irani *et al.*, 2005).

Finally, there was no formal project management planning, as advised in the PMI approach, since there was no predefined time frame for the projects, no clear scope and no well-defined costs, especially for the **PRS**. However, these issues were eventually considered and solved, as one project member indicated:

When we compare the previous copies with the present copy, we can clearly see the big difference between the two; maybe the resources were limited for the previous whereas the project has now greatly expanded. (Interviewee 4, Project 1, Member, 23/05/2020)

Meanwhile the costs of the **NERs** mushroomed due to weak management during the planning stage. Hence, the main elements of proper planning for a successful project were missing from the two latter projects. However, we can see all these points were clearly illustrated in the **PSRS**, **UAS** and **PSITTM** projects from the planning stage onwards.

Project management in the implementation process

Based on the information provided by the interviewees and available documentation, it is observed that the work involved in executing the **PRS** was undertaken inside the MoH, without any external intervention or involvement from the private sector. However, the development of the project took

a long time until its approval for implementation in 1997, due to bureaucratic inertia and the absence of a clear vision in relation to the future of IT. As indicated by one stakeholder:

Unfortunately, we have a degree of bureaucracy in the Ministry where the public hospitals are separated from those in the private sector, and so is the case with the executive managers for hospitals. Therefore, they have to supervise and instruct their employees to comply with executing everything in the system together. (Interviewee 6, Project 1, Stakeholder, 24/05/2018)

According to Al-Gharbi *et al.* (2014), the milestone decision to initiate the pilot project was made in 1997 without any research into the readiness of the system. This has certainly affected implementation since there was no clear assessment of the resources required, or a timeframe. In addition, resistance to change and a lack of skilled professionals were other factors that led to delays in the **PRS** and **UAS** projects. The **UAS** was implemented after two years of study and planning by project team members who set the goals, and then the system was designed by the contracted company. However, due to the resistance from other organizations, they developed another plan in case it was unsuccessful, as indicated by the project manager:

In the beginning, there was strong resistance from the organizations due to their mistrust in the project and its success. The SQU had plan “B” ready in case (Interviewee 13, Project 3, Manager, 10/05/2018)

In **PSRS**, the project was implemented in the same year as the issuance of the decision by the Cabinet of Ministers. However, the application of the system did not start immediately in all ministries, but in stages, starting first internally, then with small ministries, and finally the large ministries according to a set plan. This was explained by a stakeholder:

When they started implementing the system, they organized a workshop and invited the government organizations to send candidates to attend training on the system conducted by the IT department in the Ministry [...]. Also, employees from the MoCS were sent to government organizations to help with how to enter the data and use the system. (Interviewee 12, Project 2, Stakeholder, 24/06/2018)

The **PSITTM** initiative was implemented in 2013 as part of the third stage of e-government initiatives. Applications after the third stage were open to all organizations which met the conditions set by the ITA which provided the government with information about registered institutes that provided the courses.

Meanwhile, the **NERS** has not yet been implemented due to the reasons mentioned earlier. This was confirmed by one project member:

There is no evaluation as such. There are only periodic meetings during which we discuss general issues because the contract, unfortunately, doesn't include such a clause. I can't evaluate a project because it has not been officially launched. (Interviewee 22, Project 4, Member, 20/ 5/ 20180)

Project management in the monitoring and control process

Monitoring and control is required to track, review and regulate the progress and performance of the project, to identify areas where modifications are required and initiate appropriate changes (PMI, 2001). Therefore, this section focuses on the evaluation of the projects which has been conducted in various ways. The **PRS** is assessed through feedback from hospitals during regular meetings, and workshops for beneficiaries on how to use the program. The monitoring process in the **PSRS** is through questionnaires distributed by the quality department to identify opinions staff and the citizens benefitting from services. The **UAS** is evaluated in reports to the concerned organizations, as well as annual reports and statistics, and by questionnaire completed by students. The **PSITTM** evaluates the result of training through feedback from the employees and their organizations. The **NERS** team prepares and evaluates the plans through meetings with the executive body twice a year to determine achievements and what it needed next. However, one project member stated that the evaluation is not yet complete, due to lack of readiness.

Project management in the completion process

The project closure phases for most of the projects are still ongoing because they are large projects to facilitate new services in the organizations. Due to the nature of the **PRS**, **PSRS** and **UAS** projects, there are many overlapping phases and constantly changing aims because new services are regularly added. However, the absence of a clear vision and well-defined objectives has certainly had a negative effect on the completion processes in the **PRS**. In fact, each of the projects is still ongoing. The **NERS** system changed from Power to Nmir, which is incomplete. Meanwhile the **PSITTM** is excluded from consideration here, as the project formed part of the e-government initiative to spread the culture of e-government across the country as explained in the project objectives. Many bodies were supposed to establish such initiatives but rejected the scheduled time and the objectives for their development.

Overall, although e-government adoption was driven by strong organizational and technical needs, the country has lacked the capacity to fully achieve e-government practice in these projects. These strong driving forces have continued to fuel the implementation process and led the government to adopt corrective measures to rejuvenate the initiative in October 2012. Thus, it is essential to have a robust and reliable ICT infrastructure in order to successfully implement e-government. In addition, better than adequate IS/IT knowledge is required. It is also essential to establish appropriate organizational arrangements to facilitate integration between different government departments to support the institutionalization of e-government based on state laws and rules, as recommended by Al-Busaidy and Weerakkody (2009).

6.3 Obstacles to project success

This section identifies the barriers that might complicate the implementation process of e-government projects in Oman. Awareness of such barriers is important since they will alert the e-government project teams of challenges during the implementation (Ebrahim and Irani, 2005). According to Syed *et al.* (2018) public sector organizations around the world are facing many challenges to meet the demands for better public services, due to rapid changes in the global and local socio-economic environment. It is evident that there are many challenges to successful e-government implementation in Oman. They vary from one organization to another, and from one stage to another, although there are some commonalities. These commonalities, in my opinion, arise because all the organizations concerned share socio-economic and geographical similarities.

The following are the most important challenges to the e-government service modernization projects in the Sultanate, according to the analysis of the selected projects.

The obstacles faced by these projects include lack of financial and human resources, the poor infrastructure of the country, and other economic, social and cultural conditions, which have been explained previously. Arguably, these challenges are faced by most developing countries as pointed out by many researchers such as (Ndou, 2004) and Nkohkwo and Islam (2013), yet may differ in degree depending on of the circumstances and culture of each country.

Funding shortages due to the financial crisis

The financial challenges involved were stressed by all project members, experts and decision-makers in the country. However, these results contradict those of Al-Busaidy and Weerakkody (2009) who indicated that the Sultanate differs from other developing countries in having sufficient financial resources to implement e-government projects. However, their study was conducted in

the early period of project implementation from 2000 to 2013. Recent poor economic conditions throughout the world, and in Oman in particular, have led to a growing financial gap (Heeks, 2001; Chen *et al.*, 2006; Heeks and Stanforth, 2015; Syed *et al.*, 2018).

The financial challenges led to the withdrawal of incentives in the public sector, and delays in service provision which were noted in all projects as well as the delayed integration of government organizations in the **PRS** and **NERS**. Also, some services were suspended, such as branches not opening and failures in issuing documentation in the **NERS**. It caused a reduction in donor support, leading to the weakening rather than strengthening of human resource capacity and effective system design, as in the **PRS** and **UAS**. For example:

One year some companies provided grants for school leavers from previous years, but this was stopped due to the financial situation. Similarly, the financial support which was given to self-financing students [...]. This scheme is on hold due to the financial crisis. (Interviewee 14, Project 3, Member, 13/03/2018).

Moreover, other challenges included difficulties in obtaining staff with the highest levels of competence, such as doctors and programmers as in the **PRS**, **UAS** and **PSRS** projects, as well as difficulty in obtaining funding from the government for outsourcing and contracting, as in the **PRS**, **UAS** and **NERS**. Layoffs of staff also occurred, such as the dismissal of many consultants in the ITA. This resulted in the inability of staff to follow up on their work due to the pressure exerted on them, as in the case of the **NERS**.

Organizational and legal factors

Problems related to regulatory and legal issues are numerous, such as weak communication between project members causing delays in the implementation of projects, as in the **NERS**. There was and weak accountability both internally and externally, causing opportunities to be lost, as

well as mismanagement, and misuse of government spending, as reported by experts in Chapter Four.

Other challenges include conflicts of interest and the duplication of work when more than one organization provides the same service, as in the **NERS**, shortages of staff leading to the failure to offer some services, as well as weak supervision due to pressure on staff, as seen in the **PRS**, **UAS**, and **NERS**. Moreover, many organizations do not conduct research in advance to ensure the economic and administrative feasibility of projects, as in the **PRS**, although this is a key requirement for project management. Likewise, many problems were cited in the standardization of work procedures; for instance, between health centres in the **PRS**, and the equivalence of certificates in the **UAS**, therefore delaying the integration of e-government services. Furthermore, some organizations did not provide data in a timely manner due to their unpreparedness. This is one of the causes of delay in systems becoming fully operational, especially in the **NERS**, or where appropriate policy may be lacking, as highlighted by some experts in Chapter Four. Changes in laws and regulations may also be responsible for some problems. For instance, Civil Service Law and its executive bylaws must be improved because they do not provide for the proper evaluation of employees or the measurement of their performance. This issue has been noted by many experts as well as some stakeholders. For example:

Civil Service Law and its executive bylaw must be improved because it is not coping with the employee motivating system. It lacks measurement of performance. (Interviewee 11, Project 2, Stakeholder, 24/06/2018)

In addition, there may be a lack of interest in documenting a project, due to the absence of an entity that maintains project documentation, even after completion. Also, documents were found to be missing after employees retired or left the organization, as stated by project members and experts.

Human resources

The obstacles listed as human resources issues include a lack of Omani competencies in the field of IT in the public sector, as shown in the cases of the **PRS**, **PSRS**, **UAS** and **NERS**. Also, frequent resignations in the public sector occur because wages are higher in the private sector, and knowledge is lacking in the public sector due to poor training and incentives (Swales and Al Fahdi, 2011). This was demonstrated in the **PRS** and **UAS** cases. National statistics indicate that, during 2017, 59.4 per cent of the relevant staff resigned from the public sector, and a further 16 per cent left because their contracts were terminated (NCSI, 2018).

That key project members may not have been familiar with significant aspects of their projects such as the budget and methodologies used was noted in all projects, and is another obstacle listed under human resources issues. This indicates a lack of project management skills, although many researchers such as Syed *et al.* (2018) stress their importance. Furthermore, some participants pointed out that training in the public sector is mostly internal using local trainers, but private sector training is held abroad, and employees receive international certificates and licenses.

This may be one reason for staff moving to the private sector, as cited by one member:

The training of employees in the public sector is mostly internal, but the private sector's training is abroad, and their employees get international certificates and licenses. That is why the government employees tend to move to the private sector (Interviewee 4, Project 1, Member, 23/05/2018)

In addition, staff complained about the use of foreign companies on the grounds that Omanis are better at serving their country. Therefore, cooperation is weak, leading to poor performance as in the **NERS** project.

Infrastructural factors

It is further noted that most problems related to infrastructure were cited in the initiation stage of projects. Solutions were found for many such problems later, especially after the formation of the ITA. However, officials in the country still need to resolve infrastructure limitations in the Sultanate. This is widespread and includes security, privacy, information sharing, weak networks, Internet access and connectivity. There is also a scarcity of computers and a digital divide. Further, there is a lack of collaboration in and between systems, as well as issues relating to the maintenance of government websites and data systems, as shown in the **PRS**, **PSRS**, **UAS**, and **NERS** projects.

Social issues

Problems related to social issues include resistance to change and innovation by many employees, causing delays to the implementation of services as in the **PRS** and **NERS**. One reason is perhaps loyalty to the old system. This problem is noticeable in many organizations, some of which still do not use the new systems. Another problem is resistance from society in general due to mistrust of new systems and services, as with the **PRS**, **UAS**, **PSITTM** and **NERS**.

Political issues

Problems related to political issues were referred to by experts in the country. For example, some decisions taken as a result of specific circumstances subsequently led to negative results, such as the problem of recruiting jobseekers in 2011 due to global conditions at the time. This led to the accumulation of vacancies and failure to appoint appropriately qualified staff, as mentioned by one stakeholder:

Many employees were employed in positions that have nothing to do with their qualifications in response to requests from citizens for jobs in 2011. [...] After that, and due to the huge employee inflation in the public sector, recruitment was stopped in 2014, and

the burden was shifted to the private sector. (Interviewee 11, Project 2, Stakeholder, 24/06/2018)

From the above, six main aspects of these challenges can be identified as main themes, grouped under the following categories:

Financial aspects

Issues related to finance are among the most challenging. This is corroborated by (Brinkerhoff and Brinkerhoff, 2015) who noted that one of the challenges facing reform in developing countries is how to provide high-quality services to a variety of users with fewer resources. The most important themes here are adequate funds and budgets to develop e-government services, particularly during economic crisis. According to Ebrahim and Irani (2005: 606), the main source of finance in public sector organizations comes from central government, making it hard to control and difficult to plan sustainable IT initiatives such as e-government. This shows the importance of finance and the need for sufficient funding.

Organizational and legal aspects

The most important organizational themes were leadership, performance and change management. Many problems resulted from the lack of criteria to evaluate individual and organizational performance. This led to weak supervision and accountability which caused a duplication of work and conflicts of interest where more than one organization provided the same services. In other cases, this caused a delay in the provision of services, or a lack of activation of some services. This was accompanied by poor project documentation.

Some of the other problems that were identified included policy weaknesses, the failure to conduct feasibility studies, lack of attention to human capital development and weak public-private partnerships.

Human resources aspects

An analysis of training and capacity building reveals that the lack of ICT skills in the public sector is a major challenge for implementing e-government initiatives. A lack of knowledge and skills in project management is another constrain. There were also frequent resignations due to lack of incentives in the public sector, especially after the global economic crisis (Ndou, 2004; Swailes and Al Fahdi, 2011). In addition, there was a lack of acceptance of change and employees preferred to use existing systems. Further, there was a scarcity of qualified Omani programmers and lack of sufficient participation in projects by project members (Syed *et al.*, 2018).

Infrastructure aspects

Infrastructural development and maintenance requires huge spending to repair or provide new facilities, especially in difficult environmental and climatic conditions (Syed *et al.*, 2018). Morris (2013) pointed out that, for example, more than 40 trillion USD would be needed over the next 25 years to repair the infrastructure in America.

Challenges in the lack of readiness of the Omani infrastructure include ICT, security, privacy, information sharing, weak networks, Internet access and connectivity, the scarcity of computers, the digital divide, system integration, the maintenance of government websites, and data systems and the absence of risk management.

Social aspects

Social issues arose from the beginning of the application of electronic services, which started with the **UAS** before the implementation of e-government in the country. The **UAS** was greeted with widespread rejection and mistrust from the community because it represented a new culture in the country. Other social challenges related to citizens' lack of awareness and receptivity to change, geographical problems, illiteracy, the societal culture, and lack of communication. Socio-cultural factors are of great importance in ICT-related developments in developing countries, especially because the manner in which technology is used by policymakers and citizens tends to be affected by patterns of individual behaviour and cultural norms (West, 2004).

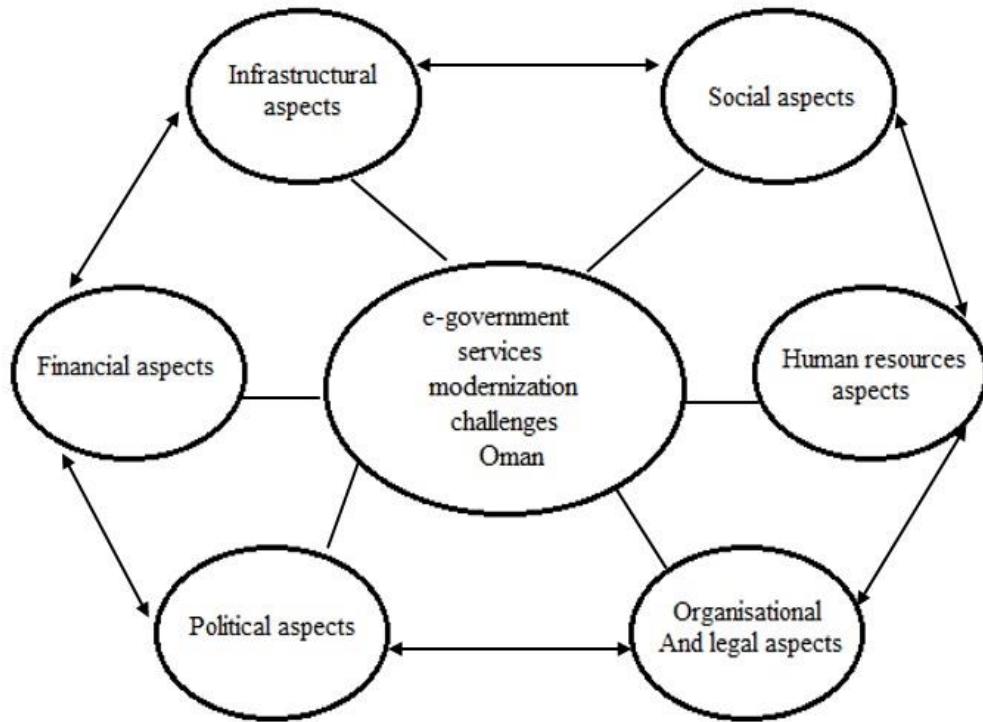
Political aspects

Leadership and the political context are dominant themes in this study. It is important for the government to support e-government initiatives because leadership is one of the main driving forces of innovation. In addition, for e-government initiatives to succeed, laws and policies governing implementation need to be in place, which has been addressed by the ITA as the relevant state institution responsible for setting new rules, policies, and legislative changes that deal with electronic activities, such as freedom of information, computer crimes, property rights, and copyright issues (Ndou, 2004). Most of the challenges emerging in the case study projects related to the human (soft) rather than technological (hard) aspect. Organizations should thus pay close attention to the human aspects in changing and improving services (Jaca and Psomas, 2015).

Moreover, it is clear that the hard and soft issues affect each other in various ways. For example, there is a relationship between infrastructural problems and human issues because, even with the necessary infrastructure, human skills are needed to manage and operate it. Similarly,

funding is required to acquire the infrastructure necessary to enable the successful implementation of e-government initiatives (Nkohkwo and Islam (2013). Figure 6.1 illustrates the relationship between the different challenges in the projects.

Figure 6.1 Problems in managing projects.



Source: Nkohkwo and Islam (2013)

6.4 Examining the degree of success

This section examines the success of these projects, based on the project management approach developed by the PMI, and using the Morris (2013) paradigm. Table 6.6 identifies the number of users who have benefitted from the systems compared with the number of employees working in the departments involved, in order to determine the efficiency of IS projects in public sector services. Table 6.7 then indicates the degree of success measured in terms of user satisfaction, project delivery to specifications, project time and project cost.

Table 6.6. Project teams and numbers of users in 2018

	PRS	PSRS	UAS	NERS	PSITTM
Project Team Number	580 IT staff in MoH	33 staff in recruitment department and 2 in HR system	50 staff from HEAC	178 staff from PAMR	2 from ITA in addition to trainers from 32 institutes
Number of Users	39,161 employees in MoH	13,515 employees recruited	24,436 students	45,711 jobseekers	81,800 employees attended the courses

Source: fieldwork analysis and the Statistical Annual Books of 2017/2018 from the NCSI

The **PRS** has 580 MoH employees working in IT departments, meaning that every 14 to 15 employees benefit from each IT staff member. For the **PSRS**, there were 35 employees working in IT, 13,515 employees used the system. The total number of civil service employees was 175,868 at the end of 2018. It should be noted, however, that civil service recruitment has stalled since 2014.

Fifty employees work in the **UAS** at peak times, including 7 working directly on the system. Meanwhile the number of students admitted to institutions of higher education in the academic year 2017/2018 was 24,436, with approximately the same number receiving annual qualification opportunities since the system was established. Many have also benefited from internal and external scholarships. These opportunities were provided after the establishment of the system, which in turn has helped many citizens in the country to obtain qualifications.

The number of employees working in the **NERS** is 178, of whom 15 work directly on the system, either as PAMR staff or employees of the contractor. An official account of the national workforce programme entitled, ‘Together We Work’, shows that recruitment of Omani youth in the private sector continues apace. The number of appointees from 3 December 2017 to 30 April

2018 was 26,103, of whom 68 per cent were male and 32 per cent female. It was announced in January 2018 that 25,000 Omanis would be employed in six months to curb the high unemployment rate, which had reached 17.5 per cent in 2016, while the number of jobseekers at the end of November 2018 amounted to 45,711 (Ashabiba, 2018). Meanwhile, the integrated system has not yet been launched.

The **PSITTM** is one of the main e-government initiatives training employees in the government sector. Two IT employees work as supervisors and coordinators in the project with a total of 335 employees in the Authority, and 32 private training institutes have run training courses. The target was to train 90,000 people with an expected success rate of 60 per cent obtaining qualifications. But only 81,800 employees attended the training courses, of whom 72,000 passed the examination. This represents an excellent success rate of 89 per cent.

Degree of efficiency and effectiveness in the projects

According to Morris *et al.* (2000) the ethos of project management relates to efficient delivery on time, within budget, and to scope and its effective performance meets the sponsor's business goals and the requirements of the project customers. Therefore, projects should represent value for money and meet or exceed their strategic objectives. This section assesses the success of the projects according to the PMI guide and Morris *et al.* (2000) paradigm, as shown in Table 6.7 and Figure 6.2.

