



Circuits of Power Approach to Leading GIS-enabled Business Process Reengineering: The Case of Abu Dhabi Sewerage Services Company

Doctor of Business Administration Dissertation

By

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The undersigned have examined the thesis entitled *Circuits of Power Approach to Leading GIS-enabled Business Process Reengineering: The Case of Abu Dhabi Sewerage Services Company* presented by Nader Asaad Taher, candidate for the degree of Doctor of Business Administration, and hereby certify that it is worthy of acceptance.

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I hereby declare that this dissertation constitutes original work. It is a result of my intensive literature review supported by my own long experience in the field of management and geographic information systems.

Statement 1

I further declare that this dissertation has not been produced or presented at this university or elsewhere.

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The numerous sources consulted during the preparation of this dissertation have been clearly acknowledged in the bibliography.

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Abstract

Geographic information systems (GIS) are increasingly used by utility companies in the United Arab Emirates (UAE). As GIS have the potential to improve organizational performance at both the operational and strategic levels, many utilities are pursuing so-called “Enterprise GIS” initiatives. GIS-enabled business process automation and reengineering initiatives are based on a vision whereby GIS are used throughout an organization to support all business processes. Unfortunately, the integration of GIS into individual and organizational processes often encounters user resistance.

This study reviews the literature on change management, business process reengineering (BPR), and user resistance to information systems (IS) to understand the individual and organizational factors behind user resistance to GIS-enabled BPR and automation initiatives. Organizational factors include lack of organizational maturity, conflict between organizational traditions and ideologies, and poor communication. Individual factors include lack of technical skills among employees, lack of perceived benefits, fear of losing power, and the absence of project sponsorship.

The study then measures the integration of the clearance management application (CMA) at Abu Dhabi Sewerage Service Company (ADSSC). Here, integration is understood as the degree to which GIS-enabled BPR and automation initiatives have become institutionalized in an organization and represent daily routines by which end-users run their operations. The study then applies the latest thinking on leadership, change management, and project management to propose 17

interventions specific to the UAE public sector context aimed at mitigating organizational and individual resistance factors. The results reveal a statistically significant increase in the degree of CMA integration at ADSSC after the suggested interventions are implemented.

In theoretical terms, this research extends the circuit of power framework (CoP) to comprehend organizational and individual resistance factors and then proposes a new framework. This research also offers some practical recommendations to ADSSC management and other practitioners about managing future GIS-enabled BPR initiatives.

Since power and authority are found to be very important elements of UAE culture, the author suggests that future research examine the framework proposed by this dissertation. The author also recommends a further examination of the role of power in implementing organizational change in the UAE context. Third, the author suggests that future research seek to understand how technology-driven initiatives can impact old- and new-generation employees in the UAE public sector.

Keywords: Business process reengineering, automation, resistance, circuits of power, GIS, leadership, project management, organizational change, change management

Dedication

This research is dedicated to my parents, Asaad and Sabah, my lovely wife, Kalthoum, and my kids, Al Yaziya, Asaad, Abdulla, Mohamed, and Mansour. I thank them for their sacrifices, support, and encouragement. Furthermore, I dedicate this research to the soul of my grandmother Neama, who raised me and who would be very proud of my achievement.

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Chapter 1: Introduction

Geographic information systems (GIS) are being increasingly used by public utilities across the globe to visualize their geographically dispersed infrastructure, manage operations, and carry out organizational strategies. At the operational level, GIS is used by utilities to collect, manage, share, analyze, and visualize operations dispersed over large geographical areas. At the strategic level, GIS enables utilities to make better decisions and formulate appropriate policies for utility operations and development.

Utilities in the United Arab Emirates (UAE) are also increasingly using GIS and related spatial products and services as part of their operations and strategies. Some UAE utilities go as far as to pursue the “Enterprise GIS” vision, whereby a GIS is used throughout the organization to support all operational processes and strategic initiatives. In this vision, GIS is used as a hosting frame to interface with all the other important applications and processes within a public utility.

While GIS can bring a number of benefits to a utility company, business process reengineering (BPR) and business process automation (BPA) with the help of GIS are often resisted by employees, like any organizational change. Rank and file employees may resist GIS due to the fear of losing their jobs, among other reasons. This may cause some end users to change the workflows associated with decision processes to avoid complying with new GIS-driven processes (Hesson, 2007; Somers, 1998). Decision makers will also resist technology-enabled PBR if they feel that the initiative may diminish their power within the organization or make their jobs redundant (L.-B. Dorthy & W. A. Kraus, 1985). Resistance is largely due to the fear

of losing power and a knowledge-based advantage within the organization (Barley, 1990; Bensaou & Earl, 1998; L. Dorthy, B. & W. Kraus, A., 1985; M. Hesson, Al-Ameed, & Samaka, 2007; Lapointe & Rivard, 2005). Employee resistance causes delays in GIS-enabled BPR initiatives and prevents utilities from fully realizing value from GIS.

User resistance due to the fear of losing power is of special concern in the UAE because power and decision-making authority are very sensitive areas in the culture. This sensitivity originates from the UAE's traditional “tribal” social structure (Peterson, 1977). The harsh and resource-deprived desert environment left many tribes with no margin for error. Tribal leaders faced immense challenges in ensuring the survival and well-being of their people. These challenges led many tribal leaders to adopt a rather rigid organizational structure (Mimouni & Metcalfe, 2011). All decisions related to social, political, and financial issues within a tribe were handled solely by the leader. Many of these challenges are now gone due to the impressive economic, social, and political growth in the UAE over the last few decades, but this culture is still deeply engraved in the minds of some decision makers. Losing any amount of decision-making authority is viewed as a demotion. Thus, the automation of business processes is often viewed as a threat to one's power and can lead to fierce resistance.

Both the scholarly and practitioner-oriented literature on leadership, change management, and project management has provided a number of useful recommendations for overcoming user resistance (Grover, Seung Ryul, Kettinger, & Teng, 1995; M Hesson, 2007; Jurisch, 2012; Lapointe & Rivard, 2005; Samaranayake, 2009). However, little attention has been paid to power, the

cornerstone of resistance to GIS in the UAE. The main goal of this research is to devise and test a power-centric framework of specific actions that managers can use to overcome user resistance to GIS-enabled BPR initiatives and thus maximize GIS' value to organizations.

1.1 Motivation and Research Questions

The theoretical perspectives on change management, leadership, and project management discussed in the literature review fail to address what this study believes is the cornerstone of organizational resistance to GIS in the UAE: power. Power can be defined as the ability to get a person or group of people to perform a task they do not want to do (Clegg, 1989; Dahl, 1957). Obviously, power is at the heart of leadership (when it comes to *influence*), change management (when it comes to mandating the desired change), and project management (when it comes to the decision to initiate a project). Elements of power can be seen in any change management project, from the early stage of inception to completion, especially in the UAE context. None of the studies reviewed in this dissertation explicitly considers the role of power relationships in BPR and BPA in the context of GIS implementation. This study fills this research gap and assists GIS integration in UAE public utilities by devising a power-centric framework and action plan for overcoming user resistance and ensuring GIS integration in a UAE public utility. This study attempts to answer the central research questions below:

1. How can one measure the degree of GIS integration from the perspective of power relationships?

2. What set of power-centric management techniques can one use to overcome user resistance to GIS-enabled BPR?

1.2 Dissertation Overview

The rest of this dissertation is organized into the following six chapters: literature review, theoretical framework, data and methodology, discussion of results, discussion of qualitative findings, and implications, limitations, and conclusion. The content of each is briefly described below.

1.2.1 Literature Review

The literature review consists of three parts. The first is designed to familiarize readers with geographic information systems (GIS), business process reengineering (BPR), and business process automation (BPA).

The second part is an overview of the barriers to GIS-enabled BPA and BPR initiatives. As part of this discussion, possible solutions for overcoming these barriers are proposed. The third part reviews three theoretical perspectives relevant to the research question of this study: change management, leadership, and project management. While these frameworks can be useful in ensuring the success of GIS-enabled BPA and BPR, it is argued that they lack a component crucial in the UAE context: power.

1.2.2 Chapter 3: Theoretical Framework

This chapter assists in understanding the context of power and its relationship with system institutionalization. The first part of this chapter introduces the “circuits of power” approach proposed by Silva and Backhouse (2003). The second part explains the components (or “power circuits”) comprising this framework (i.e.,

episodic, social integration, and systemic integration circuits) and the role these circuits play in system integration.

1.2.3 Chapter 4: Data and Methodology

This chapter describes the methodology used in this research. The first part of this chapter describes the site used for the study, the Abu Dhabi Sewage Services Company (ADSSC). The second part describes the study's action research approach and explains why this research approach is appropriate. The third part of this chapter details the research protocols and data collection methods used in the study and how these tools align with the theory being applied.

1.2.4 Chapter 5: Discussion of Results

This chapter discusses the results of the pre- and post-test stages. The chapter also discusses the results of the paired-sample *t*-tests at the level of individual items, dimensions, and circuits within the circuit of power framework.

1.2.5 Chapter 6: Discussion of Qualitative Findings

This chapter discusses the initial findings and the author's interpretation of the collected data. The data used in this research include interview scripts, the author's journal notes, and memos. The first section discusses the selection of study participants and details why and how participants were selected. The section also discusses the demographic characteristics of the selected interviewees. Section two discusses the emergent themes that evolved from the study. This discussion includes the author's definition of the emergent themes, possible tactics for overcoming the identified barriers, the inference of excerpts from interview scripts and whether the author's findings and excerpts confirm or contradict the literature.

1.2.6 Chapter 7: Implications, Limitations, and Conclusion

This chapter concludes the dissertation by discussing its implications. The chapter also discusses the limitations of the data and methodology used in the research. The chapter ends with the author's recommendations for ADSSC management and suggestions for future research. Finally, the chapter outlines the author's main conclusions drawn from this research.

Chapter 2: Literature Review

2.1 Geographic Information Systems

Geographic information systems constitute spatial technology that helps organizations, especially utilities, capture, manage, analyze, and display all forms of geographically referenced asset information. It provides decision makers with valuable and timely data that facilitate decisions making concerning operations and strategy (Baird, 2011; Taher, Krotov, & Dixon, 2012; Yagoub & Engel, 2009).

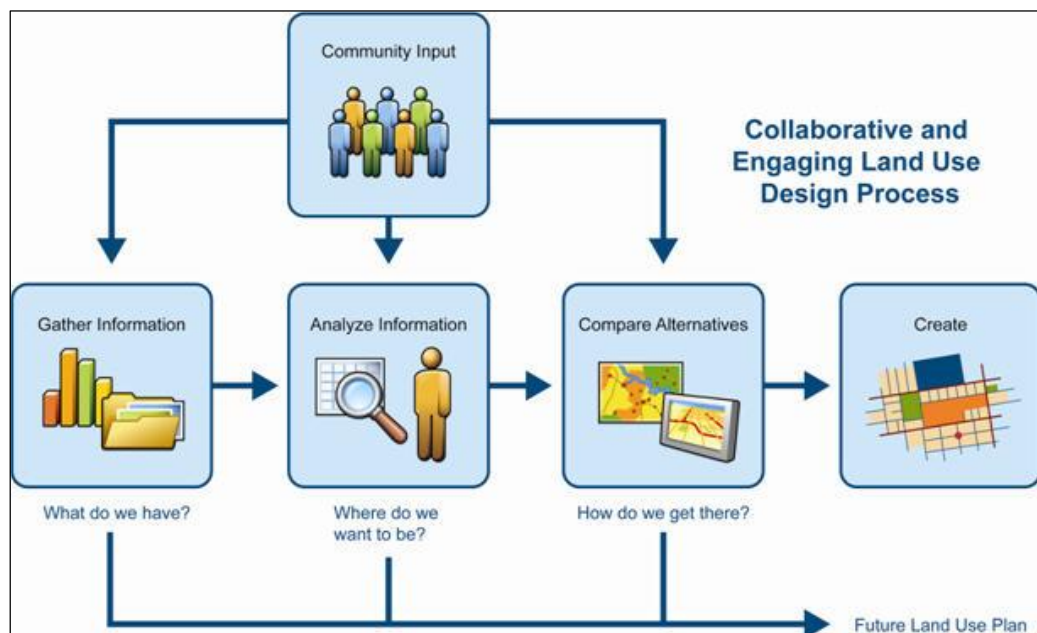


Figure 2-1: Use of GIS
(Source: www.directionsmag.com, 2011)

Roger Tomlinson, of Canada's Department of Forestry and Rural Development, introduced GIS in 1960 (Coppock & Rhind, 1991). He used it to map information related to land—the type of soil, agricultural activities, water flows, and wildlife areas. This information was used for planning within the ministry.

In the utility sector, visualizing buried assets is essential to facilitate operational and strategic decisions (Yagoub & Engel, 2009). Amid the rapid spread of spatial technologies, after the revolution in information and communication (ICT) technologies that started in the 1960s (Coppock & Rhind, 1991), GIS technology and solutions developers introduced several extensions to accommodate further spatial–business integration, such as document management systems, business workflows, and spatial mobile solutions (ESRI, 2013).

Like any other technology platform, GIS consists of five equally important components: hardware, software, data, processes, and users. Developing all these components is required to maximize the benefits of using GIS in business (Frank, Egenhofer, & Kuhn, 1991).

During the last two decades, GIS have become quite widespread around the world and in the Gulf Cooperation Council (GCC) countries in particular (Frank et al., 1991; Yagoub & Engel, 2009). In fact, GIS have become common among not only public and private organizations but also individuals via various spatial consumer tools such as car navigation systems, Google Maps, and personal navigation devices (Frank et al., 1991).

The United Arab Emirates, like other Gulf countries, requires a spatial solution for monitoring and evaluating rural and urban developments, including land use, utilities services, and the unceasing oil exploration that is promoted by government and private bodies (Yagoub & Engel, 2009). The GIS, as a spatial technology, was able to assist with these needs. Research explains that the remarkable development of GIS in the UAE has been caused by (1) an increase in computer literacy among government and corporate employees, (2) the spread of the Internet (Coppock & Rhind, 1991; Devillers, 2005; Yagoub & Engel, 2009), and (3) the readiness of the UAE government to use English as a medium of communication and programming instruction (Yagoub & Engel, 2009).

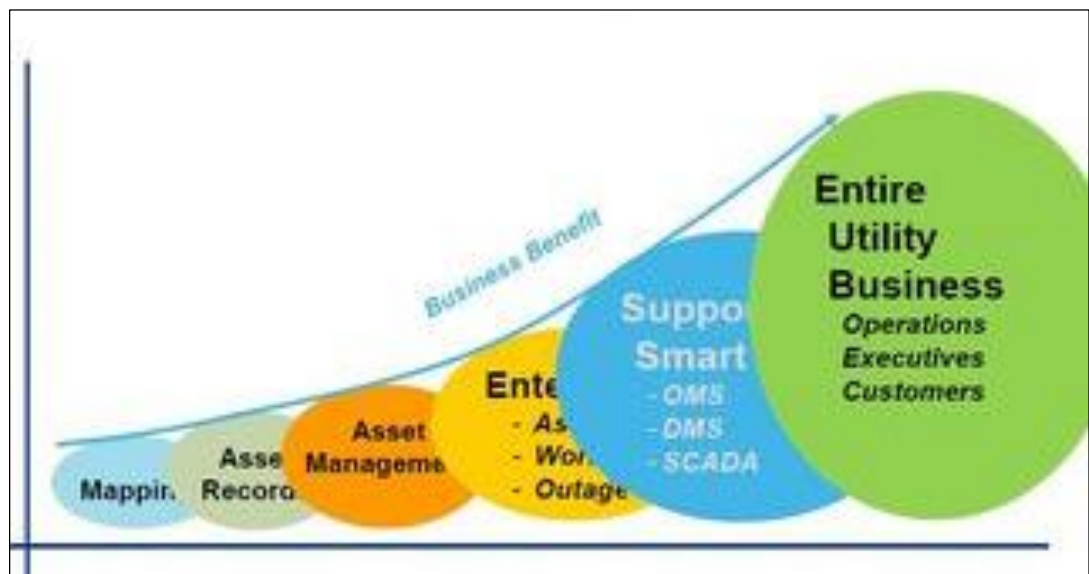


Figure 2-2: Role of geographic information system in utilities
(Source: www.geospatial.blogs.com, 2014)

For example, the Abu Dhabi government incorporated spatial initiatives into its overall vision for the emirate (ESRI, 2013). It appointed the Abu Dhabi Systems and Information Center (ADSIC) as the regulator of all spatial initiatives run by government entities. The Abu Dhabi government also introduced geospatial curricula in both government and private universities and schools (Yagoub & Engel, 2009). The

aim of these educational initiatives was to supply the UAE market with human resources that possess knowledge of geospatial and remote sensing.

2.2 Business Process Reengineering and Business Process Automation

Business process reengineering (BPR) and business process automation (BPA) are organizational initiatives that aim to enhance the speed, efficiency, and quality of organizational processes (Aler, Borrajo, Camacho, & Sierra-Alonso, 2002; Hammer, 1993; M Hesson, 2007; Taher, 2013; Taher et al., 2012). The BPR process involves the fundamental rethinking and redesign of organizational and operational processes to reduce costs, improve quality, and optimize the time dimensions of organizational processes (Hammer, 1993). The PBA process typically involves capturing business process workflows and using technology to automate and streamline (M Hesson, 2007; Samaranayake, 2009). Both BPR and BPA aim to deliver benefits at the organizational level as well, such as eliminating non-value adding steps in organizational processes and improving their cost, quality, and time dimensions.

2.3 Barriers to Business Process Reengineering and Business Process Automation

Though PBR and BPA initiatives can offer substantial benefits, the research found that such initiatives encountered organizational resistance (Bostrom & Heinen, 1977a, 1977b). Several individual and organizational factors may drive user resistance to BPR and BPA, including lack of organizational maturity and stability, conflict among traditions and ideologies, the absence of project sponsorship, poor communication, lack of user training, fear of losing power, and lack of perceived personal benefits. The rest of this section discusses these barriers in detail (please refer to Table 2).

2.3.1 Lack of Organizational Maturity and Stability

Organizational maturity and stability are important factors that can contribute to organizational change or become serious obstacles to it (Jurisch, 2012; Kudray & Kleiner, 1997). Organizational maturity is a reflection of accumulated organizational resources' knowledge and experience within a specific business domain (Taher et al., 2012). An organization needs to be mature and stable to reach goals and objectives related to a BPR and BPA initiative. Stability is the result of long-term collaboration and team-building among employees and business units (Taher et al., 2012). Lack of organizational maturity and stability is frequently manifested through a general lack of change management capability and constant conflict among employees and business units (Nedovic-Budic & Godschalk, 1996). Thus, BPR and BPA initiatives may become a political battlefield rather than a vehicle for positive change if constant conflict among employees and business units occurs (Krotov, Boukhonine, & Ives, 2011).

An introduction to change and knowledge management can be an effective way to overcome a lack of organizational maturity and stability (Biygautane & Al-Yahya, 2010, 2011; Jurisch, 2012). Such an introduction must reach all employees at all levels and penetrate their mindsets. The sooner the organization buys the need to change, the less important this barrier becomes.

Knowledge management units, recently established in most UAE government entities, can be seen as a solid example of setting up a solution to overcome a lack of organizational maturity and stability. The aim of these units is to spread the organizational knowledge comprising the knowledge of its resources and expand it to new employees through a systematic approach (Biygautane & Al-Yahya, 2010, 2011;

Department of Municipal Affairs of Abu Dhabi, 2009). Knowledge sharing among business units and employees fosters the accumulated experience of the organization driven by business units and individuals (i.e., maturity; Biygautane & Al-Yahya, 2010, 2011; Jurisch, 2012; Nedovic-Budic & Godschalk, 1996). Knowledge sharing also plays a vital role in concretizing the essence of long-term collaboration and team building among business units and individuals (Nedovic-Budic & Godschalk, 1996).

2.3.2 Conflict among Traditions and Ideologies

Tradition and ideologies can influence the use of technologies in any organization from both macro and micro social perspectives (Barley, 1990; Jurisch, 2012; Lapointe & Rivard, 2005). Barley (1990, p. 63) states the following:

Existing traditions and ideologies surely influence the way organizations and technologies are designed. However, it is also quite likely that all technologies exert unintended as well as intended pressures on the social organization of work

Traditions and ideologies need to be looked at closely, as they may affect BPR and BPA initiatives (Barley, 1990; Crowswell, 1991; L. Dorthy, B. & W. Kraus, A., 1985). Organizations seeking to enhance their performance and raise the quality of their services must be ready for a radical change in their workflows and processes. However, the influence of an organization's bureaucracy and traditions may have a substantial deterrent impact on the redesign of the processes (Jurisch, 2012; Kudray & Kleiner, 1997). For example, information systems projects may create a conflict among old- and new-generation employees, particularly over traditional and proposed business processes (Taher et al., 2012), because of the different traditions and ideologies the generations may have. The old generation may view information systems as supportive tools for maintaining existing business practices, while the new

generation, which is usually more “tech-savvy,” may favor a more radical BPR and BPA with the help of technology (Taher et al., 2012).

Introducing a comprehensive communications plan can mitigate conflicts among traditions and ideologies. The plan should detail the desired communication channels and protocols for specific types of messages (Al-Mashari & Zairi, 1999; Bensaou & Earl, 1998; Dixon, Arnold, Heineke, Kim, & Mulligan, 1994; Taher et al., 2012) and offer a structured approach to communicating a primer on and the benefits of a planned initiative as well as solutions for the expected barriers to it. The sooner the communications plan becomes a working approach, the less conflict will likely occur.

2.3.3 Absence of Project Sponsorship

Management’s commitment to use technology in business operations is a critical factor in the success of these initiatives (Crowswell, 1991; Kudray & Kleiner, 1997; Taher, 2013; Taleai, Mansourian, & Sharifi, 2009). Cascading down vision, values, and empowerment to BPR and BPA, project management teams (PMT) are essential for ensuring the success of technology-driven BPR projects (Burns, 1978; Crowswell, 1991; Davies, 2011; Ginzberg, 1981; Grover et al., 1995; Northouse, 2013; Silva & Backhouse, 2003; Taher, 2013; Taher et al., 2012; Taleai et al., 2009). Management commitment can be manifested in the form of a project executive sponsor (PES) or project steering committee (PSC; Davies, 2011; Taher, 2013; Taher et al., 2012). A PES or PSC ensures that all success factors are adequately addressed, including the allocation of resources to the project management team to achieve the project goals and objectives (Davies, 2011). They also ensure the collaboration among and participation of all concerned individuals and functional units in a project.

Representatives from functional units are typically included in project management teams (PMTs), allowing for better communication within and among the units in relation to the project (Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991; Taher, 2013; Taher et al., 2012). A performance review meeting with top management can help the PMT overcome the absence of a PES or PSC. However, it cannot ensure the alignment of GIS initiatives with the organization's business operations at all levels.

2.3.4 Poor Communication

The main goals of communication concerning BPR and BPA are (1) cascading the vision of the top management of change management initiatives; (2) addressing end-user requirements; and (3) overcoming the natural divide between functional units (Al-Mashari & Zairi, 1999; Dixon et al., 1994; Fondas, 1993; Rodney & John, 1999). Functional units and the individuals within them may have different perspectives on how business process reengineering and automation and associated technologies should be used (Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991). Communication should be employed to facilitate a discussion on what type of solution is required and how to implement it to overcome the problems functional units are facing. The chosen solution should be the product of the participation of all individuals and functional units. An inability to listen to the problems and concerns of individuals and functional units may impact the communication process (Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991; Issa-Salwe, Ahmed, Aloufi, & Kabir, 2010; Taher, 2013; Taher et al., 2012).