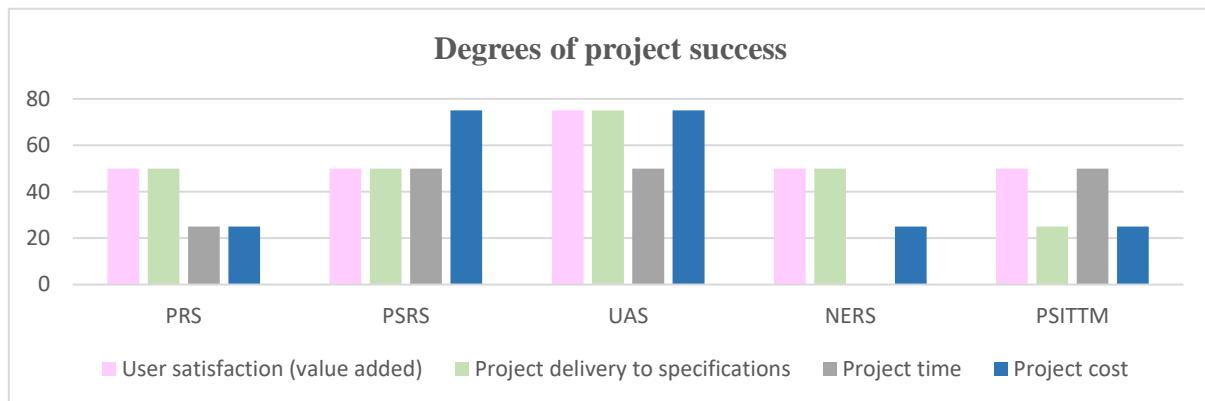
Table 6.7. Efficiency and effectiveness of the projects

Efficiency and effectiveness	PRS	PSRS	UAS	NERS	PSITTM
User satisfaction (value added)	Medium	Medium	High	Medium	Medium
Project delivery to specifications	Medium	Medium	High	Medium	Low
Project time	Low	Medium	Medium	V. Low	Medium
Project cost	Low	High	High	Low	Low

High = 75 / Medium = 50 / Low = 25 / Very Low = 0

Source: Fieldwork analysis

Figure 6.2. Degrees of success



Source: Author

From the analysis of data, it can be concluded that the **UAS** system has performed best. The idea came from experts in the MoHE after conducting research and learning from the experiences of other countries, whereupon the decision was made to establish the project. The project considered all human and material needs, including in the selection of staff. Teams from the civil service and private sector companies worked on the system. Because the project was large, the establishment of the project was assigned to an expert from the Irish Admissions Centre, who had extensive experience in this area.

Also, the project was designed by a specialist private company. Project members and stakeholders all acted as key participants. Project communication was handled through various local and international channels. Clear goals were set based on the budget allocated. Many interventions improved the system, and performance indicators were set for the project's objectives, although there has been a lack of appropriate individual and organizational performance measures as in all Omani civil service organizations. All staff were trained in the use of the system. Private sector assistance was sought for some services to reduce costs. The system achieved all the objectives of the project, achieving justice, equality and transparency in providing places for 24,436 students at university level, as shown in Table 6.5.

The **PSRS** can also be considered successful because it achieved added value to a moderate degree. A total of 13,515 people have been employed using the system. Some modifications and improvements in specifications, however, are still needed. The system is currently suspended due to a lack of vacancies in the public sector. This has negatively affected the project and its services have not been significantly utilized since 2014, nor were all stakeholders involved at the beginning of the project, although their views have subsequently been taken into account. Project members were also unaware of key data in the project, such as costs.

The **PRS** and **PSITTM** have achieved some level of success but in different ways. The **PRS** is of great value to Ministry employees, including doctors and other employees. However, the project did not achieve the objectives related to citizens benefitting directly from the system, such as scheduling services electronically. Other intended services have not yet been implemented due to lack of financial and human resources. In terms of specifications, the degree of success is moderate because the project has added many services for its beneficiaries, but these services are still not fully available in all medical centres due to lack of resources. There are also some active

services in the system which have not been used by staff due to poor supervision in the system, as well as high work pressures on staff. In terms of time and cost, it was found that the project did not set its targets according to timing or cost, which has affected its success.

The **PSITTM** has achieved great success in staff training, but the specifications were not suitable according to beneficiaries in terms of the provision of training halls and the quality of trainers. Some pointed to the weakness of supervision by staff at the ITA, who rely too heavily on the training institutes. In addition, interviewees pointed out that the method of selecting employees for training was random. In terms of time and cost, the duration of the project was extended at the request of the authorities without warning or prior planning. The main members of the project had no knowledge concerning the cost of the project but could only indicate that the cost was appropriate.

The **NERS** is not so successful and has failed in various respects. Although it combines the expertise of the public and private sectors and the system was created by a Singapore company, there are weaknesses in the communication of wants and needs between users and project stakeholders. This has led to misunderstandings among all parties. The project aims have not yet been achieved. An official at the ITA noted that a study was conducted before the establishment of the project, but it did not fully account for all risks before making the implementation decision, and many of the government organizations involved were not ready. This delayed the launch of the project and increased the costs, and appropriate targets were not set. The loyalty of employees of the Commission to a previous project and failure to accept the new project led to further delays in completion and thus increased costs. According to (Flyvbjerg and Budzier, 2013), risk can never be eliminated. It may be more explicitly recognized and better managed with the participation of all project members, citizens and stakeholders as well as experts, administrators and politicians

who are able to reflect on their experiences and expertise. This would produce greater accountability. However, this project has been amply supported by the higher government decision-makers.

6.5 Conclusion

This chapter has answered the research question: ***How effectively have e-government projects been managed and implemented in Oman?*** Five selected case studies representing attempts to modernize public services in the Sultanate have been evaluated. The first section analyzed the processes involved in the implementation of these projects, and determined the ways different processes in these projects were managed and the tools and techniques used in initiating, planning, executing, monitoring and controlling, and closing the projects (PMI, 2001).

The challenges facing the successful implementation of e-government initiatives in the Omani public sector were then considered. Financial aspects were the main challenges confronting the successful implementation of e-government. Other challenges included the availability of qualified people. Additional obstacles that had to be overcome were infrastructural, socio-economic issues and the complexity of the political and legal systems. It should be noted that there is a relationship between these different issues, and how they affect each other in various ways.

Finally, the projects were assessed by identifying the degree of success achieved based on the PMI approach and the paradigm proposed by Morris (2013). The evaluation focused on efficient delivery on time, within budget, and to scope and effective performance in meeting the sponsor's business goals and requirements of project customers. Projects must be managed effectively and efficiently; and must represent value for money and meet or exceed their strategic objectives. It is concluded that the most successful project was the **UAS**, followed by the **PSRS**.

The **PRS** and **PSITTM** achieved some success in different respects. The **NERS** project is not progressing well due to weak communication about users and stakeholder needs, as well as long delays in implementation.

The next chapter is the final empirical chapter of this thesis. In it the evaluation conducted in this chapter is extended to evaluate e-government improvement projects. The purpose is to uncover underlying difficulties and obstacles to change. It seeks to answer the following important questions: How and to what degree have NPM principles informed e-government initiatives in Oman? And: What lessons might be learned from the Omani experience at the macro (policy) and micro (practice) levels?

Chapter Seven

E-government, NPM and the management of change

7.1 Introduction

Chapters Five and Six looked at e-government projects in Oman. Five selected projects in the public sector covering health, civil service, higher education, manpower and technology were examined to determine how they were selected, designed and controlled. Project management and implementation and obstacles to change were then examined. The stages of project work were discussed from establishment to launch with reference to guidelines developed by the Project Management Institute (PMI) in the US and the framework devised by Morris (2013). Obstacles to successful implementation were then identified.

This chapter answers the final research question: ***How and to what degree have NPM principles informed e-government initiatives in Oman?*** It evaluates the performance of e-government improvement projects selected in this study through the application of NPM principles. The chapter demonstrates that varying degrees of success have been achieved in the five projects researched. Some are more successful than others. The primary purpose of the chapter is therefore to explain why some projects have performed well and others less well. A secondary purpose is to assess the degree to which the principles of NPM have benefitted the Omani public sector. Finally, the chapter considers the availability of resources and the impact this can have on finding solutions to problems that delay project implementation. This enables lessons to be drawn at both the micro and macro levels.

7.2 Project evaluation using NPM principles

This section examines how change initiatives associated with NPM affect the improvement of public sector services in Oman. The characteristics of change associated with NPM are well-documented in the literature, but little is understood about how these changes have changed the public sector in Oman. The objective here is to increase theoretical understanding of improvement projects and so provide insights useful to practitioners.

NPM change is characterized by devolution and the delegation of authority and autonomy (Christensen and Lægreid, 2011), including decentralization (Alonso *et al.*, 2015), privatization (De Vries and Nemec, 2013), contracting (Alonso *et al.*, 2015) and trust (Mueller *et al.*, 2004) as features at the macro. Micro-level organizational features include strategic differentiation (Diefenbach, 2009), service user feedback (Bevan and Hood, 2006; Diefenbach, 2009), key performance indicators (Bevan and Hood, 2006; Diefenbach, 2009) targets and milestones (Bevan and Hood, 2006; Diefenbach, 2009), and so on. All these features are part of the broader shift to ‘post-bureaucratic’ forms of organization driven by the need to cut costs while increasing efficiency and flexibility (Osborne and Gaebler, 1992; Bovaird 2007; Farrell and Morris 2013). These changes have included cost reduction, delayering, redundancy, reorganization, downsizing, culture change, improving performance and accountability, increased use of temporary and agency staff, outsourcing, offshoring and mergers (Morris, 2013). In many ways, NPM reform has also driven public sector organizations to mimic practices in the private sector (Hood, 1991; Dunleavy and Hood, 1994). These trends are evident in a range of public sector activities in developed countries, including the UK (Osborne and Gaebler, 1992; Bovaird, 2007) and US (Drechsler, 2005). They are studied here in the Omani context, starting at the micro level by considering the opinions of organizational actors before progressing to the macro level to obtain opinions of expert

commentators and policy makers as well as core project members in the organizational hierarchy who were experts involved in the projects from their inception. Further information was gained from available documentation.

Strategic differentiation

Strategic differentiation means that each organization should have its own vision, mission and strategy to enable innovation and competition as an important feature of NPM. Indeed, in light of accelerated change in the global business environment, strategic foresight was declared as a dominant logic for successful organizing. It enhances the enactment of procedures and regulatory references that enhance the entrepreneurial capabilities of organizations embedded in high-speed environments (Sarpong and Maclean, 2014). According to interviewees, each of the five case study organizations has a clear vision and objectives linked to strategic plans that call for innovation in service provision. Table 7.1 shows each project and its organization, and its website link to information on its vision, mission and objectives.

Table 7.1. Organizational vision, mission and objectives website links.

Project	Organization	Website Link
PRS	MoH	https://www.moh.gov.om/ar/-51
PSRS	MoCS	http://portal.mocs.gov.om/Default.aspx
UAS	MoHE	https://www.mohe.gov.om/InnerPage.aspx?ID=d8d3fca8-0e81-429e-bf4c-3272d891df95
NERS	PAMR	https://pamr.gov.om/ar-om/eportal/Public/Pages/Vision-Mission-and-Objectives.aspx
PSITTM	ITA	https://www.ita.gov.om/ITAPortal_AR/About/Vision.aspx

Source: compiled by the author from the organizations' websites.

All the selected projects have been accorded the highest strategic priority. Organizational change in the public sector requires management to develop strategies for achieving change, including

convincing the members of the organization of the need to change. Strategy serves as a road map for the organization, offering direction on how best to proceed, identifying obstacles and proposing ways of circumventing obstacles (Fernandez and Rainey, 2017).

The analysis of interview data shows that all projects had a set of objectives developed by experts and employees. Additionally, they had support from top management to implement the projects. **PRS** and **UAS** began with knowledge gained by officials during their education abroad. The **PSRS**, **NERS** and **PSITTM** projects were initiated in policy circles and were well thought-out and linked to the country's strategic plans. All projects had the support and commitment of top management, which is crucial for successful implementation (Fernandez and Rainey, 2017). Policy implementation scholars offer evidence of how a skillful and strategically placed leaders can successfully coordinate the behaviour of disparate actors and overcome obstacles by leveraging close personal ties and pursuing informal avenues of influence (Fernandez and Rainey, 2017). Furthermore, extensive knowledge of the theory and practice of change management that encompasses both technical and cultural norms, which enables management to implement timely interventions to keep projects on track (Ansari et al, 2010). Senior management support in the public sector often requires the need for a guiding coalition to support change through the cooperation of high-level public officials, as well as politically appointed executives. Aucoin and Peter (1995), for example, attribute the failure of reforms in Canada to the lack of support from ministers.

The most obvious project that meets these requirements was **UAS**, which from the beginning had strong support from stakeholders. They did not work on their own. One of the most important characteristics of the change is that it is a participatory process in which all stakeholders participate in the planning process by defining long-term goals and identifying the conditions to

achieve those goals (Rogers, 2014). Besides top management, Pick and Teo (2017) noted the critical role of middle managers in successful change. Effective middle managers tend to have sound ideas about implementing change and have extensive formal and informal networks. Currie and Procter (2005) argue that organizational performance is heavily influenced by what happens in the middle of organizations. Middle managers are positioned as key strategic actors. They can contribute ideas that coordinate a different activity and support a coherent trend and thus have an integrative impact on the organization's strategy. Each of the five projects was managed by middle managers with the necessary skills and ideas about how to implement change, especially in the initiation stage, and how to spread the culture of change among employees and citizens, as in case **PRS and UAS.**

Scope of participation

Increasing the extent of participation is important in the process of change and is a common approach to overcome resistance to change. It is considered to be a key social element in NPM in achieving a successful outcomes (Bovaird, 2005). Planned change requires extensive participation by members at multiple levels of the organization throughout implementation, helping to reduce barriers to change by creating psychological ownership, encouraging the dissemination of important information, and encouraging staff to control change during implementation. Participation must be broad and extend throughout the process of change. Leaders must take participation seriously and manage it properly so as not to waste time or resources (Fernandez and Rainey, 2017).

The analysis of interview data in Chapter Five shows that the leaders of change at the **PRS, PSRS, UAS and PSITTM** in the planning stage was excellent, supportive and cooperative, in terms of development, maintenance, and support. At the same time, these projects had support from

political overseers and key external stakeholders, especially in **NERS**, which was launched after the decision was taken by top political bodies in the country. The project manager noted that:

The project launched immediately after the issuance of the Royal Decree. Later on, and after the definition of the project and its function a working group headed by members of the Board of Directors was established [...]. We also submit supporting reports to the decision-making bodies such as the Council of Ministers because PAMR is directly responsible to it. (Interviewee 19, Project 4, Manager, 03/06/2018)

The same applied to **PSRS**, **UAS** and **PSITTM** in that political bodies are core stakeholders. The **PRS** project was specifically designed internally for the MoH. But, as illustrated earlier, the Directorate General was the first department to focus on IT. It was established by a Royal Decree due to its size, duties and the number of staff, and so it has strong support. Also, the relationships between the employees working in the project across the organization were strong, as confirmed in the interviews. Employees working in this project were strongly committed to it from the beginning. Project members indicated that they initially faced considerable discontent from staff with respect to the “winds of change” and the problem of training people in how to use the system, even among qualified people such as doctors, because of the lack of IT skills:

In the beginning, people resisted because they were accustomed to paperwork [...]. The system was rejected by people who were irritated and dismayed because of the large amount of information they were required to give [...] patients were irritated because of the doctors’ concentration on the questions rather than on the patient (this is how they saw it) which makes them take a long time with the doctor (Interviewee 2, Project 1, Member, 21/05/2012).

In the **PSRS**, similar issues arose when the system was first introduced, especially since many organizations resented the transfer of recruitment procedures to the MoCS. The situation with the **UAS** was more difficult, since it was established before the implementation of e-government in the country. The project faced rejection and mistrust by the community because it was a new initiative which was not congruent with the culture in the country. In addition, the social challenges identified included citizens’ lack of awareness, lack of receptivity to change, geographical factors, illiteracy,

culture, and lack of communication. However, the organization's leaders or change agents had the authority to act as change enablers, and were able to overcome resistance by integrating employees into the change process to make it easier for them to adapt to change.

Employees of the **NERS** faced challenges because the system was new to Oman. Changes in policies and procedures in the organization could affect partners in the absence of coordination, and some organizations thought that the Registration Authority had exceeded its authority, as one member indicated:

The addition of the task of employment was among the problems which we faced at the beginning. This meant taking away some of the authority of organizations like the MoCS. This led to some discontent in these organizations and additional workload on for us. (Interviewee 22, Project 4, Member, 20/ 5/ 2018)

The challenge in the **PSITTM** was the release of government employees to attend training courses. However, these problems were tackled because of the desire to strengthen relations among project members and persuasively communicate the need for change.

It was found that the relationships between the main members of project teams and those working in host organizations were supportive. They were willing to change and motivated to work, so they were able to address the challenges that emerged at the beginning of the project. In contrast, non-participatory relations with external project members delayed some services. The project in which all members sought to participate in the development of plans, set goals and achieve results was **UAS**. A feasibility study was conducted, and members used their networks of personal contacts to obtain privileged information. There was complete clarity from the beginning, which helped to reduce risks (Miller and Lessard, 2007), and led to the successful design and implementation of the e-government initiative (Ndou, 2004). Two project members noted that:

All members shared ideas before establishing the system because they are the experts in the higher education institutions, not the ministry [...]. The idea of the system's operation came from higher education, whereas the application conditions were set by the higher education institutions. We added the communications companies to study the infrastructure [...] today communications are direct and strong [...] (Interviewee 13, Project 3, Manager, 10/05/2018)

We conveyed the picture to the guardians and explained everything in periodical meetings. If they had any comments or suggestions, we discussed them and conveyed this to the centre (Interviewee 18, Project 3, Stakeholder, 21/06/2018)

In contrast, significant weaknesses were observed in the **NERS**, where low levels of participation, poor communication, staff discontent and the failure to question assumptions and reach milestones led to delays. All of these factors were considered to reflect resistance to change and represent constraints in the process of change.

In the **PRS**, participation was significant but not based on solid foundations. A feasibility study was not carried out with the participation of all stakeholders, nor was there participation in the development of clear goals and how to achieve results, especially at the initial stages, although the situation improved during the phases of the project. There was no integration with other parties in the setting of objectives, as evidenced by the lack of coordination:

There is a lack of coordination between the government organizations, such as when we want to take action, we find no cooperation from the other organizations and so is the case with the duplication of work (Interviewee 6, Project 1, Stakeholder, 24/05/2018)

The most important factor was that they did not settle all these issues from the beginning. With **PSRS and PSITTM**, the stakeholders noted that key members did not allow the participation of other members in the development of goals. These were set by the main members and then all stakeholders were required to consider the objectives and how to achieve them. Help and support to answer all questions was only offered later. Table 7.2 below shows the stages of the project participation, based on interview data.

Table 7.2. Participation with different stakeholders

	PRS	PSRS	UAS	NERS	PSITTM
Organization employees	From the beginning	From the beginning	From the beginning	From the beginning	From the beginning
Public sector organizations	After implementation	After the planning stage	From the beginning	After the planning stage	After the planning stage
Private sector	After implementation	After the planning stage	From the beginning	After the planning stage	After the planning stage
Citizens	After implementation	After implementation	From the beginning	After implementation	After implementation

Source: Author

Participation in the majority of projects was not broad, while the change emphasizes high levels of stakeholder engagement and communication at all stages, and that leaders must take it seriously, commit time and effort, and manage it properly. Failure to do so can be counterproductive, wasting time and resources and undermining morale.

At the same time, it seems that participation and communication among public sector organizations is weak in general. This is the point of view of most experts as well as project members, who consider this a difficult challenge facing the public sector improvement in Oman:

Many government organizations operate in isolation from each other and many decisions are made without taking into account their overall impact, so it is clear that communication levels are insufficient. We do not have a political centre as in other countries with for example a prime minister. There are various councils in our country, such as the Finance and Energy Resources Council and the Supreme Planning Council, but I think there should be greater centrality in decision-making (Interviewee F, Government Financial Advisor, 16/05/2018).

Many problems stemmed from the failure to conduct feasibility studies, most notably at **PRS**. In addition, targets were set based on need, unrestricted by time limits and budgets. **NERS** had long-term targets, but these were not correctly linked to timing or measurement indicators. Further, they did not study the circumstances surrounding them in detail, resulting in delayed project

implementation. Clear and specific objectives were set by the higher authorities for the **PSRS** and **PSITTM**, but they did not include the participation of all stakeholders, which led to dissatisfaction. In contrast, in **UAS**, all project members participated in the development of assumptions, indicators and alternatives which were linked to objectives.

Completing a feasibility study showing the benefits and the financial and social costs is crucial. If projects are evaluated properly from the economic, social, technological, and illustrative perspectives, appropriate planning can take place. The project will be successfully implemented if it has the right resources, good supervision and periodical follow-up throughout its lifetime. Otherwise, the project will fail to achieve its goals. Since 2014, the government has introduced corrective actions, including giving priority according to economic and social feasibility. For any project to receive approval from the Ministry of Finance (MoF), it must present a feasibility study to the Supreme Council for planning (SCP) explaining its direct and indirect benefits to society. The project is then submitted to the MoF for financial evaluation. This policy is important in the current conditions, as indicated by one expert:

The SCP tries to follow up through its periodical reports to ensure the timing of project implementation. If it is slow this means wasting resources. If the product or services are not delivered on time, that means an increase in production costs which lowers the contribution planned for the product or the service (Interviewee M, Government Economic Expert, 08/05/2018)

Despite the efforts made by the state in the form of the SCP to provide appropriate projects to improve services, some experts felt that this policy has not been evaluated effectively:

There is follow-up and documentation for projects, but most of them have not seen the light and there is no documentation for them [...] The projects are present but how the follow-up is conducted, and how the money has been spent, and how it was implemented, remains unknown. There is no accountability, and before that there were specifications of duties to allocate amounts of money fairly. Work is done according to personal likes and dislikes; if I am pleased with you, I will give you the money; if I receive, I will give you. If I do not

receive instructions, I will not give you the money. I think you understand what I mean (Interviewee B, Government Undersecretary, 30/05/2018)

Moreover, one of the fundamental issues highlighted by experts is the lack of appropriate policies:

I think what we are lacking the policies [...]. All these elements and the goals and the policies remained unchanged from the first to the ninth five-year plans. This applies to the economic structure, which has remained almost unchanged as well [...]. On analysing the situation to understand why the five-year plans have failed to achieve the goals since the first plan, we find that the current budget and the development budgets are shopping lists rather than comprehensive plans. Of course, there are projects, but we must see how far they affect the economy. When we relate them to the goals, we find no strong links between them; the goals are there but the policies have not been designed in a form congruent with the goals which remain a mere formality that does not relate to the projects. Also, there are no clear policies for achieving the goals that have been set (Interviewee E, Government State Council Member and Economics Expert, 10/05/2018)

Evidence in support of this statement can be found in the five case studies. Delays in the completion of the **PRS** and **NERS** projects can be attributed the lack of feasibility studies, failure to evaluate alternatives, and the lack of assessment of the situation and the surrounding environment. Finally, targets were not set with timelines and indicators to ensure their validity and to enable the project to be implemented on time. This is especially evident in the **NERS**.

According to Fernandez and Rainey (2017), policy implementation analysts note the importance of clear and specific policy objectives and coherent causal thinking about the link between the initiative to be implemented and the desired outcomes. Specific objectives help to ensure that measures implemented are consistent with policy by limiting the ability of implementing officials to change policy objectives, and by providing a standard of accountability. The ambiguity of politics can sow confusion. Therefore, the indicators and outcomes and who are the intended beneficiaries of change should be determined up front. Brown and Osborne (2012) indicated that measuring outcomes and charting the success of change initiatives implemented in public services may be difficult if clear indicators are lacking. Therefore, change members may be required to be subtle when implementing change initiatives.

Performance indicators

Performance is about managing public sector activities to achieve results. Managers use public resources to ensure that programmes meet overall goals and expectations. The main advantage of using performance as a metric is that it is evaluated through multiple standards of effectiveness, efficiency, and equity (Kearney, 2018). Various international standards should be considered, such as follow-up, evaluation, accountability, results and transparency (MoF, 2017). In recent years, there has been a renewed focus on measuring public sector performance. Public services are open to criticism when officials cannot show what has resulted from spending public money. Measurement is a key component of organizational performance, which helps determine how well organizations and employees are performing as well as increasing accountability and therefore trust between public organizations and citizens (Kearney, 2018). If indicators and outcomes are not clear, then the extent of the change or the measurement of individual and organizational performance cannot be identified.

In the **PSR** project, the objective of the project was to replace paper records electronically and the programme was subsequently expanded in accordance with the requirements of each section. Many additional services were added and were able to obtain many reports and accordingly make effective decisions in the field of health services. However, these services could not be extended to the other sections due to lack of manpower and the absence of indicators to measure the performance.

In **UAS**, assumptions and alternatives were clear from the outset. Indicators of success linked results to objectives, although measures of individual and organizational performance were lacking. Meanwhile, in **NERS**, assumptions were unclear, as they were agreed with an external party without specifying all the points, which affected the budget and forced them to implement

the project without completing all the objectives. Again, there were no individual and organizational performance metrics. In **PSITTM**, indicators were clear and outcomes measurable. Requirements and tools for each indicator were identified from the outset, and some were changed as a result of the interventions. Course nominee and delegate data were recorded but outcomes were not validated. Hence it is not possible to say is staff members were trained appropriately or who has gained from the training. Some beneficiaries reported that they did not benefit despite obtaining certificates and achieving nominally good results. As in other cases, there were no indicators of individual or organizational performance in place.

From the case study data, we know that none of the government organizations sponsoring modernization projects routinely use performance measures. However, accurate measurement using KPIs is essential start change (Rogers, 2014). This is illustrated by most interviewees, especially experts who believe that the resources allocated to organizations bear little relation to performance. Furthermore, civil service law and executive bylaws for administrative accountability have not been implemented properly. Senior management avoid taking punitive action against employees. This is congruent with Swailes and Al Fahdi (2011) finding that nepotism and patronage are deeply entrenched in the region, despite the emphasis in Islam that reward must be linked to performance and that non-monetary rewards such as recognition should be shown to encourage those who have done a good job and to inspire others. The evaluation of employees represents a means to ensure adherence to the employment contract, and to enable staff to be aware of their own performance. One expert in the civil service proposed a solution:

I believe the solution is to have a clear five-year plan, and clear definition of duties so that the individual can assess himself without supervision. If the present system was based on assessing individual and organizational performance, and budgeting for programmes and performance, everything would be clear (Interviewee B, Government Undersecretary, 30/05/2018)

However, there was no assessment of e-government performance in any of the five case study organizations. There is an evident need to adopt evaluation metrics and to quantify the value and benefits of e-government.

As illustrated in Chapter Four, the Ministry of Finance's budgeting and performance policy states that projects will not be approved unless the effects that will be achieved are clearly shown. The MoE, MoH, MoCS, and MoF have recently begun to apply such policies. Reward systems based on merit, short-term contracts, and incentive schemes are essential for the development of human resources in the public sector. Performance from an NPM perspective is based on quality standards, performance targets, and measurements linked to public service capabilities and expected outcomes (Osborne and Gaebler, 1992; Bovaird, 2007). One of the main recommendations emerging from this study is that government organizations should apply human resource management metrics to facilitate improvements in public sector services.

Total quality management (TQM)

TQM is a classic example of a continuous improvement methodology designed for the private sector and then transferred to the public sector (Lau and Tang, 2009). TQM complies with NPM systems in terms of concepts and values, with a strong orientation toward meeting the needs of service users, the use of targets, milestones and key performance indicators to measure progress and direct employees, and the pursuit of continuous improvements in service outputs and processes (Vinni, 2007), which can have a transformative effect on the quality of services while lowering production costs (Fryer *et al.*, 2007).

The Sultanate is interested in applying the principles of TQM in the public sector and has made many efforts in this regard, such as the creation of TQM departments in all government

agencies and the creation of Quality Prizes which have helped in improving organizations and their competitiveness in providing better services (Shayban, 2017). Organizations have also been helped to improve the management and provision of services to meet the requirements of the new ISO 2015 specifications through the MoCS, as explained in Chapter Four. Due to the government's interest in quality and confirmation of its importance from the experts and consultants interviewed, the case studies reveal that the quality departments in some projects were working properly, as in the **PRS**, **PSRS** and **UAS**, while appropriate supervision was not present in the **PSITTM**. However, the focus on quality is a relatively recent phenomenon in the Sultanate, and there is some evidence of service projects having been established without regard to quality, such as the **NERS** as indicated in Chapter Six.

Rehabilitation and training of employees

It has been noted that the case study project members all referred to severe shortages of qualified people. All functions related to IT require continuous training to acquire skills, given the rapid development of technology. Rajasekar and Khan (2013) suggest that training managers in the Omani public sector find themselves severely constrained by lack of funding and therefore the full benefit from the training and development they envision and plan for cannot be reaped. So, budget issues should be addressed urgently, because many of the organizations lack the technical capabilities needed to function effectively.

Previous research emphasizes the need to raise awareness among organizations to invest in human development by training staff in new processes and activities. Providing incentives could prevent the brain drain of skilled people to the private sector, and including them in decision-making could ensure the successful implementation of e-government initiatives (Ndou, 2004). Project managers emphasized that highly skilled people are moving to the private sector because

of a lack of incentives in the public sector. The public sector is then forced to outsource services or recruit expatriate employees through temporary contracts. In **PSR**, one project member stressed that due to the lack of qualified people in Oman, the MoH employs expatriates from different Asian countries. However, this leads to many challenges such as high employee turnover and the difficulty of finding experienced replacements, for programmers and doctors, especially when the incentives offered are few compared to the private sector. Members of the **UAS** project also indicated that the main difficulties they have faced are financial. Those working on the **NERS** project said they lacked specialist expertise and the resources needed to secure these. Due to difficulties in obtaining funding from the government to recruit Omanis, the **PSRS** and **NERS** outsourced, which rendered them dependent on foreign companies, which resulted in delays and poor stakeholder communication.

According to Fosu (2013), the ability of a country to compete successfully, especially in the current globalized environment, depends on capacity-building and investing especially in physical, organizational, and human resources infrastructure. Due to Oman's lack of skills and qualifications, the Omani government is keen to train and increase capability, competencies and efficiency. One expert suggested that:

Omani youth love to work and they have the will to make a change and benefit from everything, but they lack training. Some employees do not have even post-secondary education, so they need more training. Those who have university degrees need training to acquire experience that enables them to participate in decision making (Interviewee O, Government Director, 30/05/2018)

As a result, the government has organized initiatives for capability building in the Economic Diversification Execution Project. Technical, economic and other specializations are necessary in conducting feasibility studies which are a pre-requisite for any project, as one expert indicated:

Studying the experiences of other countries that are suitable for our country and not transferring them as they are applied but taking them according to our culture and environment (Interviewee F, Government Financial Advisor, 16/05/2018)

Further, training all government organizations with the IPA is required on how to conduct feasibility studies. Each organization should arrange training for their employees according to need, as indicated by one expert:

SCP has conducted study of the current situation in the Council and the nature of the capabilities of its employees. This included listing all their skills and qualifications and identifying shortages. Based on that the employees attended training programmes on capability building, in their fields of specialization. This has led to building a knowledge base in capability building. Many organizations have followed suit (Interviewee C, Government Deputy Secretary, 05/06/2018)

On the other hand, many interviewees recommended the training of IT staff in both technical fields and project management. There was a focus on the qualifications of IT staff. This is because the effective management of human resource is required to achieve change, one expert indicating that:

We know that we have a problem in the administrative system, we know that we have a problem in how to improve competencies. Our problems are known but we need to look for a solution. Improvement requires taking care of human resources (Interviewee F, Government Financial Advisor, 16/05/2018)

Rajasekar and Khan (2013) discovered that, despite strong government advocacy for training, senior bureaucrats are often indifferent to human resource development initiatives. This helps in explaining why public sector organizations often suffer from a lack of training.

Contracting

It has been noted that the organizations running modernization projects have relied on the issue of temporary contracts due to attempts to limit government employment since 2014. Employment of IT contractors is common within NPM settings, especially in complex environments such as healthcare and education. This is made possible through use of recruitment agencies that negotiate flexible and service contracts on behalf of contractors. In this, NPM has in part made public sector organizations similar to firms operating in the private sector (Alonso *et al.*, 2015). In Oman, the **PRS, UAS** and **NERS** projects made heavy use of IT contractors on fixed term contracts. However, they experienced many challenges such as a lack of understanding between key employees and contractors that negatively impacted on the projects. This finding supports that of Oh and Park (2017) on the subcontracting of public services that competition forces contractors to reduce costs to the detriment of service delivery.

Outsourcing

Many IT projects are outsourced to the private sector, which is an element of NPM used to decrease expenditure and public sector employee numbers. However, this study has found that outsourcing leads to problems such as duplication of work and delayed completion of services, causing increased costs. This is attributed to the low levels of internal auditing and oversight by Omani organizations, which urgently need to implement effective frameworks for governance and accountability. It is recommended that such a comprehensive framework is applied to provide the necessary monitoring during the project development lifecycle. One expert stated that:

The use of some companies to provide some services can improve the efficiency of the administrative system and its quality, provided that it is required of the private sector to perform clearly and measurably (Interviewee F, Government Financial Advisor, 16/05/2018)

Partnerships with the private sector

Some of the selected projects involved partnering with the private sector to improve their services.

In projects such as the **UAS** and **NERS**, private companies became core stakeholders. They helped in building an internal support system for change. Leaders should understand that change involves a political process of developing and nurturing support from major stakeholders and organizational members (Fernandez and Rainey, 2017), which helps in acquiring resources (Miller and Lessard, 2007). The main aim of the **NERS** project is to benefit the public and private sector, and:

It produces reports of the manpower working in the different government and private sectors. The Register provides numerous benefits from which government and private sector organizations, including in military, security and services sectors can benefit and confidently choose candidates according to their requirements and standards (Interviewee 20, Project 4, Member, 20/ 5/ 2018)

Core stakeholders in **UAS** likewise come from different private sector companies. Members of the **UAS** project noted that some companies finance educational programmes and bear the costs of printing student manuals issued through the University Admissions Department. This became prevalent after the financial crisis that led the department to seek help from the private sector. One stakeholder involved in the **PRS** showed displeasure with the bureaucracy and emphasized the need to build strong relationships with the private sector. The same situation occurred with **PSRS**, as the project manager explains:

We sought the help of the private sector in the SMS issue and smartphones. The remaining issues were dealt with through offers presented by many companies in response to the tender in we put up. We selected the most suitable offer and we are working step by step [...]. Even the private sector, the National Company for Airports Management and the Dry Dock Company opted to apply our testing system (Interviewee 7, Project 2, Manager, 07/03/2018)

Moreover, policies for the development of administrative work in the MoCS were set for training and qualification in partnership with private sector organizations. The Ministry has signed several

memoranda of cooperation with private companies in the country; government employees in 25 training areas from 2017 to 2020. The Ministry also announced training programmes through the Ministry's HR database (ALMAWRED), as well as through the Ministry's website (Alroya.om, 2017). In the **PSITTM**, the ITA seeks partnerships with the private sector in many ways, such as:

Because of the shortage in funds we tried finding mechanisms and solutions for training. One of solutions found was making use of the private sector's programme for in-service training. There is a memorandum of understanding between us and the Ooredoo Company whereby it gives training programs, and we provide the venues (Interviewee 28, Project 5, Stakeholder, 29/05/2018)

As illustrated above, partnerships with the private sector have become commonplace for government organizations in the Sultanate, in line with the policy of self-financing which requires government organizations to partially finance themselves. Government organizations are forced to seek cooperation with private sector partners. This represents another great challenge to the government organizations which, unlike private sector partners, are governed by financial regulations that limit their freedom in setting wages and incentives for employees and cooperating staff. This requires the government to change its policies in line with the current situation in the country. Government organizations should also provide more innovative ideas to help improve services. For example, an expert in the IPA indicated how they solved economic challenges by converting them into opportunities and forming partnerships with the private sector:

Due to the economic situation in the country the MoF declined to support us to finance the Institute's building. This led us to consider if the private sector could be the alternative that would help us in our endeavour. This is how we started our move in this direction [...]. We considered how to benefit from this land according to the country's land utilization law. We invited tenders for utilizing the land for 50 years – as per the law – in return for constructing the new building for the Institute. Although we are the first public sector organization to take such a step, thank God, it has been well received. Construction work is underway. That was a big challenge for us, but we managed to convert a challenge into an opportunity when we changed our way of thinking (Interviewee I, Government Chief Executive Officer, 15/02/2018)

So, to meet the challenges of the current economic situation, it is necessary to change the work strategy and to think differently. Successful change usually requires sufficient resources to support the process (Ndou, 2004). Therefore, strategic leaders need to provide adequate resources to achieve higher levels of change in the organization's activities and functions, as evidenced by what has happened in public sector organizations in Oman.

In general, experts in most of the fields emphasized the need for partnership with the private sector at both the macro and micro levels in order to deliver more efficient and effective public services.

I am convinced that the government must be the organizer for all sectors, and it must organize and give due consideration to the views of the private sector regarding systems and laws. There must be no competition between the public and private sectors. The government must endeavour to attract investment that gives support to the private sector (Interviewee 11, Project 2, Stakeholder, 24/06/2018)

Privatization

Since 1995, the development policies of the government have included a privatization strategy for various sectors according to Royal Decree No. 24/96. Interviewees in this study reported that the Omani government has implemented privatization in some fields, aiming to save money and improve efficiency. However, the interviewees admitted that privatization has succeeded in some projects and failed in others:

I think these goals were not achieved in the privatization of the electricity sector; there was partial success [...] the part of delivering electricity to the end user was unsuccessful because of the inflation of this sector and the presence of large numbers of employees, in addition to mismanagement by the companies (Interviewee D, Government Consultative Council Member, 27/06/2018)

According to De Vries and Nemec (2013), privatization of public sector organizations can help improve the delivery of services. The legal framework is needed to regulate the relationship so that

the right to question, give directives, and have control over service is maintained. An expert in public administration noted that if Oman follows the same structure this could result in successful privatization:

There must be a tight legal framework regulating the transfer of the service from the government to the private sector. That is why the regulatory body was formed. Its task is to ensure the application of the principles, standards and laws set for the service sectors which have been privatized. Now there are regulatory bodies for: the electricity, communications, and very soon the aviation sectors. This practice has proved successful not only in the Sultanate but worldwide (Interviewee I, Government Chief Executive Officer, 15/02/2018)

Decentralization

Privatization is one means of decentralizing and achieving the goal of smaller more flexible government. It leads to the breakdown of centralized political control by hierarchical structures in favour of decentralized ones as advocated by NPM (Bovaird, 2007). Alonso *et al.* (2015) confirm that decentralization tends to decrease the size of government in the long term. It seems that decentralization provided positive change after 2011 when organizations like the Shura Council and the Municipality Councils were given new powers. Governorates were formed, and positions of Governor created. Nevertheless, their authority remains limited. To achieve decentralization, the governorates must be developed and given more authority. In this regard, an expert in the civil service indicated that:

The issue of decentralization is different from one side to another. There is no obligation for government units to go towards decentralization, but as a recommendation that is always presented to the government. We at the MoCS have delegated to Excellencies and Director Generals. We have decentralization, but some problems and laws give authority only to the head of the unit itself. But in one way or another some ministries have facilitated these aspects and cooperated, the MoH and MoE have given great powers to the Director Generals in the provinces (Interviewee A, Government Minister, 06/06/2018)

It is noticeable that the government is pursuing decentralization, but it is not clear to what extent it will be able to achieve it. Research shows that decentralization is a factor in improving

performance. In Oman, the TANFEETH initiative and Vision 2040 Oman recognized this requirement. This involves engaging citizens more completely in decision-making processes by implementing democratic practices outside the realm of representative government, such as involving citizens in service re-design and implementing more direct means of communication as recommended in NPM (Bovaird, 2007).

The five projects analyzed in this thesis confirm that the government has expanded its services throughout the Sultanate to achieve decentralization. The aim is to break up bureaucracies into smaller, semi-independent organizations with the power to respond to local service user needs and to make the services easier for citizens to use (Alonso *et al.*, 2015). All organizations have branches to provide services in different regions of Oman, except for the **PSRS** which has only its main branch in Muscat and the **NERS** in Muscat, Sohar and Salalah. They could not complete the project to open branch offices in all Walayat in the Sultanate because of the economic crisis, as discussed in Chapter Five. However, with e-government it should not really matter where service centres are physically located. Thus, the organizations have developed different ways to provide services using information technology. Users do not need to go to specific locations to use the services. Everything can be handled online using remotely accessible databases. In the **PSITTM** project, however, members exceptionally chose 32 training centres to serve beneficiaries across the country.

Most of the services provided by the five projects studies are free at the point of delivery, although some **PRS** facilities require payments for services such as issuing treatment cards or requesting medical reports, as well as for sending text messages about jobs in the **PSRS** and **NERS** projects. However, the setting of fees for some government services has caused problems, as

citizens considered that paying high fees for government services was unjustified because people already pay taxes.

Social participation

Social participation is one of the fundamental themes of the Oman Vision for 2040, along with themes such as the economy, development, governance, and institutional performance (Oman Vision, 2018), as illustrated in Chapter Four. Social participation is one of the key characteristics of networked governance (Hartley, 2005) that can lead to improved services in the public sector and increased transparency and equality. Many Omani organizations are focusing on this. In the **UAS**, policy making incorporated the opinions of all stakeholder from the start, including students, guardians and teachers. For transparency and equality, the project adds an excellent feature to ensure active role of citizens:

Another characteristic of the system is that it enables every student, after the admission results have been published, to know through the system why he/she has not been accepted in the programme of their choice, who was the last student accepted in the same programme and what was his/her average. Thus, students can compare and be convinced that everything was done transparently. There is also a grievance committee to which the student could electronically present any complaint after registration. This committee is neutral and does not belong to the MoHE (Interviewee 13, Project 3, Manager, 10/05/2018)

In **NERS**, project members expressed their interest in citizen input through questionnaires distributed from time to time to gather opinions on the services provided. They also tested the system with citizens before the implementation to ensure the correctness and integrity of the procedures. However, citizens expressed dissatisfaction with the fees charged, but no action by PAMR has been taken in this regard. The **PSRS** project also encouraged participation from the community through the distribution of questionnaires to gather their views on services.

The **PSITTM** project took account of the views of citizens from the beginning, because its main aim was to develop the capabilities of the community. Listening to the community and its needs, the flexibility of work and the creation of clear quality standards by which all parties are bound from the beginning to the completion of the project were strong points. However, some participants noted lack of official interest in the quality of the programmes they presented, as illustrated earlier.

Meanwhile it is noticeable that the **PRS** contains many services that are provided to citizens directly, but they did not publicize these services and thus citizens may be unaware of them. Some new services have been added, but they have not been activated due to lack of interest by the staff in charge and a lack of control over them. Furthermore, there is an acute shortage of staff which in turn prevents the use of these services. It is thus concluded that there are many areas that do not satisfy the criteria for public participation, and where communication or dialogue between providers and consumers is not enabled.

Customers were not given the opportunity to participate in designing some services. In this regard, in a study of the core role of the leadership in local government, Hartley and Allison (2000) highlighted the importance of representing the needs of diverse voices and interests in the local community. This requires planning to meet for the needs of current users and future generations as well as capacity building, empowerment and representation. Moreover, it requires leadership beyond the boundaries of the organization through influence, persuasion, negotiation and coalition-building. According to Hunter et al., (2014) leadership style was found to be critical to the success of transformational change. Also, basic training must be provided to the community so that citizens can use new facilities to access information and e-services (Ndou, 2004).

Overall, social participation occurs in Oman but not at the levels required. The TANFEETH and Vision 2040 programmes were responses to a directive from the Sultan, and problems

associated with the TANFEETH led the government to encourage the public to become acquainted with all aspects of the project (Oman vision 2040, 2018). Taking account of the opinions of citizens must be a priority, and that is why major companies give due weight to customers. Public service organizations are tools of the state, and their effectiveness depends on the trust and involvement of citizens. Thus, public service organizations must be judged in terms of their ability to deliver services and their contribution to the creation of a fair and equitable society (Hartley and Skelcher, 2008).