Effective communication is especially important for addressing the gap between developers and end-users (Bensaou & Earl, 1998; Taher et al., 2012). Both groups have idiosyncratic knowledge and goals, driven by two different areas:

technology and business. Thus, it is essential that both types of stakeholder understand the concerns of the other group, share knowledge from their respective domains, and, ultimately, ensure the alignment of technology with the operations and strategies of the organization (Bensaou & Earl, 1998; Issa-Salwe et al., 2010; Taher et al., 2012).

Introducing a planning statement document at the early stage of a project can mitigate the poor communication expected between system developers and end-users. A planning statement document typically includes all necessary information about the proposed initiatives, not merely about their basic design and benefits. Additionally, user-needs requirement and assessment documents are equally important in the design stage; both help fine-tune end users' initial thoughts and concretize system options and operation.

2.3.5 Lack of Technical Knowledge among Users

A poor understanding of how information systems support an organization's business operations across an enterprise often plagues technology-driven BPR and BPA initiatives (Bensaou & Earl, 1998). Technical specialists often have difficulty communicating the role of IS, particularly the GIS, in their organizations (Crowswell, 1991), as it is often difficult for non-technical users to understand how GIS data relevant to organizational business processes are created and used to enhance organizational processes (Crowswell, 1991; Taher et al., 2012). Thus, no matter how much effort technical specialists make in using GIS to improve organizational processes, their efforts, and the overall value of a GIS, are frequently not recognized within their organizations (Crowswell, 1991). Thus, educating users on what GIS is and how they can be used is crucial to the success of an initiative (Taher et al., 2012).

The planning stage is considered the most important phase in any project, followed by the user-needs requirements and user requirements formulation stages. Technical specialists need to educate end-users about the benefits (radical and incremental) of the intended initiatives. System developers can use a pilot to promote a specific initiative. End-users can consequently visualize the potential outcomes. Deploying a pilot can be very challenging due to political, financial, and contractual barriers. In this case, benchmarking and exposure to best practices with affiliate organizations can be advantageous.

2.3.6 Lack of Perceived Personal Benefits and Recognition

While successful technology implementation can produce a number of benefits at the organizational level, some end users often feel that they gain nothing from the technology except additional tasks and duties (Kudray & Kleiner, 1997; Taher et al., 2012). Thus, the organization must extend the benefits gained from automation to individuals (M Hesson, 2007; Silva, 2007; Silva & Backhouse, 2003; Taher et al., 2012). If individual investments are necessary to create benefits for another functional unit, the organization should acknowledge or reward contributing functional units and individuals. This reward can be financial or comprise social recognition (L. Dorthy, B. & W. Kraus, A., 1985; Pacific Council, April 2002; Taher et al., 2012). Performance policy can be a supportive tool for overcoming the lack of perceived personal benefit and recognition that employees can feel. A default performance policy includes departmental and individual performance indicators, benefits, and recognition schemes. For example, internal recognition of the best employee in a department can create a sense of accomplishment and system ownership among employees.

2.3.7 Fear of Losing Power

Individuals in a public organization can be very reluctant to give up even a portion of their power and authority (M Hesson, 2007; Silva & Backhouse, 2003; Taher et al., 2012). Employees at all levels may feel that their power is threatened because some of their tasks can be automated and they could be replaced by technology (L. Dorthy, B. & W. Kraus, A., 1985; Silva, 2007; Silva & Backhouse, 2003). Indeed, an information system can carry out most operational tasks, such as requests for registration, record maintenance, and reporting (Baird, 2011; ESRI, 2013). Others may feel that the newly introduced technology will reduce their legitimacy within the organization, as they lack expertise with the technology. The research refers to this phenomenon as “technical shock” (Pacific Council, April 2002; Taher et al., 2012). Thus, decision makers impacted by an information system may form the most serious barrier to GIS implementation (M Hesson, 2007). The fear of losing power can be dealt with by getting employees involved at the early stages of BPR and BPA initiative implementation (M Hesson, 2007). This gives users ownership of the system and the feeling that it is a product of their decision-making authority (Taher et al., 2012).

The responsible assignment matrix (RACI) can help mitigate the fear of losing power that many managers face during the initiative implementation stage. An RACI matrix can be used to discuss, assign, and communicate the roles and responsibilities of all members in a functional unit and outline the day-to-day operations that a functional unit conducts. Alternatively, a performance review meeting at the organizational level can help stabilize the performance momentum among employees. To be effective, such reviews require senior managers to deploy their scope of authority.

A technical shock can be overcome through effective participation in all stages of an initiative: planning, user-needs requirements, user-needs assessment, and technical training. This participation is a result of an alignment with the agreed-upon RACI matrix.

Table 2-1: Literature Review Summary

Resistance Type	Description	Authors	Remedies
Lack of Organizational Maturity and Stability	Important success factor for applying change; importance of accumulated experience in the organization (maturity); capability to maintain long-term collaboration and team-building among employees and business units	Kudray & Kleiner, 1997; Jurisch, 2012; Nedovic-Budic & Godschalk, 1996; Taher et al., 2012	Change management; Knowledge management
Conflict in Traditions and Ideologies	Influence the way organizations and technologies are designed; the ability to face radical changes as of BPR and BPA; new generation (tech savvy) vs. old generation employees; technology support existing business practices vs. technology to drive new business regime.	Barley, 1990; Crowswell, 1991; Jurisch, 2012; Kudray & Kleiner, 1997; Taher et al., 2012; L. Dorthy, B. & W. Kraus, A., 1985	Comprehensive communication plan
Absence of a Project Sponsorship	Importance of management commitment; absence of room of authority; seeking ability to sponsor the project with required resources; the higher rank in the organization is the sponsor, the higher importance is the project; expected collaboration from all units.	Barley, 1990; Bensaou & Earl, 1998; Burns, 1978 Crowswell, 1991; Davies, 2011; Ginzberg, 1981; Grover et al., 1995; Kudray & Kleiner, 1997; P. G. Northouse, 2013; Silva & Backhouse, 2003; Taher, 2013; Taher et al., 2012; Taleai et al., 2009	Performance review meetings
Poor Communication	Losing of a mean of share specific messages; raise issues and problems during the project implementation; increase the gap between developers and end-users; reach goal objectives become challenging.	Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991 Issa-Salwe et al., 2010; Taher, 2013; Taher et al., 2012	Planning statement document; End-user requirement document
Lack of Technical Knowledge among Users	Affect the understanding of how technology can help the business; considered a major barrier to execution; impact users-need requirement.	Bensaou & Earl, 1998; Crowswell, 1991; Taher et al., 2012	Execution of pilot project; benchmarking; exposure to best practices
Lack of Perceived Personal Benefits and Recognition	New technology were seen as additional tasks and duties; no education made to end-users; importance of introducing rewards scheme (financial and socially)	Kudray & Kleiner, 1997; L. Dorthy, B. & W. Kraus, A., 1985; M Hesson, 2007; Silva, 2007; Silva & Backhouse, 2003; Taher et al., 2012; World, April 2002	Performance policy; internal recognition of best employees
Fear to Lose Power	Fear to give up their power and authority; fear of automation as it may replace employees; fear to face technical shock; fear to diminish legitimacy because of limited knowledge.	Baird, 2011; ESRI, 2013; L. Dorthy, B. & W. Kraus, A., 1985; M Hesson, 2007; Silva, 2007; Silva & Backhouse, 2003; Taher et al., 2012; World, April 2002	Setup of responsible assignment matrix; performance review meetings; active participation in all project stages.

2.4 Theoretical Perspectives for Overcoming Barriers to BPR and BPA

Three theoretical perspectives can guide managers in overcoming user resistance to BPR and BPA: change management, project management, and leadership. This section discusses these perspectives in detail and points to some of the weaknesses in the philosophical assumptions underpinning them.

2.4.1 Change Management

A basic, widely accepted definition of change management views it as a process that leads a functional unit to change (Kudray & Kleiner, 1997; Rothwell & Sullivan, 2005; Taher et al., 2012). Rothwell and Sullivan (2005, p. 17) define change management as the *“process of helping a person, group or organization change.”* Kudray and Kleiner (1997) view change management from a competition and market perspective, defining it as a *“continuous process of aligning an organization with its marketplace—and doing it more responsively and effectively than competitors”* (p. 18). The definition of change management used in this study involves the introduction of measures and a timeframe. Thus, change management is defined as a *“process of communicating and enforcing a program consisting of clearly defined, time-framed actions needed to take an organization from an undesirable state A to a desirable state B, with both states being clearly defined and measurable”* (Taher et al., 2012, p. 347). Given this definition, the basic elements of change management include the following (Barley, 1990; Crowswell, 1991; Ginzberg, 1981; Grover et al., 1995; M Hesson, 2007; Lapointe & Rivard, 2005; Taher, 2013; Taher et al., 2012; Winston & Patterson, 2006):

- Assessment of current position

- A vision with respect to the desired state formulated and disseminated via management involvement and commitment
- Effective planning of time-framed actions towards achievement of the desired state
- Effective communication with all organizational stakeholders

Ultimately, a suggested change should be “SMART”—specific, measurable, achievable, relevant, and time-oriented (Taher et al., 2012).

Numerous theories of and approaches to change management have been proposed, including Lewin’s theory, Kotter’s eight-steps, Kanter et al.’s Ten Commandments, and Prosci’s ADKAR model (Zhuoyuan, Benson, & Imriyas, 2013). The concept of change management was introduced by the father of scientific management practice, Frederick Taylor. In 1952, Lewin succeeded in adding a human dimension to Frederick Taylor’s mechanical focus on change (Coghlan & Brannick, 2003). Lewin also managed to shift the focus from scientific management to social psychology (Gilley, Dean, & Bierema, 2001; Kritsonis, 2005; Papanek, 1973). The Lewin model divides change into unfreeze, transition, and refreeze stages according to employees’ comfort zones. Lewin’s model was criticized for being applicable only to pre-planned operations with incremental changes (By, 2005). The value of Lewin’s model remains questionable (By, 2005).

Among other change management models and approaches, Kotter’s eight-step model, an emergent approach, focuses on employees’ buy-in perspective. Kotter’s model can be very successful in an organization with a classical hierarchy (Appelbaum, Habashy, Malo, & Shafiq, 2012) due to the model’s function, with its top-down instruction rather than genuine participation. On the downside, Kotter’s eight-step model may have limited success if it is used in a linear rather than a cyclic

manner. Employees may also be thwarted if the model is not followed in order or if stages are skipped (Appelbaum et al., 2012).

Prosci's ADKAR (Awareness, Desire, Knowledge, Ability, and Reinforcement) model is a reliable change management model. The focus of this model, developed in 1998, is to allow individuals to change, and a change management team focuses on a specific business result. The model's simplicity lies in its checklist method. Prosci's ADKAR checklist can be easily followed to ensure successful changes.

Effective change management can produce benefits at the individual and organizational levels (Schein, 1999). Organizationally, a clear change management approach can facilitate a solid understanding of why the change needs to happen (Appelbaum et al., 2012; By, 2005; Gilley et al., 2001). Sharing change streams with functional units can enhance the recognition of barriers and the discovery of solutions. Functional units can also assist in detailing action plans for the changes demanded by top management (Appelbaum et al., 2012). From the employees' perspective, understanding the reasons behind change can motivate key individuals to lead rather than resist change (Crowswell, 1991; M Hesson, 2007). Employees' ownership of change streams can ultimately help in meeting the defined goals and objectives (Appelbaum et al., 2012; L. Dorthy, B. & W. Kraus, A., 1985).

Most of the theoretical approaches to change management focus on the importance of leadership in setting the vision and objectives of a desired change. Other change management frameworks focus on the role of management in supporting the agents of change management initiatives with money and human resources. However, none of the perspectives on change management focuses on

understanding the power relationships among the stakeholders involved or devising techniques for changes that are in line with these power relationships.

Table 2-2: Summary of Theoretical Perspectives for Overcoming Barriers to Business Process Re-engineering and Automation

Theory	Theme	Criticism	Literature
Lewin (1952)	• Mechanical focus on change • Focus on human dimension • Capacity of employees' comfort zone • Designed for pre-planned operations with incremental change	• Used for unplanned change • Looks after incremental benefits only • The theory is low agility.	Coghlan & Brannick, 2003; Gilley, Dean, & Bierema, 2001; Kritsonis, 2005; Papanek, 1973; By, 2005
Kotter's eight-steps (1996)	• A natural extent of previous theories. • Focus on employees' buy-in perspective to proposed change • Works well in classical/vertical organizational hierarchy; • Designed to be Up-down instruction • Simple to follow • Theory adopts a cyclic manner	• Not adequate for flat or frequently changed organizational hierarchy • No room for genuine participation • Cannot be used of once, but need to adopt cyclic manner • Steps need to be followed in order	Appelbaum, Habashy, Malo, & Shafiq, 2012;
Prosci's ADKAR (1998)	• Reliable for focus change of business results • Applicable for project and non-project change • Primarily focuses on people • Simplicity of representation "checklist template" • Designed to be followed in order	• Not applicable for wide change scope • Steps cannot be overlooked or ignored. • Missed cuts power context in resisting change	Hiatt, J., 2006

2.4.2 Leadership

The topic of leadership has received substantial attention from researchers and practitioners (Winston & Patterson, 2006). Various definitions of “leadership” have been devised by researchers and practitioners in approximately 26,000 articles related to this topic (Winston & Patterson, 2006). Researchers agree that leadership is a combination of processes and behaviors (Barker, 2002; Winston & Patterson, 2006). Leadership can be manifested in a particular person (e.g., leader) or a group of people (e.g., steering committee). Northouse (2013) defines “leadership” as a “process whereby an individual influences a group of individuals to achieve a common goal.” A group of people can be influenced in several ways: via a visionary mindset, team building and development, or challenging the status quo (Bernard M. Bass & Riggio, 2006).

Leadership has always been viewed as a critical success factor in change management, as it touches on critical elements of change management: vision and enforcement (Crowswell, 1991; Ginzberg, 1981; Grover et al., 1995; Taher, 2013; Taher et al., 2012; Taleai et al., 2009). Leadership also greatly emphasizes promoting beliefs, values, and morals among the stakeholders of change management initiatives, especially employees (Burns, 1978; Northouse, 2007). Leadership can have a positive impact on technology implementation success via the mitigation of impediments to change.

Numerous theories of leadership have been proposed, including the contingency theory of leadership, functional theory transformational leadership, and transactional leadership. Burns (1978) defines “transformational leadership” as a *“process where leaders and followers engage in a mutual process of raising one*

another to higher levels of morality and motivation” (p. 20). Bass (1985) describes a transformational leader as one who *“induces additional effort by further sharply increasing subordinate confidence and by elevating the value of outcomes for the subordinate”* (p. 22). Transformational leadership theory was introduced by Burns (1978). Bass (1985) extended Burns (1978) to address the behavior of a leader and the techniques that can be used to motivate followers to reach a challenging target. The theory of transformational leadership is the most widely used in both practice and research (Northouse, 2007). Despite minor flaws, transformation leadership theory exhibited practical logic and received considerable empirical support (Antonakis, 2012; Northouse, 2007; Taher, 2013). Many practitioners of this theory have achieved impressive results in their organizations (Antonakis, 2012; Northouse, 2007).

Transactional leadership looks at followers from a global perspective. It does not individualize followers’ needs or the development of their personal characteristics (B. M. Bass, 1985; Bernard M. Bass, 1990; Northouse, 2007, 2013; Taher, 2013). Research highlights that transactional leadership focuses on two factors: contingent rewards and management by expectation (Bernard M. Bass, 1990; Northouse, 2007, 2013). Contingent rewards shape the relationship between leaders and follower by paying back the followers for executing directions (Northouse, 2013).

Management by expectation involves leadership intervention, both positive and negative, as followers execute directions (Northouse, 2013).

Contingency theories of leadership, including Fiedler’s theory and Hersey and Blanchard’s situation theory, correlate leadership styles with particular environments to ensure effective leadership (Fiedler, 1964; P. Hersey & Blanchard, 1974; P. B. K. H. Hersey, 1964; Michaelsen, 1973). Contingency theories argue that no single

leadership style is appropriate for all situations and environments and that the successful selection of leadership style depends on the characteristics of the situation and the potential of the followers. The leadership candidates' behavior is also a main concern. Thus, failure to reasonably assess the situation may lead a leadership candidate to choose an inadequate leadership style (Fiedler, 1964; P. Hersey & Blanchard, 1974; P. B. K. H. Hersey, 1964; Michaelsen, 1973). Despite contingency theories' consideration of the social environment (Burian, Burian, Francis, & Pieffer, 2014; Michaelsen, 1973; Northouse, 2007, 2013), they ignore the power–relationship context involving leaders and followers.

While offering useful perspectives for understanding and using leadership in real-world contexts, leadership theories such as the functional, transformational, transactional, and contingency theories fail to examine how power affects the institutionalization of IT solutions. Failure to understand the power perspective leads to organizational resistance fueled by stakeholders such as decision makers, employees, and system developers.

Table 2-3: Summary of Theoretical Perspectives for Overcoming Barriers to Business Process Re-engineering and Automation

Prospective	Theory	Theme	Criticism	Literature
Leadership	Transformational	• Present a natural expand of other leadership theories • Addresses the behavior of a leader and techniques for motivating followers • Individualized follower needs • Presenting the leader as idol, • Focus on Inspiring followers	• Failed to focus on the perspective of power in different aspects related system(s) institutionalization process • Over individualizing may take the theory out of context.	Antonakis, 2012; Northouse, 2007; Taher, 2013); B. M. Bass, 1985; Bernard M. Bass, 1990; Taher, 2013)
	Transactional	• Focus on global perspective of followers needs • It is a natural available by nature • Focuses on contingent rewards and management by expectation	• Does not individualize followers need • Does not concerns of followers personal development • Develops a perspective of pay-back	B. M. Bass, 1985; Bernard M. Bass, 1990; Northouse, 2007, 2013; Taher, 2013)
	Contingency theories	• No fixed leadership style • Leadership style depends on the environment and quality of followers • Focus on the leader candidate behaviors • It acknowledges societal environment	• Too generic • Many variables contribute to success (environment, quality of followers, candidate behaviors) • Lack of understanding of power-relationship context between the leader and followers	Fiedler, 1964; P. Hersey & Blanchard, 1974; P. B. K. H. Hersey, 1964; Michaelsen, 1973; Burian, Burian, Francis, & Pieffer, 2014; Northouse, 2007, 2013)

2.4.3 Project Management

Project management can be seen as a way to manage operational tasks that share a common objective, timeframe, quality, and budget (Project Management, 2008). Most project management approaches consider quality, cost, and time. Project Management Institute Project Management (2008) defines the project management team (PMT) as the “members of the project team who are directly involved in project management activities” (p. 444). The project manager (PM) is defined as “*the person assigned by the performing organization to achieve the project objectives*” (p. 444). Davies (2011) describes the project executive sponsor (PES) as the person who continuously communicates the expectations and outcomes for a project.

Project management has its roots in the pioneering work of Fredrick Taylor and was further developed by Henry Gantt and Henri Fayol. The field of project management is a natural extension of the industrial revolution (1785–1845) and Classic and Neo-classic management (1900–1950) thinking (Carayannis, Kwak, & Anbari, 2003, 2005; Weaver, 2007). Various approaches to project management have appeared, such as traditional, extreme project, event change, and agile project management (Layton, 2012). These approaches have different focuses and assumptions. For example, the traditional “waterfall” approach assumes that a project’s scope remains unchanged until completion. Thus, project managers using the traditional approach focus on managing resources to achieve the objective (Zhuoyuan et al., 2013).

Managing a project with a constant change of variables or uncertain client requirements can be extremely difficult. The extreme project approach is the most common management approach to handling highly uncertain client requirements. In

many projects, a specific constraint might lead to a chain of constraints, which, by default, may impact project delivery.

The event chain project approach (which complements the critical path approach) tackles the dependency constraints by planning a critical path and forecasting problems using archival data and dependency events. In many cases, end users' inputs and participation are required (e.g., for project automation and the development of websites).

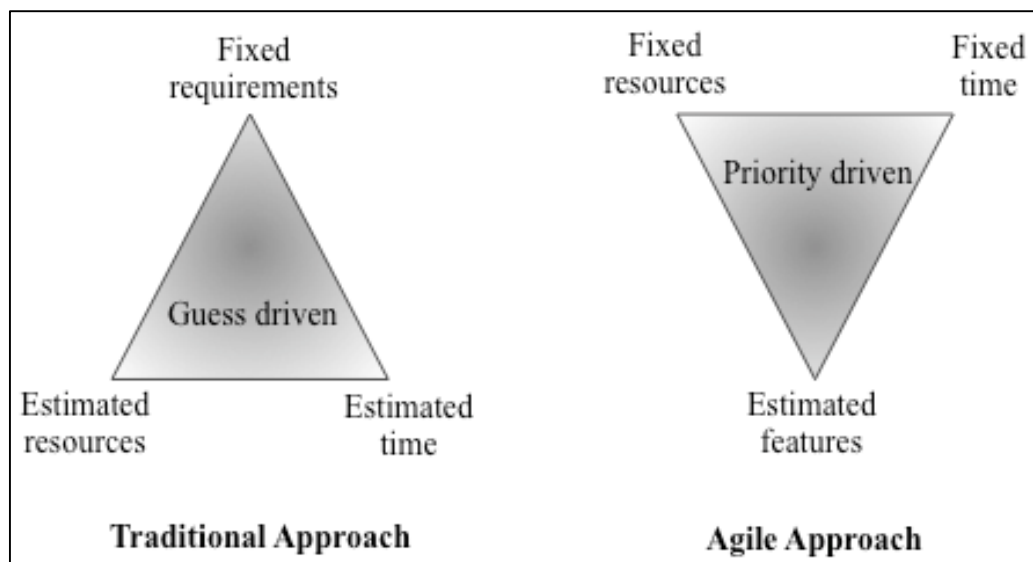


Figure 2-3: Comparison of traditional and agile project management approaches
Source: Reprinted from (Layton, 2012, p. 44)

Agile project management allows a project management team to fit end-user requirements within a project's resources and time limitations (Layton, 2012). The agile approach also facilitates interaction between the development team and end-users, allowing end-user input to be used during the project cycle. However, to achieve the benefit of such interaction, end users have to be heavily involved in the planning and production cycles.

Projects executed using the agile approach are the most consistent in meeting end-user requirements, due to frequent testing and acceptance (Layton, 2012). A downside of the agile approach (including the Scrum, extreme programming, crystal-clear, and Kanban methods) is that it requires end-user availability during execution and testing (Carroll, 2012). Figure 2-3 compares traditional and agile project management approaches.

By conveying the project vision to stakeholders (including the project management team, users, and developers), PMs and PESs lead the stakeholders to comply with the goals of the project. While it is clear that influence and power are at the center of effective project management, most project management frameworks focus on the technicalities of project management and fail to address the power relationships among the project stakeholders.

Table 2-4: Summary of Theoretical Perspectives for Overcoming Barriers to Business Process Re-engineering and Automation

Prospective	Theory	Theme	Criticism	Literature
Project Management	Traditional	• Designed for fixed project's scope, time and cost • Managing resources according scope • Focuses in achieving objectives within agreed path	• Rigid approach • Inadequate for open scope project • Its ignores relationship among the project team and end-users	Layton, 2012; Carayannis, 2003; Weaver 2007
	Extreme project; - Even change - XPM	• Possible to handle uncertainty when it comes to scope, money or resources • Lives in turbulent environment • Plans potential constraints • Lives in chaos with self-correcting	• Fixable but low agility in handling variation to scope, quality, resources and time • Focuses on delivery • End-users are not always available for review and acceptance	Layton, 2012) Zhuoyuan et al., 2013)
	Agility	• Focus on user requirements • Fit additional user requirements them in the project. • Adopts pilot outcomes • Allows end-users to focus on intervention with the project team.	• Comes in preliminary delivery mode (pilot) • Requires end-users availability during the execution and testing • It supports team building • It supports team independence	Carroll, 2012 Davies, 2011 Zhuoyuan et al., 2013)

Chapter 3: Theoretical Framework

This study uses the circuits of power framework introduced by Clegg (1989) and extended by Silva and Backhouse (2003) as its meta-theory. The main function of this framework is to organize various tools and techniques of change management reviewed earlier around one central concept—power. On the theoretical level, the circuits of power framework offers organizations interested in institutionalizing technology solutions a comprehensive understanding of the ongoing implementation/battle situation. Clegg (1989) succeeds in linking individual knowledge to power, and this becomes a distinctive characteristic of the framework, which integrates behavioral, social, and systematic perspectives on technology implementation. In order to implement technology in an organization and foster the adoption and institutionalization of this technology, an information systems solution must pass through three circuits of power: episodic, social integration, and systemic integration (see Table 3-1).

The episodic circuit of power is the casual power practiced when champions and powerful organizational agents (e.g., managers) direct the system's end-users (e.g., subordinates) to perform a task with an IT solution to reach a specific objective (Silva & Backhouse, 2003; Smith, Winchester, Bunker, & Jamieson, 2010). Systematic end-users are expected to resist champions' and powerful organizational agents' requests to use the technology as an outcome of practicing casual power. Four main elements assist in understanding the circuit of episodic power in the institutionalization of an IT solution:

- Who are the champions (managers) and who are the resisters (subordinates)?
- What are the objectives of the champions and resisters in the battle of implementation?
- What are the strategies used by the champions and resisters in the battle?
- What are the resources that can be accessed and used to support their position?

The social integration circuit presents the dispositional power of the champions (powerful organizational agents) and system end-users at the organization in relation to their level (power) at the organization (membership) and surrounding rules and norms (Clegg, 1989; Silva & Backhouse, 2003; Smith et al., 2010). The following factors need to be considered for the successful integration of technology through the social integration circuit:

- What are the organizational rules that place the managers and system end-users or subordinates in their respective positions?
- How do the rules and norms affect the implementation of the IT solution until institutionalization?
- How do the system end-users or subordinates interpret the institutionalization of the IT solution?

The systemic integration circuit is a facilitative power (a collective of organizational rules) that facilitates the execution of what the champions (powerful

organizational agents) want the system end-users to do (Clegg, 1989; Parsons, 1967; Silva & Backhouse, 2003; Smith et al., 2010). The following factors need to be considered for the successful integration of technology through the systemic integration circuit:

- Understanding the organizational rules and monitoring the setup;
- Understanding the consequences and interpreting the achievement of the objectives

Understanding the episodic circuit will help the organization identify change agents and resister–users as well as the casual power and tactics used to support change agents and resister–users. Knowing the social integration circuits will promote the understanding of the rules and norms that place the change agents and resisting users in their positions and the beneficial tradeoffs that will occur when the system is institutionalized. Finally, understanding the circuit of systemic integration can help users understand the facilitative power employed to accommodate system institutionalization and devise changes.

Thus, the importance of the circuits of power framework lies in the importance of the circuit's episodic, social, and systemic integration (Silva, 2007; Silva & Backhouse, 2003; Smith et al., 2010).

Table 3-1: The Circuits of Power Framework: Reprinted from (Silva & Backhouse, 2003, p. 300)

Circuits	Type of Power	Definition	Outcomes
Episodic	Casual power	Champions and powerful organizational agents (managers) directing the system end-users res (subordinates) to perform a task in an existing IT solution to reach a specific objective (Silva & Backhouse, 2003).	• Who are the champions and who are the resisters? • What are the objectives of champions and resisters in the battle of implementation • Understanding the different stratagems used by champions and resisters employed in the battle. • What are the resources that can be accessed and used to support their position
Social integration	Dispositional power	The power of the champions / powerful organizational agents and system end-users at the organization in reflection to their level (power) at the organization (membership) and surrounding rules and norms (Clegg, 1989; Silva & Backhouse, 2003).	• What are the organizational rules that place champions / powerful organizational agents and system end-users in their reflective positions? • How do the rules and norms affect the implementation of the IT solution till it becomes institutionalization? • How do system end-users interpret the institutionalization of the IT solution?
Systemic integration	Facilitative power	A collective of organizational rules and monitor setup that facilitate the execution of what champions / powerful organizational agents are directing the system end-users objectives (Clegg, 1989; Parsons, 1967; Silva & Backhouse, 2003).	• Understanding the collective of organizational rules and monitor setup in place • What are the consequences actions and interpretation of achieving objectives?

Chapter 4: Data and Methodology

This research focuses on understanding the impact of power relationships in leading GIS-enabled BPR and BPA initiatives in the UAE. The UAE–power context was elucidated in the literature review (Chapter 2). To enrich the understanding of this context, general information about the UAE is provided below.

4.1 The United Arab Emirates (UAE)

4.1.1 Historical Background

The UAE was formed from the sheikhdoms that existed along the southern coast of the Arabian Gulf and the northwestern coast of the Gulf of Oman. These sheikhdoms were known at that time as the “Trucial Coast States.” Between the seventeenth and nineteenth centuries, the British established a strong presence in the region. The British presence was largely unchallenged by other world powers. The British announced in 1968 and reaffirmed in 1971 that they would end their treaty with the seven Trucial Coast States, which had been under their protection since 1892. Following the dissolution of all existing treaties with the British on December 2, 1971, six of the seven sheikhdoms formed the UAE. The seventh sheikhdom, Ras Al Khaimah, joined the UAE in 1972. On December 9, 1971, the UAE became a member of the United Nations; the recognition of the Arab League followed in the same year. On May 25, 1981, following a tremendous effort, the late Sheikh Zayed Bin Sultan Al Nahyan founded the Gulf Cooperative Countries (GCC).

4.1.2 The Political System

The political system of the UAE is based on a federation of self-governing emirates. The federal government consists of the Federal Supreme Council, a Cabinet

of Ministers, and the Federal National Council (Emirates, 2014; The Cabinet, 2013). The Federal Supreme Council consists of the rulers of the seven emirates and is the highest authority according to the constitution of the UAE. The Council has the power to appoint the president, vice-president, and the prime-minister and to define the shape of the UAE's internal and foreign policies (The Cabinet, 2013). The Cabinet of Ministers is the executive arm of the Federal Supreme Council. The Cabinet manages all internal and foreign affairs of the UAE in accordance with the constitution and federal laws (Emirates, 2014; The Cabinet, 2013). The Federal National Council is a legislative advisory body that looks after the Emirati people and their needs. The Federal National Council members are partially elected by the Emirati people under the supervision of the National Election Committee. The ruler of the Emirates, according to an agreed representative proportion, nominates the resets (Emirates, 2014; Interact, 2011; The Federal National Council, 2013).

4.1.3 Geography and Demographics

The UAE lies between latitudes 22–26.5 degrees north and longitude 51–56.5 degrees east, covering an area of 83,600 square kilometers. The UAE is surrounded by the Arabian Gulf from the north, the Oman and the Gulf of Oman from the east and southeast, and the Kingdom of Saudi Arabia from the west (Central Intelligence Agency, 2013). The strategic location of the UAE served as a bridge between the Far East and Europe. Abu Dhabi and Dubai Emirates optimally used their geographical position to enhance their business climates and become prominent international business hubs.



Figure 4-1: UAE Map
Source: UAE Interact (2014)

The 2011 population census estimated the UAE population at 8.3 million. Emirati inhabitants were estimated at 984 thousand, less than 11.5% of the total population (National Bureau of Statistics, 2011). The statistics show a balance between Emirati males and females (50.5% and 49.5% respectively). The UAE's average annual population growth is 6.3% according to the National Bureau of Statistics (2011).

4.1.4 Culture

Despite their population diversity, UAE nationals are profoundly attached to “the culture of the desert.” Bedouin culture has strongly influenced the character of the UAE leadership (Peterson, 1977). Bedouin culture has influenced the native population to become family- and religion-oriented. Families (both small and extended) are important to the population. The UAE government protects the Bedouin identity but in a modern way. Frequent traditional cultural events are part of this plan

to protect the Bedouin identity; they remind citizens of the “culture of the desert.” Examples include the Al Dhafra camel race and market, the Al Dhafra date market, and Arabian falcon hunting competitions. The UAE government has promoted some of the most important traditional sports in the region at the international level. In 2009, the UAE government registered traditional Arab falcon hunting with UNESCO (Interact, 2011).

4.1.5 Economy

Since the discovery of oil and gas in the 1960s, the UAE has been going through rapid changes (ADCED, 2008). Oil and gas revenues were invested in education, health care, infrastructure, city and urban development, and tourism (The Cabinet, 2013). Under the wise leadership of the late Sheikh Zayed Bin Sultan, the father of the nation, the UAE government worked to diversify incomes and reduce the nation’s dependence on oil and gas (ADCED, 2008; National Bureau of Statistics, 2015). The government established several initiatives to ensure the diversification of the national economy by adopting low tax rates and opening so-called “free zones” (Central Intelligence Agency, 2013). The government also encouraged foreign investment in almost all fields, including major utilities (ADSSC, 2013) and public–private partnerships (PPP) in education. According to the Central Intelligence Agency (2013), the UAE turned into one of the most powerful economies in the GCC and the Middle East, as its GDP rose from 104.34 USD billion in 2000 to 416.4 USD billion in 2014. The UAE has ranked 13th worldwide in terms of GDP per capita (PPP), at 65,000 USD (Central Intelligence Agency, 2013).

4.2 Abu Dhabi Sewerage Services Company (ADSSC)

Abu Dhabi Sewerage Services Company (ADSSC) is a public organization with more than 650 employees. It was established in June 2005 under the umbrella of the Abu Dhabi Water Electricity Authority (ADWEA) to deliver wastewater services to the emirate of Abu Dhabi. Prior to the formation of the ADSSC, wastewater services were managed and delivered by the sewerage directorates of the Abu Dhabi and Al Ain municipalities. In 2009, the ADSSC was re-established as an independent company reporting directly to the Abu Dhabi Executive Council (ADSSC, 2012).

The ADSSC's mission is protecting the environment, public health, and customers by performing wastewater collection, treatment, and safe disposal for all residential and commercial customers in the Emirate of Abu Dhabi (ADSSC, 2012).

The ADSSC's assets comprise 8000 km of sewer lines, 298 pumping stations, and 36 sewerage treatment plants (five main STPs and 31 package STPs). The current treatment capacity of the ADSSC's assets is 1.3 million cubic meters of sewage water per day. Their operation allows the ADSSC to extend its services to the majority of the population of the Emirate of Abu Dhabi and meet the needs of local businesses and industry (ADSSC, 2013); it also allows the ADSSC to provide a sustainable supply of treated water for the irrigation of agricultural and landscaped areas in the Emirate of Abu Dhabi (ADSSC, 2012, 2013).

4.2.1 Asset Performance Department

The Asset Performance Department (APD) is the largest department in the Asset Management division. The APD organization chart contains 51 positions, approximately 65% of the Asset Management division's manpower. The APD owns two functional units: the GIS and Technical Services. As illustrated in Figure 4-2,

both functional units symmetrically serve Abu Dhabi and the Western and Eastern regions.

ADSSC Organization Chart

2.3 - Asset Performance Dept.

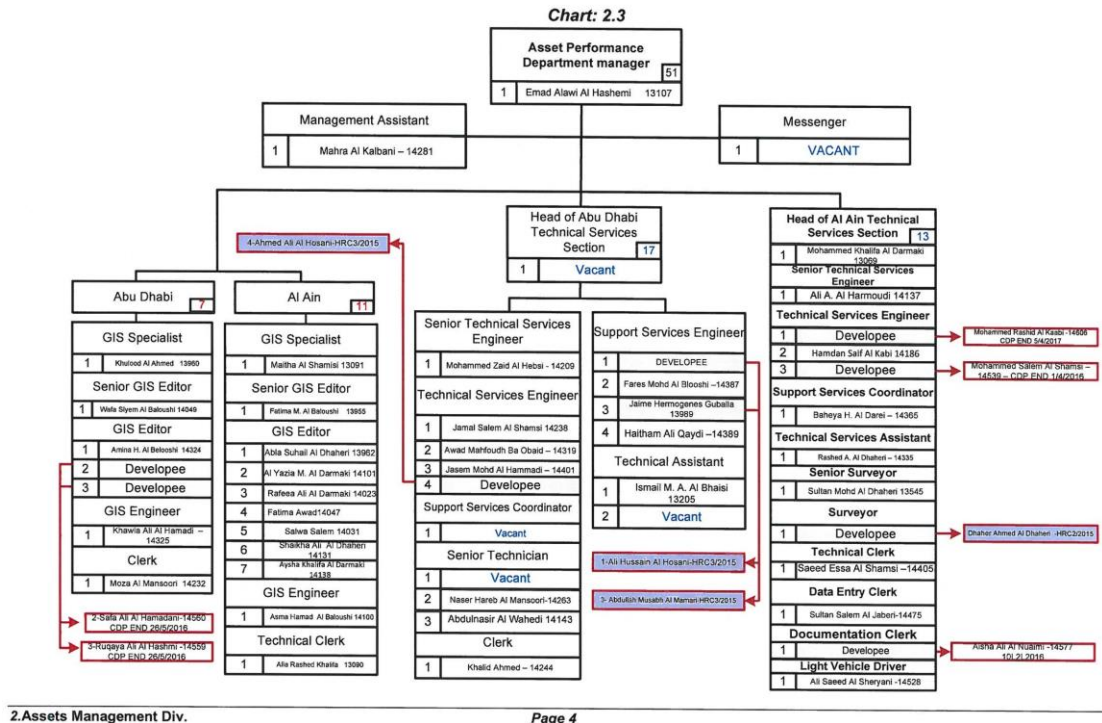


Figure 4-2: Asset Performance Department organization chart
Source: ADSSC Intranet (2013)

The APD's goal is to provide accurate and timely geospatial and permitting services to ADSSC customers. The GIS section's main function is to manage sewage asset data using the GIS system. The Technical Service section's main function is to respond to the municipal and town planning inquiries of government authorities and individual customers. These permits are referred to as "No Objection Certificates" or "NOCs."

On average, 2,100 and 900 NOC permits per month are processed by the Technical Services Section of Abu Dhabi and Al Ain, respectively (ADSSC, 2013). Figure 4-3 compares the number of permits processed by the Technical Services Section of Abu Dhabi and Al Ain.

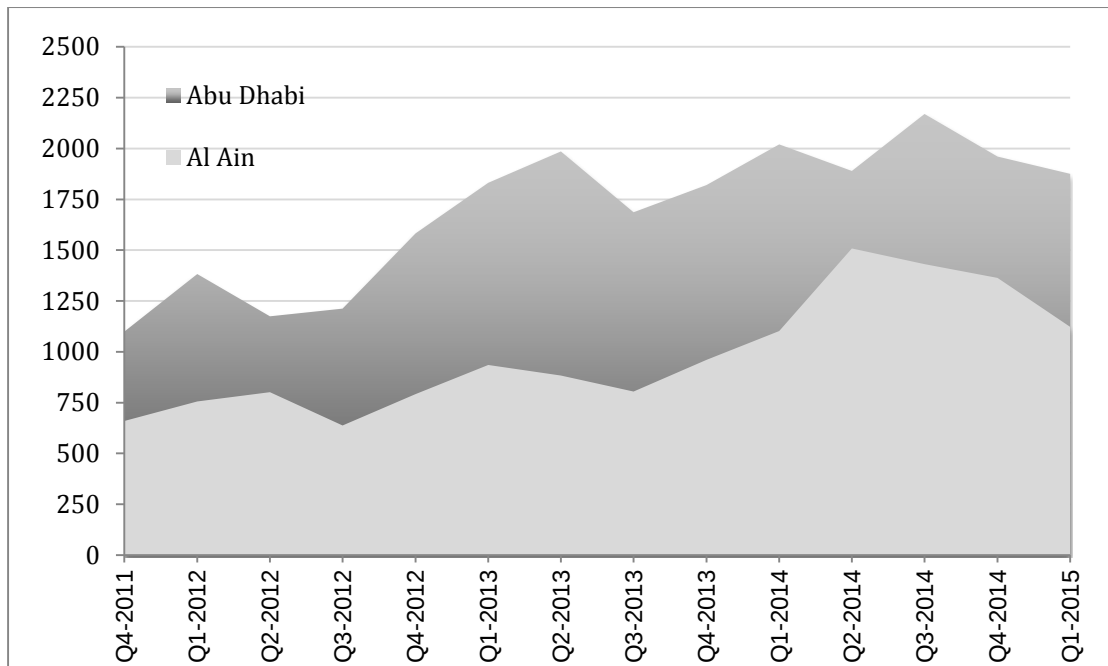


Figure 4-3: Permits processed by Technical Services Section of Abu Dhabi and Al Ain
Source: ADSSC Intranet (2013)

4.2.2 Enterprise GIS of ADSSC

The ADSSC (formerly the Sewerage Directorate) used to work on an older version of the spatial representation frame, called “Intergraph.” The Intergraph was used to draw sewerage assets using vector graphics on top of satellite images. The Intergraph was very successful in terms of data accuracy and geographical asset positioning. In early 2006, the ADSSC started to face data reliability issues. An investigation revealed the Intergraph’s limited capabilities and weaknesses in its system architecture.

Following the system architecture of the ADWEA (mother company), the ArcGIS was suggested as the new geospatial platform for ADSSC. In late 2006, the ADSSC announced the implementation of the ArcGIS through a pilot phase. The ADSSC developed a master plan for serving its functional unit needs from a

geospatial perspective. The plan is composed of five geospatial development phases, as illustrated in Figure 4-4.

Phase 1 Abu Dhabi Island 2007 4.9 Mill (AED) Data Conversion Data quality control Application development 5 years Master plan	Phase 2 Abu Dhabi Mainland 2008 5.0 Mill (AED) Data Conversion Digitizing of backlogs Asbuilts Application development	Phase 3 Al Ain City 2009 21.2 Mill (AED) Data Conversion Digitizing of backlog asbuilts Fields survey Application development
Phase 6 Emirate of Abu Dhabi 2014 4.1 Mill (AED) Data Conversion Digitizing of backlog asbuilts Fields survey	Phase 5 Emirate of Abu Dhabi 2012 7.3 Mill (AED) Digitizing of backlog asbuilts Fields survey Application development Building professional capacity Landbase and data conversion 5 years master plan	Phase 4 Eastern Region 2010 8.9 Mill (AED) Data Conversion Fields survey Application development

Figure 4-4: ADSSC investments in the GIS from 2006 to 2013

Source: ADSSC Intranet (2013)

After reviewing the status of the GIS platform at the ADSSC, the GIS team managed to provide spatial data, solutions, and services to the majority of the ADSSC's functional units. These services include data enhancement, capturing of contracts as built drawings, backlog management of old contracts (executed before the formation of the ADSSC), field surveys and operational updates of current assets, and the development of mobile and desktop applications.

These services were developed over eight years with a total capital expenditure of AED 48 million. The ADSSC was recognized regionally and internationally for their geospatial achievements and was awarded four excellence awards in 2012, 2013, and 2105 (ADSSC, 2013).

4.2.3 ADSSC Clearance Management Application (CMA)

The ADSSC initiated several projects to automate their manual processes and leverage geospatial data and systems. Notable among them is the Clearance Management Application (CMA), designed to issue permits related to the design, extension, or modification to the sewer infrastructure. The CMA involves several departments within the ADSSC, contractors, consultants, and even the general public. Prior to the CMA, the process flow involved a lengthy series of approvals by various departments and the constant duplication of supporting documents along the way. The process is laborious and leads to the duplication of work, increases the time required to process received permits, and loses track of permit statuses.

In 2012, the government of Abu Dhabi called for a new business process reengineering and automation initiative called the “electronic no objection certificate initiative” (E-NOC). The E-NOC aims to streamline municipal and town-planning permits processes among various NOC issuers. The government aims for a “one-stop shop” platform for receiving, managing, and distributing all NOCs. The E-NOC will pursue board integration with current NOC systems run by Abu Dhabi government entities. The ADSSC was one of the first entities in Abu Dhabi to initiate work towards E-NOC by implementing the CMA system

The ADSSC’s CMA system is designed to simplify the process for applicants, keep them informed, and ensure that all supporting data and materials are easily available to any of the various reviewers and approvers along the process path. Spatial data such as the location of the affected plots, sewer networks, land base details, and satellite images retrieved from the GIS enable participants to use information in their decisions. For example, customers wishing to submit a Notice of Intent to realign a

sewer open the appropriate clearance for a geo-located plot within the CMA and supply the required details along with uploaded supporting documents.

Within the ADSSC, the Technical Services Section (TSS) is the primary user of the CMA. Other functional units such as operations and maintenance, projects, and inspections are considered secondary users based on their contributions to customer inquiries. The CMA is designed to service 15 workflows covering the TSS' day-to-day operations. It assists the TSS by supplying geographical data related to plot location and associated sewage infrastructure and displaying them in approval workflows; it also allows ADSSC customers to submit, review, and track the status of their applications. The TSS staff use a simple interface to log in to review and verify submitted documents, process decisions, and self-monitor application queue.

The CMA has helped the TSS dramatically reduce the average processing time for permits from 14 days to less than four, meeting the target set by the corporate strategy team. The CMA can thus be seen as an application that serves as a business process model with embedded geospatial data that allow the TSS to attend to customer inquiries efficiently and increase customer satisfaction.

4.3 Research Questions

The literature review illustrated a knowledge gap about the role of power in the relationships in BPR and BPA in the context of GIS implementation, especially in the UAE's public sector. The study's central research questions are as follows:

- How can one measure the degree of GIS integration from the perspective of power relationships?

- What set of power-centric management techniques can one use to overcome user resistance to GIS-enabled BPR?

4.4 Research Theory

This section explains the alignment made to the circuits of power theory (CoP), including the intervention, how the intervention works based on the circuits of power theory (CoP), and the expected results.

The “intervention” refers to actions proposed by the researcher after diagnosing the status of system institutionalization. The proposed actions are specified to improve system institutionalization in the organization and take it to the next level (Baskerville, 1999). Upon diagnosing the institutionalization of the CMA (see Table 5-3), the results illustrate that improvements are required to ensure high institutionalization. Therefore, a number of actions are suggested. Following the CoP, these actions should affect the institutionalization of the CMA; actions for improving social and systemic integration will lead to a high CMA institutionalization (Silva & Backhouse, 2003). After institutionalization is achieved, it will affect meaning and membership as well as the discipline and production that are required to reinforce dispositional and facilitative power (Silva & Backhouse, 2003). Thus, the expected results of the proposed intervention will improve the degree of CMA institutionalization at the ADSSC.