Today with the presence of social media, it has become easier to communicate using Twitter, Facebook and various other applications which provide a degree of transparency. The opportunities this presents were emphasized by one expert from SCP:

The society participates in most of the projects of SCP, be it the five-year plan or the Governorates' Strategy, or Vision 2040. This participation is done through social communications and meetings in many venues (Interviewee C, Government Deputy Secretary, 05/06/2018)

The platform of government communication at the General Secretariat of the Council of Ministers was established precisely to encourage government organizations to communicate with the community in order to enhance partnership and cooperation. This centre monitors the performance of government, receiving the views of various segments of society about the services provided to citizens and produces regular reports for the Council of Ministers. The centre has also launched electronic windows for community communication, managed directly by the centre. These are consistent with the ongoing efforts of all organizations to activate an integrated system of government communication to reach the community directly, in line with global developments and standards, as illustrated in Chapter Four (Oman Daily, 2017). However, this platform is not well known by citizens because there is no complete definition of community audience.

Through these service projects, the Omani government has achieved good results both in the selected areas or through other executive projects in the country that increased transparency and equality and led to improvements in many procedures. However, large-scale transformational change is problematic in any complex adaptive system (Erskine *et al.*, 2009). It takes time and requires consistency, goal concatenability and organizational stability (Hunter *et al.*, 2014). Hence, there are still shortcomings in many projects. It is noticeable that organizations have significantly improved some of their services, while other services delivered by the same organization have deteriorated. Implementing NPM to improve public services requires progressive and all-pervasive change, as happened in many developed countries such as the UK. This lack of progress was outlined by an expert:

There are some advanced agencies in the provision of services, such as the ROP in the provision of driver's licenses, identity cards and passports, everyone praises, there are still some things that need to improve more, which relates to civil defense. Similarly, other organizations such as MoHE, Ministry of Manpower, etc. (Interviewee F, Government Financial Advisor, 16/05/2018)

Table 7.3 shows the overall assessment of e-government readiness in the selected projects.

Table 7.3. Overall assessment of e-government readiness

Organization Name	MoH	MoCS	MoHE	PAMR	PSITTM
Selected Project	PRS	PSRS	UAS	NERS	ITA
Electronic Presence Phase	-	63%	73%	-	90%
Electronic Interaction Phase	-	57%	79%	-	87%
Electronic Transaction Phase	-	53%	69%	-	92%
Electronic Transformation Phase	-	58%	62%	-	98%

Source: Data from the organizations' websites.

It is noticeable from the table that the overall assessment of e-government readiness in the **PRS** and **NERS** are not available due to a lack of satisfactory results. The services and procedures have been deemed inadequate as recorded in the Council of Ministers assessment of these organizations' reports, submitted by the **ITA** to the Council of Ministers, as indicated by an official in the **ITA**:

I believe that these organizations felt that the results should not be officially publicized so that they could improve these services and work to correct the procedures and observations received from the Council of Ministers and thus obtain satisfactory results (Interviewee 24, Project 4, Stakeholder, 10/06/2018)

The researcher asked for copies of these reports from the project managers, who reported that they did not have copies. It is a serious obstacle to effective project management and change management in the Sultanate if significant project documents are not publicly available.

Unfortunately, none of the case study projects have issued written narratives explaining how to conduct change in a gradual way, even in the **UAS** which is considered an ideal model in Omani change projects, as noted by one member:

One of the project weaknesses is no documented technical analysis of the present system or a conceptual report that explains the logic of the project framework (Interviewee 14, Project 3, Member, 13/03/2018)

The reason for this is the lack of a culture of filing documents in the Sultanate overall. Tayeb (2005); Common (2008) have noted the problems faced by researchers in obtaining official documents related to reform efforts in Arab countries, including Oman.

Overall, this study confirms that the main reason for poor results in assessment reports is the lack of clear, detailed, written and documented plans for e-government implementation in Oman. Similarly, the issue of poor communication between departments and IT staff in particular, was raised by many members of these projects:

Despite the government's keenness for IT reflected in establishing the ITA, it is noticeable that till now this field is not developed yet. Some organizations have reached a very high level in this respect [...]. Other organizations have not developed their programmes at all [...]. But there is no integration between government organizations (Interviewee F, Government Financial Advisor, 16/05/2018)

The lack of financial resources is one of the main reasons for delays in the implementation of the projects in the Sultanate. Another constraint is contracting with expatriates specializing in IT, as

well as outsourcing to gain experience and help in the implementation of projects as a result of the lack of human resources in the country.

Overcoming these constraints should be prioritized to develop a more effective approach to systems integration and service delivery. Many researchers have concluded that for fundamental change in behaviour to occur, leaders must make systemic changes to the subsystems in their organization which must be aligned with the desired end state (Fernandez and Rainey, 2017). According to Hartley and Skelcher (2008), the degree of improvement cannot be assessed simply by the achievements of an individual organization or service unit, but rather is better assessed through the achievements of the entire organizational field. Changing only one or two subsystems will not generate sufficient force to bring about organizational transformation (Fernandez and Rainey, 2017). According to Moore (cited by Hartley (2005):

"Those changes worth recognizing as innovation should be new to the organization, be large enough, general enough and durable enough to appreciably affect the operations or character of the organization" (Moore *et al.*, 1997, p. 276).

Researchers warn that implementing multiple changes without understanding the structure and nature of the interconnections among subsystems can result in additional costs and a longer implementation period than anticipated (Hannan *et al.*, 2003). This happened in **NER**S when it halted the Power project and initiated the more advanced Nimir project. It was conducted without a clear plan, thereby increasing costs and delaying implementation. According to Sulistiyan and Susanto (2018), change management in e-government projects should affect all aspects of the project if successful change is to be achieved, including IT, organizational structure, bureaucracy, people, business processes, government policy, and legislation.

Accordingly, this study holds that the government should intervene more decisively to successfully implement e-government. This intervention is needed in the form of explicit laws and regulations which underpin public sector activities. The government should reinforce the authority of the ITA which supervises and coordinates implementation efforts in Oman, in order to enforce standards and timetables for implementation. Al-Busaidy and Weerakkody (2011) explain that this idea was incorporated in the new transformative plan for e-government in Oman officially launched in 2012. However, the same challenges have persisted due to the lack of an integrated strategy.

The Ministry of Technology and Communications was established in 2019 which is now responsible for the ITA. In addition, policies and legislation in the telecommunications sector have been transferred to the same government department. Therefore, everything related to technology and telecommunications has been grouped under one umbrella overseen by the Ministry of Technology and Communications (MoLA, 2019). It is hoped that this will help overcome the above-mentioned problems.

The main points made in the preceding analysis are summarized in tables 7.4-7.6 below. These tables together constitute an analytical synthesis, an overview of the main findings presented in this chapter.

Table 7.4. Factors that have led to organizational change in the selected projects

Factors	PRS	PSRS	UAS	NERS	PSITTM
Top management support	Complete	Complete	Complete	Complete	Complete
Political overseer support	Complete	Complete	Complete	Complete	Complete
Convincing individuals of the need for change	Complete	Partially complete	Complete	Incomplete	Partially complete

Internal support for change	Partially complete	Largely complete	Complete	Complete	Largely complete
External support for change	Incomplete	Partially complete	Complete	Complete	Complete
Provision of plan	Incomplete	Largely complete	Complete	Incomplete	Largely complete
Conducting feasibility study	Incomplete	Partially complete	Complete	Incomplete	Largely complete
Participation of members	Complete	Complete	Complete	Complete	Complete
Participation of stakeholders	Partially complete	Largely complete	Complete	Incomplete	Partially complete
Provision of resources	Incomplete	Partially complete	Largely complete	Incomplete	Complete
Average	60%	67.5%	97.5%	62.5%	82.5%

Complete 100%, largely complete 75%, partially complete (*to some extent*) 50%, Incomplete 25%

Source: Author

Table 7.5. Project evaluation by new public management goals

Goals	PRS	PSRS	UAS	NERS	PSITTM
Economical	Largely complete	Largely complete	Complete	Incomplete	Complete
Efficient	Largely complete	Partially complete	Complete	Incomplete	Complete
Effective	Partially complete	Complete	Complete	Partially complete	Largely complete
Ethical	Largely complete	Largely complete	Largely complete	Largely complete	Largely complete
Accountable	Incomplete	Largely complete	Largely complete	Incomplete	Partially complete
Responsive	Largely complete	Largely complete	Complete	Partially complete	Complete
Adaptable	Partially complete	Complete	Complete	Partially complete	Largely complete

Complete 100%, largely complete 75%, partially complete (*to some extent*) 50%, Incomplete 25%

Source: Author

Table 7.6. Project evaluation by new public management features

Features of new public management at the macro level					
	PRS	PSRS	UAS	NERS	PSITTM
Decentralization	Complete	Incomplete	Complete	Partially complete	Complete
Trusts	Partially complete	Largely complete	Complete	Partially complete	Partially complete
Contracting	Complete	Partially complete	Complete	Complete	Partially complete
Privatization	Partially complete	Partially complete	Complete	Complete	Largely complete
Features of new public management at the micro level					
	PRS	PSRS	UAS	NERS	PSITTM
Strategic differentiation	Incomplete	Partially complete	Complete	Incomplete	Largely complete
Service user feedback	Partially complete	Largely complete	Complete	Partially complete	Partially complete
Key performance indicators	Incomplete	Incomplete	Incomplete	Incomplete	Incomplete
Targets and milestones	Incomplete	Largely complete	Complete	Incomplete	Complete
Benchmarking	Partially complete	Largely complete	Complete	Incomplete	Complete
Total quality management	Largely complete	Complete	Largely complete	Partially complete	Largely complete
Business process redesign	Partially complete	Partially complete	Complete	Incomplete	Complete
Risk management	Partially complete	Complete	Largely complete	Partially complete	Complete

Complete 100%, largely complete 75%, partially complete (to some extent) 50%, Incomplete 25%

Source: Author

7.3 Lessons to be learnt at the macro and micro levels

Notwithstanding the problems identified in the preceding section, efforts to transform the public sector in Oman have gained momentum, and the Sultanate has invested heavily in change initiatives, particularly those related to e-government. However, limited progress has been made

so far in achieving integrated e-government services in Oman. There are many factors that currently affect the development and deployment of e-government in Oman, as described by government officials involved in the provision of government services, and experts involved in improving the public sector in the Sultanate, both at the individual level and nationwide. In this section, we draw lessons learned from this experience at both the micro and macro level, hopefully to benefit from them in the implementation and development of future projects.

Lessons at the macro level

1. The IT capabilities of the workforce are limited. There is a need to train and leverage the skills of experienced staff to implement the various stages and services required to improve the e-Oman strategy. Weerakkody (2009) highlighted the limited capability and experience within the government IT workforce. The workforce also needs to improve their knowledge and experience through training and acquiring knowledge from contractors in order to implement the various stages and services required in the e-Oman strategy. There is also a need to improve administrative competencies and policies in the public sector to encourage competent staff to remain.
2. The lack of integration and exchange of information between government agencies is a particularly important factor affecting e-government implementation. Interviewees who cited this as a critical issue came from IT in Omani government ministries as well as experts in the field. The development of e-government has been ongoing for more than 15 years in the Sultanate, but much time has been spent working to strengthen integration and communication. Al-Busaidy and Weerakkody (2011) also indicate the need to integrate processes and systems in various Omani government organizations and agencies.

3. The public sector organizations in Oman lack clear detailed plans for improvement and service implementation (Ndou, 2004), which will inevitably affect progress (Sahraoui *et al.*, 2006).
4. One of the main reasons for delay in the implementation of projects in Oman is the lack of financial resources. While, Al-Busaify and Weerakkody (2009) asserted that the Sultanate differs from other developing countries in having sufficient financial resources. However, their study was conducted in the early periods of project implementation from 2000 to 2013, when ample funding was available for e-government projects. The subsequent poor economic conditions throughout the world led to a lack of financial resources (Heeks, 2001; Chen *et al.*, 2006; Heeks and Stanforth, 2015; Syed *et al.*, 2018), which has in turn led to poor skills development and weak capacity building in Oman partly due to the migration of highly skilled staff to the private sector.
5. Performance measurement standards are still inadequate and need strengthening. This has resulted in a lack of proper evaluation of the employees and organizations, failure in administrative control and accountability, the inappropriate utilization of resources, a lack of appropriate and fair mechanism, for employee motivation, and diminishing chances for innovation and creativity. Thus, the current performance assessment form used in the MoCS has very limited scope which makes the proper assessment of employee performance impossible.
6. There must be effective communication between government organizations as well the participation of the private sector to implement and improve projects (Ndou, 2004). However, satisfactory partnerships are rare. In contrast, descriptive statistics collect by Al-Busaify and Weerakkody (2011) show a high level of participation and good relationships between the public and private sectors in the context of e-Oman. Companies managing projects need to adopt a constructive approach in relation to approaching customers, developing offers, and managing

relationships in order to succeed in the new business environment, as well as establishing strong relationships with all stakeholders (Jalkala *et al.*, 2010). Social participation involves taking into consideration views of the public and providing opportunities for their participation in designing services. This includes simplifying procedures for the citizen in using services including the setting up of one stop access.

Lessons at the micro level

1. Change in any organization is driven by the people within that organization, the beliefs, thoughts, ideas and assumptions that they bring with them in articulating how change is expected to occur. Therefore, change should be a process in which all stakeholders participate, and externalities should be managed side by side with internalities.
2. The strategies of a large number of government organizations have been prepared and formulated at the request of the MoCS, and the implementation of strategy is key to the survival of any organization (Rajasekar, 2014). However, although there is a strong strategic formulation process in many government organizations, they lack effectiveness in implementing strategies and have not been able to maintain competitive advantages partly due to weak leadership, as seen in **NARS**. Rajasekar (2014) stressed that leadership is one of the most important factors affecting the successful implementation of strategy in the service sector in Oman.
3. Not giving high priority to training in project management for managers and members of many organizations increases the risk of project failure (Ali and Al Badi, 2013; Syed *et al.*, 2018) and the brain drain of skilled people (Ndou, 2004). A Gartner 2000 survey indicated that 60 per cent of organizations did not provide project management training (Ali and Al Badi, 2013).

4. The general aim of e-government is to achieve strategic change through these projects. Therefore, communication with staff and different stakeholders from the beginning is necessary to persuade them about the need for change, and participation is needed to assist the management in the definition of the change process. In addition, there must be an awareness of possible reactions to change so that those affected can be helped through difficulties from the beginning (McElroy, 1996). The lack of participation from the beginning led to delays in some case study projects and difficulties that were not anticipated.
5. For a fundamental change in behaviour to occur, leaders must make systematic changes to their organization's subsystems. This must be congruent with the final state required. Any development requires a comprehensive approach to change that achieves integration. Changing one or two subsystems will not generate sufficient power to effect organizational transformation (Fernandez and Rainey, 2017). Shareef (1994) found that the effort to implement a culture of participation in the US Postal Service was undercut by the administration's failure to modify organizational subsystems to support cultural change.
6. Leaders of change should be interested in strengthening relationships between their employees and expatriate employees who are hired through contracts or outsourcing. Weak relationships result in staff discontent, poor performance and delays in achievements. Public leaders are central in addressing profound societal, political and organizational changes driven by rapid technological and economic transformation, potentially discerning, shaping, nurturing and facilitating public value (Hartley *et al.*, 2019). Therefore, the government should promote the role of leaders especially in the early stages, to raise awareness and make ICT development a national priority (Ndou, 2004).

7.4 Conclusion:

This chapter has answered the research final question: ***How and to what degree have NPM principles informed e-government initiatives in Oman?*** It has evaluated the performance of the e-government improvement projects selected in this study through the application of the NPM principles.

In order to improve services in the government sector, the Omani government has begun to implement NPM. However, it has not been applied rigorously but instead adopted half-heartedly, and modernization projects have failed to deliver in full on the promise of radically improved services. In all cases, there have been some success and positive effects on public sector services as well as some negative effects. The positive effects of NPM change initiatives include greater flexibility, transparency in work, increased skills due to working in teams with different stakeholders, the measurement of outcome indicators, greater simplification of procedures, and decentralization in the provision of services. Service performance in some cases has been greatly improved. In addition, this study reveals that improved accessibility, efficiency and availability of public services, transparency in their use and fairness in access to them may lead to high levels of trust among citizens, especially in relation to e-government. However, privatization and the participation of the private sector to improve services is conditional on an appropriate legal framework regulating the transfer of services from the government.

Negative impacts identified include the intensification of work, increased workloads and volumes of responsibility and consequently increased working hours, leading to reduced job satisfaction and morale. Furthermore, misunderstandings can occur when there is more than one point of communication and people do not have the skills to communicate properly. Thus, one of

the main findings of this thesis is that modernization projects in Oman have met with widely differing degrees of success.

In addition, this study finds that building a digital Omani society and e-government can only be achieved through the collaborative work of various government and private entities. It also requires all organizations to recognize that the use of emerging technologies in all their transactions, services and systems has become an urgent necessity. To achieve this successfully, the public sector needs to prepare technical training programmes for employees, to develop the IT sector, and to improve cybersecurity and e-service quality. It needs to continue these developments and innovations by adopting the latest systems and applications and applying the best standards and practices to take advantage of the digital boom to promote development and progress in the Sultanate. The great digital transformations around the world require all entities to take advantage of the potential of emerging technologies, to take the lead in automating their services and enhancing performance and productivity. This can only occur by building the human resources capacity with the latest developments in this vital sector.

Therefore, the study notes that people working in the field of information technology in the Sultanate often do not have the skills and competencies to enable them to improve and manage services. The government must pay close attention to the training and qualifications of Omani employees and focus on motivating them. On the other hand, organizations can use expatriates in this area through contracts and outsourcing to benefit from their experience.

Moreover, a process of improving procedures is necessary to develop the public sector in Oman, which can be enhanced by developing employees through systematic training programmes. This should be supported by a strict programme of performance evaluation and accountability. Employees should be rewarded through incentives based on performance evaluation and

appropriate career paths. This will help to improve the quality of e-government services and increase customer satisfaction. Thus, organizations may eventually find themselves better prepared to support the struggle for greater social equity.

Having conducted an exhaustive evaluation of the management of e-government modernization projects in Oman and by comparing actual accomplishments with NPM principles, the main themes of this thesis can be drawn together, and relevant recommendations made in the following concluding chapter.

Chapter Eight

Conclusions and recommendations

8.1 Introduction

This chapter revisits the general approach of the study, identifying its purpose and objectives and giving an overview of how these have been achieved. It outlines the main contributions of the research to knowledge and offers a series of recommendations for policy makers and practitioners in the field of e-government. These stem from the identification of the most important challenges that delay the implementation of change as well as critical success factors that can help improve the quality, efficiency and effectiveness of public services. Finally, it makes policy suggestions and proposes areas for future research.

8.2 General approach of the research

The focus of this research is public sector improvement projects in the Sultanate of Oman. It explores the opportunities for administrative improvement in the Omani public sector. The main objectives are as follows:

First: To provide an overview of the Omani strategy to modernize the public sector, by examining the drivers of change and the tools and techniques used by Omani organizations to improve services. The research identifies the future direction of Oman's public sector, reaching conclusions regarding the characteristics of the modernization process.

Second: To explore e-government projects in Oman, examining how they are selected, designed, and controlled, as well as investigating how effectively they are managed and implemented and the obstacles to change mitigated, where possible.

Third: To contribute to the development of a theoretical understanding of contemporary NPM philosophy and to increase the understanding of how political elites explicate and enact the principles of NPM in public sector organizations in Oman. This is achieved by investigating the extent to which the doctrine of NPM has impacted on Oman and is enacted in management practice in Oman's public sector organizations.

Fourth: To explore the organizational capability of Oman's public sector to initiate and sustain reform, to identify how public services are responding to the requirements of the public, and to develop a conceptual model for the improvement of their efficiency and effectiveness.

Fifth: To review substantial change initiatives in public services in Oman using NPM principles to determine the causes of relative success and failure, learning lessons at the macro and micro levels with a view to making recommendations for best practice and drawing conclusions.

The research builds upon and extends existing NPM theory and determines practical implications for subsequent reform initiatives in Oman and elsewhere. In order to achieve its practical and methodological aims, the research is based upon a systematic comparison of five in-depth case studies, examining public sector projects from the health, civil service, higher education, manpower, and technology fields to identify, evaluate, and compare what has been done in each situation.

This research represents one of the few qualitative studies which draws mainly on primary data rather than descriptive studies of public sector improvement initiatives and e-government project adoption in developing countries. The management of e-government projects is investigated from the point of inception to implementation and evaluation, to give a deeper

understanding of the life cycle of e-government project development. It evaluates the success of these change projects in improving efficiency and effectiveness in the Omani public sector by adopting the principles of NPM.

Data were collected using a triangulation strategy of semi-structured interviews with experts, project managers, and core project members, literature review and analysis by the researcher of relevant documentary evidence. The interview data were collected from multiple government departments from interviews with government officials at different levels of management. They include experts, and policymakers, core members and stakeholders working in the selected projects. This multi-perspective technique enhances the reliability and validity of the findings.

The data collection instruments were developed from examples in the literature and validated by experts and core project members who are natives of Oman. Secondary sources of data were used to triangulate the findings, including government documents and reports, statistics, books and news media stories. Therefore, this study attempted to offer a holistic view of the interplay between the dynamics of the organizational environments as well as the technical environment across different government departments regarding the implementation of improvement projects in Oman.

In terms of the time factor, this study has examined the process of project management at the initial adoption stage up to implementation and beyond, to investigate the motivations for the adoption of change at different points in time and to generate better interpretations of the adoption process based on clear motives (Kennedy and Fiss, 2009).

8.3 Brief answers to research questions

In introducing the thesis in Chapter One, I posed four guiding research questions. These are answered briefly in this section and then elaborated on and discussed in what follows.

What are the main drivers of public services modernization in Oman?

The main drivers of public services modernization in Oman can be divided into internal and external factors. The internal factors that have influenced the government to modernize public services include: new organizational goals or tasks; new employees; and employee dissatisfaction. External factors include political, economic, social, and technological conditions such as the institutional dynamics arising from the global discourse on e-government and the knowledge-based economy. In addition, coercive, mimetic, and normative forces encourage conformity to international standards. Besides these, specific environmental factors such as clients, competitors, and suppliers are important in providing pressure for change. This combination of internal and external drivers has put pressure on the government to develop a strategy for modernizing government services that would allow the Sultanate to join the ranks of other developed countries.