4.5 Research Approach

This case study adopts an action research approach to IS research as outlined by Baskerville (1999). The action research approach was selected for the following reasons:

- Action research is a well-established research method in the social science and IS fields. It is well suited for testing the effectiveness of business practices in a real-world context (Baskerville, 1999; Baskerville & Wood-Harper, 1996).
- The author of this study has been and will be part of the implementation of the CMA at the ADSSC. Specifically, the author has been involved with the CMA in the following roles: (1) as a management representative responsible for looking after strategic and corporate operational initiatives; (2) as a director of the Asset Management Division responsible for responding to customers' technical inquiries; and (3) as a project manager responsible for CMA implementation.
- The author seeks to understand how the CoP can help GIS-enabled business process reengineering and automation solution become institutionalized and integrated in ADSSC operations.
- This action research will benefit both the author and the organization by helping overcome resistance to GIS-enabled business process reengineering and automation solutions within the ADSSC.

4.6 Research Methodology

4.6.1 Sept 1: Devising a Survey for Measuring Current Status Quo

In this step, a questionnaire derived from the CoP framework was developed to measure the current integration of the GIS within the ADSSC. The target population comprises CMA stakeholders (i.e., executives, managers, subordinate

users, and system developers). The questionnaire (see Appendix-A) targets the three circuits of power: episodic, social integration, and systemic integration.

4.6.1.1 Survey Questionnaire

The survey questionnaire was developed in English and was translated into Arabic because most ADSSC participants are native Arabic speakers. English and Arabic versions of the survey were made available to participants for their convenience and to ensure a solid understanding of the questionnaire items and thus high-quality results.

The survey questionnaire consisted of two parts: demographic data and the CMA institutionalization assessment. The first part consists of five questions covering age, gender, position, experience with and exposure to TSS operations, and tenure in the ADSSC (see Appendix A, section 1). The first part was designed to allow respondents to choose just one response from the list of alternatives. An example is given below:

3. Which of the following described best your position within the organization?
- ☐ Executive
 - ☐ Manager
 - ☐ Section Head / Team Leader
 - ☐ Entry-Level Employee
 - ☐ System Supporter

The second part of the survey questionnaire consists of 21 questions. The survey covers the CMA institutionalization assessment, based on the three circuits of power (episodic, social, and systemic integration) and 10 sub-dimensions (Silva & Backhouse, 2003). Each sub-dimension was reflected in two survey items (except for dimension 3 of the systemic integration circuit, which was reflected in three survey items). The survey questionnaire used a Likert scale from 1 to 5 (1 = “strongly

disagree,” 5 = “strongly agree”) to allow participants to assess CMA institutionalization (see Appendix A, section 2). An example is given below:

Item	1	2	3	4	5
5. The CMA operates in line with my responsibilities and authority within the organization	☐	☐	☐	☐	☐

4.6.1.2 Pilot Survey

Before sending out the survey questionnaire to the targeted participants, a pilot survey was conducted with nine respondents to test the questionnaire. The respondents of the pilot survey were candidates who had been exposed to the use of ICT in the organization and had a modest knowledge of CMA. Comments received from pilot survey participants, mostly about clarity and item rephrasing, were evaluated and reflected in the final version of the survey questionnaire.

4.6.2 Step 2: Measuring the Status Quo during the Implementation of Action Plan

This step involved using the developed questionnaire to measure the degree of GIS integration within the ADSSC. This stage was a pre-test designed to assess the current status quo with respect to GIS integration in the organization.

4.6.2.1 Selection of Participants for Survey Questionnaire

The population targeted for this research consisted of all employees at all possible levels of ADSSC departments and functional units involved in developing and operating the CMA. The participants came from the following departments and functional units:

- Technical Services Section (Abu Dhabi and Al Ain)
- GIS Section (Abu Dhabi and Al Ain)

- Customer Services Department
- Operation and Maintenance Division
- CMA Project Management Team
- System Developer (contractor)
- System Support (outsourced)

The same population targeted in the first-stage survey questionnaire was targeted for the second questionnaire.

4.6.2.2 Distribution of Survey Questionnaire

In this stage, questionnaires were sent to all employees directly involved in developing and operating the CMA. According to the number of CMA users, 52 respondents were involved in CMA institutionalization at ADSSC and were thus given the questionnaire.

To protect respondents' privacy, revealing one's name in the questionnaire was optional. Moreover, study participants were informed of their rights by the informed consent form. All survey questionnaires were printed and sent to all employees by email. Participants had three weeks to fill out the questionnaire and revert to the researcher. This process was also used for the distribution and collection of the second-stage survey questionnaires.

4.6.2.3 Data Entry

In this stage, the survey data were entered into an Excel spreadsheet, and basic descriptive statistics were generated. Data were then imported into SPSS (Statistical

Package for Social Scientists) for further analysis, including examinations of missing values, mean and standard deviation, skew, and mean differences.

4.6.3 Step 3: Designing an Action Plan Structured Around the Three Circuits of Power and Literature Review

In this step, action plans were developed for fostering GIS integration within the ADSSC. Specific action items were organized around the episodic, social integration, and systemic integration circuits of power. The components of the action plan include such areas as system objectives, practicing decision power, operational procedures, user training, monitoring and control, and continual improvement. Actions were implemented as soon as they were determined.

Tables 4-2, 4-3, and 4-4 illustrate the alignment between the various CoP, survey items, and proposed actions as well as the expected outcomes of the defined action plans.

Table 4-1: Circuits of Powers Visualization- Episodic Circuit

Definition: Champions and powerful organizational agents (managers) directing the system end-users (subordinates) to perform a task in an existing IT solution to reach a specific objective (Silva & Backhouse, 2003)		Reflection: Defining the champion as Asset Performance Department Manager (project sponsor and in-charge person for the electronic no-objection certificate issuance). Additionally, the clearance management application users and referral departments (resistors) to perform the electronic no-objection certificate tasks through clearance management application.	
Dimension	Measurement/Survey Item(s)	Action(s)	Rational
EP_D1: Defining the champions and resistors	1. My line manager or CMA sponsor is contributing to achieving goals and objectives of the E-NOC initiative with the help of the CMA	1. Quarterly CMA's user briefing about E-NOC initiative	Briefing CMA users, on a quarterly basis, about CMA and E-NOC updates will reflect management contribution to E-NOC via CMA in government collaboration sessions. In addition, resistors may read that as how far their management commitment is to achieve goals and objectives of the government via the E-NOC and CMA.
	2. By using the CMA, I contribute to goals and objectives of E-NOC	2. Introducing E-NOC to all CMA users	Briefing CMA users about CMA and E-NOC rationale, objectives and benefits will help in drawing a wider picture and consider the government goal related to NOC's issues. After sending out the monthly e-memos and have an effective announcement of the E-NOC objectives, the CMA stakeholders can be then classified as champions and resistors. This classification will be based on how far are the CMA stakeholders committed and contributed to goals and objectives of E-NOC.
EP_D2: Objectives of champions and resistors during the implementation	3. The CMA is useful for monitoring various activities within the organization	3. Re-introduction CMA reporting tool CMA users	Reintroducing CMA reporting tools, via prescheduled sessions, will allow CMA users to understand the component, objective and usage of the CMA reporting tools and how they can monitor various activities of the organization related to NOC's
	4. The CMA provides me with valuable information and helps me perform my duties	4. Sending out notification emails to all CMA users upon adding a new feature in the CMA	By sending out notification emails briefing CMA users about new added features/tools in the CMA might able the champion to mitigate the fear of users of being kept behind during the CMA design and implementation and thereafter forced to use the CMA without knowing its features or even how it works.
EP_D3: Stratagems used by champions and resistors employed to achieve their objectives	5. The CMA operates in line with my responsibilities and authority within the organization	5. Creation of standards operating procedures (SOPs) associated with responsibility matrix.	Having SOP's in place reflect the current practices in CMA allow CMA stakeholders to focus on how to do their tasks rather than thinking if they do have a room of authority to perform their tasks and decision accordingly. SOP includes an RACI matrix are set to illustrate better level of authorities and responsibilities of CMA users.
	6. I share with others knowledge and information on how to improve operations and use of CMA (e.g. proposing additional features for the system, helping CMA users on how to use it)	6. Launching user feedback form and reflect outcomes in quarterly consultation session	CMA stakeholder's feedback on how to enhance the use of the CMA is essential. Suggestion and improvement sharing can be seen as a sign of further improvement in the CMA institutionalization. Feedback form presents an asset to allow the CMA champion to understand the resistors claims and penetrate to their strategy and encounter them accordingly.
EP_D4: Resources that can be accessed and used to support their position	7. The data management tools of CMA provide me with timely data and information	7. Enhancing reporting tools	Enhancing CMA reporting tools can be used as resources to support stakeholder' arguments about the institutionalization. This action is meant to develop better reporting tools that can allow CMA stakeholders to obtain timely data and information allowing them to take a decision. Failure to this may lead CMA users to argue that the CMA does not provide an adequate platform to proceed with a decision
	8. Whenever the CMA breaks down, I report this immediately to avoid delays in handing the customers' request.	8. Capturing complaints and compliments log by system support	For CMA stakeholders (champion and resistors) to support their arguments, whether they were positive or negative towards he CMA institutionalization, all CMA users' complaints will be logged. This action will facilitate quantifying them and further assist the change agent to find adequate actions to mitigate complaints and invest on compliments.

Table 4-2: Circuits of Powers Visualization- Social Integration Circuit

Definition: The power of the champions / powerful organizational agents and system end-users at the organization in reflection to their level (power) at the organization (membership) and surrounding rules and norms that empower agents (Clegg, 1989; Silva & Backhouse, 2003).		Reflection: Why Asset Performance Department Manager, as a project sponsor and in-charge person for the electronic no-objection certificate issuance, directing the clearance management application users and referral departments to perform the electronic no-objection certificate tasks through the clearance management application where system end-users interpret the institutionalization of the IT solution resists the usage of The clearance management application.	
Dimension	Measurement/Survey Item(s)	Action(s)	Rational
SC_D1: Organization rules that place system stakeholders (champions and resisters) in their position	9. My line manager or CMA sponsor is committed to the success of the CMA and the E-NOC the as they contribute to the government goal	9. CMA in AMD DPRM's	This action considered an example of Asset Management Division Director (champion) commitment to CMA results and how results can be improved. Divisional performance review meeting (DPRM) is used as a vehicle to highlight hot issues related to CMA. Encounter, CMA's champions' commitment to the success of CMA and the E-NOC, is to be highlighted too, as they contribute to the government goal.
	10. I am committed to performing my duties with no delays	2. Introducing E-NOC to all CMA users	Briefing CMA users about CMA and E-NOC rationale, objectives and benefits will help in drawing a wider picture and consider the government goal related to NOC's issues. After sending out the monthly e-memos and have an effective announcement of the E-NOC objectives, the CMA stakeholders can be then classified as champions and resisters. This classification will be based on how far are the CMA stakeholders committed and contributed to goals and objectives of E-NOC.
SC_D2: Rules and norms that affect the implementation of the suggested IT solution	11. My participation in user needs assessment sessions for the CMA is important for proper implementation of the system	10. Continue engaging CMA users in future CMA enhancement in a bigger capacity	Engaging CMA users in in "user need assessment sessions" prior to launch enhancement project/tasks to CMA is a major milestone in the relationship between CMA users and developers. In the relationship, such interaction creates a mean of communication and room for debates on how better utilize the CMA to achieve the company goals and objectives
	12. Sharing knowledge and information about technical spot check and SOP's with others contributes to success of CMA and the E-NOC initiative	11. Quarterly consultation session	Opening a communication channel to CMA champion, user and developers will enable them to share thoughts and ideas on how to improve the CMA. However, it's also important to share back obstacles that may face the implementation of suggested actions. Quarterly consultation session is a natural step that can come after launching action 6 "Launch user feedback form."
SC_D3: System stakeholders (champions and resisters) interpret the institutionalization of the suggested IT solution.	13. The main purpose of the CMA is to contribute to the E-NOC initiative	2. Introducing E-NOC to all CMA users	Briefing CMA users about CMA and E-NOC rationale, objectives and benefits will help in drawing a wider picture and consider the government goal related to NOC's issues. After sending out the monthly e-memos and have an effective announcement of the E-NOC objectives, the CMA stakeholders can be then classified as champions and resisters. This classification will be based on how far are the CMA stakeholders committed and contributed to goals and objectives of E-NOC.
	14. I understand how I can use CMA to contribute to the E-NOC initiative and ADSSC as a whole	12. Issuing a Bio language user manual	To enable a positive interpretation of CMA's institutionalization, users need to become aware of all CMA roles and functionalities. Issuing a bio language user manual will lead to improving individuals feeling and further positively interoperate how they can use CMA to contribute to E-NOC initiative and ADSSC achieving the government's goal.

Table 4-3: Circuits of Powers Visualization- Systemic Integration Circuit

Definition: A collective of organizational techniques and monitor technologies setup that facilitate the execution of what champions / powerful organizational agents directing the system end-users objectives and routines (Clegg, 1989; Parsons, 1967; Silva & Backhouse, 2003)		Reflection: Regulatory and administrative frameworks and setup in ADSSC that allows the Asset Performance Department Manager, as a project sponsor and in-charge person for the electronic no-objection certificate issuance, directing the clearance management application users and referral departments to perform the electronic no-objection certificate tasks through the clearance management application and how the later interpret the institutionalization of the clearance management application and become routine while performing their duties.	
Dimension	Measurement/Survey Item(s)	Action(s)	Rational
SY_D1: Organization techniques and monitor technologies	15. The CMA reporting tools are effective in monitoring my daily performance.	13. Conduct weekly team performance brief	This action considered an example of how organization techniques and monitor technologies can be deployed in ADSSC to monitor CMA users' performance. Deployment of this will result in reviewing and discussing Technical Service Section employees' performance (as part of the CMA users) during the elapsed working week and discuss actions for improvement.
	16 The CMA provides an accurate assessment of my performance for my annual performance evaluation.	14. Personal Scorecard linked TSS operational plan 2014-2016	This action considered another example of how organization techniques and monitor technologies can be deployed in ADSSC to monitor CMA users' performance. Deploying personal score cards including KPI's linked to departmental key performance indicators will help in assessing CMA users' performance and further acknowledgment of individual efforts.
SY_D2: Actions and interpretation of achieving objectives	17. The CMA helps me in self-monitoring my performance regularly	15. Auto-generated daily and weekly performance brief	The auto-generated (daily and weekly) performance briefs will assist CMA users to practice self-monitoring and assessing how they would achieve the objective of the CMA and E-NOC initiative.
	18. I believe that ADSSC achieved the E-NOC initiative objective by implementing the CMA	2. Introducing E-NOC to all CMA users	Briefing CMA users about CMA and E-NOC rationale, objectives and benefits will help in drawing a wider picture and consider the government goal related to NOC's issues. After sending out the monthly e-memos and have an effective announcement of the E-NOC objectives, the CMA stakeholders can be then classified as champions and resisters. This classification will be based on how far are the CMA stakeholders committed and contributed to goals and objectives of E-NOC.
SY_D3: Integration of the system as a routine while doing work	19. I perform most of my daily tasks through the CMA	16. Activate remaining workflows	Activation of remaining workflows in CMA will allow CMA users to perform their day-to-day duties through the CMA only, with no paper-based tasks. In summary, CMA will become the sole focus of technical services and referral departments' representatives, engaged in NOC's process.
	20. I am aware of the disciplinary or reward measures that ADSSC has to ensure that I use CMA in my work	17. Introduce performance-based rewarding scheme	This action will cover the need to recognize individuals who are committed to NOC's process through using CMA to achieve the E-NOC objective. Such recognition will lead to creating a competition among technical Services section individuals (CMA users).
	21. The CMA is an important part of my daily routine		

4.6.4 Step 4: Carrying Out the Action Plan Outlined in Step 2

The action plan developed to foster GIS integration within the ADSSC was implemented under the supervision of the author of this research. The CoP theory suggests that actions will affect the perceptions of system users and thereafter improve the integration of the system. On that foundation, the author carried out the implementation of the identified actions suggested in stage 3 to improve CMA institutionalization in the ADSSC. Action plans were monitored twice a month and reported on a monthly basis. In addition, while carrying out the action plans, the author conducted an interview with key staff working on the CMA. Details of the interview structure, selection of participants, interview transcription, and memo writing are described below.

4.6.4.1 Interviews

Interviews were conducted while implementing the action items to encourage key persons who worked on the CMA to share their thoughts on the CMA via open-ended questions linked to the CoP framework. The interview questions were designed to identify the participants' role in the CMA, their concerns about how the CMA is operated, and their evaluation of CMA institutionalization in the organization. The questions were spilt into two sections, as illustrated below:

Section One	
Q1	How old are you?
Q2	What is your position at ADSSC?
Q3	For how long have you been interacting with the Technical Services Section?
Q4	For how long have you been working at the Abu Dhabi Sewerage Services Company?

Section Two	
Q1	Why was CMA been initiated in the first place?
Q2	What do you think are the objectives of implementing CMA?
Q3	How did you contribute to CMA implementation?
Q4	What are the obstacles that you have faced during the design and implementation phases of the CMA?
Q5	Why do you think that these obstacles appeared?
Q6	How did you manage to overcome these obstacles? Did you have the necessary resources to overcome the obstacles? Did you have the authority? Or did you report to your manager?
Q7	What should ADSSC do to ensure the high adoption of the CMA?
Q8	Do you think that the CMA has become an integral part of users' daily routine? Why?

An interview request was sent out to five participants via MS Outlook. The questions were sent to them in advance so that they could prepare for the interview. Before starting the interview, the participants were notified that the interview would be audio recorded and that they were free to not answer any question if they were not comfortable. It was clearly mentioned to all participants that their identity would be kept private so that they could feel comfortable and speak without fear or pressure. The interviews were set for 30 minutes. However, they all exceeded this time.

4.6.4.2 Selection of Participants for Interviews

The selection of participants was based on the judgment of the researcher. The main driver was the researcher's knowledge of the importance of the participants' role in developing, managing, and operating the CMA. Five interviews were conducted with individuals in various positions:

- System developer (a candidate who participates in the development and management of the CMA)
- Approver 3 (the final decision maker for all applications submitted and processed through the CMA)

- Approver 2 (the intermediate decision maker for all applications submitted and processed through the CMA)
- Approver 1 (the initial decision maker for all applications submitted and processed through the CMA)
- Reviewer (the technical reviewer for all applications submitted and processed through the CMA)

4.6.4.3 Transcription

Microsoft Word was used to transcribe the voice records. NVivo (version 10.1.3) was used for organizing, managing, coding, and analyzing interviewee scripts. In this research, NVivo facilitates an illustration of the findings and fosters reflections on and connections among the data (see Figure 4-5).

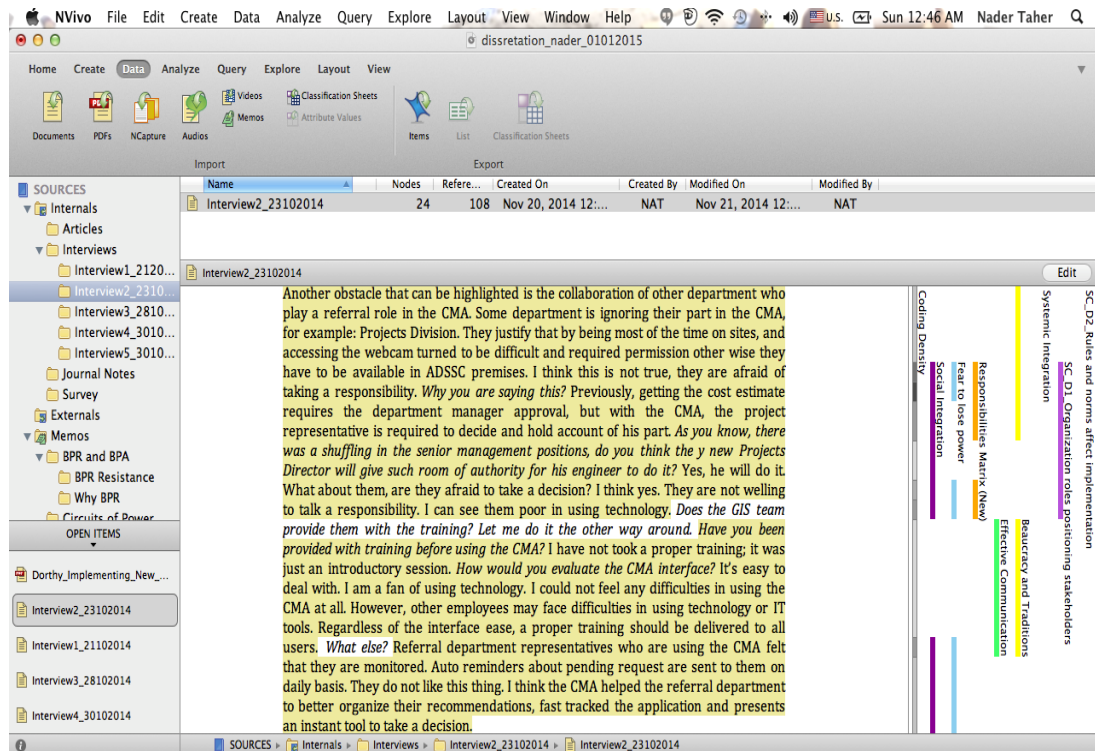


Figure 4-5: Illustration of research finding using ©NVivo10

Source: ©NVivo10

4.6.4.4 Writing Memos

In this type of study, it is important to have a tool for capturing thoughts and findings. Memos were used to reflect the author's immediate reactions and thoughts. Memos were also used for subsequent reflections (after the fact) as well as the author's understanding and definition of captured nodes and journal notes.

4.6.5 Step 5: Measuring the Degree of GIS Integration within the Organization (post-test)

This step involved using the developed questionnaire to measure the degree of GIS integration within ADSSC as a post-test after the action items were implemented. Participants in the pre-test (step 2) were asked to fill out the questionnaire again. The survey questionnaire was sent to the targeted population and was returned by email. The response period was as defined in step 2.

4.6.6 Step 6: Reporting Results/Lessons Learned

This step involved reporting the results and lessons learned during the research timeline. The research data collected using the questionnaire during step 5 were analyzed to evaluate the improvement in CMA institutionalization in the ADSSC. Lessons learned and author interpretations (via memos and journal notes) were reported to confirm the improvement in CMA institutionalization in the ADSSC. Source coding in NVivo is an integral part of reporting results. The following subsection details the source coding mechanism.

4.6.7 Source Coding in NVivo

Data were extracted from several sources, including a literature review, interviews, and the main researcher's journal notes. Themes extracted from these resources formed themes and were reflected as "nodes" in ©NVivo. Each node represented a specific idea that needed to be considered and analyzed. A memo was created to briefly discuss the importance of a theme, author perception, or reflection or to elaborate on each node individually. When the nodes were set up in ©NVivo, data sources were reviewed in detail and clustered to the pre-set nodes. Data coding can vary in magnitude from one node to another depending on the author's perception of the gathered data and the review process. Later, emergent nodes were created to support emergent thoughts and themes. Emergent nodes were created and used to support the discussion of CMA integration within ADSSC operations.