Accordingly, the Omani government has moved to embrace public service modernization incrementally as the main plank of its public sector policy. The first step began with the use of technology, which was initiated by the establishment of e-government in 1998. This was followed by the creation of a single platform and official portal for government services (Oman Digital) in 2009, as a step towards simplifying government services for individuals and businesses. Moreover, the government's vision and mission focuses on providing its services efficiently and effectively. A services manual for government ministries has been issued by the MoCS, which helps organizations to set their visions and missions and to improve the provision of services to meet the

requirements of the new ISO 2015 specifications. Furthermore, a system of prizes and awards encourages public sector bodies to provide better services, and customer services departments are being established in all government units. The Platform of Government Communication and electronic windows to communicate with the community will further enhance partnership and cooperation. In addition, many conferences and training events are held to develop administrative performance and to train leaders and staff at different administrative levels.

How are e-government projects in Oman selected, designed, and controlled?

The transformation from traditional to electronic government services witnessed in the Sultanate has had a significant impact on the functioning of the public sector. Each of the projects selected is linked to the needs and objectives of the country. Thus, from a technocratic standpoint, the Omani government has made more good decisions than bad decisions. Under advice, it selected state-of-the-art technologies like the Oracle relational database management system and designed systems and interfaces using high level languages like SQL and Java. Equally, it adopted standard industry methods to design, manage and implement modernization projects. Problems occurred not because of these choices but ultimately from lack of experience in leading and managing complex processes of organizational change when critical resources are in short supply. At times, control was lost or ceded to expatriates with whom lines of communication were poor. Too little time was devoted to monitoring performance and taking corrective action when required. These problems should be resolved over time as senior managers in the public sector in Oman gain experience and reconceive of their role as taking executive action rather than political maneuvering.

How effectively have e-government projects been managed and implemented in Oman?

What emerges from the research is that project management cannot be discussed in isolation irrespective of the context in which projects are established. From a technocratic point of view, these projects were managed properly. However, different factors affected the degree of success of some projects and delayed the implementation of some services. These related to funding shortages due to the financial crisis, regulatory and legal obstacles, human resources issues, infrastructure problems, and social and political conditions.

How and to what degree have NPM principles informed e-government initiatives in Oman?

One of the main findings of this thesis is that modernization projects in Oman have met with widely differing degrees of success. NPM has not been applied as rigorously or with the determination shown in many developed countries where, since the 1980s, neoliberalism has dominated in public life. In this context, private sector solutions and methods are widely accepted as best and little is seen as the exclusive preserve of government. This is not true in Oman and many other developing countries where both governments and the people expect central authorities to underwrite the economy and society. In this context, the harsher and more insistent aspects of NPM are less readily accepted, such as measuring the performance of individuals and organizations and holding them to account. In consequence, NPM has been adopted half-heartedly and somewhat reluctantly, and modernization projects have failed to deliver radically improved services. This is due to different sources of resistance to change encountered in reforming public services in Oman. Experienced managers anticipate resistance to change, where employees familiar with long-established ways of working feel threatened by radical changes in systems, customs and practices. They fear for their jobs and feel differing degrees of doubt about their ability to cope. Some fear that modernization means a loss of promotion opportunities. Others do not wish to work more flexibly or to show

higher levels of respect for the people they serve. For these reasons, the government of Oman, like others in developing countries, recognized some virtue in the ideology and methods of NPM. Privatization, decentralization, stakeholder consultation and the use of key performance indicators are all expressions of a strong desire to change and improve, to put the interests of service users ahead of those of service providers, thus breaking with the past. However, entrenched resistance and reluctance to abandon habitual practices or cede power have proved formidable barriers to change. This helps explain the conspicuous patchiness of the modernization process in Oman and why there is such a high degree of variability in the outcomes of e-government projects with performance ranging from very good to poor. However, in all cases there have been some successes, and in the best examples service performance has greatly improved.

8.4 Contribution to knowledge

This research contributes theoretical and empirical insights. Firstly, in terms of its theoretical contribution, there is a lack of studies on NPM in public service organizations in developing countries. This study provides significant knowledge on the topic of improving the performance and delivery of public sector services. Further, it extends our theoretical understanding of NPM change projects in developing countries by highlighting the importance of feasibility studies and stakeholder participation in formulating policy relating to public sector improvement projects. Lack of financial resources, failure to define individual and organizational performance and lack of interest in training are highlighted as the main reasons leading to the failure of projects. Secondly, as an empirical contribution, this is the first in-depth research project on public service improvement in Oman.

8.5 Building the structure and outline of the research

As indicated above, this research presents three major contributions to current knowledge using an analysis based on thematic categories found in the data. This research has investigated several types of public sector projects undertaken in a developing country in the fields of health, the civil service, higher education, manpower, and technology during the period from 2011 to 2015. Each of these projects is part of the e-government initiative in Oman. These cases are examined to assess and discuss ways to improve the efficiency and effectiveness of Oman's public services. The study has identified, evaluated, and compared the work conducted at each stage using NPM principles. The research has highlighted indicators which must be monitored and has outlined what more needs to be done.

In order to achieve the theoretical objectives of the research, the study contributes to the literature on improvements in public service organizations in developing countries generally, and within the Omani public sector specifically. An extensive critical review of the literature, relevant theories, and relevant empirical studies is presented identifying and filling gaps in the study of public sector improvement in developing countries, which is an under-researched field of enquiry.

Having presented a clear picture of issues in public sector improvement, political, economic, and democratic factors were identified which impact on public sector improvement initiatives. Therefore, it was important to consider the Omani situation and shed light on improvement projects in the Sultanate, to determine the extent of the adoption of NPM principles. Understanding the techniques, tools, and strategies used for improvement and change in the Omani context helped the researcher to explain the theoretical contribution of the research more clearly.

The analysis of the case study data clearly indicates that the public sector in the Sultanate is vigorously seeking to develop and improve its services. Consequently, the Omani government decided to adopt modern concepts and trends in various fields and worked to develop many management practices, roles, and functions under the banner of NPM. Among these, measures have been taken to improve the adoption of e-government initiatives through the implementation of ICT projects. Due to the widespread impact of ICTs, e-government has become of paramount importance. This prompted the Omani government, as well as those in other countries, to contemplate the digital transition. E-government projects have the potential to enhance management and transparency, raise service performance, and eliminate bottlenecks in service delivery. Some internal actors have helped their organizations to make radical improvements in their e-government services. However, there are also various obstacles which hinder improvement in certain governmental organizations.

Therefore, five representative modernization projects were selected, and a comparative study conducted to determine factors that contributed to the success or failure of each project. The study evaluated these change projects using NPM principles to identify the obstacles that prevented change and improvement, and to suggest solutions and draw conclusions.

The analysis of the case study data strongly indicates four dominant themes described in the previous chapters concerning the following subjects:

- Drivers of public sector modernization and the role of the government in Oman.
- E-government projects in Oman.
- Managing and implementing e-government projects in Oman.
- E-government, NPM and the management of change.

Drivers of public sector modernization and the role of the government in Oman.

The first empirical chapter is based on an overview of Oman's development strategy for public services including the aims, drivers of change, and different tools and techniques used to improve services, and future directions. This chapter reviewed the strategy used in the development of Oman as a country and its intention to become a first-class modern economy and society while maintaining its distinctive traditions. Moreover, the chapter considers the internal and external drivers of change in Oman. These drivers have led the government to strive for change and to develop a strategy for modernizing government services to lead the Sultanate to join the ranks of other developed countries. Accordingly, the Omani government has made many efforts to improve its services at the micro or macro level.

Oman strives to be a modern society with a modern economy, modern social infrastructure, and a higher degree of equality in relations between men and women (Shayban, 2017). Fundamental to the achievement of this goal is the introduction of improved and modernized public services. The primary tool and key technique used for modernization is project management as a technocratic solution, with change considered in its social context. Thus, aspects of human relations and social systems also need to change rather than attending to purely technical and/or procedural factors (Hornstein, 2015).

In its efforts to modernize public sector services, the researcher concludes that the government still faces many challenges as summarized in this chapter, concerning lack of attention to human resources, poor strategic planning of goals and policies, the lack of measures for individual and organizational performance, and a lack of technical and human mechanisms to improve services due to lack of financial resources. These are significant points regarding the development and modernization of government services.

E-government projects in Oman

This chapter addressed the Omani e-government's modernization projects, considering five selected large projects developed to implement e-government in Oman. The main objectives of e-government in Oman, according to global and local expectations, are to enhance the delivery of public services, improve information flows to citizens, promote productivity among public servants, and encourage citizen participation (Heeks, 2001; Nkohkwo and Islam, 2013; Heeks and Stanforth, 2015). The chapter thus examined five large projects to understand how these projects were managed.

In terms of the rationale for their selection, it was noted that all the projects were linked to the five-year plans of the country. Thus, the idea of creating these projects was born either from experts, consultants, and senior staff or was decided by decision-makers in the state. This clearly indicates that there was strong senior executive sponsorship for e-government in the case study organizations. However, despite the importance of these projects and the links with the five-year plans of the country, it was found that some of the projects, such as the **PRS**, were not based on feasibility studies. Some projects did not conduct planning or study all the relevant circumstances before making implementation decisions, as in the **NERS**, which led to delays in implementation and limited success. Meanwhile proper planning and preparation of feasibility studies led to the relative success of projects such as the **PSRS**, **UAS**, and **PSITTM**.

Each of the IS projects – except for the **PSITTM** – was designed using the universally recognized Oracle database, using the SQL programming language in the **PRS** and **PSRS**, or Java as used by the **UAS** and **NERS**. Two kinds of software methodologies were used: the waterfall methodology used by the **PRS**, **PSRS**, and **UAS**, and the agile methodology employed by the **NERS** and **PSITTM**. The waterfall method was used in the early stages of administrative

development in the Omani public sector. But with rapid technological progress and given the strategic direction of the Sultanate to implement e-government and the provision of e-services, a change of direction was required to satisfy new requirements and customer demands.

Software development experts represented by the ITA in Oman changed the methodology used from the waterfall to agile methodology in 2013. It is noted that project members were not generally aware of project management methodologies. Basic documentation for project design was not shared between project subsections, even though service re-design and implementation requiring direct communication between all parties are key points of NPM (Bovaird, 2007). This is an indication of the lack of knowledge among project members, despite its importance to the success of the projects (Syed *et al.*, 2018).

Regarding the human resources for these projects, the study indicates that these projects were designed either by the staff of the relevant organizations, as in the **PRS** and **PSRS**, or through contracting in the **UAS** and outsourcing in the **NERS**. It is noted that many of the programmers and workers in the projects were Omani, but expatriates were appointed on contracts in the **PRS**, **PSRS** and **UAS**, or through outsourcing in the **NERS**. Most of these were of Asian nationalities, especially from India as in the **PRS**, **PSRS**, **UAS**, and **NERS**, because these workers are more productive and cost-effective, making it difficult to replace them (Mashood *et al.*, 2009; Fatiha, 2017; Kapiszewski, 2017). It has become clear that the economy of Oman, as in other Gulf countries, relies heavily on foreign labour (Mashood *et al.*, 2009).

The study noted that the systems of projects built by their own employees are less expensive than those purchased or produced in conjunction with external contractors. However, it is noted that many project members were not aware of the costs involved, which can negatively affect the success of projects (Syed *et al.*, 2018). Also, the appointment of employees through contracts has

been an issue in the success of these projects due to the economic conditions in the country, especially after the financial crisis. If the contracts of the programmers expire and funding is not secured, the remaining Omani staff are not sufficiently competent because they have inadequate training, and there is a lack of Omani skills in the field of information technology in the public sector, as referred to by Chen *et al.* (2006). The lack of financial resources has led to staff departures and the brain drain of skilled people from the public sector to the private sector, which corresponds to the findings of previous research (Disney and Gosling, 1998; Swailes and Al Fahdi, 2011; Syed *et al.*, 2018).

The case study analysis revealed that the relationship between Omanis and expatriates was weak, such as in the **NERS** project. Further, the relationship between employees and stakeholders in some projects in the start-up phase was similarly inadequate, as evidenced in the **PSRS** project. This is in line with the findings of the literature that competition in contracting may not yield the desired results in terms of delivery, leading to delays in implementation (Al-Gharbi *et al.*, 2014; Oh and Park, 2017). This may be due to unclear contractual conditions, and managers in the **NERS** being less aware of specific outsourcing arrangements (Miller and Lessard, 2007; Bernroider and Ivanov, 2011; Walther, 2015; Eckersley and Ferry, 2019). Meanwhile the partnership established at the beginning of a project through to its implementation contributed to the relative success of projects such as the **UAS** and **PSITTM**. This is a clear signal that partnership among all stakeholders is a key point for the success of improvement projects, as noted by (Miller and Lessard, 2007; Jalkala *et al.*, 2010; Fernandez and Rainey, 2017).

The chapter concludes that the concept of modernization in Oman has been associated with IT to reframe practices in a completely new manner, which also means liberalizing the economy in conjunction with technology to achieve the best value (Al-Busaify and Weerakkody, 2009). This

raises the question of whether these services have been provided efficiently and effectively. Have services been developed efficiently to meet customer needs while offering the best value? Were they planned so that stakeholders will ensure the delivery of the highest possible quality of services with the available resources to effectively achieve goals? Did they manage these projects properly? This is was considered in Chapter Six.

Managing and implementing e-government project in Oman

This chapter examined the management of projects in Oman based on the PMI approach, and the management of projects paradigm designed by Morris (2013), by evaluating five selected projects to modernize services in the Sultanate. The chapter analyzed the implementation process of these projects. It determined the way the projects were managed through different processes and the tools and techniques used. Moreover, it focused on the challenges facing the successful implementation of e-government initiatives in the Omani public sector. Finally, it assessed these projects, identifying the degree of success in each project based on the above approach.

The findings indicate that there are many challenges to the successful implementation of e-government initiatives in Oman. These may vary from one organization to another, but there are some commonalities since the organizations share social, economic, and geographical similarities. The study identified six main type of challenge relating to: financial, organizational and legal, human resources, infrastructure, social, and political issues.

Issues related to finance are among the most challenging. This is corroborated by Brinkerhof and Brinkerhof (2015), who noted in their study that one of the challenges facing reform in developing countries, including Oman, is to provide high-quality services to a variety of users with fewer resources. However, Al-Busaidy and Weerakkody (2009) indicated that the Sultanate

differs from the other developing countries in having sufficient financial resources to implement e-government projects. This may be because funding was available for e-government projects in the early period of project implementation from 2000 to 2013. However, the result of poor economic conditions throughout the world, and in Oman in particular, led to this gap as indicated by many studies (Heeks, 2001; Chen *et al.*, 2006; Heeks and Stanforth, 2015; Syed *et al.*, 2018) and confirmed by the results of this research.

The most important themes are funding, the cost of e-government services, project budgets, and the economic crisis. The challenges include the difficulty in renewing contracts for some programmers, lack of outsourcing, lack of qualified staff, and few incentives, delays in services, poor accountability, inadequate donor support, the long-term suspension of projects, poor training and qualification, and staff resignations. According to Ebrahim and Irani (2005: 606), the main source of finance in public sector organizations comes from central government, making it hard to control and difficult to plan sustainable IT initiatives such as e-government. This shows the importance of finance and the need for money to facilitate the provision of e-government services.

The most important themes related to regulatory and legal aspects are performance management, leadership, and change management. The vision and values driving an e-government initiative should emanate from the highest level of the administration. This vision should be effectively communicated to all stakeholders. Appropriate metrics should be established to evaluate the effectiveness of the initiative.

Many problems stemmed from a lack of criteria for evaluating individual and organizational performance. This produced weak supervision and accountability, which caused a duplication of work and delayed the completion of services. In some cases, services were not established because data were unavailable to the organizations. Moreover, lack of accountability both internally and

externally caused some opportunities to be lost and resources wasted. There were also conflicts of interest between organizations providing the same service. Further, there was a failure to some services which meant that the public was unaware of them (Alshihi, 2006). Documentation was poorly managed, leading to the absence of important project documents. Weak supervision by the senior leadership ensured that policy and feasibility studies were often not conducted. Additionally, little attention was paid to human capital development, which left Oman with a shortage of skilled staff.

Training and capacity building are the two dominant HR themes. The lack of ICT skills in the public sector is a major challenge for successfully implementing e-government initiatives. Additionally, lack of knowledge and skills in project management and its tools and techniques is a major constraint, because all these initiatives are large projects that need to be well managed (Syed *et al.*, 2018). Other constraints include the brain drain and frequent resignations due to lack of incentives in the public sector, especially after the global economic crisis (Ndou, 2004; Swailes and Al Fahdi, 2011). In addition, there is a lack of acceptance of the need for change and loyalty to existing systems, as well as a lack of qualified Omani programmers and inadequate participation in project phases by project members.

The lack of readiness of the infrastructure in the Sultanate has led to delays in the implementation of these projects. Some of the weaknesses in the ICT infrastructure, are security, privacy, information sharing, and weak networks. In addition, there is a lack of Internet access and connectivity, a scarcity of computers, poor system integration and the lack of maintenance of government websites, and weak data systems (Al-Busaify and Weerakkody, 2009).

Social aspects have emerged from the beginning of the application of electronic services, which started with the **UAS** before the implementation of e-government in the country. The **UAS**

met with rejection and mistrust among the community because it represents a new culture in the country. Additionally, citizens were suspicious of the technology because of lack of knowledge, unreceptiveness to change and digital illiteracy.

Leadership and political situations are dominant political themes. It is important for the government to support e-government initiatives because leadership is one of the main driving forces of any new and innovative project. The implementation of e-government initiatives require complex and large-scale changes. In addition, for such initiatives to succeed, appropriate laws and regulations need to be in place (Syed *et al.*, 2018).

Arguably, the same challenges are faced by most developing countries, as pointed out by many researchers (Ndou, 2004; Nkohkwo and Islam, 2013; Syed *et al.*, 2018), but they may differ in degree depending on circumstances and culture. Also, it is notable that most of the challenges that have emerged in these projects relate to human aspects, with fewer relating to technology. This requires organizations to pay more attention to human issues, because people are also required to change and continually improve services as well as implementing the technology (Jaca and Psomas, 2015). Moreover, the different factors affecting success interact in various ways (Nkohkwo and Islam (2013). For example, there is a relationship between infrastructure and human aspects because, even if the state has the necessary infrastructure, human skills are needed to manage and operate it. Also, funding is required to buy the infrastructure necessary to enable the successful implementation of e-government initiatives.

After identifying the challenges affecting the success of project management in the Omani public sector, the study assessed the extent to which the projects were implemented effectively and

efficiently, according to Morris *et al.* (2000) and the PMI guide. The **UAS** was deemed the best, followed by **PSRS**. Finally, the study notes that the **NERS** project did not go well.

The success of the **UAS** is based on feasibility studies and consideration of all human and material needs. This includes: the participation of all stakeholders from the start; the setting of clear goals based on the budget and training of all staff. Also, they built strong varied channels of communication as well as seeking private sector assistance to reduce costs and achieve equality and transparency in providing services for beneficiaries.

The **NERS** is not going well due to failures in these respects. Although it blends the public sector with the private sector, and the system was created by a Singaporean company, there are serious deficiencies in communication among all parties, and the aims have not been achieved. Although research was conducted before the establishment of the project, staff did not consider all risks and appropriate planning was lacking. This delayed the launch of the project and increased costs, and suitable targets were not set. The devotion of employees to the existing system and their non-acceptance of the new project is another reason for the delays and increases in cost.

E-government, NPM and management of change

This chapter focused on project evaluation based on the NPM principles. Overall, the study concludes that the core reasons for the success of improvement projects include good communication and participation between all stakeholders, between civil service departments and IT staff. Further, feasibility studies should be conducted to study the prevailing conditions, which were clearly defined in the **UAS** and **PSITTM**. The poor results of the projects were due to the lack of measurement of individual and organizational performance to identify shortcomings. Other

concerns include the lack of clear, detailed, written and documented plans for e-government implementation in these organizations and in Oman generally.

In addition, the lack of financial resources was one of the main reasons for delays in the implementation of projects in the Sultanate as well as the lack of training of employees. Therefore, leaders in Oman need to pursue comprehensive change and develop a detailed integrated approach to change that achieves subsystem congruence. Many researchers stress that, in order for fundamental change in behaviour to occur, leaders must make systemic changes to the subsystems of their organization which must be aligned with the desired end state (Fernandez and Rainey, 2017).

However, due to the inappropriate or lack of performance measures currently in place, it is not possible for organizations to identify the reasons for failure and who is responsible. Consequently, most organizations in the Sultanate may succeed in implementing some services, but success is not comprehensive due to such failures. Degrees of improvement can be assessed through achievements in the whole organizational field not by the achievements of an individual organization or service unit (Hartley and Skelcher, 2008). Changing only one or two subsystems will not generate sufficient force to bring about organizational transformation (Fernandez and Rainey, 2017). According to Moore, as cited by Hartley (2005), changes that are worthy of being recognized as innovation must be large, general, and durable enough to significantly affect the operations of the organization.

Some researchers warn that implementing multiple changes without understanding the structure and nature of the interconnections among subsystems can result in additional costs and a longer implementation period than anticipated (Hannan *et al.*, 2003). This occurred in the **NERS** project when the “Power” project was transformed into the new more advanced “Nimir” project,

but without studying the whole system and its surrounding environment and without developing a clear plan. This resulted in increasing costs which delayed implementation. Previous research has emphasized that practitioners should begin any change effort with systematic changes in the work setting and ensure that such changes are congruent with each other. They should also send consistent signals to organization members about the new desired behaviours (Fernandez and Rainey, 2017).

8.6 Discussion

In summary, from the findings of this research, the most important challenges that delay success in applying change and producing improvement are shown in Table 8.1:

Table 8.1. Challenges that delay the implementation of successful change

Key elements	Challenges	References
History and culture of the public sector	Duties and powers are not properly defined in government.	(Al-Busaidy and Weerakkody, 2009; Rajasekar, 2014; Syed <i>et al.</i> , 2018)
	No clear detailed plans for improvement and complementary plans between service-providing organizations.	(Ndou, 2004; Sahraoui <i>et al.</i> , 2006)
	Economy not growing or increasing in productivity due to the lack of planning and lack of plans linked to strategic goals and time periods.	(Hvidt, 2013; Syed <i>et al.</i> , 2018)
	Poor standards of oversight, accountability and performance.	(Common, 2008; Al-Busaidy and Weerakkody, 2009)
	Limited resource capability and experience required for training among leaders and employees. This has led to an increase in expatriates and thus an increase in unemployment.	(Al-Busaidy and Weerakkody, 2009)

	Lack of attention to administrative competencies and motivation in the public sector leading to brain drain to the private sector and frequent resignations.	(Ndou, 2004; Swailes and Al Fahdi, 2011)
	Relatively short history of democracy and little transparency in government policies and rules.	(Common, 2008; Mashhood <i>et al.</i> , 2009; Syed <i>et al.</i> , 2018)
	Lack of integration and exchange of information between government agencies.	(Al-Busaidy and Weerakkody, 2009)
	Lack of official documentation related to reform efforts.	(Tayeb, 2005; Common, 2008)
Technical staff	Lack of staff with dedicated technical skills or very limited in-house staff.	(Ali and Al Badi, 2013; Syed <i>et al.</i> , 2018)
	Employment using temporary contracts impossible due to financial circumstances.	(Syed <i>et al.</i> , 2018)
	Poor coordination between local and expatriate staff.	(Syed <i>et al.</i> , 2018)
	No acceptance of the change, especially at the start.	(Syed <i>et al.</i> , 2018)
Infrastructure	Weak infrastructure.	(Heeks, 2001; Chen <i>et al.</i> , 2006; Al-Busaidy and Weerakkody, 2009; Heeks and Stanforth, 2015; Syed <i>et al.</i> , 2018)
	Poor internet access for citizens.	
	Lack of consideration given to risk management.	
Citizens	Internet access is not available everywhere.	(Carter and Bélanger, 2005; Andrews and Van de Walle, 2013; Syed <i>et al.</i> , 2018)
	Relatively less experience in democracy.	
	Lack of electronic services for citizen use, and the complexity of some available procedures	
	Some electronic services fees are high for the citizen	
	Less actively involved in government policy-making processes.	
Government officers	Low dedication of resources.	(Al-Busaidy and Weerakkody, 2009; Syed <i>et al.</i> , 2018)

	Many have not prioritized e-government due to lack of knowledge.	(Syed <i>et al.</i> , 2018)
	Fear of and unwillingness to change.	(Al-Busaidy and Weerakkody, 2009; Syed <i>et al.</i> , 2018)
	Lack of knowledge related to reform efforts.	(Tayeb, 2005; Common, 2008)
	Poor internal communication between staff of government organizations, as well as weak participation with the private sector and lack of social participation.	(Ndou, 2004; Al-Busaidy and Weerakkody, 2009; Jalkala <i>et al.</i> , 2010)
Funding / financial resources	Failure to link plans and goals with financial resources.	(Hvidt, 2013)
	No budget allocation for projects.	(Al-Busaidy and Weerakkody, 2009; Syed <i>et al.</i> , 2018)
	Project members lack of awareness of costs.	(Syed <i>et al.</i> , 2018)

Source: Based on (Syed *et al.*, 2018)

On the other hand, there are many critical success factors that have led to the success of e-government improvement projects in the public sector, as defined in table 8.2:

Table 8.2. Critical success factors in improving public sector services

Factors	Missions
Top Management Support	Provision of project funding and commitment to funding
	Active involvement in planning
	Creativity at work
	Articulation of a vision of IT role by the Information Officer or equivalent.
	Management ability to involve the right people
	Leadership and the need for committed champions to introduce novel IT endeavour.
	Leaders must make systematic changes to organization subsystems in line with the time scale set.
	Creation of leadership steering committees and long-term commitment

	<p>Motivating and rewarding staff and being change agents</p> <p>Training in the public sector to develop much needed knowledge, skills, and leadership abilities</p> <p>Strengthening links with project members and stakeholders</p> <p>Advertising and publishing services on various social media</p>
Communication	<p>Developing internal and external communication strategies for improvement initiatives</p> <p>Dissemination of information about the key concepts, a clear understanding of the programme and how to engage with it, while communicating the results of the initiative to all stakeholders, users, suppliers, delivery partners elsewhere in the public, private and voluntary sectors, politicians, and the media.</p> <p>Communication with stakeholders about the system and its benefits and addressing negative aspects</p> <p>Communication of IT governance-related policies and guidelines to enhance control, change and enforcement performing IT-enabled functions</p>
Preparedness for Organizational Change	<p>Introducing new practices, values and structures</p> <p>Change of solid structures in government organizations</p> <p>Preparing staff and citizens to accept change</p> <p>Use of rewards and benefits</p> <p>Development of internal and external communication strategies</p> <p>Ability to adopt rapid technological change in a deliberate manner</p> <p>Training and development programmes to build team skills</p>
Seeking Customer and Stakeholder Support-Involvement	<p>Focus on customer in the public sector, taking their views into account and participating in decision-making</p> <p>Commitment of customers to simplify procedures</p> <p>Need for a greater awareness of customers of public services</p> <p>Interest in providing appropriate publicity for service improvement projects to inform customers of the services provided</p> <p>Providing the necessary training to customers if required</p> <p>The establishing a one-stop section for integration in providing and facilitating services</p> <p>The establishment of a department to provide customer services.</p>

Choosing the Team	Specialised skills and experience in preparing a variety of techniques
	Work to identify key enabling factors for the successful introduction of new technologies, including people and process issues
	Use of external consultants
	Platform to offer value-added services
	Human resource planning, recruitment, development and retention of qualified technical staff
Reduction of Downsizing Fears	Partnerships with the private sector and different industry experts in e-government projects
	The need for union and staff relationship management to handle changes to jobs and reskilling needs
	Involving influential and knowledgeable champions
	Use of intrinsic and extrinsic motivational strategies to overcome resistance to change and fear of uncertainty
Empowerment	Government employees' involvement in the process to overcome resistance
	Involvement of staff and incorporating their opinions
	Delegation of authority, responsibility, and accountability issues
	Creation of a collaborative teamwork culture and staff taking greater responsibility and accepting accountability
ICT Infrastructure	Direct involvement of staff at all levels and the incorporation of their opinions in mapping exercises and improvement of staff participation in decision-making
	Systems needed for effective communication.
	Spending to repair or replace existing facilities or to provide new facilities
	Readiness of the infrastructure in terms of security, privacy, information sharing, network, Internet access and connectivity, provision of computers, collaborating systems, maintenance of government websites, data systems
	Need to consolidate, standardize, and manage IT infrastructure for cost optimization and effective information flow
Culture	Positive synergy among units participating in improvement initiatives
	A well-established culture of teamwork
	Revision of reward systems, communication, empowerment, people involvement, training and education, creating a culture for change, and stimulating receptivity of the organisation to change

	Shifting the cultural focus from technology culture to services
PM and PM Skills	Training staff in the field of project management
	Adopting flexible and adaptive methodology
	Adequate plan execution
	Using processes by which projects are defined, planned, monitored and controlled to achieve the project objectives of timely delivery, risk assessment, adherence to budget, conformance to specifications and stakeholder satisfaction
	Using tools and techniques that create a unique product or service
	Ensure that services are managed and delivered appropriately
	Attention to project documentation
ICT Awareness	Assess and develop the required technical and process competencies
	Need for ICT awareness and effective training
	Use of ICT training for public sector officers to achieve higher user satisfaction
	The use of regulations and the need for technical support to improve ICT awareness
IT Governance	Providing a reference framework to guide organizational units to ensure responsibility and accountability to lead improvement initiatives
	Importance of IT governance and its awareness, training, and competency of professionals to a sustainable, standardized and cost-effective IT environment
	Systematic planning that includes the definition of specific roles and responsibilities, description of policies and methodologies, and selection of process-oriented software tools
	Ensuring the importance of integration between government agencies in improvement projects
Strategic Clarity and Alignment	Setting a clear vision, business case, and result-focused strategy for e-government initiatives, with Interrelationship between strategic goals for an e-government project and the overall government's vision and mission
	Suitability of the system for the organizational need and its compatibility for cross-departmental information sharing
	Alignment of IT with business strategies and enabling IT structures. This can make possible successful integration of IT with effects on public service delivery and improvement in these organizations

	Enhancement of private sector participation is among the priorities of strategies for improvement
External Environment	Examine external environmental factors including socio-economic, political structure, literacy, population characteristics which can influence transformation activities
	Availability and access to specialized knowledge, human, financial and material resources political climate and administrative policies, and socio-economic/socio-ethnic composition can significantly alter transformation endeavours, especially in a developing country

Source: based on (Syed *et al.*, 2018)

Governments across the world, including in Oman, are still turning to ICT-enabled initiatives to transform their services to become citizen-centered and sustainable. A good understanding of CSFs may enable organizations to understand which areas need attention to improve the effective design and implementation of ICT initiatives. Public sector organizations have characteristics different from those in the private sector and, likewise, developing countries are often different from developed nations (Syed *et al.*, 2018).

The study has identified the most important challenges that delay success in applying change and hinder improvement efforts. It has also identified the most critical success factors leading to the success of improvement projects in the public sector. However, in the Omani context, the research identified that the most important element in delivering service improvement and the simplification of procedures is human resources. If the people working on the projects lack the skills and training, neither technology nor systems or policies can bring about change and improvement. Accordingly, the Omani government should invest in its human resources through training and motivation to provide better and easier services and economic growth.

Fosu (2013) pointed out that for governments the ultimate objective to maintain growth and achieve development should be continual improvements in the human development of their

citizens. In general, achieving development requires inclusive economic growth, and requires a relatively equitable distribution of capabilities among individuals to participate effectively in the growth process. This view of human development will also include various forms of freedom so that it will continue in the long term.

Hendrix (2017) suggested that policymakers should focus on human resources education and investment as a useful means of diversifying GDP. He referred to the experience of Saudi Arabia. The Saudi Vision 2030 document contained ambitious plans to reform the country's education system to enhance critical thinking and technical skills. Hendrix (2017) also noted that policymakers should understand that achieving appropriate organizational structure and procedure is key to diversifying exports and nonrecourse development. Also, policymakers should refocus on successful experience and the most suitable cases to guide practical thinking in this area.

The development community must therefore provide better examples and solutions to developing countries to help their sustainable development. However, solutions will stem from empowering leaders through training and qualifications, because senior management plays a major role in implementing successful change. They are responsible for formulating strategies to improve services (Rajasekar, 2014). Although the Sultanate has been keen since the beginning of the Omani renaissance to develop human resources through training, it still suffers from a severe lack of skills and expertise in various fields, including information systems. The Omani public sector does not have staff with dedicated technical skills. The government lacks local outsourcing options and rarely has the financial ability to outsource, while the current staff may be unable to define specific requirements. This is one of the challenges that many developing countries face (Syed *et al.* (2018).

This is due to the lack of a detailed training strategy in the Omani public sector, as the study findings noted. Rajasekar and Khan (2013) pointed out that the lack of a long-term training strategy

in Omani public sector organizations and the fact that training is not linked to their vision, mission, and strategic goals certainly hinders the development of their employees. This also demonstrates the ambiguity of human resource development goals. Omani organizations therefore urgently need to develop a long-term human resources development plan linked to their objectives, which is well-articulated and able to provide an integrated framework for staff development and growth.

The current study therefore recommends that Omani organizations develop detailed training strategies to develop a comprehensive training policy, which is properly documented and shared with everyone in the organization to provide an effective mechanism for structuring and organizing training. This should emphasize the goals and objectives of training and the methods and procedures to assess what learners achieve and what skills and information are transferred to their job performance as the added value of training (Rajasekar and Khan, 2013).

At the same time, training organizations should apply successful modern training methods such as practical approaches that include staff in managing project teams. Also, specific tasks to improve learning outcomes and improve the quality and effectiveness of training should be used, rather than the prevailing methods currently offered. Rajasekar and Khan (2013) argue that we are in the information age which requires e-governance, and that many government activities and services are now available on the Internet. However, many Omani public service organizations are currently lagging behind in providing online learning and knowledge management for their employees. Therefore, IT-supported training must adopt a strong support system for properly setting up and maintaining online training.

The implementation of such methods is currently difficult due to problems such as the reluctance of senior bureaucrats, weak IT infrastructure and poor Internet access, and the resistance of employees to adopt modern learning methods. The ITA is thus required to play an active role in

combating the rigidity of government organizations and creating an enabling environment for IT, while providing a sense of direction and encouraging the adoption of modern teaching methods and techniques.

This will help employees meet the requirements of the 21st century and promote learning and self-development, where they can play important roles in the development of competencies. However, the study of official documents show that the Omani public sector is represented by the MoCS and the IPA, which are concerned with administrative development and training. The MoCS has launched several distance training programmes for seven government agencies, with the participation of 310 staff from various sectors of the civil service (MoCS, 2019).

Besides the attention given to human resources, legislation and regulation must also be simplified. According to Robinson and Acemoglu (2012), to sustain growth and development and achieve development in organizations and governance, the focus should be on the structure of state organizations and how they can be altered. Unfortunately, the emphasis in many developing countries has often been on the establishment of an extremely strong central government bereft of the appropriate checks and balances. Sooner or later political systems are transformed into patrimonial or neo-patrimonial governance which is unaccountable to the interests of the citizenry (Fosu, 2013). Accordingly, the recommendation of this study is that the Omani government must re-define the powers of organizations more carefully, specifying all job titles and responsibilities, so that organizations and employees work according to their duties and powers.

Additionally, accurate measures must be prepared for individual and organizational performance according to which work is monitored and evaluated and job requirements as well as accountability are determined based on the results of evaluation. In Oman, each organization

operates separately, and there is no authority responsible for evaluating performance. Organizations also have no authority to monitor tasks and assess performance in other ministries.

Although the MoCS, for example, is concerned with administrative development, it does not have the authority to implement plans to improve services and procedures, and it cannot hold other parties accountable for their actions.

Strengthening the role of public oversight, introducing strategies, to enhance integration between government departments, and institutionalizing e-government in the structures of these departments is one of the basic measures needed in Oman. Al-Busaify and Weerakkody (2009) stressed that introducing rules and laws and increasing the role of public oversight will increase pressure on organizations in line with the intended results of the implementation of e-government. Hence, action is required to reformulate strategies in an appropriate way.

Rajasekar (2014) stresses that strategy formulation requires leadership skills, careful planning, the organization of resources and activities, thorough analysis, governance and innovation, as well as ensuring that people adhere to the new strategy. The implementation requires managerial talent, creativity, and the ability to anticipate obstacles that may arise, as well as assessing market opportunities and organizational strengths. Furthermore, strategy formulation is usually a senior management function, while implementation is the responsibility of middle and lower level managers. Nevertheless, the role of senior management is vital in developing and delivering a viable strategy that middle managers can implement. In other words, successful implementation begins at the drafting stage, and failure to link strategy formulation and implementation is likely to end in failure. A well-prepared strategy makes no sense if it is not implemented properly.

Most organizations spend considerable time, energy, and money in formulating strategy, but they do not provide enough input to implement it properly. This is observed in some of the case study projects. In the **PRS**, the final objectives were not formulated from the outset but were tailored simply to meet the requirements of the first period of project preparation. This was realized later, and interventions were made to modify it. In the **PSRS** and **PSITTM**, the objectives were formulated but the organizations involved did not participate in implementation. Meanwhile, **NURS** was drafted without the careful planning and organization of resources and activities, which in turn delayed implementation.

Finally, it is not possible to develop government performance on paper. The regulations must be changed, and financial resources devoted for the development of work and a simplification of procedures. However, this is one of the biggest challenges affecting improvement in Oman. Lack of financial resources has led to challenges such as staff departures and a brain drain of skilled people.

This study recommends that the public sector must pay competitive salaries. For the best people, high pay rises, and a reward structure is required to maintain the highest levels of talent in managing projects; these people will often be young, dynamic, and very capable. When organizations have such people, they must be rewarded. Otherwise, the people that remain in the public sector are less capable (Disney and Gosling, 1998; Syed *et al.*, 2018).

Swailes and Al Fahdi (2011) found that public organizations suffer from the loss of skilled and educated staff, due to employees leaving to join firms in the private sector. Most had moved from the public to the private sector from IT or engineering departments, due to the higher rewards available in the private sector. (Ndou, 2004) emphasized the need for investment in human

development by training staff to deal with new processes and activities and by providing incentives to prevent the brain drain of talented employees.

However, lack of financial resources is not always the deciding factor in the failure to adopt e-government in developing countries. Other factors could also delay the implementation of e-government projects, such as weaknesses in the institutional, technological, and administrative structures which may have a major impact elsewhere. The implementation of e-government will not succeed in a weak institutional or technical environment (Al-Busaidy and Weerakkody, 2009).

8.7 Recommendation for policy and practice

A full understanding of e-government frameworks by public sector organizations is significant in its reliable and effective adoption. One objective of this study is to provide recommendations for policymakers and practitioners in the field by identifying the most important elements of public administration that can help improve the quality, efficiency and effectiveness of public services. The findings of the research will help policymakers develop appropriate solutions that can be effectively implemented.

This research will help IT practitioners in Oman to learn how to use and manage information technologies to revitalize business processes, improve business decision-making, and gain a competitive advantage from the adoption of e-government.

Recommendations for policymakers

Organizational preparedness for change is an important precursor for the successful implementation of change projects. Experts assert that greater readiness leads to the more successful implementation of change. All employees and stakeholders must be convinced of the need for change. The contradiction between current and targeted performance levels must be

explained to employees so that they understood why there is dissatisfaction with the current situation. An attractive vision of the future situation should be created and how the future state can be achieved (Weiner, 2009). Consistent leadership messages and actions, information sharing through social interaction, and shared experience between members are likely to generate a shared sense of readiness (Weiner, 2009).

Policymakers need to invest in Omani human resources, developing and empowering them, raising their efficiency, capabilities and skills, and building leadership abilities through training. It is also the responsibility of leaders of change to consider the efficacy of change in term of determinants of implementation capability: task demands, resource availability, and situational factors such as timing. They should assess whether the organization has the human, financial, material, and informational resources necessary to implement the change properly and take into consideration relevant situational factors. When organizational members have a shared understanding of the changes required, they will share a sense of confidence that collectively they can implement a complex organizational change (Weiner, 2009).

Furthermore, this study shows that consistent intervention from the government is needed for the implementation of e-government to succeed, especially in the area of strengthening institutional environments to allow for horizontal integration and collaboration among government departments. This intervention in the form of explicit laws and regulation is needed because public sector activities are mainly based on such regulations and rules (Teicher *et al.*, 2002). Most of the participants in this research indicated a lack of policy and clear guidance prior to the implementation of e-government projects.

The present study shows that technological determinism is not appropriate in the case of e-government. As a technological innovation, e-government is not capable of enacting change in

organizational structures. Thus, the Omani government must change its policy and formulate laws in an appropriate way in line with the country's current situation. It is also recommended that a proactive role is taken to enhance the field of IT, especially after transferring these powers from the ITA to the Ministry of Technology and Communications which will oversee and coordinate the implementation effort in Oman.

Moreover, it is important to allocate suitable budgets for service projects when developing strategic plans. Inadequate funding has impeded many projects and led to delays and cessations in some services. Accordingly, the country's decision-makers should accelerate the implementation of the programme with a performance-based budget that links all plans and projects with specific goals to achieve efficient exploitation of limited resources. The Ministry of Finance needs to be convinced of the importance of the financial control system project and its benefits for the country. The budget preparation method currently used is the item-based budget, which is focused on input without paying much attention to the goals, and without properly measuring these outcomes and their implications. This inevitably leads to a reduction in the chances of conducting efficient accountability vis-à-vis the effectiveness of the utilization process of the budget.

Simultaneously, current performance assessment in the public sector has a very limited scope, which makes it difficult to properly assess employee performance. This needs to change. Therefore, it is important to have a performance evaluation system for the measurement of individual and organizational performance. Individual performance assessment is based on incentives linked to results. Organizational performance evaluation is conducted according to the European Excellence System. The evaluation highlights points of strength and weakness compared with organizations of similar functionality regionally and internationally.

There must be internal communication between government organizations as well as participation with the private sector. Partnerships should be used as a tool to improve the public sector but so far these are not satisfactory. Listening to the views of the citizens and providing them with opportunities to participate in designing services could include simplifying procedures and establishing one-step services in each locality so that all formalities can be finalized in one place.

Recommendations for practitioners

The most significant point for IT practitioners is to highlight the importance of integrating existing information systems and applications in public sector organizations in order to establish an efficient framework for the e-government architecture. Therefore, essential information systems, applications, and necessary infrastructure technologies can be used for reliable and flexible access to government data and information processing within and between organizations (Ebrahim and Irani, 2005).

Moreover, the internal Omani IT capability is limited. Therefore, there is a need to train and leverage the expertise of experienced employees to implement the various stages and services required to improve the e-Oman strategy. In general, there is a need to pay attention to administrative competency in the public sector, so that organizations can address the problem of competent staff moving to the private sector.

There is a lack of integration and exchange of information between government agencies. Likewise, weak relationships exist between IT experts in the Omani government ministries and those in the private sector. Accordingly, this study recommends strengthening relations between practitioners in the field of information systems by setting up workshops and meetings to exchange knowledge between the public and private sectors. There is a need to adopt a highly constructive

approach in relation to approaching customers, developing offers, and managing relationships in order to succeed in the new business environment.

8.8 Suggestions for further investigation

This study has identified many factors that lead to the success of improvement projects. So, it is important to examine these elements in a more detailed way. For example, leadership has been identified as a key factor in successful project management, especially top management support. Also, leadership and communication are necessary to implement change. Change must be a continuous process supported by communication (Syed *et al.*, 2018). However, studies of the style, nature, and attributes of leadership that contribute to such success are scarce, as stated by Syed, Bandara, French, & Stewart (2016). Thus, this study recommends that attention be paid to the power relationships between different stakeholders. Further research is required into how top management can support public sector project management initiatives, and how leadership contributes to the success and sustainability of project management in the public sector.