Chapter 5: Discussion of Results

This chapter discusses the results of the analyses of the pre-test and post-test stages as well as the paired-sample *t*-test at the level of individual items, dimensions, and circuits by the CoP framework. The chapter concludes by presenting the overall result of the research. Table 5-1 below lists the interventions suggested by the author during the study.

Table 5-1: List of Interventions Suggested by the Author

1.	Conduct a quarterly CMA's user briefing sessions about E-NOC initiative
2.	Communicate monthly electronic memos are introducing and briefing CMA users about the CMA and E-NOC.
3.	Conduct quarterly awareness sessions to covers various component of the CMA.
4.	Creates electronic messages to all CMA users upon adding a new feature in the CMA
5.	Create standards operating procedures (SOPs) associated with responsibility matrix
6.	Create CMA electronic feedback portal to allow CMA users to share knowledge, ideas and suggestions on how to improve operations and use of the CMA with the system developers
7.	Enhance existing reports currently available in the CMA that might be useful for users to obtaining information on timely manner
8.	Capture complaints and compliments log initiated by the CMA users and further attended by the System support
9.	Include CMA hot issues in the agenda of the division/department performance review meeting conducted by Asset Management Division
10.	Continue engaging CMA users in future enhancement projects.
11.	Conduct quarterly consultation sessions with all CMA users to exchange ideas about how to improve the CMA
12.	Create user manuals for all CMA roles in both languages (Arabic and English) used by CMA users
13.	Conduct weekly team performance brief
14.	Establish personal scorecards for CMA users (TSS employees) that are linked to TSS operational plan 2014-2016
15.	Auto-generated daily and weekly performance brief
16.	Activate remaining workflows that were offline at the CMA
17.	Introduce a performance based rewarding scheme at ADSSC

5.1 Pre-test Phase

5.1.1 Demographic Data

The pre-test demographics show that most respondents were males (83%) and that 48.9% of the respondents were 20 to 29 years old. Entry-level employees made up 51.1% of the surveyed population. Staff with two years or less of experience interacting with the TSS made up 44.7% of the sample, whereas staff with two years or less of experience made up 38.3%. Out of 52 targeted-participants, 47 responses were received, for a response rate of 90.4% (see Table 5-2).

Table 5-2: Demographic Characteristics of Respondents of Pre-test

Variable	Category	Frequency	Percent
Age	19 years old or younger	1	2.1
	20 – 29 years old	23	48.9
	30 – 39 years old	15	31.9
	40 – 49 years old	6	12.8
	50 years old or older	2	4.3
Gender	Male	39	83
	Female	8	17
Which of the following described best your position within the organization?	Executive	2	4.3
	Manager	2	4.3
	Section Head / Team Leader	14	29.8
	Entry-Level Employee	24	51.1
	System Supporter	5	10.6
For how long have you been interacting with Technical Services Section?	2 years or less	21	44.7
	3 – 5 years	14	29.8
	6 – 10 years	9	19.2
	11 – 15 years	1	2.1
	16 years or more	2	4.3
For how long have you been working in Abu Dhabi Sewerage Services Company?	2 years or less	18	38.3
	3 – 5 years	14	29.8
	6 – 10 years	9	19.2
	11 – 15 years	3	6.4
	16 years or more	3	6.4

5.1.2 System Institutionalization

The pre-test of CMA institutionalization was categorized into four maturity levels (1= $M < 3.74$, 2 = $3.75 < M < 3.99$, 3= $4.00 < M < 4.24$, 4= $M > 4.25$). The results show that 11 items were categorized at maturity level 3, followed by six items categorized at maturity 2. Two items were categorized at maturity levels 1 and 4 (see Table 5-3).

Table 5-3: System Institutionalization Respondents Summary of Pre-test								
Survey Item	Mean	Stand. Div.	Skew	Scale				
				Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	4.09	0.583	-0.003	0.00%	0.00%	12.77%	65.96%	21.28%
2	4.15	0.722	-1.683	2.13%	0.00%	6.38%	63.83%	27.66%
3	4.04	0.955	-0.393	0.00%	2.13%	19.15%	48.94%	27.66%
4	3.98	0.794	-0.779	0.00%	6.38%	12.77%	57.45%	23.40%
5	3.96	0.690	-0.359	0.00%	2.13%	19.15%	59.57%	19.15%
6	4.02	0.707	-0.416	0.00%	2.13%	17.02%	57.45%	23.40%
7	3.92	0.686	-0.734	0.00%	4.26%	14.89%	65.96%	14.89%
8	4.21	0.832	-0.897	0.00%	4.26%	12.77%	40.43%	42.55%
9	4.28	0.992	-1.728	2.13%	0.00%	6.38%	48.94%	40.43%
10	4.28	0.682	-0.841	0.00%	2.13%	6.38%	53.19%	38.30%
11	3.96	0.924	-0.652	0.00%	4.26%	14.89%	59.57%	19.15%
12	4.04	0.779	-0.652	0.00%	4.26%	14.89%	53.19%	27.66%
13	4.21	0.720	-0.346	0.00%	0.00%	17.02%	44.68%	38.30%
14	4.17	0.974	-0.926	0.00%	4.26%	8.51%	51.06%	34.04%
15	3.96	0.779	-0.789	0.00%	6.38%	12.77%	59.57%	21.28%
16	3.68	0.957	-0.544	2.13%	8.51%	27.66%	42.55%	19.15%
17	3.56	1.173	-0.678	2.13%	12.77%	21.28%	48.94%	10.64%
18	4.11	0.634	-0.085	0.00%	0.00%	14.89%	59.57%	25.53%
19	4.00	0.860	-1.072	2.13%	2.13%	17.02%	51.06%	27.66%
20	3.94	0.734	-0.243	0.00%	2.13%	23.40%	53.19%	21.28%
21	4.19	0.741	-0.995	0.00%	4.26%	6.38%	55.32%	34.04%

5.2 Post-test Phase

5.2.1 Demographic Data

The post-test demographics show that most respondents were males (80.5%), and 41.5% ranged from 20 to 29. Entry-level employees represented 61% of the surveyed population. Staff with three to five years of experience interacting with the TSS made up 36.6% of the sample. Staff with three to five years and those with six to 10 years of experience both made up 34.2%. Out of 55 targeted-participants, 41 responses were received, for a response rate of 74.5%. The reduced response rate for the post-test was due to the absence of targeted participants because of national service duties, examination leaves, or summer leaves (see Table 5-4).

Table 5-4: Demographic Characteristics of Respondents of Post-test

Variable	Category	Frequency	Percent
Age	19 years old or younger	0	0.0
	20 – 29 years old	17	41.5
	30 – 39 years old	15	36.6
	40 – 49 years old	8	19.5
	50 years old or older	1	2.4
Gender	Male	33	80.5
	Female	8	19.5
Which of the following described best your position within the organization?	Executive	1	2.4
	Manager	1	2.4
	Section Head / Team Leader	11	26.8
	Entry-Level Employee	25	61.0
	System Supporter	3	7.3
For how long have you been interacting with Technical Services Section?	2 years or less	10	24.4
	3 – 5 years	15	36.6
	6 – 10 years	12	29.3
	11 – 15 years	2	4.9
	16 years or more	2	4.9
For how long have you been working in Abu Dhabi Sewerage Services Company?	2 years or less	8	19.5
	3 – 5 years	14	34.2
	6 – 10 years	14	34.2
	11 – 15 years	2	4.9
	16 years or more	3	7.3

5.2.2 System Institutionalization

The post-test of CMA institutionalization was categorized into four maturity levels (1= $M < 3.74$, 2 = $3.75 < M < 3.99$, 3= $4.00 < M < 4.24$, 4= $M > 4.25$). The results show that 15 items were categorized at maturity level 4, followed by five items categorized at maturity 3. One item was categorized at maturity level 2 (see Table 5-5).

Table 5-5: System Institutionalization Respondents Summary of Post-Test								
Survey Item	Mean	Stand. Div.	Skew	Scale				
				Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	4.32	0.687	-0.994	0.0%	2.4%	4.9%	51.2%	41.5%
2	4.34	0.728	-1.045	0.0%	2.4%	7.3%	43.9%	46.3%
3	4.25	0.809	-1.723	2.4%	0.0%	7.3%	48.8%	39.0%
4	4.32	0.850	-1.704	2.4%	0.0%	9.8%	39.0%	48.8%
5	4.29	0.782	-1.895	2.4%	0.0%	4.9%	51.2%	41.5%
6	4.22	0.881	-1.149	0.0%	7.3%	7.3%	41.5%	43.9%
7	4.22	0.690	-0.798	0.0%	2.4%	7.3%	56.1%	34.1%
8	4.44	0.838	-1.539	0.0%	4.9%	7.3%	26.8%	61.0%
9	4.41	0.706	-1.249	0.0%	2.4%	4.9%	41.5%	51.2%
10	4.54	0.674	-1.681	0.0%	2.4%	2.4%	34.1%	61.0%
11	4.29	0.680	-0.942	0.0%	2.4%	4.9%	53.7%	39.0%
12	4.32	0.722	-0.987	0.0%	2.4%	7.3%	46.3%	43.9%
13	4.56	0.673	-1.787	0.0%	2.4%	2.4%	31.7%	63.4%
14	4.41	0.741	-1.243	0.0%	2.4%	7.3%	36.6%	53.7%
15	4.27	0.775	-1.192	0.0%	4.9%	4.9%	48.8%	41.5%
16	3.95	0.835	-0.718	0.0%	7.3%	14.6%	53.7%	24.4%
17	4.03	0.932	-0.988	0.0%	4.9%	7.3%	65.9%	19.5%
18	4.34	0.656	-1.049	0.0%	2.4%	2.4%	53.7%	41.5%
19	4.24	0.830	-1.046	0.0%	4.9%	9.8%	41.5%	43.9%
20	4.00	0.806	-0.301	0.0%	2.4%	24.4%	43.9%	29.3%
21	4.61	0.628	-1.394	0.0%	0.0%	7.3%	24.4%	68.3%

5.3 Paired Sample *t*-test

A paired-sample *t*-test was carried out to investigate the progress of CMA institutionalization at the ADSSC. The test calculates the difference in the mean of the survey items according to the suggested methodology. According to the CoP framework, system institutionalization cannot occur without the integration among system stakeholder behavior (episodic), the symbolic level (social integration), and the disciplinary use of technology (systemic integration).

The dimensions of each circuit present important elements in the map of system institutionalization. Therefore, a paired-sample *t*-test was run at the individual item, dimension, and circuit levels to identify the impact of the implemented interventions on CMA institutionalization at the ADSSC. The paired-sample *t*-test was also used to measure how statistically significant CMA institutionalization at the ADSSC became after the author's interventions were implemented.

5.3.1 Demographic Data

Some participants varied between the pre-test and post-test stages due to the absence of some of them (for the reasons mentioned above). To ensure accurate measurement, it was decided to use only the participants who appeared in both the pre- and post-tests in the paired-sample *t*-test.

The paired-sample *t*-test demographics show that most respondents (see Table 3) were males (76.5%), and 44.1% were 20 to 29 years old. Entry-level employees made up 50.0% of the surveyed population. Staff with two years or less of experience interacting with the TSS made up 44.1% of the sample, whereas staff with two years or fewer made up 35.3% (see Table 5-6). The paired-sample test was run on 34 respondents.

Table 5-6: Demographic Characteristics of Respondents of Paired-Sample

Variable	Category	Frequency	%
Age	19 years old or younger	1	2.9%
	20 – 29 years old	15	44.1%
	30 – 39 years old	11	32.4%
	40 – 49 years old	6	17.6%
	50 years old or older	1	2.9%
Gender	Male	26	76.5%
	Female	8	23.5%
Which of the following described best your position within the organization?	Executive	0	0.0%
	Manager	2	5.9%
	Section Head / Team Leader	11	32.4%
	Entry-Level Employee	17	50.0%
	System Supporter	4	11.8%
For how long have you been interacting with Technical Services Section?	2 years or less	15	44.1%
	3 – 5 years	9	26.5%
	6 – 10 years	7	20.6%
	11 – 15 years	1	2.9%
	16 years or more	2	5.9%
For how long have you been working in Abu Dhabi Sewerage Services Company?	2 years or less	12	35.3%
	3 – 5 years	10	29.4%
	6 – 10 years	7	20.6%
	11 – 15 years	3	8.8%
	16 years or more	2	5.9%

5.3.2 System Institutionalization

5.3.2.1 The Individual Item Level

The first intervention suggested by the author was established to better define CMA champions and resisters. The intervention involved conducting quarterly CMA user briefing sessions about E-NOC initiatives. The rationale behind the suggested intervention was that briefing CMA users on a quarterly basis about CMA and E-NOC updates would reflect management's contribution to E-NOC via CMA in government collaboration sessions and show resisters the management's commitment to achieving government goals and objectives via the E-NOC and CMA. The paired sample *t*-test (see Table 5-7) revealed a significant increase in the understanding of

the clearance management sponsor's contribution to achieving the goals and objectives of the E-NOC initiative. This result was achieved by the system end-users with the help of the CMA ($M=4.441$, $SD=0.613$) through the suggested intervention (see Table 5-1) rather than before ($M=4.029$, $SD=0.577$), $t(33)=2.693$, $p<.05$.

The second intervention suggested by the author was also established to better define CMA champions and resisters. The intervention involved communicating monthly electronic memos to brief CMA users about the CMA and E-NOC. The rationale was that the electronic memos would help CMA users see a bigger picture of the government's NOC goals, allowing CMA stakeholders to be classified as champions or resisters. The paired sample t -test (see Table 5-7) revealed a significant increase in the understanding of the personal contribution towards achieving the goals and objectives of the E-NOC initiative. This result was achieved by the system end-users with the help of the CMA ($M=4.500$, $SD=0.564$) after the suggested intervention (see Table 5-1), rather than before ($M=4.147$, $SD=0.558$), $t(33)=2.659$, $p<.05$.

The third intervention suggested by the author was intended to enhance the understanding of CMA champions and resisters of the CMA's objective and promote its use. The intervention involved conducting quarterly awareness sessions with all CMA users covering various components of the CMA. The rationale was that conducting quarterly awareness sessions would allow CMA users to better understand the CMA's components, objectives, and ways to benefit from the reporting tools to monitor NOC activities. The paired sample t -test (see Table 5-7) revealed a significant increase in views of the CMA as a valuable information resource. The resource helped users perform their duties ($M=4.324$, $SD=0.589$) after the suggested

intervention (see Table 5-1) rather than before ($M=3.853$, $SD=1.019$), $t(33)=2.766$, $p<.01$.

The fourth intervention suggested by the author was also established to enhance the understanding of CMA champions and resisters of the CMA's objectives and to promote its use. The intervention involved sending notification emails to all CMA users whenever a new CMA feature was added. The rationale was that such notifications might help CMA champions mitigate users' fears of being kept behind during CMA design and implementation and being forced to use the CMA without knowing its features or operation. The paired sample t -test (see Table 5-7) revealed a significant increase in views of the CMA as a valuable information resource. The resource helped users perform their duties ($M=4.441$, $SD=0.660$) after the suggested intervention (see Table 5-1), rather than before ($M=3.971$, $SD=0.797$), $t(33)=3.064$, $p<.01$.

The fifth intervention suggested by the author was established to understand the stratagems used by CMA champions and resisters to achieve their objectives. The intervention involved creating standard operating procedures (SOPs) associated with a responsibility matrix. The rationale was that having SOPs in place to reflect current CMA practices would allow CMA stakeholders to focus on how to do their tasks rather than wondering if they have the authority to perform them. The SOPs, including the responsibility matrix, would illustrate the authority and responsibility levels for CMA users. The paired sample t -test (see Table 5-7) revealed a significant increase in views of CMA operations in line with users' responsibilities and authority within the organization ($M=4.382$, $SD=0.551$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.000$, $SD=0.603$), $t(33)=3.199$, $p<.01$.

The sixth intervention suggested by the author was also established to understand the stratagems used by CMA champions and resisters to achieve their objectives. The intervention involved creating an electronic CMA feedback portal to allow CMA users to share knowledge, ideas, and suggestions on how to improve operations and CMA usage along with the system developers. The rationale was that sharing such knowledge, ideas, and suggestions could be seen as a sign of improved CMA institutionalization. The CMA users' feedback is a valuable asset allowing change agents to understand the resisters' claims and strategy and address them accordingly. The paired sample *t*-test (see Table 5-7) revealed a significant increase in personal beliefs in the importance of sharing knowledge, ideas, and suggestions on how to improve operations and CMA usage with other users ($M=4.353$, $SD=0.734$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.029$, $SD=0.674$), $t(33)=1.997$, $p<.1$.

The seventh intervention suggested by the author was established to identify the resources that can be accessed and used to support their position. The intervention was intended to introduce and/or enhance the reports currently available in the CMA that might help users obtain information promptly. The rationale was that introducing or/and enhancing CMA reporting tools could support users' arguments about institutionalization; this outcome would be achieved by obtaining timely data and information, allowing them to make a decision. The author introduced this intervention as part of a maintenance project. Since it dealt with many technical issues, this intervention was marked as a medium priority. Unfortunately, the maintenance project was terminated and referred to another contractor (please refer to JN 35, 37, 46). The author thereafter reintroduced the existing reports to all CMA users via quarterly briefing sessions after slight modifications were made to suit the

users. The paired sample *t*-test (see Table 5-7) revealed a significant increase in views of the CMA reporting tool as a source of timely data necessary for decision making ($M=4.353$, $SD=0.597$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=3.941$, $SD=0.547$), $t(33)=3.423$, $p<.01$.

The eighth intervention suggested by the author was also established to identify the resources that can be accessed and used to support their position. The intervention involved using a complaints and compliments log initiated by CMA users and attended to by the system support “M/s. Injazat.” The rationale was that logging CMA users’ (change agents’ and resisters’) complaints/compliments would facilitate their quantification and help change agents take the actions needed to mitigate complaints and invest in compliments. The paired sample *t*-test (see Table 5-7) revealed a significant increase in positive personal behavior in reports of system down issues that might affect the handling of customer enquiries ($M=4.500$, $SD=0.826$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.147$, $SD=0.784$), $t(33)=1.787$, $p<.1$.

The ninth intervention suggested by the author was established to increase the organizational rules that place system stakeholders (champions and resisters) in their positions. The intervention involved including hot CMA issues on the agenda of the division/department performance review meetings conducted by the Asset Management Division. The rationale was that discussing such issues during the division/department performance review could show how committed the change agents were to reviewing CMA outcomes and responding immediately to hot issues that could compromise the success of CMA and E-NOC. The paired sample *t*-test (see Table 5-7) revealed a significant increase in system users’ beliefs about CMA

sponsors' commitment to the success of the CMA and E-NOC, as both contribute to the government's goals ($M=4.441$, $SD=0.613$), after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.088$, $SD=1.083$), $t(33)=1.711$, $p<.1$.

The tenth intervention suggested by the author was also established to increase the organizational roles that place system stakeholders (champions and resisters) in their positions. The intervention involved communicating monthly electronic memos briefing CMA users about the CMA and E-NOC. The rationale was that the electronic memos would help CMA users see a bigger picture about government goals related to NOC issues, thus increasing their commitment to performing their duties immediately. The paired sample t -test (see Table 5-7) revealed a significant increase in system users' commitment to performing their duties without delay ($M=4.588$, $SD=0.557$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.177$, $SD=0.717$), $t(33)=2.693$, $p<.05$.

The eleventh intervention suggested by the author was established to increase the rules and norms affecting the implementation of the suggested IT solution. The intervention involved engaging ADSSC CMA stakeholders in "users-need assessment sessions" prior to launching any enhancing CMA project/tasks. The rationale was that such engagements would be seen as a major milestone in building effective communication between system developers and end-users, creating a healthy space for debates on how to better utilize the CMA to achieve company goals and objectives. The paired sample t -test (see Table 5-7) revealed a significant increase in system users' participation in the CMA users-need assessment sessions considered important for proper implementation ($M=4.412$, $SD=0.557$) after the suggested

intervention (see Table 5-1) over the pre-intervention level ($M=3.853$, $SD=0.784$), $t(33)=3.396$, $p<.01$.

The twelfth intervention suggested by the author was also established to increase the rules and norms affecting the implementation of the suggested IT solution. The intervention involved holding quarterly consultation sessions with all CMA users to exchange ideas about how to improve the CMA. The rationale was that opening a means of communication among CMA champions, users, and developers would facilitate a sharing of thoughts and ideas on how to improve the CMA, a natural step after launching the electronic logs of complaints and compliments. The paired sample t -test (see Table 5-7) revealed a significant increase in the sharing of technical and administrative knowledge among CMA users contributing to the success of CMA and E-NOC initiatives ($M=4.382$, $SD=0.652$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=3.912$, $SD=0.793$), $t(33)=2.856$, $p<.01$.

The thirteenth intervention suggested by the author was established to enhance the interpretation of the CMA stakeholders (champions and resisters) concerning CMA institutionalization at ADSSC. The intervention involved communicating monthly electronic memos briefing CMA users about the CMA and E-NOC. The rationale was that such communication would help CMA users see a bigger picture about the government's NOC goals, thus increasing their understanding of the purpose of CMA and how system stakeholders (champions and resisters) interpret the institutionalization of the suggested IT solution. The paired sample t -test (see Table 5-7) revealed a significant increase in understanding of the CMA's purpose and how it contributes to the E-NOC ($M=4.618$, $SD=0.551$) after the suggested

intervention (see Table 5-1) over the pre-intervention level ($M=4.088$, $SD=0.712$), $t(33)=4.370$, $p<.01$.

The fourteenth intervention suggested by the author was also established to enhance the interpretation of the CMA stakeholders (champions and resistors) of the CMA institutionalization at ADSSC. This intervention involved creating user manuals for all CMA roles in both of the languages (Arabic and English) used by CMA users. To enable a positive interpretation of CMA institutionalization, users must become aware of all CMA roles and functionalities. The rationale was that issuing the manual would improve attitudes and help employees see how they could use CMA to contribute to the E-NOC initiative and help the ADSSC achieve the government's goals. The paired sample t -test (see Table 5-7) revealed a significant increase in users' understanding of how to use CMA to contribute to the E-NOC initiative and to ADSSC as a whole ($M=4.471$, $SD=0.662$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.059$, $SD=0.776$), $t(33)=2.537$, $p<.05$.

The fifteenth intervention suggested by the author was established to enhance organizational techniques and monitoring technologies at the ADSSC. The intervention involved conducting weekly team performance briefings. The rationale was that running team performance briefings would help change agents pinpoint the obstacles facing CMA users (and TSS employees) and identify solutions. This was considered an example of how organizational techniques and monitoring technologies can be deployed at the ADSSC to monitor CMA users' performance. Though this task was listed as priority 1, the intervention was strongly linked to interventions 14 and 15. The sooner those interventions could be established, the sooner intervention 13 could occur; however, weekly meetings were currently being held to discuss

department performance in general. The paired sample *t*-test (see Table 5-7) revealed a significant increase in users' understanding of the effectiveness of the CMA reporting tool in monitoring individuals' daily performance ($M=4.324$, $SD=0.684$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=3.851$, $SD=0.784$), $t(33)=3.064$, $p<.01$.