Furthermore, building leadership capabilities for process-centric innovation in the public sector and methods to sustain long-term top management commitment to business project management in the public sector is warranted (Syed *et al.*, 2018). In addition, conducting more research on the importance of communication and participation in the success of projects is required. According to Syed *et al.* (2018), despite many discussions indicating the importance of communication for project management success, studies of the essential elements in planning communication in public sector project management are scarce. How can social and cultural factors in public sector organizations influence change initiatives? How can training and development be designed to support effective change in the public sector? All these topics need more research.

Finally, it is crucial to conduct research on this subject, but from the perspective of citizens rather than project employees. Alternatively, the results of this research could be applied to projects in sectors not considered in the current research. Also, future research may extend the scope of investigation to other countries similar in context to the Sultanate in the same geographical region, such as other GCC states. Additionally, this model can serve as part of a larger framework to evaluate efforts designed to improve public sector services and introduce modern systems.

8.9 Conclusion

This chapter has summarized the general approach of the research, and identified its purpose and objectives, with an overview of how they have been achieved. It has outlined the main contributions this research has made to knowledge and how this has been achieved. Finally, it has identified areas for future research and made recommendations.

The chapter indicates that, with the dawn of a new technological age and the spread of ICTs, e-government has become of paramount importance. This has prompted many governments, including that of Oman, to think about the digital transition. E-government has the potential to enhance management, create transparency, raise service performance and eliminate bottlenecks in service delivery. Thus, this chapter has reviewed the Omani government strategy for public service modernization and the application of project management as the primary tool and key technique to achieve this objective. Five large projects that have been developed to improve services in the Omani health, civil service, higher education, manpower, and technology fields were evaluated. The selected projects were developed to implement e-government in Oman. How these projects were managed has been examined, and how they were selected, designed, and controlled has been explored. Also, stages in the process of project execution and obstacles to change have been

identified. Finally, project evaluation using NPM principles and learning at the macro and micro levels have been examined.

The results show that lack of financial resources, human resources and skills, organizational and legal skills, and ICT infrastructure, are among the most common issues and challenges to the successful implementation of e-government initiatives in Oman. The study identified these challenges in terms of financial, human resources, organizational and legal, infrastructure, social and political issues.

Overall, the study identified that the core reasons for the success of improvement projects include: good communication and participation between all stakeholders, especially between the departments concerned and IT staff; conducting feasibility studies before starting projects; and careful study of the surrounding conditions. The low success results in these projects were due to organizational problems, especially the lack of individual and organizational performance evaluation to identify where shortcomings occurred, and who was responsible for them. There was also a lack of clear, detailed, written and documented plans for e-government implementation in these organizations, and in Oman generally. In addition, lack of financial resources was one of the main reasons for delays in project implementation. A further constraint was the lack of interest in training and developing the leaders and employees working on these projects. Finally, the chapter has identified the limitations of the current study and identified areas for further research.

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Appendices

Appendix A: Case study coversheet

Type: (key staff) / (Experts) / (Policy makers).

Interviewee name: _____

Job title: _____

Department: _____

Project name: _____

Ministry: _____

Website: _____

Social media:

Facebook _____

Twitter _____

Instagram _____

Snapchat _____

Public Sector:

Higher Education	1
Information Technology	2
Health	3
Civil Service	4
Manpower	5
Human resources / Consultancy	6
Community, Social Services	7
Education	8
Finance	9
Other _____	10

Interview Date: _____

Interview Time: _____

Interview Location: _____

Appendix B: Consent form

نموذج الموافقة

For participating in the study of 'Modernizing Public Service Provision in the Sultanate of Oman

للمشاركين في بحث تحديث الخدمات العامة بسلطنة عمان

I, the undersigned, confirm that: (please tick box as appropriate)		أنا الموقع اسمي أدناه أوافق على التالي: (الرجاء وضع علامة صح حسب موافقتك)
I have read and understood the information about the study.	<input type="checkbox"/>	لقد قرأت وفهمت المعلومات حول هذه الدراسة.
I have been given the opportunity to ask questions about the study and my participation.	<input type="checkbox"/>	لقد أعطيت فرصة للسؤال عن الدراسة وعن مشاركتي فيها.
I voluntarily agree to participate in this study.	<input type="checkbox"/>	لقد وافقت المشاركة تطوعياً في هذه الدراسة.
I understand I can withdraw at any time without giving any reason.	<input type="checkbox"/>	أعلم أنه يمكنني الانسحاب في أي وقت من الدراسة دون ابداء أي أسباب.
The use of the data in research, publications, sharing and archiving has been explained to me.	<input type="checkbox"/>	لقد تم توضيح أن المعلومات في هذه الدراسة لغرض البحث فقط، كما تم توضيح آلية النشر والأرشفة.
I understand that any information that I give will only be used anonymously and I will not be identified.	<input type="checkbox"/>	أتفهم أن أي معلومات أقدمها سوف تستخدم بطمس المصدر ولن أكون معرفاً.
I understand that the researchers will hold all audio recordings and transcripts of these collected during the study confidentially and all efforts will be made to ensure I cannot be identified as a participant of the study (except as might be required by law).	<input type="checkbox"/>	أنا اتفهم بأن الباحثين سيقومون بستجيل جميع المقابلات عبر التسجيلات الصوتية ، وسوف يتم التعامل مع جميع التسجيلات الصوتية بكل السرية ، وكما تبذل كل الجهود لضمان عدم تحديد أسماء المشاركين في الدراسة (باستثناء (ما قد يتطلبه القانون

I, along with the researcher, agree to sign and date this informed consent form.

المشارك:

Name of Participant	الاسم	Signature	التوقيع	Date	التاريخ
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Participant :

Name of Researcher	الاسم	Signature	التوقيع	Date	التاريخ
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Appendix C: Participant information sheet

I am currently a student at Newcastle University Business School, studying for a PhD, and undertaking a dissertation research under the title: **Modernizing Public Service Provision in the Sultanate of Oman** (Please find the attached document about the research aims).

You are invited to take part in an interview, which will contribute to my dissertation.

What is the purpose of the interview?

The purpose of the interviews is to collect data on issues related to the public sector and government initiatives in Oman, to identify barriers and facilitators of improvement in an emerging economy context.

Why have I been chosen?

You are a key staff / expert involved in the improvement projects -selected for this study-, according to your job titles and responsibilities in government public sector organisations. [Your knowledge and expertise will be valuable to the project].

Do I have to take part?

Participation in the study is voluntary. You have a right to decline the invitation or to withdraw from the study at any time without providing an explanation.

What will happen to me if I take part?

If you agree to take part, you will be asked to discuss issues related to the public sector improvement in Oman. With your permission, the discussion will be audio recorded. The interview will be either in your office or any convenient place and time for you. The discussion will last about 90 minutes. Results will be anonymous (i.e., you will not be identifiable) and will be used for research purposes only.

Are there any potential benefits of taking part in the study?

There will not be any immediate benefits to those who take part in the study. However, it is hoped that the results of the study will, through time, benefit experts, policymakers, field leaders, researchers in public management in general and public sector improvement specifically. Also, please note that “at the end of the study you will receive a written summary of the findings to all participants.”

What if something goes wrong?

It is extremely unlikely that something will go wrong during this study. The University ensures its staff and students to carry out research involving people. The University knows about this research project and has approved it. “There are no known risks about your involvement in this project.”

Confidentiality:

Any information you supply will be held in strict confidence, viewed only by the named researcher (see below) and then anonymized.

Contact details:

Name: Fatma Mohammed Ali Al-Zadjali

Student Number: 150659363

Email: F.M.A.Al-Zadjali2@ncl.ac.uk

Dissertation Supervisors:

First Supervisor Name: Professor Charles Harvey,

•**Telephone:** +44 (0) 191 208 5812

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Second Supervisor Name: Professor Tom McGovern

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Appendix D: Brief view about the research

Modernizing Public Service Provision in the Sultanate of Oman

This research focuses on public-sector improvement projects in the Sultanate of Oman. It explores the opportunity for administrative improvement in the Omani public sector. In particular, it offers awareness and better understanding of how political elites explicate and enact the principles of New Public Management “NPM” in public sector organizations, explores the institutional capability of Oman’s public sector to initiate and sustain reform, and develops a conceptual model of improving the efficiency and effectiveness applicable to Oman. From this orientation, the theoretical aim of the research is to examine the main drivers for change and improvement in the public sector in Oman, investigates how and to what extent the doctrine of “NPM” impacted on Oman. Also, how elements of “NPM” express themselves in management practice in Oman’s public sector organisations, and Identify barriers and facilitators of improvement in an emerging economy context. The research builds upon and extends existing theorizing about NPM and draws practical implications for subsequent reform initiatives, in Oman and beyond.

In order to achieve the practical aim, the research is based upon systematic comparison of five in-depth case studies, examines projects from different sectors (health, civil service, higher education, manpower, and technology) to identify, evaluate, and compare what has been done in each situation. Using the New public management principles to review substantial change initiatives in the public services of Oman with a view to making best practice recommendations.

The data will be collected through semi-structured interviews with key staffs, experts, policy makers, and field leaders. Moreover, official government documents and evaluation reports will be reviewed.

Appendix E: Interview questions schedule (experts, policy makers, and field leaders)

Modernizing public service provision in the Sultanate of Oman

Topics	Questions
Personal background	<ul style="list-style-type: none"> • Can you tell me about yourself? • Can you tell me about your education? • Position • Tasks • Responsibilities?
Functional tasks	<ul style="list-style-type: none"> • What is your role in this organization? • How long have you held this position? • What are the main challenges/constraints in this role? • How has this changed in recent years?
Reforms	<ul style="list-style-type: none"> • What are the important policies having the Omani government developed since 1970 to improve the public sector? • What are the drivers of public service improvement projects in Oman? • Does internal communication occur regularly within reform initiatives? • Which factors emerge as the most consistent influencing in service improvement in your point of view? • Are developments related to the improvement tracked and documented? If so, who does this? Can you offer some examples? • Have you faced any kind of resistance (socially, managerially, economically, etc.) that might stop or late the improvement? If yes, why do you think that happen? • As far as you are aware, have changes in recent years helped in the country to cope better? Does the overall effect mean a fall, or rise in the efficiency and effectiveness of the Public Sector in Oman, or little change? • To what extent do you think the reforms that have been are successful? Or How successful are public management improvement projects in Oman at meeting their stated objectives? • How are citizens informed about public service improvement in Oman? • Do you think that local research should have preceded change (or other similar projects)? If so, what studies should have been done to justify the need for change?

NPM elements	<ul style="list-style-type: none"> • How well are the policies working in practice, how could they be improved and what gaps in the policies need filling? • Are there any techniques used by the government to improve performance and accountability in public sector? • Is there more enhanced accountability in the public sector to improve the efficiency and effectiveness • Is the amount of resource received by each unit linked with performance? Are there any explicit and measurable standards of the performance of departments/individuals in public sector? • Are there any tools used to motivate employees during the change process? • Do you encourage public participation in the process of change? Why? • What forms of communication (to ensure accountability and transparency) exist between the public sector, private sector, and the public? • What strategies, if any, are you using to overcome resistance to change? • What tools and techniques have been adopted in pursuit of improving Oman's public services?
Challenges and resistances	<ul style="list-style-type: none"> • Are there any further issues which you feel are important for the understanding of the changes in this public sector? • What are the main challenges to public sector improvement in Oman? • What resistances to change and improvements have been encountered in reforming public services in Oman?
Lessons and evaluation to be learnt	<ul style="list-style-type: none"> • Are there any improvement in the Efficiency and Effectiveness of Public Sector in this sector compared to the time before 2011? • Overall, how do you evaluate the situation? • Overall, do you think the government has been successful in providing a supportive environment for the development of public sector organizations? If not, what more could have been done better.? • What might be learned from past public service improvement projects in Oman to increase the likelihood successful change in the future? • What can be/should be done by the government in the future to improve the current situation? • Would you like to add any additional observations or recommendations about public sector improvement in Oman?
	Anything else you would like to add? Thanks.

Appendix F: Interview questions schedule (project officers)

Modernizing public service provision in the Sultanate of Oman

Topics	Questions
Personal background	<ul style="list-style-type: none"> • Can you tell me about yourself? • Can you tell me about your education? • Position • Tasks • Responsibilities?
Functional tasks	<ul style="list-style-type: none"> • Did you work in this project during its initial stage? • What are your tasks in this project? • How do you feel about being part of this project?
Project Definition	<ul style="list-style-type: none"> • What is the “Project definition (conceptualisation)”? • Were there any problems faced by your agency during the project definition process? • What were the problem (if any) faced by your agency during the project definition process? • Who were the parties involved in this project? • Who are the stakeholders in this project? • Were all relevant parties invited to air their views during the project definition? • Did the committee consider all views in making the decision of the way project should go about?
Project Goals	<ul style="list-style-type: none"> • What are the project goals? • Are the project goals made known to all parties prior to project implementation? • What are the long-term outcomes of this project? • How long it takes to set the long-term outcome? • Is this project part of long-term plan in the state? • Did project scope sufficiently expanded before the decision made? • Did the building specification, ICT equipment specification, and furniture fulfill the needs? • Was there any element of risk management been considered during the project planning? • Leaning from this project, what are possible risk that need attention during project definition?
Project Planning	<ul style="list-style-type: none"> • Do you consider the project was planned prior to implementation? • Was there a marketing plan prior to the implementation of the project? How and why?

	<ul style="list-style-type: none"> • Do you think that local research should have preceded this project (or other similar projects)? If so, what studies have been done to justify the need for changing the ----- system in Oman? • Were you (or your agency) part of the project planning committee? • In which phase of the project you involved in planning? • How was authority and responsibility among the parties in this project distributed? • Was there any overlapping in authority and responsibility? • How were the contractors selected? • Has the selection gone through normal tender procedure? • What is the cost of the project? • Do you think the project cost fair enough to the contractor? • Do you think all documentation related to this project was properly managed?
Project Implementation	<ul style="list-style-type: none"> • How do you see the overall administration of the project? • Do you have any formal training in project management? • How long have been involved in managing the project? • How was the project being managed/ monitored/supervised? • Do the people responsible for making improvements know enough to manage the process properly? • Do they have the skills needed? • How do you see the communication among the parties involved in the projects? • Did the parties in the project a have good relationship? • How efficient was information from one party reaching the other parties? • How fast and adequate was action taken in responding to the request? • Did you ever face a problem of misunderstanding or misinterpretation? • Have all procedures fulfilled in the process of getting the approval? • Was there any kind of non-standard practice that comes to your knowledge? • Was there any external factor that influences the implementation of the project? What are the factors? • How did they influence the project?
Challenges and resistances	<ul style="list-style-type: none"> • Were there any challenges or problems uncounted during the project to success? • What was the most difficult problem you faced in this project? • Are you satisfied with the results of the project? • Being part of this project, what are the strongest and weakest points in this system in different areas such as the structure/ quality of personnel/ regulations/ equipment?

	<ul style="list-style-type: none"> • Have you faced any kind of resistance (socially, managerially, economically, etc.) since the creation of the project?
Lessons and Evaluation to be learnt	<ul style="list-style-type: none"> • Has the management system in the ministry improved after applying this project? How? • Is there any improvement in the efficiency and effectiveness of public sector in this sector compared to the time before the usage of this project? • How does this project benefit the citizens? • Do you think the project is success? • Is there any room for you to improve the outcome? • Overall, how do you evaluate this project? • Are there any significant lesson/ experience learned? • How, and to what extent, have barriers to change been overcome? • If you were to do this kind of project again in the future, what is the most important thing that must be there?
	<p>Anything else you would like to add?</p> <p>Thanks....</p>

Appendix G: Interview questions schedule (project stakeholder)

Modernizing public service provision in the Sultanate of Oman

Topics	Questions
Personal background	<ul style="list-style-type: none"> • Can you tell me about yourself? • Educational qualification • Position • Tasks • Responsibilities?
Functional tasks	<ul style="list-style-type: none"> • Did you work in this project during its initial stage? • What are your tasks in this project? • How do you feel about being part of this project?
Project definition	<ul style="list-style-type: none"> • What is the project definition (conceptualisation)? • Are there any problem faced by your agency during the project definition process? • What were the problem (if any) faced by your agency during the project definition process? • Who were the parties involved in this project? • Who are the stakeholders in this project? • Were all relevant parties invited to air their views during the project definition? • Did the committee consider all views in making the decision of the way project should go about?
Project goals and missions	<ul style="list-style-type: none"> • What are the project goals and missions? • Is the project goal and mission made known to all parties prior to project implementation? • Is this project part of long-term plan? • Did project scope sufficiently expanded before the decision made? • Did the building specification, ICT equipment specification, and furniture fulfill the needs? • Was there any element of risk management been considered during the project planning? • Learning from this project, what are possible risk that need attention during project definition?
Project planning	<ul style="list-style-type: none"> • Has the project been properly planned prior to implementation? • Was there a marketing plan prior to the implementation of the project? How and why? • Do you think that local research should have preceded this project (or other similar projects)? If so, what studies have been done to justify the need for changing the ----- system in Oman?

	<ul style="list-style-type: none"> • Were you (or your agency) part of the project planning committee? • In which phase of the project you involved in planning? • How was authority and responsibility among the parties in this project distributed? • Was there any overlapping in authority and responsibility? • How were the contractors selected? • Has the selection gone through normal tender procedure? • What is the cost of the project? • Do you think the project cost fair enough to the contractor? • Do you think all documentations related to this project were properly managed?
Project implementation	<ul style="list-style-type: none"> • How do you see the overall administration of the project? • Do you have any formal training in project management? • How long have been involved in managing the project? • How was the project being managed/ monitored/supervised? • Do the people responsible for making improvements know enough to manage the process properly? • Do they have the skills needed? • How do you see the communication among the parties involved in the projects? • Did the parties in the project a have good relationship? • How efficient was information from one party reaching the other parties? • How fast and adequate was action taken in responding to the request? • Did you ever face a problem of misunderstanding or misinterpretation? • Have all procedures fulfilled in the process of getting the approval? • Was there any kind of non-standard practice that comes to your knowledge? • Was there any external factor that influences the implementation of the project? What are the factors? • How they influence the project?
Challenges and lessons to learn	<ul style="list-style-type: none"> • Are there any challenges have faced this project to success? • What was the most difficult problem you faced in this project? • Do you satisfy with the results of the project? • Being part of this project, what are the strongest and weakest points in this system in different areas such as the structure/ quality of personnel/ regulations/ equipment? • Have you faced any kind of resistance (socially, managerially, economically, etc.) since the creation of the project? • Has the management system in the ministry improved after applying this project? How?

	<ul style="list-style-type: none"> • Is there any improvement in the efficiency and effectiveness of public sector in this sector compared to the time before the usage of this project? • How does this project benefit the citizens? • Do you think the project is success? • Is there any room for you to improve the outcome? • Overall, how do you evaluate this project? • Are there any significant lesson/ experience learned? • If you were to do this kind of project again in the future, what is the most important thing that must be there? ?
	<p>Anything else you would like to add? Thanks....</p>

Appendix H. Example of transcript and initial codes

Initial code	Participant words
Feasibility is an important factor	Feasibility must be studied. This is the responsibility of all parties (expert)
Individual and organizational performance measurement	The lack of a system for individual and organizational performance measurement led to the weakness of administrative control in Oman (expert)
Administrative strategy overlapping of authorities	The best thing is to put the right person in the right place (expert)
Integration between organizations is important	The need to evaluate the Government Organizations; The evaluation of overlapping of authorities between the organizations (expert)
Outsourcing	Many of the Government organizations use foreign expertise all the major sectors depend on projects (expert)
Lack of skills	The person who lately became in charge of supervising the work of the project doesn't have English language skills
Excellence Prizes	The Ministry of Education for example, launches the Excellence Prizes
Feasibility stud	Improvement projects must be preceded by research and studies because I don't think any improvement project would come from nowhere (expert).
Economic development	The correct spending of all resources with the least expense and effort
Financial crisis	This crisis has been managed without taking serious actions to prevent confusion (expert).
Services delay due to financial shortage	Now we are trying to arrange things but the shortage of financial and human resources stands in our way
Financial shortage delays the implementation of project 4	we would not be able to achieve anything because the organizations don't have the required financial and human resources.
Technology revolution	I think all these international changes and the scientific revolution have contributed to the development (expert)..
social development	We don't deny that the living conditions in the Sultanate have radically changed between 1970 and the present time. The change covers all aspects of health, living standard and education among other fields. This is not the problem (expert).
Staff training	The process of improving procedures is important such as developing the employees through systematic training programs, applying strict program for performance evaluation and awarding the employees incentives based on performance evaluation and improving the services provided to the customers and the beneficiaries of the Government service (expert).
Lack of polices	I think what we are lacking are the policies;
Policies is important	many do not understand the value of these policies while they strive to deal with the issue quickly (expert).
Accountability bodies	Administrative accountability bodies are the personnel committees in the various government units (expert).
Economic development	The reduction of the budget by 13% started in the past years, then 5%, 2%, and 1% last year. As the prices in the country are stable, they will come up with useful results
Partnership with private sector	the problem is not in the weakness of education, it is rather in the inability of the Government and private organizations to cope with the output of education and make use of it (expert).
Employment in private sector	The present output is greater than the capacity and requirement of the private sector to accommodate
reforms successful extant.	The reforms are successful in general, some of them absolutely and others relatively (expert).
Attention of the HR	paying attention of the HR and taking care of the potentials of the individuals is very important (expert).

	The Human is the one who leads the change (expert). The Human element is the basis for change (expert). Development of the human Resources of the country are continuing (expert).
Social development	Any service function must incorporate societal participation (expert).
Benefiting from the experiences of others	I am saying implementation of the projects were started by taking the idea from the Malaysians
Administrative development	The methods of providing services to the citizens have improved and developed to the better by introducing new technologies. Some services now provided online (expert).
performance of the government	There is no organization that controls the performance of the government organizations in the real sense of accountability which must be in place.
Take advantage of the tools of the public sector	Performance assessment measures are applied in the private sector, but they still need to be reviewed in the Government sector.
political and economic challenges	The achievement of the goals has been delayed because of some deviations attributed to political and economic challenges (expert)
Most of the age groups are young	Some of the Omani physicians who studies in Britain say that Oman is electronically more advanced than Britain in its procedures, because most of the UK society is old age and don't quickly accept change, compared to Oman.
The use of technology	I believe it is high time to use technology
current situation Study	We must ensure that these experiences suit our nature and culture.
fighting corruption	Another evidence of the Sultanate's progressive stand in fighting corruption is the 2011 riots and demonstrations after which many senior Government officials were expelled
Quality improvement	It is important to set up a national framework for quality and adopt some of the methodologies which motivates some organizations and shows which is better in providing the services (expert).
Leadership	We are succeeded in converting adversity into grants (expert).
privatization	Sometimes providing the service by the Government is better than privatizing it (expert).
Attention to the citizen	The Government must respond to the citizen because it exists for the sake of the citizen. (expert).
Staff training	It must train its staff and increase their capabilities and competencies
Regulating Body	there must be a tight legal framework regulating the transfer of the service from the government to the private sector. That is why the Regulating Body was formed.
Omanization	Omanization is a noble goal but the approach taken was mingled with some defects.
Government strategy	we strive to develop our economic resources, natural wealth and human capacity
Citizen requirements	The citizen must be listened to and his needs considered and analysed
accountability	no one has heard about any of their management has been questioned or brought to investigation
Living condition in Oman	The desire to live this experience and learn from it, made me extend my stay in Oman
Al shuras' members	we had seven PhD holders, 14 master's degree holders, and 34 to 45 bachelor's degree holders
Project 3 member	The main parties are the higher education organizations.
Political development	We hope to apply the wisdom of His Majesty the Sultan up to 1 per cent, especially the balance,
Economic development	we have a diversified, robust and interactive economy with the global economy
Increase PS role	the next stage requires the private sector to play the largest role in it
Staff training	The clear desire in using knowledge and looking at things scientifically
private sector participation	the consolidation of private sector participation,
Staff skills	to develop its capabilities, enhance its expertise and diversify its skills

Project 3 definition	The concept of the system is the centralism of applying for admission to higher education organizations
technological development	the supposed administrative improvement is accompanied by technological development
Society	The government cannot cope without the support of society.
Oman strategy	The goal is to create jobs in the higher sectors and this is the quality
vision and a mission	Define a vision and a mission for the government and all government units
Lack in performance measurement	I don't think the Government has succeeded in creating a supporting environment for the development of the Public Sector Organizations, because they don't have performance indicators; everything unmeasurable has no value. (expert)
Project initiation year	The idea of the system was based on the study carried out by the Higher Committee for Vocational Training and Labour and was submitted to the Cabinet of Ministers. Accordingly, the Council adopted the resolution in 1997 (project member)
Project 5 members	We were a group of employees working together as a team.
waterfall methodology	Previously, the waterfall methodology was used for all projects
private sector	The Government must be the organizing facilitator. It should not compete with the private sector. Instead it must draw the legislations that make things for the private sector should play the executive role
Attention to : training and education	Employee efficiency is an important factor that helps to improve public services, which is based on two things: train and educate the employee
Project starting year	The Registration authority was created in that tense situation and was able to carry out its duties of listing the job seekers in 2012 (project member)
Oman strategy	Numerous policies have been developed in different periods. Each period has its specific administrative improvement pattern according to the stage of the country's needs
Project initiation	He asked me to start working in the medical centres (project members)
Agile methodology	now we are using agile, because agile methodology has been circulated for all projects in the government
Political role	The Sultanate is very interested in the subject; the Palestinian and Israeli
Project initiation	The idea of the Omani system originated from the employees of the Ministry
Visibility study	These research studies have helped in the success of the project
highly qualified staff	Omani employees have become more qualified and the managerial leadership has become in the hands of young and highly qualified Omanis.
Project initiation	The idea is an experiment taken from the British UCAS (project members)
Financial crisis	as I see, bring them nearer to coming out of the crisis
Service improvement	Is one entity that provides fast and high services but in some other services it is so far delayed
relationship between the parties of project 5	The relationship between the parties involved in the project was generally good, but some institutes might have been feeling uneasy
Expanded project 4 scope	The project is widely expanded because some organizations are not ready yet
ITA project	this project is part of the initiatives set by the IT Authority (project members)
Policies reviewing	the laws need to be studied, and sometimes the lawmakers need to follow up and guide
Setting well planned long-term goals on time in project 3	it obvious that long-term goals have been set for it. I think that they have put the plans and defined the goals with setting time
Setting timetable for work in project 1	It was difficult in the past, but we have started putting a timetable for all types of work in a proper and scientific way
target of plan was not met in project 4	The plan was for five years but this target was not met because the project started late
Project 3 specification were not satisfied	We were not happy about the training hall; otherwise the equipment and other requirements were satisfactory

Employee shortage	We do not have specific supervisory employees for all these aspects and procedures. The number of employees working on the system is small compared with the size of work, and there are no new recruitment opportunities.
relationship between the parties of project 2	I know nothing about their employees and their skills because I don't deal directly with them. Communications between us were through. or meetings which never attended
TQM	I hope topics on quality would be introduced into school curriculums
Expanded project 3 scope	What I notice is that whenever they expand, they become better and better
Partnership	the each of the Government, the private sector and the societal participation have a role to play in drawing the future policy of the country.
The cost of project 1 (5 million RO)	If we want to guess the cost for a country smaller than Oman, it will be about 5 million RO
The cost of project 4 (5 million RO)	I think it is in the range of 5 million because such projects have long-term plans as they extend for three years and continue with us until they are completed
organized a workshop to implement project 3	When they started implementing the Electronic Central Recruitment System, they organized a workshop and invited the government organizations
Project 3 made alternative plan	there was strong resistance from the organizations due to their mistrust in the project and its success. The SQU had plan "B" ready in case.
financial situation stopped some services	They were to be registered via the centre, but this was stopped due to the financial situation.
No evaluation in project 4	There is no evaluation as such. There are only periodical meetings during which we discuss <u>general issues</u> because the contract
quality section in project 4	The quality section is responsible for evaluating and reviewing the authority's services
Benefiting from the experiences of others	I remember when I was in the Government summit how Estonia, made a technological move (expert).
Shortage in some equipment	some medical centres do not have electric generators to avert the risk of electrical failure.
Shortage in having standby system	In this way we managed to control the situation when this risk happened to us. Nevertheless, we insist that we are in need of a system that secures the continuity of the system.
Project 1 members not considered risk	I remember when cyclone "Jono" hit Oman in 2005, and that was during the peak of the registration period. We were caught unprepared because we did not think of risk management
Administrative development in Oman	The Administrative machinery in Oman is started from Zero in 1970. Now it is a completely mature system (legislatively, organizationally, HR workforce) (expert).
Correcting past mistakes is inevitable	if we ignore the mistake on the pretext that it will correct itself, improvement will never happen (expert)
Expanded project 5 scope	We expanded the scope of the project [...]. We also expanded the training organizations
present situation	Improvement will not happen unless the present situation is corrected (expert)
tool for improvement	The Electronic -Government is one of the most important projects (expert)
Initiation year	we practically started in 2006 (project member)
slowness in achievement	Projects for administratively improving the Public Sector in Oman are successful to some extent but there is slowness in achievement(expert).
Performance and budgeting Programs	Performance and the Performance and the Programs budgeting is important because it rationalizes spending and leads to producing results is important because it rationalizes spending and leads to producing results
No committing of time	Sometimes the objective is not realistic e.g. a period of 6 months period or a year is set for the project but environment is unfavourable but there is no way to stop or cancel, and so the project is extended to another project and so on.
Lack in accountability.	
TANFEEDH	The support and follow up (TANFEEDH) became a neutral body playing a compromising role between the government organizations or even with the private sector.

Oman Vision 2040	For Oman Vision 2040, we considered the people's points of view and their orientations.
Project setup	we suffered a lot at the beginning
PM	The current plan is to review really successful and failed projects.
Project initiate before e. government	the project started before the introduction of the e government; the infrastructure was greatly enhanced
No integration	If we review the integration map, we will find that each organization needs not less than 26–27 organizations to integrate with.
Infrastructure unpreparedness	We noticed the presence of many risks such as the unavailability of data, and the unpreparedness of the infrastructure in Oman:
Procedure simplification attraction of foreign and local investors	Plans for Procedure simplification and motivation and attraction of foreign and local investors must be introduced
decisions led to negative results	Many employees have been employed in positions that have nothing to do with their qualifications in response to requests from the citizens for jobs in 2011
Resistance and mistrust from society of new services	We faced the problem of the “Winds of Change” and the problem of training the people on how to use the system
Project launched years	The project was launched in response to the recommendation of the Ministerial committee on Oman Digital Strategy for the years 2005 – 2006
Customer Services	Customer Services departments are very important
single station services	the creation of a single station providing all services
Quality Prizes	There are awards as the Sultan Qaboos Award for Mastery and we are in service we won in a year of years.
No authority to have decentralization	We have decentralization, but some problems and laws give authority only to the head of the unit itself.
Project 3 consider trust	the idea of central recruitment was considered, and entrusted to the MoCS
Some Government Organizations didn't trust their staff ability	There is evidence that many of the Government Organizations which did not trust their employees, entrusted their projects to foreign companies but they got into trouble because this action put them at the mercy of these companies.
Projects gather Feedback on services	We asked them to use the system so that we could ensure its adequacy and get feedback and recommendations from the jobseekers

Appendix I. Example of the basic level concepts

The basic level concepts	Initial code	Participant words
Drivers of change in Oman	Technological changes Globalisation Technological revolution Customers satisfaction Social changes Employee dissatisfaction	I believe it is high time to use technology The requirements of the era. Electronic government has become a necessity and reality To cope with the accelerating world I think all these international changes and the scientific revolution have contributed to the development The aspirations do not match with the beneficiaries' choice To solve the problem of unemployment Employees in the government sector are dissatisfied with the incentive system in the Civil Service Act
Tools and techniques for improvement	Staff training Excellence Prizes Performance measurement Economic diversification Increase PS role Define a vision and a mission Attention of TQM PPP and societal participation Attention of PM Procedure simplification attraction of foreign and local investors Customer Services department single station services Quality Prizes the services manual Excellence Prizes	The process of improving procedures is important such as <u>developing the employees through systematic training programs</u> , The Ministry of Education for example, launches the Excellence Prizes applying strict program for performance evaluation set up a national framework for quality we have a diversified, robust and interactive economy with the global economy the next stage requires the private sector to play the largest role in it Define a vision and a mission for the government and all government units I hope topics on quality would be introduced into school curriculums the each of the Government, the private sector and the societal participation have a role to play in drawing the future policy of the country The current plan is to review real successful and failed projects. Plans for Procedure simplification and motivation and attraction of foreign and local investors must be introduced Customer Services departments are very important the creation of a single station providing all services There are awards as the Sultan Qaboos Award for Mastery and we are in service we won in a year of years. issuing the services manual by the Ministry of Civil Service (MoCS) The Ministry of Education for example, launches the Excellence Prizes
Oman strategy	Good health, living standard and education	We don't deny that the living conditions in the Sultanate have radically changed between 1970 and the present time. The change covers all aspects of health, living standard and education among other fields. This is not the problem (expert).

	Well spending of resources	The correct spending of all resources with the least expense and effort
	reduction of the budget	The reduction of the budget by 13% started in the past years, then 5%, 2%, and 1% last year. As the prices in the country are stable, they will come up with useful results
	New technologies	The methods of providing services to the citizens have improved and developed to the better by introducing new technologies. Some services now provided online (expert).
	personal attributes of His Majesty	We hope to apply the wisdom of His Majesty the Sultan up to 1 per cent, especially the balance,
	Economic diversity	we have a diversified, robust and interactive economy with the global economy
	private sector role	The Government must be the organizing facilitator. It should not compete with the private sector. Instead it must draw the legislations that make things for the private sector should play the executive role
	Attention to training and education	Employee efficiency is an important factor that helps to improve public services, which is based on two things: train and educate the employee
	Policies changed	Numerous policies have been developed in different periods. Each period has its specific administrative improvement pattern according to the stage of the country's needs
	Strong foreign policy	The Sultanate is very interested in the subject; the Palestinian and Israeli
	TANFEEDH	The support and follow up (TANFEEDH) became a neutral body playing a compromising role between the government organizations or even with the private sector.
	Oman Vision 2040	For Oman Vision 2040, we considered the people's points of view and their orientations.
	Attention of the PM	The current plan is to review really successful and failed projects.
	attention of the HR	paying attention of the HR and taking care of the potentials of the individuals is very important (expert).
	Project launched years	The project was launched in response to the recommendation of the Ministerial committee on Oman Digital Strategy for the years 2005 – 2006
Project setup and start stage	Project 3 start in 2006	we practically started in 2006 (project member)
	Project 3 initiate before e. government in 2006	the project started before the introduction of the e. government; the infrastructure was greatly enhanced
	Project 1 initiation in 1995	He asked me to start working in the medical centres in 1995
	ITA project	this project is part of the initiatives set by the IT Authority to
	Project 3 idea	The idea is an experiment taken from the British UCAS
	Project 4 idea	The idea of the system was based on the study carried out by the Higher Committee for Vocational Training and Labour and was submitted to the Cabinet of Ministers. Accordingly, the Council adopted the resolution in 1997
	Project 3 definition	The concept of the system is the centralism of applying for admission to higher education organizations
	Project 5 definition	The project is about Government IT training and certification which addresses the Civil Service employees
	Project 3 member	The main parties are the higher education organizations.
	Project 5 members	We were a group of employees working together as a team.
	waterfall methodology	Previously, the waterfall methodology was used for all projects
	Agile methodology	now we are using agile, because agile methodology has been circulated for all projects in the government

Project Planning stage	Expanded project 5 scope	We expanded the scope of the project [...]. We also expanded the training organizations
	Expanded project 3 scope	What I notice is that whenever they expand, they become better and better
	Expanded project 4 scope	The project is widely expanded because some organizations are not ready yet
	The relationship between the parties of project 5	The relationship between the parties involved in the project was generally good, but some institutes might have been feeling uneasy
	relationship between the parties of project 2	I know nothing about their employees and their skills because I don't deal directly with them. Communications between us were through. or meetings which never attended
	Employee shortage in project 1	We do not have specific supervisory employees for all these aspects and procedures. The number of employees working on the system is small compared with the size of work, and there are no new recruitment opportunities.
	Shortage in project 3 specification	We were not happy about the training hall; otherwise the equipment and other requirements were satisfactory
	Setting long-term goals on time in project 3	it obvious that long-term goals have been set for it. I think that they have put the plans and defined the goals with setting time
	Setting timetable for work in project 1	It was difficult in the past, but we have started putting a timetable for all types of work in a proper and scientific way.
	target of plan was not met in project 4	The plan was for five years but this target was not met because the project started late
	Shortage in some equipment in project 1	some medical centres do not have electric generators to avert the risk of electrical failure.
	Project 1 members not considered risk	I remember when cyclone "Jono" hit Oman in 2005, and that was during the peak of the registration period. We were caught unprepared because we did not think of risk management
	Shortage in having standby system in project 4	In this way we managed to control the situation when this risk happened to us. Nevertheless, we insist that we are in need of a system that secures the continuity of the system.
	Quality section in project 4	The quality section is responsible for evaluating and reviewing the authority's services
	The cost of project 1 (5 million RO) The cost of project 1 (5 million RO)	If we want to guess the cost for a country smaller than Oman, it will be about 5 million RO If we want to guess the cost for a country smaller than Oman, it will be about 5 million RO
Implementing stage	organized a workshop to implement project 3	When they started implementing the Electronic Central Recruitment System, they organized a workshop and invited the government organizations.
	Project 3 made alternative plan	There was strong resistance from the organizations due to their mistrust in the project and its success. The SQU had plan "B" ready in case.
Monitoring and controlling stage	No evaluation in project 4	There is no evaluation as such. There are periodical meetings during which we discuss general issues because the contract

Obstacles to change	Financial shortage delays the implementation of project 4	we would not be able to achieve anything because the organizations don't have the required financial and human resources.
	financial situation stopped some services	They were to be registered via the centre, but this was stopped due to the financial situation.
	Services delay due to financial shortage	Now we are trying to arrange things but the shortage of financial and human resources stands in our way
	Lack of policies	I think what we are lacking are the policies.
	No accountability	There is no organization that controls the performance of the government organizations in the real sense of accountability which must be in place.
	Lack in performance measurement	I don't think the Government has succeeded in creating a supporting environment for the development of the Public Sector Organizations, because they don't have performance indicators; everything unmeasurable has no value. (expert)
	Employee shortage	We do not have specific supervisory employees. The number of employees working on the system is small compared with the size of work, and there are no new recruitment opportunities.
	No recruitment	The person who lately became in charge of supervising the work of the project doesn't have English language skills
	Lack of skills	
	No integration	If we review the integration map we will find that each organization needs not less than 26–27 organizations to integrate.
NPM elements	Infrastructure unpreparedness	We noticed the presence of many risks such as the unavailability of data, and the unpreparedness of the infrastructure in Oman:
	Resistance and mistrust from society of new services	We faced the problem of the "Winds of Change" and the problem of training the people on how to use the system
	decisions led to negative results	Many employees have been employed in positions that have nothing to do with their qualifications in response to requests from the citizens for jobs in 2011
	No authority to have decentralization	We have decentralization, but some problems and laws give authority only to the head of the unit itself.
	Project 3 consider trust element	the idea of central recruitment was considered, and entrusted to the Ministry of Civil
	Some Government Organizations didn't trust their staff ability	many of the Government Organizations which did not trust their employees, entrusted their projects to foreign companies but they got into trouble because this action put them at the mercy of these companies.
	Using contracting/ Outsourcing in public sector	Many of the Government organizations use foreign expertise all the major sectors depend on projects

Appendix J. Example of conceptual categories

Conceptual categories	The basic level concepts	Initial code
Internal factors of drivers of change in Oman		improving individual performance Employee dissatisfaction Education and training New vision and mission
External factors of drivers of change in Oman / indirect environmental	Drivers of change in Oman	Technological changes Technological revolution Social changes Political changes Globalisation
External factors of drivers of change in Oman / direct environmental		Customers satisfaction improving individual performance
Tools and techniques in macro level	Tools and techniques	human Resources development Economic diversification Increase PS role PPP and societal participation Attention to PM attraction of foreign and local investors single station services Quality Prizes Excellence Prizes
Tools and techniques in micro level		Define a vision and a mission Attention to TQM Procedure simplification Customer Services department Quality department
Social development	Oman strategy	Good health, living standard and education
Economic development		Well spending pending of resources Reduction of the budget Economic diversity Increase the role of private sector TANFEEDH (Economic diversity)
Political development		personal attributes of His Majesty Strong foreign policy
Administrative development		New technologies Attention of the HR Attention of training and education Attention of PM
Future direction of Oman		Oman Vision 2040

Project initiation year	Project setup	Project 3 start in 2006 before e. government Project 1 start in 1993 Project 4 start in 2012
Project organization		ITA project
Project idea		Project 3 idea Project 4 idea
Project definition		Project 3 definition Project 5 definition
Project members		The main parties are the higher education institutions. We were a group of employees working together as a team.
Project methodology		waterfall methodology Agile methodology
Project scope	Project Planning stage	Expanded project 5 scope Expanded project 3 scope Expanded project 4 scope
Communication management		The relationship between the parties of project 5 The relationship between the parties of project 2
Specification (sources and procurement management)		Employee shortage in project 1 Shortage in project 3 specification
Time management		Setting long-term goals on time in project 3 Setting timetable for work in project 1 target of plan was not met in project 4
Risk management		Shortage in some equipment in project 1 Project 1 members not considered risk in "Jono" cyclone Shortage in having standby system in project 4
Quality management		Quality section in project 4
Cost management		The cost of project 1 (5 million RO) The cost of project 1 (5 million RO)
Project management in implementation stage		organized a workshop to implement project 3 Project 3 made alternative plan
Project management in the monitoring and controlling process group	Monitoring and controlling stage	No evaluation in project 4

Financial aspects	Obstacles to change	Financial shortage delays the implementation of project 4 financial situation stopped some services Services delay due to financial shortage
Organizational aspects		Lack of polices No accountability Lack in performance measurement
HR aspects		Employee shortage No recruitment Lack of skills
Infrastructural aspects		No integration Data unavailability Infrastructure unpreparedness
Social aspects		Resistance and mistrust from society of new services
Political aspects		decisions led to negative results
NPM features in macro level	NPM features	
Decentralization		No authority to have decentralization
Trust		Project 3 consider trust element Some Government Organizations didn't trust their staff ability
contracting/ Outsourcing		Using contracting and outsourcing in public sector
Privatization		Sometimes providing the service by the Government is better than privatizing it
NPM features in micro level		
Strategic differentiation		Define a vision and a mission for all government units
Service user feedback		Projects evaluating Feedback on services
Key performance indicators		No performance indicators

Appendix K. Main themes

Main themes	Subjects
The drivers of public sector modernization in Oman	<p>Oman: A historical perspective.</p> <p>Strategies for economic, social and political development in Oman.</p> <p>Public administration in Oman.</p> <p>Omani strategy for public service modernization (Drivers of change in Oman, Services and initiatives for public service modernization).</p> <p>Looking to the future: (Oman 2040).</p>
E-government project in Oman	<p>Origins of modernization projects in Oman.</p> <p>Design of the modernization projects (project design, Project resources, Project budgets, Project methodology).</p> <p>Logic of modernization projects</p>
Managing and implementing e-government project in Oman	<p>Examining Omani project execution based on the project management approach</p> <p>An overview of the selected projects in the study</p> <p>Project management in the initiation process (Promotion and publicity)</p> <p>Project management in the planning process (project scope, Communication management, Project specifications, and resources and procurement management, time management, risk management, quality management, cost management).</p> <p>Project management in the implementation process.</p> <p>Project management in the monitoring and control process.</p> <p>Project management in the completion process.</p> <p>Project obstacles (Financial aspects, Organizational and legal aspects, Human resources aspects, Infrastructure aspects, Social aspects, Political aspects).</p> <p>Examining the degree of success (Degree of efficiency and effectiveness in the projects).</p>
E-government, NPM and management of change.	<p>(Strategic differentiation, Scope of participation, Performance indicators, Rehabilitation and training of employees, Contracting, Outsourcing, Partnerships with the private sector, Privatization, Decentralization, Social participation).</p> <p>Lessons to be learnt at the macro and micro levels</p>