The sixteenth intervention suggested by the author was also established to enhance organizational techniques and monitoring technologies at the ADSSC. The intervention involved using personal scorecards for CMA users (and TSS employees) linked to the 2014–2016 TSS operational plan. This intervention can be seen as another tool for enhancing the organization techniques and monitoring technologies deployed by the ADSSC to monitor CMA users' performance. The rationale was that deploying personal scorecards (including the KPIs linked to departmental key performance indicators) would assist in assessing CMA users' performance and acknowledging their individual efforts. Though this task was listed as priority 1, the author faced difficulties in implementing this intervention due to organizational and individual barriers. The relevant journal notes (23, 31, 32, 33, 34, and 54) show that the resistance was driven by Human Resources (HR), who managed the ADSSC's personal policy manual (PPM). This matter was raised with the ADSSC's board of directors, who instructed the business support division director to establish a personal scorecard for all ADSSC employees in alignment with the corporate strategy in order to ensure an adequate evaluation of employee performance. The author (in liaison with the Strategy and Communication department) several times requested approval to proceed with the personal scorecard intervention as a pilot and demonstrate the intervention's effectiveness. The author's request was rejected. During the research stage, the author updated the TSS team and APD manager frequently. The author

believed that putting the CMA end-users in the loop and keeping them aware of the intervention's progress made this intervention successful, even though it was rejected by HR. The paired sample *t*-test (see Table 5-7) revealed a significant increase in users' understanding of how the CMA was effective in providing accurate assessments of individual performance and of its reflection in annual performance evaluations ($M=4.000$, $SD=0.779$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=3.529$, $SD=0.992$), $t(33)=2.478$, $p<.05$.

The seventeenth intervention suggested by the author was established to enhance the actions for and interpretation of objective achievement at the ADSSC. The intervention involved using daily and weekly auto-generated performance reports (based on first-attempt log in) to brief CMA users on their performance during the previous working day/week. The rationale was that these reports would help CMA users practice self-monitoring and assess how they could achieve the objectives of the CMA and the E-NOC initiative. The paired sample *t*-test (see Table 5-7) revealed a significant increase in users' understanding of how the CMA could help in the regular self-monitoring of individual performance ($M=4.029$, $SD=0.937$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=3.177$, $SD=1.193$), $t(33)=3.150$, $p<.01$.

The eighteenth intervention suggested by the author was also established to enhance the actions for and interpretation of objective achievement at the ADSSC. The intervention involved communicating monthly electronic memos briefing CMA users on the CMA and E-NOC. The rationale was that such memos would help CMA users see a bigger picture about the government's NOC goals, increasing users' beliefs that the E-NOC objectives have been achieved by implementing CMA at the

ADSSC. The paired sample *t*-test (see Table 5-7) revealed a significant increase in CMA users' belief that the ADSSC had achieved the E-NOC's objectives by implementing CMA. ($M=4.382$, $SD=0.551$) after the suggested intervention (see Table 5-1) over the pre-intervention level ($M=4.000$, $SD=0.603$), $t(33)=3.693$, $p<.01$.

The nineteenth intervention suggested by the author was established to enhance the integration of the system as a routine while CMA users were working. The intervention involved activating the remaining workflows that were offline at the CMA. The rationale was that this activation would allow the users to perform their day-to-day duties through the CMA only, with no paper-based tasks, making the CMA the sole focus of all users (including Technical Services and referral department representatives) engaged in the NOC process. This intervention was impeded by technical issues related to system design and functionality (i.e., the integration with the E-NOC solution). External resources (a specialized system designer) were required to activate this intervention (refer to JN 35, 36, and 46). The intervention was postponed until the new consultancy services could be launched, which was expected by September 2015. Although this intervention is still in progress (see Table 5-1), the paired sample *t*-test (see Table 5-7) revealed an increase in users' understanding of how the CMA can assist in most of their daily tasks ($M=4.265$, $SD=0.828$) over the prior level ($M=3.941$, $SD=0.851$), $t(33)=1.644$, $p>.1$.

The twentieth intervention suggested by the author also aimed to enhance the integration of the system as a routine while CMA users were working. The intervention involved introducing a performance-based reward scheme at the ADSSC. The rationale was to recognize the individuals who show a commitment to the NOC process by using CMA to achieve the E-NOC objective, thus creating competition

among TSS employees (i.e., CMA users). Though this task was listed as priority 2, the author faced difficulties in implementing the suggested intervention due to organizational and individual barriers. The relevant journal notes (23, 31, 32, 33, and 54) suggest that, again, resistance was driven by HR. Changing the personnel policy manual to include performance-based rewards was difficult. The business approval hierarchy was seen as constrained, and HR's mindset and attitudes to the ADSSC's business are outdated. Thus, implementing the intervention was almost impossible. The paired sample *t*-test (see Table 5-7) revealed an increase in users' understanding and awareness of the disciplinary and reward measures announced by the ADSSC to ensure users are using CMA in their daily work ($M=4.088$, $SD=0.712$) over the prior level ($M=3.912$, $SD=0.621$), $t(33)=1.643$, $p>.1$.

Item	Pre-Test			Post Test			Paired Differences				95% Confidence Interval of the Difference		<i>t</i>	df
	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean	N	Mean	Std. Deviation	Std. Error Mean	Lower	Upper		
EP_D1_Q1	4.029	0.577	0.099	4.441	0.613	0.105	34	0.412	0.892	0.153	0.101	0.723	2.693**	33
EP_D1_Q2	4.147	0.558	0.096	4.500	0.564	0.097	34	0.353	0.774	0.133	0.083	0.623	2.659**	33
EP_D2_Q1	3.853	1.019	0.175	4.324	0.589	0.101	34	0.471	0.992	0.170	0.124	0.817	2.766***	33
EP_D2_Q2	3.971	0.797	0.137	4.441	0.660	0.113	34	0.471	0.896	0.154	0.158	0.783	3.064***	33
EP_D3_Q1	4.000	0.603	0.103	4.382	0.551	0.095	34	0.382	0.697	0.120	0.139	0.626	3.199***	33
EP_D3_Q2	4.029	0.674	0.116	4.353	0.734	0.126	34	0.324	0.945	0.162	-0.006	0.653	1.997*	33
EP_D4_Q1	3.941	0.547	0.094	4.353	0.597	0.102	34	0.412	0.701	0.120	0.167	0.657	3.423***	33
EP_D4_Q2	4.147	0.784	0.134	4.500	0.826	0.142	34	0.353	1.152	0.198	-0.049	0.755	1.787*	33
SC_D1_Q1	4.088	1.083	0.186	4.441	0.613	0.105	34	0.353	1.203	0.206	-0.067	0.773	1.711*	33
SC_D1_Q2	4.177	0.717	0.123	4.588	0.557	0.096	34	0.412	0.892	0.153	0.101	0.723	2.693**	33
SC_D2_Q1	3.853	0.784	0.134	4.412	0.557	0.096	34	0.559	0.960	0.165	0.224	0.894	3.396***	33
SC_D2_Q2	3.912	0.793	0.136	4.382	0.652	0.112	34	0.471	0.961	0.165	0.135	0.806	2.856***	33
SC_D3_Q1	4.088	0.712	0.122	4.618	0.551	0.095	34	0.529	0.706	0.121	0.283	0.776	4.370***	33
SC_D3_Q2	4.059	0.776	0.133	4.471	0.662	0.114	34	0.412	1.019	0.175	0.056	0.767	2.357**	33
SY_D1_Q1	3.853	0.784	0.134	4.324	0.684	0.117	34	0.471	0.896	0.154	0.158	0.783	3.064***	33
SY_D1_Q2	3.529	0.992	0.170	4.000	0.779	0.134	34	0.471	1.107	0.190	0.084	0.857	2.478**	33
SY_D2_Q1	3.177	1.193	0.205	4.029	0.937	0.161	34	0.853	1.579	0.271	0.302	1.404	3.150***	33
SY_D2_Q2	4.000	0.603	0.103	4.382	0.551	0.095	34	0.382	0.604	0.104	0.172	0.593	3.693***	33
SY_D3_Q1	3.941	0.851	0.146	4.265	0.828	0.142	34	0.324	1.147	0.197	-0.077	0.724	1.644	33
SY_D3_Q2	3.912	0.621	0.107	4.088	0.712	0.122	34	0.176	0.626	0.107	-0.042	0.395	1.643	33
SY_D3_Q3	4.265	0.567	0.097	4.677	0.535	0.092	34	0.412	0.783	0.134	0.139	0.685	3.066***	33

*Significant at $p < 0.1$, **Significant at $p < 0.05$, ***Significant at $p < 0.01$

5.3.2.2 The Dimension Level

According to the CoP framework, the dimensions are considered the elements that shape the circuits. Analyzing the progress of the dimensions through paired sample *t*-tests is extremely important to an understanding of CMA institutionalization at the ADSSC.

Looking at the first dimension of the episodic circuit, the author aimed to better define CMA champions and resistors by implementing the suggested interventions. The paired sample *t*-test (see Table 5-8) revealed a significant increase in defining the organization's CMA agents and resistors ($M=4.471$, $SD=0.536$) after the suggested interventions (see Table 5-1) over the pre-intervention level ($M=4.088$, $SD=0.484$), $t(33)=3.016$, $p<.01$.

Regarding the second dimension of the episodic circuit, the author aimed to understand the objectives of change agents and resistors during the implementation of the CMA. The paired sample *t*-test (see Table 5-8) revealed a significant increase in understanding the objectives of change agents and resistors during CMA implementation ($M=4.382$, $SD=0.462$) after the suggested interventions (see Table 5-1) over the pre-intervention level ($M=3.956$, $SD=0.632$), $t(33)=3.510$, $p<.01$.

In the third dimension of the episodic circuit, the author aimed to understand the stratagems used by champions and resistors to achieve their objectives. The paired sample *t*-test (see Table 5-8) revealed a significant increase in understanding the stratagems used by change agents and resistors to achieve their objectives ($M=4.368$, $SD=0.512$) after the suggested interventions (see Table 5-1) over the pre-intervention level ($M=4.015$, $SD=0.529$), $t(33)=2.887$, $p<.01$.

For the fourth dimension of the episodic circuit, the author aimed to understand the resources that can be accessed and used to support the champion and resistor position. The paired sample *t*-test (see Table 5-8) revealed a significant increase in the understanding of the resources that can be accessed and used to support the champion and resistor positions ($M=4.427$, $SD=0.538$) after partial implementation of the suggested interventions (see Table 5-1) over the pre-intervention level ($M=4.044$, $SD=0.513$), $t(33)=3.419$, $p<.01$.

For the first dimension of the social integration circuit, the author aimed to understand the organizational roles that place system stakeholders (champions and resisters) in their positions. The paired sample *t*-test (see Table 5-8) revealed a significant increase in the understanding of the organizational roles that place system stakeholders (champions and resisters) in their positions ($M=4.515$, $SD=0.515$) after the suggested interventions (see Table 5-1) over the pre-intervention level ($M=4.191$, $SD=0.578$), $t(33)=2.340$, $p<.05$.

Looking at the second dimension of the social integration circuit, the author aimed to understand the rules and norms affecting the implementation of the suggested IT solution. The paired sample *t*-test (see Table 5-8) revealed a significant increase in the understanding of the rules and norms affecting the implementation of the CMA ($M=4.397$, $SD=0.504$) after the interventions (see Table 5-1) over the pre-intervention level ($M=3.882$, $SD=0.686$), $t(33)=3.786$, $p<.01$.

For the third dimension of the social integration circuit, the author aimed to enhance how system stakeholders (champions and resisters) interpret the institutionalization of the suggested IT solution. The paired sample *t*-test (see Table 5-8) revealed a significant enhancement of system stakeholders' (champions'

and resistors') interpretation of the institutionalization of the CMA ($M=4.544$, $SD=0.513$) after the suggested interventions (see Table 4-1) over the pre-intervention level ($M=4.074$, $SD=0.538$), $t(33)=3.944$, $p<.01$.

Looking at the first dimension of the systemic integration circuit, the author aimed to enhance the organizational techniques and monitoring technologies adopted by the ADSSC. The paired sample t -test (see Table 5-8) revealed a significant increase in the organizational techniques and monitoring technologies adopted by the ADSSC ($M=4.162$, $SD=0.660$) after partial implementation of the suggested interventions (see Table 5-1) over the prior level ($M=3.691$, $SD=0.769$), $t(33)=3.325$, $p<.01$.

For the second dimension of the systemic integration circuit, the author aimed to enhance the actions for and interpretation of objective achievement of the champions and resistors. The paired sample t -test (see Table 5-8) revealed a significant increase in the actions for and interpretation of objective achievement of the champions and resistors ($M=4.265$, $SD=0.480$) after partial implementation of the suggested interventions (see Table 5-1) over the prior level ($M=3.691$, $SD=0.578$), $t(33)=5.122$, $p<.01$.

For the third dimension of the systemic integration circuit, the author aimed to enhance the integration of the system as a routine while the system users (champions and resistors) worked. The paired sample t -test (see Table 5-8) revealed a significant increase in the integration of the system as a routine while the system users (champions and resistors) worked ($M=4.344$, $SD=0.524$) after partial implementation of the suggested interventions (see Table 5-1) over the prior level ($M=4.056$, $SD=0.384$), $t(33)=2.718$, $p<.05$.

Table 5-8: Descriptive Statistics - System Institutionalization of Paired t-Test at the Dimension Level														
Item	Pre-Test			Post Test			Paired Differences				95% Confidence Interval of the Difference		<i>t</i>	df
	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean	N	Mean	Std. Deviation	Std. Error Mean	Lower	Upper		
EP_D1	4.088	0.484	0.083	4.471	0.536	0.092	34	0.382	0.739	0.127	0.124	0.640	3.016***	33
EP_D2	3.956	0.632	0.108	4.382	0.462	0.079	34	0.426	0.709	0.122	0.179	0.674	3.510***	33
EP_D3	4.015	0.529	0.091	4.368	0.512	0.088	34	0.353	0.713	0.122	0.104	0.602	2.887***	33
EP_D4	4.044	0.513	0.088	4.427	0.538	0.092	34	0.382	0.652	0.112	0.155	0.610	3.419***	33
SC_D1	4.191	0.578	0.099	4.515	0.515	0.088	34	0.324	0.806	0.138	0.042	0.605	2.340**	33
SC_D2	3.882	0.686	0.118	4.397	0.504	0.086	34	0.515	0.793	0.136	0.238	0.791	3.786***	33
SC_D3	4.074	0.538	0.092	4.544	0.513	0.088	34	0.471	0.696	0.119	0.228	0.713	3.944***	33
SY_D1	3.691	0.769	0.132	4.162	0.660	0.113	34	0.471	0.825	0.142	0.183	0.759	3.325***	33
SY_D2	3.691	0.578	0.099	4.265	0.480	0.082	34	0.574	0.653	0.112	0.346	0.801	5.122***	33
SY_D3	4.056	0.384	0.066	4.344	0.524	0.090	34	0.288	0.618	0.106	0.073	0.504	2.718**	33

*Significant at $p < 0.1$, **Significant at $p < 0.05$, ***Significant at $p < 0.01$

5.3.2.3 The Circuit Level

The suggested interventions at the level of the episodic circuit aimed to increase the usage of CMA by end-users in performing tasks directed by powerful organizational agents. The paired sample *t*-test (see Table 5-9) revealed a significant increase in CMA usage by end-users to perform tasks directed by powerful organizational agents ($M=4.424$, $SD=0.427$) after the suggested interventions (see Table 5-1) over the pre-intervention level ($M=4.038$, $SD=0.369$), $t(33)=4.173$, $p<.01$.

The suggested interventions at the level of the social integration circuit aimed to increase the level (power) of the powerful organizational agents and system end-users at the organization (membership) and surrounding rules and norms. The paired sample *t*-test (see Table 5-9) revealed a significant increase in the level (power) of the powerful organizational agents and system end-users at the organization (membership) and surrounding rules and norms ($M=4.482$, $SD=0.397$) after the suggested interventions (see Table 5-1) over the pre-intervention level ($M=4.041$, $SD=0.489$), $t(33)=3.941$, $p<.01$.

The suggested interventions at the level of the systemic integration circuit aimed to enhance the system end users' consideration of the execution of their daily work using CMA as a routine. The paired sample *t*-test (Table 5-9) revealed a significant increase in system end-users' consideration of the execution of their daily work using CMA as a routine ($M=4.277$, $SD=0.459$) after partial implementation of the suggested interventions (see Table 5-1) over the prior level ($M=3.850$, $SD=0.419$), $t(33)=5.030$, $p<.01$.

Table 5-9: Descriptive Statistics - System Institutionalization of Paired t-Test at the Circuit Level														
Item	Pre-Test			Post Test			Paired Differences				95% Confidence Interval of the Difference		<i>t</i>	df
	Mean	Std. Deviation	Std. Error Mean	Mean	Std. Deviation	Std. Error Mean	N	Mean	Std. Deviation	Std. Error Mean	Lower	Upper		
Episodic	4.038	0.369	0.063	4.424	0.427	0.073	34	0.385	0.538	0.092	0.197	0.573	4.173***	33
Social Integration	4.041	0.489	0.084	4.482	0.397	0.068	34	0.441	0.653	0.112	0.213	0.669	3.941***	33
Systemic Integration	3.850	0.419	0.072	4.277	0.459	0.079	34	0.426	0.494	0.085	0.254	0.599	5.030***	33

*Significant at $p < 0.1$, **Significant at $p < 0.05$, ***Significant at $p < 0.01$

5.4 Confirmation of Initial Assumptions Based on Paired *t*-test Results

The interventions were actions proposed by the researcher after diagnosing the status of system institutionalization. The proposed actions (see Table 5-1) are intended to improve system institutionalization in the organization and ensure that it is used routinely (Baskerville, 1999).

According to Silva and Backhouse (2003), the proposed actions should affect the institutionalization of CMA. Additionally, improving social and systemic integration should improve CMA institutionalization. The institutionalization at ADSSC will affect meaning and membership as well as the discipline and production that are required to reinforce dispositional and facilitative power.

The results shown in Table 5-7, Table 5-8, and Table 5-9 reveal that the assumptions made by the author in terms of the suggested interventions (see Table 5-1) were correct and significantly increased CMA institutionalization at the ADSSC at all levels (i.e., individual item, dimension, and circuit).

Chapter 6: Qualitative Findings

This chapter discusses the initial findings and the author's interpretation of the collected data. The collected data used in this research include interview scripts, journal notes, and memos. The first section discusses the selection of the participants and their demographic characteristics. Section two discusses the emergent themes that were evolved from the findings and outlines the definitions of the emergent themes, possible tactics for overcoming the identified barriers, inferences drawn from interview excerpts, and whether the findings confirm or conflict with the literature.

6.1 Participants

The interviews aimed to encourage key persons who worked on CMA to share their thoughts about it via open-ended questions linked to the CoP framework. The selection of participants was based on the judgment of the researcher. The main driver was the researcher's knowledge of the importance of the participants' role in developing, managing, and operating CMA (see sections 4.6.4.1 and 4.6.4.2). Finally, five interviews were conducted, with a system developer, a reviewer, an approver 1, an approver 2, and an approver 3.

Table 6-1: Demographic Characteristics of Interviewed Participants

Participants	Age	Position category	Interacting with TSS	Tenure in ADSSC
Participant 1	34	Section Head / Team Leader	7 years	7 years
Participant 2	27	Employee	3 years	3 years
Participant 3	28	Section Head / Team Leader	4 years	4 years
Participant 4	31	Employee	6 years	6 years
Participant 5	38	Manager	3 years	12 years

6.2 Emergent Themes

The emergent themes discussed in the following subsections are derived from an analysis through NVivo. Via data collected from interview scripts, the author's journal notes, and memos, the emergent themes were found to be compatible with the literature findings. The CoP framework touched upon these emergent themes, as described below.

The analysis found that there are links between the emergent themes (see Figure 6-1). For example, the lack of organizational maturity and stability can be seen as a factor in the disparities between traditions and ideologies among employees and business units. Such disparities were also found to be a driver of the fear of losing power and job security among employees who resisted the implementation of the suggested BPR and BPA initiative as well as a driver of the lack of technology knowledge and know-how seen in some business units who resisted the change suggested by the BPR and BPA initiatives. Further, a lack of organizational maturity and stability was found to be a factor that weakened project sponsorship at the organization due to a lack of management commitment. The emergent theme of "lack of perceived personal benefits" was found to strengthen the disparities between traditions and ideologies among employees and business units.

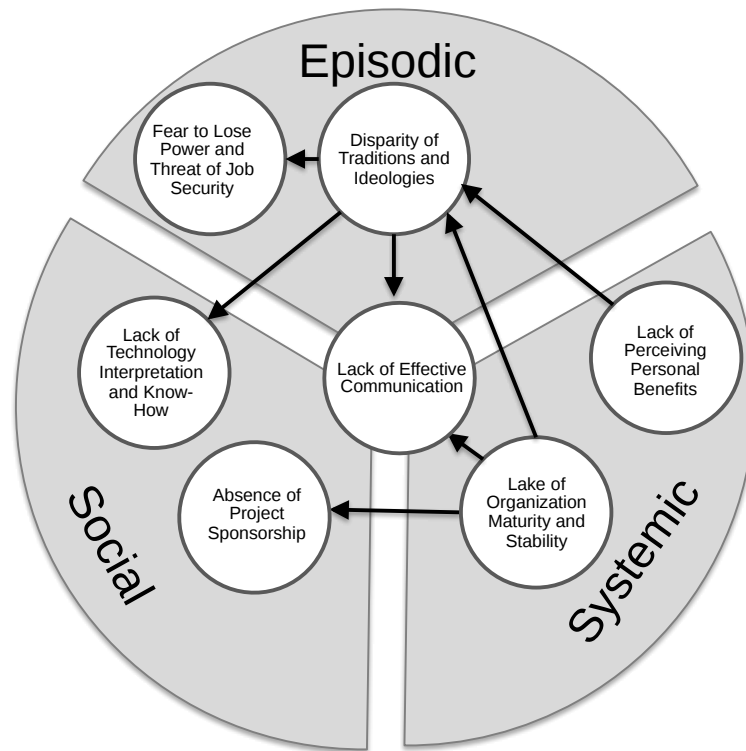


Figure 6-1: Possible links between the emergent themes and the CoP framework

Additionally, the analysis concluded that the emergent themes are also linked to the circuits of power (see Figure 6-1). For example, disparity of traditions and ideologies, the fear of losing power, and threats to job security are linked to the episodic circuit. Project sponsorship and technology interpretation and know-how were found to contribute to the social integration circuit. Effective communication was found to contribute to both the episodic and social integration circuits. Both organizational maturity and stability and employees' lack of perceived personal benefits were found to be linked to the systemic integration circuit.

The following subsections discuss these themes, supported by excerpts from the interview scripts, journal notes, and memos.

6.2.1 Organizational Maturity and Stability

The first theme was organizational maturity and stability. Organizational maturity and stability are important factors that can contribute to organizational change or become serious obstacles to it. An organization needs to be mature and stable to reach the objectives related to a BPR or BPA initiative. Stability can be seen as a result of long-term collaboration and team building among employees and business units. Maturity refers to accumulated experience and know-how demonstrated by organizational resources. Senior management's commitment to change is essential to increasing the level of organizational maturity. Senior management must also acknowledge the necessity of knowledge sharing among business units and individuals and stay one step ahead to increase organizational stability.

Recently, it was noticed that most UAE government entities have established knowledge management units to spread their organizational knowledge to new employees using a systematic approach (Biygautane & Al-Yahya, 2010, 2011; Department of Municipal Affairs of Abu Dhabi, 2009). Ensuring knowledge sharing among business units and employees fosters the accumulated experience (i.e., maturity) of the organization driven by business units and individuals. Knowledge sharing also plays a vital role in concretizing the essence of long-term collaboration and team building among business units and individuals.

This emergent theme contributes to the systemic integration circuits, as it deals with facilitative and disciplinary aspects at the organization. Looking at possible links between other emergent themes, it was found that lack of maturity and stability widens the disparity between traditions and ideologies among employees and business

units. It was also found to be a factor that weakened project sponsorship due to a lack of management commitment. Moreover, maturity and stability appear to influence the quality of communication across the organization.

Introducing change and knowledge management to UAE public organizations can be seen as an effective way to overcome the lack of organizational maturity and stability. Both concepts need to reach all employees at all levels and penetrate their mindset. The sooner the organization buys into the need to change, the less important this barrier becomes.

In the interviews, four out of five participants agreed that internal coordination among the departments at the ADSSC was smooth. This reflects stakeholders' findings on the CMA to the GIS team and vice-versa, in terms of highlighting potential solutions during and after CMA implementation. An example of that can be seen below:

Currently, departments and sections in different areas use different workflows despite the fact that we are all in the same organization. For example, the case of TSS of Abu Dhabi, Western Region, and Al Ain. The differences are present in the workflows process as well as in the nature of application types. Secondly, restructuring APD to include TSS and GIS was very helpful in putting both sections into a communication channel. The result led to a better understanding of the system and eventual persuasion of the TSS individuals to use the CMA, automating 16 types of workflow. (Participant 1)

In addition, during the test period, we had several meetings to highlight bugs and issues to the system developer to fix them prior to the official launch of the CMA. Additionally, our management had to put them into the picture. (Participant 2)

How frequently do you communicate with the GIS team? I am doing this on a daily basis. If there are any issues or anything happens, it will be on a daily basis to get things resolved before reoccurs. (Participant 3)

There is no way that knowledge sharing will be overlooked; it is a system! Everybody now knows what is going on, what is the flow chart and process adopted, and who is doing what. (Participant 5)

The author's journal notes confirm the above-discussed views on internal coordination among the departments of the ADSSC:

It is the first time since 2011 when all departments managers are set to gather and discuss their KPIs and initiatives. Looks very defensive at the beginning, but, later, attendees felt that we had a group discussion on how to improve AMD performance. (Journal Note 3, 23.06.2014)

I shared that email with Mr. M. He was very happy about it. I explained to Mr. M that I had a discussion with the AISD manager, asking him to support the APD with some staff on a part-time basis—depending on their workload. He was glad to hear that. (Journal Note 44, 21.05.2015)

Second, three out of five participants agreed that ADSSC senior management has a positive view of the CMA and its achievement. An example can be seen below:

I am glad that the recognition of CMA started externally, through positive reports/feedback sent from ADSDI and ENOC to ADSSC senior management. It has resulted in framing the CMA implementation story positively. (Participant 1)

We knew that the senior management considered us off their radar. They were not interested. They were happy about the current practices. However, the project manager through his relationship forced the senior management to implement the CMA at least for a pilot area of workflows. After some time after the system launch, the senior management starts to recognize the effort spent on the CMA. They start to feel the benefits and that productivity increased. By now, I would say that the management has become one of the main support bodies of the CMA. (Participant 3)

In addition, we have received many compliments about the CMA from other departments. Is it only the functional department or the management too? The top management was complimenting us too because we are achieving the company objectives. We are achieving the government objective too. Further, the CMA has been locally and internationally recognized, winning many awards. It is amazing! Management continues its support, from the senior management or director, for the CMA initiative, evidence of management satisfaction/compliments. (Participant 5)

The author's journal notes confirm the above-discussed view on ADSSC senior management's perception of CMA:

Senior Management was astonished by such achievement! The senior management agreed to issue a letter of appreciation to AMD-GIS staff, congratulating them on the achievement (Journal Note 37, 30.04.2015)

Third, three out of five participants agreed that the CMA could be recognized as a role model at the ADSSC. The CMA can be replicated in many areas at various levels. An example of that can be seen below:

Is it possible to say that CMA has become a role model system? Yes, you may go further and say that CMA has become a benchmark. Mr. UD [an executive], as a member of the ENOC decision panel, has directed the APD and IT to launch an initiative similar to CMA to ensure the automation and reengineering all business processes in the company. It is a natural reflection of hearing the success story of the CMA from the ENOC team. (Participant 1)

They could implement the CMA in other departments and divisions and get other people involved and get their business to go electronically. (Participant 3)

A good example that can be given is the management approval of the new initiative to copy the CMA to CSD. (Participant 5)

According to the literature, organizational maturity is a reflection of accumulated organizational resources' knowledge and experience within a specific business domain (Taher et al., 2012; Taher, Krotov, & Silva, 2015). Organizational stability is collaboration and team building among employees and business units in the long run (Taher et al., 2012; Taher et al., 2015). A lack of organizational maturity or stability is frequently manifested in a general lack of change management capabilities and constant conflict among employees and business units (Nedovic-Budic & Godschalk, 1996).

The author's definition of the emergent themes and quotes extracted from the interviews confirm the importance of organizational maturity and stability in the formula of BPR and BPA implementation. A lack of organizational maturity and stability in the UAE public sector lies behind user resistance and hinders BPR and BPA initiatives.

6.2.2 Traditions and Ideologies

The second emergent theme was traditions and ideologies. The author understands tradition as the way of evaluating a process or piece of work of a specific generation, while ideology is a set of beliefs adopted by a specific generation or group of specialists. In terms of BPR and BPA implementation, disparities between traditions and ideologies affect how developers and end-users as well as new and old generations look at technology and business relationships. Moreover, traditions often capture, solidify, and legitimize the power relationships within UAE organizations.

For example, BPR and BPA initiatives may create a conflict among older and younger employees, particularly over traditional and proposed business processes (Taher et al., 2012), due to the different traditions and ideologies that different generations of employees may have. Older employees may view IS as supportive tools for maintaining existing business practices, while younger employees, who are usually more "tech-savvy," may favor a more radical BPR and BPA with the help of technology, creating tension between these subgroups about how technology should influence business practices (Taher et al., 2012; Taher et al., 2015).

This emergent theme contributes to the episodic circuits, as it deals with the causality of power and relations among employees. Looking at possible links between other emergent themes, disparities among traditions and ideologies are affected by the

organizational level of maturity and stability practices at the organization and the employees' perception of personal benefits. On the other hand, disparities among traditions and ideologies while carrying out daily routines lead employees to fear losing power due to incremental or radical BPR solutions. They also create ambiguity in interpreting the outcomes of the suggested solutions.

Introducing a comprehensive communications plan can mitigate the conflict within bureaucracies and among traditions. The plan should detail the desired communication channels and protocols for specific types of messages (Al-Mashari & Zairi, 1999; Bensaou & Earl, 1998; Dixon, Arnold, Heineke, Kim, & Mulligan, 1994; Taher et al., 2012) and offer a structured approach to communicating a primer about the benefits of and solutions for the expected barriers to a planned initiative. The sooner the communication plan becomes a working approach, the less conflict will happen.

All participants agreed that disparities between traditions and ideologies (among the old and new generations) have impacted BPR and BPA implementation during CMA at the ADSSC, as shown below:

Non-technical obstacles presented in users' mentalities resisting usage of IT/computer system. It may happen because either they do not know how to use the introduced CMA. (Participant 1)

It is easy to deal with. I am a fan of using technology. I could not feel any difficulties in using the CMA at all. However, other employees may face difficulties in using technology or IT tools. (Participant 2)

We, as young locals, have been exposed through a learning path to use technology, and we came to know the benefits of using technology in our life and to get rid of classical paper-based exercises. With regards to non-local/old-aged employees, they do prefer classical paper-based work as they always claim that it is more sustainable and remains available on call in the unlikely event that the system is exposed to failures. (Participant 3)

For employees, we have different ages with the group and the younger ones who just joined. Those people find it easy to adopt because instead of learning the old way [paperwork], they are learning straight on CMA. We the older people, being with the company for a while, they have got already a regime that they follow and how to check. Moreover, that is all changed, and that caused a little delay. (Participant 4)

The anticipation was that the TSS would consist of new generation employees who are aware of technology and ready to use the technology and automated system. On the other hand, we have the old generation employees who are not in favor of technology use and are relaxed and satisfied with their manual operation. (Participant 5)

The author's journal notes confirm these views of the impact of traditions and ideologies on BPR and BPA implementation at the ADSSC from the old- and new-generation perspective:

Despite the fact that Mr. S is one of the expatriate-old mindset employees, he showed interest in the subject (Journal Note 28, 26.12.2014)

Second, all participants have common views on the impact of ideologies on BPR and BPA implementation at the ADSSC from the developers and end-users perspective. An example is below:

I would like to emphasize the importance of the communication between us as system initiator/owner and the system users. The project management team members represent most of the CMA internal stakeholders. We had managed to mitigate any ambiguity before it happened and resulted in a successful implementation. (Participant 1)

There was no clear instruction of how to use the CMA and what are the roles and responsibility associated with the assigned role. I think this is due to the role assignment exercise, which was a bit vague during the design stage. As soon as the testing phase starts, the role becomes much clearer. (Participant 2)

There was a continuous exchange of letters, emails, and an exchange of views and requirements for the new system during the stages of the project [design, testing, and official run]. (Participant 3)

Once it is in production, we would all work on it, and, for problems or issues that come up, I would refer to Injazat or the GIS team directly to take action before delays occurred in the product. (Participant 4)

We have started the test period, and we were anxious about CMA users' reflection rejecting the CMA. (Participant 5)

The author's journal notes confirm these views of the impact of ideologies on BPR and BPA implementation at the ADSSC from the developers and end-users perspective:

Unfortunately, there were enormous bugs in the pilot demo. We sat with the developer (this time, it is the India team) to explain the idea behind the usage of this tool and why we are planning to use this tool (Journal Note 37, 30.04.2015)

Mr. UD (Executive) was convinced of the provided solution; however, he wants to make sure that he will get support from ADSIC and get rid of any responsibility related to the required investment (Journal Note 42, 14.05.2015)

Finally, all participants agreed that traditions and ideologies solidify and legitimize the power relationships in ADSSC operations, being part of the UAE's public sector. An example is given below:

Moving the TSS section from the Asset Information and Standards Department (AISD) to Asset Performance Department (APD). Thus, results change in the adopted process workflow, rules, and responsibilities. (Participant 1)

Previously, getting the cost estimate required a department manager approval, but with the CMA, the project division representative is required to decide and account for this part. (Participant 2)

Some of them were extremely happy, as none of us will harass them anymore, and they will keep doing their work peacefully. The rest were afraid to lose their jobs, since the data and information have become available at any time with minimal effort. Why? Some of them want to be a key resource in TSS. The rest feared that everybody shall come to him prior to a decision being made. (Participant 3)

Every person has a different mindset and probably wants the work done in a different way. However, the CMA work will be done through the same process. Therefore, no matter what mindset the person has, the workflows always remain the same. (Participant 4)

When I joined the TSS, I noticed that some employees are reluctant to exchange info and transfer knowledge. (Participant 5)

The author's journal notes confirm these views of how traditions and ideologies solidify and legitimize the power relationships in ADSSC operations, being part of the UAE's public sector:

He was moderate in general, but as soon as we reached the performance issue (i.e., action number 13, 15, and 17) he showed anxiety. I think this has to do with his new assignment as a department manager and ADSSC pre-commitment to existing MOU with other entities concerning ensuring timely response to technical inquiries (Journal Note1, 16.06.2014).

Giving them the chance to talk during the DPRM may embarrass Mr. M and poke him a bit! It may become a platform for a technical skills battle (Journal Note 7, 23.07.2014)

Mr. UD (Executive) was under huge pressure from the Al Ain team. He needed to understand what went on with the CMA (Journal Note 40, 13.05.2015).

The literature review indicated that traditions and ideologies can influence, in macro and micro ways, the use of technologies in any organization (Barley, 1990; Jurisch, 2012; Lapointe & Rivard, 2005). Traditions and ideologies can be seen as a reflection of how people think and believe and how developers and end-users and new and old generations look at technology and business relationships (Barley, 1990; Hammer, 1993; Jurisch, 2012; Kudray & Kleiner, 1997; Lapointe & Rivard, 2005).

Organizations intending to enhance their performance and raise the quality of their services need to be ready for a radical change in their existing workflows and processes. However, an organization's traditions and ideologies may have a substantial deterrent impact on the redesign of the processes (Jurisch, 2012; Kudray & Kleiner, 1997).

Moreover, the social culture of the UAE may result in bureaucracy being deeply ingrained in some of the aspects of public sector operations (Yaseen and Okour, 2012; Al-Yahya, 2009). The bureaucracy often captures, solidifies, and

legitimizes the power relationships within UAE organizations. An attempt to simplify or even modify bureaucracy often creates political conflicts among employees and functional units. Thus, the bureaucracy tends to be a major obstacle to BPR in the UAE public sector (Jurisch, 2012; Kudray and Kleiner, 1997).

The author's definition of the emergent theme and extracts from the interviews confirm the importance of traditions and ideologies during the implementation of the BPA and BPA; they may have a substantial deterrent impact on the redesign of the processes (Jurisch, 2012; Kudray & Kleiner, 1997) and can lead to project failure if no adequate controls are applied (Taher et al., 2012; Taher et al., 2015).

6.2.3 Project Sponsorship

The third emergent theme was project sponsorship. The existence of project sponsorship in organizations that implement BPR and BPA initiatives is extremely important. Project sponsorship can be seen in many ways—for example, in transformational leadership, project sponsors (according to the PMI terminologies), and project steering committees. Effective project sponsorship requires characteristics that lead to management commitment, guiding team members about the organization's vision and values and empowering them concerning the BPR and BPA initiatives in the initiation and implementation phases.

This emergent theme contributes to the social integration circuit, as it deals with the rule of means and dispositional power at the organization. The author found that a lack of organizational maturity can be a main cause of the weak presence of project sponsorship in the organization. In such a case, BPR and BPA projects might face severe delays due to the ambiguity of the direction for achieving project goals

and the limited organizational resources devoted to the project. Hence, dispositional power at the project level becomes compromised.

A project executive sponsor (PES) and project steering committee (PSC) can coerce the implementation of the proposed system and should act accordingly to ensure system institutionalization. A departmental performance review (DPRM) and corporate performance review (CPRM) can boost system adoption and implementation and ensure high system institutionalization. The review typically includes a review of operational and strategic KPI performance, plans and initiative progress, and the resource allocation required to meet the scheduled target. The outcomes are expected to determine the way forward and supply direction for improving department/corporate performance and resource allocation for achieving the targets.

Three out of five participants agreed that ADSSC management's commitment existed (in different magnitudes) before, during, and after the implementation of CMA. An example appears below:

The management has started to understand the current position of ADSSC in the formula of ENOC and the necessity to be ready for its implementation. (Participant 1)

Sometime after system launch, senior management started to recognize the effort spent on the CMA. They started to feel the benefits and how productivity increased. By now, I would say that management has become one of the main support bodies of the CMA. (Participant 3)

It is amazing! Management continues its support, from the senior management or director, for the CMA initiative, evidence of management satisfaction/ compliments. A good example that can be given is the management approval of the new initiative to copy the CMA to CSD. (Participant 5)

The author's journal notes confirm these views on management's commitment to the implementation of CMA:

H.E. the Chairman was enthusiastic about it and was very keen to see this at ADSSC (Journal Note 23, 18.12.2014).

This action was an example of Asset Management Division Director (champion) commitment to CMA results and how results can be improved. Discussing this KPI in the ADSC corporate performance review meeting (CPRM) was important. On the other hand, this also can be seen as the organization's management commitment to monitoring the performance of employees (Journal Note 30, 12.02.2015).

Second, three out of five participants agreed that ADSSC senior management was guiding the team members and sharing with them the organization's vision and values during the implementation of CMA. An example appears below:

The project sponsorship plays a vital role in putting pressure on users to use the system. No alternative solution. (Participant 1)

Both TSS and GIS were under two different departments. Parallel to launching the CMA, ADSSC management decided to rearrange the organization structure. One of the results was merging the GIS and TSS into one department. Upon both sections being merged, communication became much easier and more effective. (Participant 3)

The top management was complimenting us too because we are achieving the company objectives. We were achieving the government objective too. (Participant 5)

The author's journal notes confirm these views on how ADSSC management was guiding the team members and sharing with them the organization's vision and values during CMA implementation:

I think Mr. M was successful in containing Mr. OD and his team in Al Ain and imposing my thoughts, which was discussed in 16.06.2014. (Journal Note 02, 19.06.2014)

I have explained to him that this action is aimed at creating a standard operating procedure to reflect the current CMA practices. The SOP

should include an RACI matrix to explain the better level of authority and responsibility for all CMA users. (Journal Note 18, 25.11.2014)

On the other hand, she shared with me her fear of losing the project if the contract is terminated. She was seeking advice on how to overcome that. (Journal Note 38, 13.05.2015)

The remaining KPI were either meeting or exceeding the target. Reflection: Generally speaking, APD performances were outstanding in comparison with other departments. It shows that TSS individuals are not only interested too but also proud to discuss their performance. (Journal Notes 13, 17.09.2014)

Third, three out of five participants agreed that ADSSC senior management empowered team members during CMA implementation. An example appears below:

Therefore, the management support, us with resources (financial and contractual resources) to disengage from the ADWEA data center, initiating maintenance plans (with various options), and pushing up the data accuracy of ADSSC GIS. (Participant 1)

Because the department manager and the CMA project manager is the same person. I think he had the power and authority to boost the implementation of the CMA. (Participant 3)

In general, I have put several recommendations when it comes to our business. The good thing in AMD is that we are optimistic individuals. (Participant 5)

The author's journal notes confirm these views of team empowerment at the ADSSC during CMA implementation:

I think this is a collective view (Mrs. H, Mr. O, Mr. A and I) on how to better plan quarterly sessions. (Journal Note 17, 09.11.2014)

Mr. UD (Executive) agreed that he (along with me) needs to take a serious step toward the shortage of staff in APD. He instructed (via email) the BSD and HR managers to give priority of employment to APD. (Journal Notes 41, 14.05.2015)

Giving them the chance to talk during the DPRM may embarrass Mr. M and poke him a bit! It may become a platform for a technical skills battle. (Journal Notes 7, 23.07.2014)

Fourth, one of the participants described the type of sponsorship that can exist in the ADSSC to support CMA implementation: "ADSSC should think to establish a

steering committee to monitor CMA performance and usage. Like any other organization, ADSSC has its own system, the 'CMA,' and they need to ensure its adequacy and usability," said Participant 3

The author's journal notes confirm these views on the type of sponsorship that could facilitate smooth CMA implementation:

This action started in [DPRM 05/2014] and is still continuing. However, DPRM for March and April is not yet executed. It is because the ARP system is still on hold. We are expecting the DPRMs to be re-activated in May 2015. (Journal Note 37, 30.04.2015)

I encouraged Mr. M to practice his rounds and make himself available all the time. (Journal Note 49, 10.06.2015)

The literature review indicated that the management commitment to using technology in business operations is a critical factor in the success of these initiatives (Crowswell, 1991; Kudray & Kleiner, 1997; Taher, 2013; Taleai et al., 2009). Cascading down the vision, values, and empowerment to BPR and BPA, project management teams (PMT) are essential for ensuring the success of technology-driven BPR projects (Burns, 1978; Crowswell, 1991; Davies, 2011; Ginzberg, 1981; Grover et al., 1995; Northouse, 2013; Silva & Backhouse, 2003; Taher, 2013; Taher et al., 2012; Taleai et al., 2009). Management commitment can be manifested in the form of a PES or PSC (Davies, 2011; Taher, 2013; Taher et al., 2012). Their role is to ensure that all success factors are adequately addressed, including the allocation of resources to the project management team to achieve the project goals and objectives (Davies, 2011). They also ensure the collaboration and participation of all concerned individuals and functional units in a project. Representatives from concerned functional units are typically included in PMTs, allowing for better communication

within and among the functional units about the project (Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991; Taher, 2013; Taher et al., 2012).

The author's definition of the emergent theme and interview extracts confirm the importance of project sponsorship in the formula of BPR and BPA implementation. A lack of project sponsorship in the UAE public sector is a factor in user resistance and hinders BPR and BPA initiatives.

6.2.4 Effective Communication

The fourth emergent theme was effective communication. Effective communication is essential to business units and individuals. Effective communication can be seen in how business units and individuals in an organization share information, knowledge, and thoughts to enhance the organization's business. Senior management's ambitions and aspirations must be cascaded down to all individuals, ideally via truthful cascades of the vision and mission to all business units and employees. Business units and employees might have different views of how the business should operate and how technology can enhance business operations.

The UAE's social culture emphasizes individual privacy, which promotes individualistic decisions. Applying this concept to the UAE's public sector, decision makers might not often agree to a common solution unless it fits them, their business units, or the organization.

Communication should be used to facilitate a discussion on what type of solution is required to overcome a specific problem functional units are facing. The chosen technology solution should be a result of the collective thinking of employees and experts. Failing to reach a collective agreement about technology might impact the progress of the BPR and BPA initiative.

A lack of effective communication can be seen as the result of a disparity among employees' traditions and ideologies and a lack of organizational maturity and stability. The author believes that this emergent theme contributes to all circuits of power, since it touches upon power causality, rules and norms, and disciplinary aspects practiced at the organization.

Introducing a planning statement document at the early stage of a project can mitigate the poor communication expected between system developers and end-users. A planning statement document typically includes necessary information about proposed initiatives but is not limited to basic design and benefits. Additionally, users-need requirements and assessment documents are equally important in the design stage. Both of those documents work to fine-tune end users' initial thoughts on concrete system options and operations.

All participants agreed that cascading the vision and mission to all business units and CMA users at the ADSSC is extremely important, creating a common understanding of what is required to achieve government and ADSSC goals and objectives. An example is given below:

ADSSC is looking to minimize paperwork. Also, we needed to have a data center to save and retrieve data through an automatized approach. Third, we needed a clear workflow/process used by all users unifying all TSS sections...Mr. UD (Executive), as a member of the ENOC executive committee, has directed the APD and IT to launch an initiative similar to the CMA to ensure the automating and reengineering of all business processes in the company. It is a natural reflection of hearing the success story of the CMA from the ENOC team. (Participant 1)

It is also related to the government vision of becoming an e-government and paperless. (Participant 2)

Generally speaking, the CMA has two objectives: general, which is the necessity to have a corporate system that helps the ADSSC to achieve the government objective of being an e-government by 2020,

and specific to the ADSSC, which is to get rid of paperwork, establishing an archiving document management system, setting up a smart way to track applications (new and previously submitted ones), including history tracking. (Participant 3)

The objective is to make ADSSC into a fully electronic service provider, which goes in line with the vision of the Abu Dhabi government for 2030. (Participant 4)

The second part is the government direction to become an e-government. To achieve this, we at ADSSC have to establish an electronic system that can accommodate the government direction. Nowadays we can be reached by the customer through smartphone apps and upload his request. Not only this, but also to reach back the customer and respond to his inquiries via the same platform. Therefore, this is the strategy of the government, and we have to work to achieve this strategy. (Participant 5)

The author's journal notes are in line with these views about meeting the government and company objectives stipulated in the company vision and mission:

The senior management agreed to issue a letter of appreciation to AMD-GIS staff congratulating them on the achievement (Journal Note 37, 30.04.2015)

Personally, I did not expect such a quick response from Mr. UD (Executive). Such a response indicates that Mr. UD (Executive) realizes the problem and how it might impact the ADSSC's image (Journal Note 41. 14.05.2015)

The Director indicates that, during the previous sessions, DPRMs were found to be meaningless, as the department manager, without the involvement of the senior staff, runs most of the reports/discussions. The director stated that DPRMs were made to enhance the communication between the senior staff and the department manager and establish a platform for discussion based on performance and resource management (Journal Note 7, 23.07.2014)

Second, all participants agreed that engaging the CMA end-users in defining the system requirements is crucial to ensuring the success of CMA. An example appears below:

Being part of the CMA project management team, my contribution can be clustered into two stages. Stage 1 involves the user-need assessment and defining the functional application requirement. (Participant 1)

We do have a good communication channel with the GIS team as system developers, conveying to them our comments and suggestions. (Participant 2)

There was a continuous exchange of letters, emails and an exchange of views and requirements for the new system during the stages of the project [design, testing, and official run]. Generally speaking, the communication was very successful. (Participant 3)

Communicating between system support and system developer, the GIS team and myself, was very good. Everybody is in the loop. No one is missing any information. (Participant 4)

The department manager further elaborates that the CMA is scheduled for improvement to accommodate the new changes in the TSS in particular and APD in general. (Participant 5)

The author's journal notes are in line with these views about engaging end-users in defining the system requirements without exposing the project to goal deflection:

I disagreed with Mrs. H and tried to explain to her that some end-users might take that chance and keep raising the expectation bar of the functional requirements, which might deflect the scope and after that delay the project. (Journal Note 35, 26.03.2015)

The project manager has to manage that kind of end-user expectation to avoid goal deflection and save the project from suffering delay and finally leading to failure. (Journal Note 37, 30.04.2015)

Third, four out of five participants agreed that technology-driven solutions (GIS and CMA) enhanced business operations at the ADSSC. An example appears below:

Some of the users would require access to the GIS to enable them to take proper decisions. The CMA has facilitated that kind of integration between process automation and the availability of geospatial reference. The user is no longer using a different system. All are integrated into one system, the CMA. (Participant 1)

Back then, the department manager, prior to his new assignment, was the CMA project manager. He understood all our requirements. It gave an indication that the department manager is not in favor of a section than the other but his in favor of pushing things up and fast-tracking the usage of CMA. (Participant 3)

The GIS team gives us feedback on what suggestion could be implemented right now and what can be implemented in a future enhanced project. (Participant 4)

Therefore, we start by explaining the objective of the system and why we need it. We have also explained to CSD how the system will help/facilitate their work. (Participant 5)

The author's journal notes are in line with these views on how technology was employed to enhance business operations at the ADSSC:

It indicated the successful stereotype that the CMA had created. Further communication with ADSIC will occur to see how this would take place to integrate with the E-NOC. ADSSC will be the first entity to integrate with E-NOC. It will produce a positive recognition of ADSSC internally and externally (within the ADSDI community). (Journal Note 17. 09.11.2014)

The team was a bit worried that these sessions might have low attendees. This is because the GIS and CMA have become very widely used, and no training might be required for existing users. For new users/new employees, I think it will be a must. (Journal Note 37, 30.04.2015)

I explained to him that the team discovered that the system has a coding problem, and we are in contact with the vendor to fix the issue through a VO. In addition, I explained to Mr. UD (Executive) that the current engine of the CMA—even if we managed to fix the coding—would not be able to cater to the huge increase in the number of permit processes in the CMA. (Journal Note 42, 14.05.2015)

The literature suggests that the main goals of communication in relation to BPR and BPA are the following: (1) cascading the vision of top management on change management initiatives; (2) addressing end-user requirements; and (3) overcoming the natural divide between functional units (Al-Mashari & Zairi, 1999; Dixon et al., 1994; Fondas, 1993; Rodney & John, 1999). Functional units and individuals within those units may have different perspectives on how business process reengineering and automation and associated technologies should be used (Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991). Communication should be used to facilitate a discussion on what type of solution is required and how to

implement it to overcome the specific problem the functional units are facing. The chosen solution should be a result of the participation of individuals and functional units. Failure to listen to the problems and concerns of individuals and functional units may impact the communication process (Barley, 1990; Bensaou & Earl, 1998; Crowswell, 1991; Issa-Salwe et al., 2010; Taher, 2013; Taher et al., 2012).

Effective communication is especially important for addressing the gap between developers and end-users (Bensaou & Earl, 1998; Taher et al., 2012). Both groups have idiosyncratic knowledge and goals, which are driven by two different areas: technology and business. Thus, it is essential that both types of stakeholders understand the concerns of the other group, share knowledge from their respective domains, and, ultimately, ensure the alignment between the technology and the organization's operations and strategies (Bensaou & Earl, 1998; Issa-Salwe et al., 2010; Taher et al., 2012).

The author's definition of the emergent theme and the interview extracts confirm the importance of instilling communication among business units and employees. Effective communication plays an important role in ensuring a common understanding of the company's vision and mission. It also helps establish a common understanding of how technology can boost current business operations after understanding user requirements.

6.2.5 Technology Interpretation and Know-how

The fifth emergent theme was the lack of technology interpretation and know-how. The author argued that lack of technology interpretation and know-how formed a barrier to the successful implementation of BPR and BPA initiatives in the UAE public sector. The author described a lack of technology interpretation and know-how

as the inability to understand the intuitive purpose and scope and possible usage of technology to enhance current business practices. Lack of technology interpretation and know-how can be seen at the organizational and individual levels. At the organizational level, end-users might not understand an initiative's purpose and scope. Moreover, system developers might not understand current business operations, which might differ from the end users' practices. At the individual level, employees or business units (end-users) might not be a fan of technology or have limited knowledge of information technology and how it can enhance business operations.

Since the emergent theme touches upon the rules of the norms practiced at the organization, it deals with the social integration circuit. This emergent theme is a result of the disparities among traditions and ideologies and the lack of information technology literacy discussed above. The possible consequences of a lack of interpreting technology and know-how include severe project delays or even failure.

All participants agreed that ADSSC employees demonstrated a good understanding of the purpose and scope of the suggested BPR and BPA initiatives. An example appears below:

Such integration is aimed at reducing the user dependency on as-builts drawings. Having backlogs of as-builts was a real risk considering the data accuracy. (Participant 1)

By now, we had gotten rid of paperwork. Also, by now, we had a tool to monitor the TSS individuals, in terms of some application processed, duration. The system becomes our daily routine. I think that the system achieved the objective of the government and ADSSC, in particular, to reduce the paperwork and become an e-government. (Participant 2)

Sometime after system launch, senior management started to recognize the effort spent on the CMA. They started to feel the benefits and how productivity increased. By now, I would say that management has become one of the main support bodies of the CMA. (Participant 3)

For the customer services department, they had big issues at the beginning because it is a complete big change for them; instead of just receiving the application and sending it to us, they have to upload the application, and they have to train their staff, which took some time... It is easy for them to monitor the work. They can track the work going out and when it comes back. (Participant 4)

Therefore, we start by explaining the objective of the system and why we need it. We have also explained to CSD how the system will help/facilitate their work... This creates a positive boost for accepting the system. Initially, and after introducing the CMA to CSD, they were enthusiastic about using the CMA... We have put out some leaflets and awareness messages for our customers, educating them about how to apply and how to check the status of their requests. (Participant 5)

The author's journal notes are in line with these views on employees' understanding of the implemented initiative's purpose and scope:

Despite that fact that CMA is based on a performance monitoring philosophy and knowledge sharing, TSS Al Ain appears eager to keep the CMA, recognizing the benefits that they may lose by retaining manual/paper-based duties. (Journal Note 2, 19.06.2014)

Usage of e-tools will facilitate the introduction and follow-up of agreed actions. (Journal Note 16, 06.11.2014)

The demands of the users were higher than what was offered originally in the scope by the winning bidders. The project manager has to manage that kind of end-user expectations to avoid goal deflection and save the project from suffering delays or failure. (Journal Note 37, 30.04.2015)

Second, all participants agreed that system end-users and system developers demonstrated a good understanding of TSS operations at the ADSSC. An example appears below:

Being part of the CMA project management team, my contribution can be clustered into two stages. Stage 1 involves the user-need assessment and defining the functional application requirement. Stage 2 was looking at the project maintenance requirement, approving the application acceptance plan, testing the application, and consolidating user findings /bugs and repairing them accordingly. (Participant 1)

I have an input into the workflow process and handling aspects, for example, process steps, workflow requirement. I have put forward

some suggestions related to the document required for each workflow. (Participant 2)

We held several meetings with the system developers to discuss how to automate current business processes used in the TSS and better enhance customers' application handling...Also, during the test period, we had several meetings to highlight bugs and issues to the system developer in order to fix them prior to the official launch of the CMA and our management to put them into the picture. (Participant 3)

Every person has a different mindset and probably wants the work done in a different way. However, the CMA work will be done in the same process. Therefore, no matter what mindset the person has, the workflows always remain the same. (Participant 4)

For any newly introduced system, there is an upside and a downside. The downside needs to be discovered and we will work on it accordingly. If we are not using the CMA, then we will not be able to experience it and will end up with a system that is redundant. (Participant 5)

The author's journal notes are in line with these views on how end-users and system developers demonstrate a good understanding of TSS operations at the ADSSC:

I have explained to him that this action is aimed at creating a standard operating procedure to reflect the current practices in CMA. The SOP should include an RACI matrix to better explain the level of authority and responsibility for all CMA users. (Journal Note 18, 25.11.2014)

A poor understanding of how information systems support an organization's business operations across the enterprise often plague technology-driven BPR and BPA initiatives (Bensaou & Earl, 1998). Technical specialists often face difficulties in communicating the role of IS, particularly the GIS, in their organizations (Crowswell, 1991) because it is often difficult for non-technical users to understand how GIS data relevant to organizational business processes are created and used to enhance organizational processes (Crowswell, 1991; Taher et al., 2012). Thus, no matter how much effort technical specialists make using GIS to improve organizational processes,

their efforts, as well as the overall value of a GIS, are frequently not recognized within the organization (Crowswell, 1991).

Planning stages are the most important phase in any project, followed by the user-needs and user requirements formulation stages. Technical specialists (or experts) need to educate end-users about the benefits (radical and incremental) of the intended initiatives (Taher et al., 2012; Taher et al., 2015). System developers can use a pilot to promote a specific initiative. End-users can then visualize potential outcomes. Deploying a pilot can be very challenging due to political, financial, and contractual barriers. In this case, benchmarking and exposure to best practices with affiliate organizations can be advantageous.

The author's definition of the emergent theme and interview extracts confirm that a lack of technology interpretation and know-how among employees and business units are barriers to the successful implementation of BPR and BPA initiatives in the UAE public sector. However, this is not the case in the ADSSC, which has demonstrated high consistency in technology interpretation and know-how among employees and business units. The author suggested stress-free interventions that can mitigate the lack of technology interpretation and know-how among employees and business units; planning statements, scope management, pilot project implementation, and user engagement in the design and testing stages are examples.

6.2.6 Fear of Losing Power and Threat to Job Security

The sixth emergent theme was employees' fear of losing power and threats to job security. The fear of losing power dominates employees' mindsets during the initiation and implementation of BPR and BPA initiatives. This type of fear exists among expatriate and UAE national employees alike. The author argues that the fear

of losing power has three components: fear of losing decision-making power, fear of losing legitimacy in the eyes of others, and threats to job security. Once the BPA is in place, business operation becomes standardized, and employees' authority and decision making become limited. The author argues that employees might see this as a chance to replace them with lower-hierarchy employees (who have very limited authority); for example, a senior engineer could be replaced by a technician who has a lower grade and less positional power in the organization.

In most cases, young project managers or employees in charge might fear taking action when decisive action needs to be taken. The author argues that this is due to their lack of knowledge. Experts often use their knowledge-base advantage (cumulative knowledge and experience) to take decisive action and thus strengthen their legitimacy in their business units. Most BPA initiatives include a process flow and a document management system, whereby important documents, drawings, and reports are made available to users to facilitate decision making. As soon as young employees become comfortable in accessing and searching the required information to assist them in decision making, reference to experts becomes unnecessary. Experts might also feel uncomfortable dealing with newly introduced technology due to their age or lack of technology competence (i.e., technical shock). This often diminishes their legitimacy in their business unit. Thus, employees' fear of losing power is driven by the UAE's social context, which solidifies and legitimizes the power relationships among employees.

Employees' fear of losing power can be dealt with by involving them at the early stages of BPR and BPA initiative implementation (M Hesson, 2007). This gives users ownership over the system and makes them feel that the system is a product of

their decision-making authority (Taher et al., 2012). In addition, agents should establish an RACI to discuss, agree upon, and communicate the roles and responsibilities of all members in a functional unit, which will illuminate the day-to-day operation the unit exercises. Performance review meetings at the organizational level can help in stabilizing performance momentum among employees and ensure their buy-in. Such performance review sessions require the availability of senior managers to be effective. To overcome the so-called “technical shock” among employees, change agents should involve them in the early stages of the BPR and BPA initiatives, such as the planning, user-needs requirements and assessment, and technical training stages.

Three out of five participants agreed that employees’ fear of losing power from a decision-making perspective existed during the implementation of the CMA at the ADSSC. An example appears below:

Responsibility borders are another major issue that led us to have a frequent conflict. Let me give you an example: in some cases, the conflict exists at the level of “Is there an ADSSC line in/outside the plot boundary?” (this is an accuracy issue). However, the conflict continues further on to “How far is the line from the plot edge?” and defining the safety distance. It is a responsibility/decision power issue...I think this is not true; they are afraid of taking responsibility. (Participant 2)

Some of them want to be a key resource in TSS. The rest were worried that everybody would come to him prior to a decision being made. (Participant 4)

Approver 2 is exposed to daily work. Approver 3 remains as an overseeing person to monitor the process and business operation. By reducing the approver hierarchy, we will achieve the objective of the company to respond to customer inquiries promptly. Overall, I do not see that it will impact my decision power. I am still there and can flip the table at any time, but based on facts and figures. (Participant 5)

The author’s journal notes are in line with these views about employees’ fear of losing power from the decision-making perspective during CMA implementation:

He further shows resistance by highlighting issues that present barriers to implementation, such as the personal policy manual (PPM) and how it can impact the promotion scale/policy. (Journal Note 23, 18.12.2014)

I think they are worried about losing control over HR activities, especially when it comes to unscheduled promotions due to performance, for example. (Journal Note 24, 21.12.2014)

On the other hand, she shared with me her fear of losing the project if the contract is terminated. This failure applies to her line manager, who is in charge of the APD. (Journal Note 38, 13.05.2015)

Mr. M came to me to inform me that he was staying late yesterday. He stayed till 06:30 pm to complete the pending approval in his CMA inbox. He told me that Mr. O and Mr. W were very shocked that there are no pending permits in his inbox. I think Mr. M was bragging about what he did last night. (Journal Note 50, 10.06.2015)

Second, all participants agreed that employees fear losing legitimacy when it threatens their knowledge base advantage. An example appears below:

If people resigned, we would be able to track the application that was processed by them: are we managing this application properly, do we have a good reference to what went on during a specific period?... without going back to individual users. (Participant 1)

Frankly speaking, we think that Mr. M is technically incompetent. Because of that, we have asked Mr. A and our director through informal discussion to reduce the approval hierarchy to ensure the work is smooth and delivered accurately and in a timely manner. (Participant 2)

Some of them want to be a key resource in TSS. The rest were worried that everybody would come to him prior to a decision being made ... I can retrieve any request at any time, including its detailed history and associated requests, by a single click. (Participant 3)

The older people, being with the company for a while, they have got already a regime that they follow and how to check. Moreover, that is all changed, and that caused a little delay. (Participant 4)

The CMA was initiated to speed the process of application, create an electronic archive that anyone can use, and find information at any time (Participant 4).

When I joined the TSS, I noticed that some employees are reluctant to exchange info and transfer knowledge. (Participant 5)

I came up with an action to start sharing info. I was clear that nobody would say, “I am only the person who knows”...They saw new Emirati developers threaten them in their jobs. They will not share knowledge and info with them. Thus, they remain as the single and focal point of obtaining a specific info. (Participant 5)

The author’s journal notes are in line with these views about employees’ fear of losing legitimacy when it threatens their knowledge base advantage:

The conflict with Mrs. U started with his assignment as ADSSC Representative in the E-NOC initiative where he was unable to deal with the technical requirements...He was often neglecting Mrs. U’s consultations for technical issues. Thus, it creates some issues about the data exchange mechanism (which is under Mrs. U’s responsibility). (Journal Note 1, 16.06.2014)

Mr. M’s brief was detailed, and I felt that he is seeking my endorsement against the action he took during the meeting. Seems to be unconfident but transparent. (Journal Note 2, 19.06.2014)

Third, all participants agreed that employees fear losing legitimacy due to technical shock in the ADSSC. An example appears below:

It may happen because they do not know how to use the introduced CMA. (Participant 1)

However, other employees may face difficulties in using technology or IT tools...They are not willing to take responsibility. I can see that they are bad at using technology. (Participant 2)

They might not be computer literate, thus become a Brier...I have also noticed that they have a real interest in doing this shift, but they fear using technology. (Participant 3)

Most of the employees who reject the change [the CMA] are not evolved in the use of technology, and therefore prefer to work on a paper-based/manual approach. (Participant 5)

The author’s journal notes are in line with these views about employees’ fear of losing legitimacy due to technical shock:

During the discussion, I found that Mr. M was trying to avoid having direct questions about the CMA or anything related. (Journal Note 8, 17.08.2014)

Fourth, three out of five participants agreed that employees' fear of losing job security was a challenge at the ADSSC during the implementation of the CMA. An example appears below:

This would make the user more responsible and accountable and start worrying about his performance. (Participant 1)

The rest were afraid to lose their jobs since the data and information became available at any time with minimal effort. (Participant 3)

We have faced another type of resistance, which is fear of losing a job. I think this is due to the Emiratization plan. The expatriate employees have noticed the ADSSC's insistence on the Emiratization plan. They saw new Emirati developers threaten their jobs. (Participant 5)

The author's journal notes are in line with these views about employees' fear of losing their job security:

When Mr. M jumped into my office, he was very nervous. He thought that I would definitely, this time, send him a warning letter/notification for missing the deadline for the second time. (Journal Notes 22, 17.12.2014)

In addition, he was afraid that we would not be able to reach the June 2015 target. Shortage of staff was the major excuse for Mr. M's failure to achieve the target set for 2015. He recognized that there was a management commitment to support him with staff to avoid missing the target. Mr. M has to work hard to show that this is happening. (Journal Note 44, 21.05.2015)

I think Mr. M understood the issue very well. His reputation and position became threatened. I think he would work hard to achieve the target of June 2015 but will not sustain that for long. It is his personality! (Journal Note 49, 10.06.2015)

The literature review indicated that individuals in public organizations can be very reluctant to give up even a portion of their power and authority (M Hesson, 2007; Silva, 2007; Silva & Backhouse, 2003; Taher et al., 2012; Taher et al., 2015). This is also true in the UAE context (Hesson, 2007; Al-Yahya, 2009). Employees (both UAE nationals and expatriates) at all levels may feel that their power is threatened because some of their tasks can be automated and, thus, they can be

replaced by technology (L. Dorthy, B. & W. Kraus, A., 1985; Silva, 2007; Silva & Backhouse, 2003). Indeed, an information system can carry out most of the operational tasks, such as requests for registration, records maintenance, and reporting (Baird, 2011; ESRI, 2013). Others may feel that the newly introduced technology will diminish their legitimacy within an organization, as they lack expertise with the technology. Research refers to this phenomenon as “technical shock” (Pacific Council, April 2002; Taher et al., 2012). Thus, decision makers impacted by an information system may form the most serious barrier to GIS implementation (M Hesson, 2007).

The author’s definition of the emergent theme and interview extracts confirmed the importance of dealing with employees’ fear of losing power during the implementation of the BPR and BPA initiatives. Employees’ fear of losing power and damaging their legitimacy is a serious barrier to implementing the BPR and BPA initiatives in the UAE public sector; it may also lead to the fear of threats to job security.

6.2.7 Lack of Perceived Personal Benefits

The seventh theme was the lack of perceived personal benefits. This is an area of concern to most employees in the public sector. It can take control of employees’ mindsets and compromise the implementation of the suggested initiatives. Management should ensure employee acceptance throughout the design and implementation stages of the suggested BPR and BPA initiatives. Employees should feel that they will gain something from the initiatives, such as financial and/or social rewards and recognition. To promote this feeling, rewards and deterrence measures

and mechanisms should be reflected in organizational policies and effectively implemented.

The above discussion illustrates that this emergent theme deals with facilitative and disciplinary practices proposed by the organization. Thus, this emergent theme contributes to the systemic integration circuit. On the other hand, the author argues that a lack of perceived personal benefit affects employees' understanding of their daily activities (which links to employees' traditions and ideologies).

The ADSSC's personal policy manual does not include a rewards and recognition scheme for distinguished or high-performance employees. Several discussions with the team and the HR team were held to examine this matter. Suggestions have been put forward to link the performance of employees with a reward and recognition scheme and promotion entitlement. It was also suggested that soft rewards might be established immediately (e.g., a letter of appreciation, early leave permits, approval of unscheduled or urgent leaves)

Four out of five participants agreed that the employee acceptance level increased during the implementation of the CMA at the ADSSC. An example appears below:

For example, yesterday, there was an error in the functioning of system notification emails. I've noticed that the users are informing us about the system bugs, stating that this would affect their work. This indicated that users are using the CMA frequently and on a daily basis. They do recognize the problem due to their daily check! If something happens today, we will find the emails of complaint in our inbox either on the same day or the day after. (Participant 1)

They kept thinking of the downside of shifting to an electronic system, thinking about how this might reduce their performance and thereafter not reaching the required performance. (Participant 3)

It's also a way for managers and approver 1s to monitor the performance of the team, to monitor the performance of each application type that has been delayed or has been going fast and basically changing the process of each application. (Participant 4)

It is very useful. Everything is being done through the CMA. (Participant 4)

CSD representatives in the municipality counters were a bit annoyed with the CMA, but it became clear to them that the system reduces the number of customers who are applying via the system. (Participant 5)

The author's journal notes confirm these views of employee acceptance of the CMA:

Mr. HM was looking to the performance measures from a different angle—related to annual appraisal and promotion. He asked about the details of the proposed action plan. (Journal Note 6, 10.07.2014)

Second, three out of five participants agreed that the ADSSC has failed to reward outstanding employees. An example appears below:

I would like to strongly emphasize the reward and punishment scheme. ADSSC management should better use the CMA reporting tools to measure the employees' performance and hence reward or punish the TSS individuals. (Participant 2)

The management has to use the CMA performance-reporting tool to recognize employees who processed more applications, the best employees, the worst employees, those who delay the work, who contribute more to achieving the Departmental operational measure. (Participant 3)

On the other hand, there is no recognition scheme at all for accountable or outstanding individuals. I've not seen in the ADSSC personal policy a statement that allows for a bounce or bounce leaves or even early daybreak. (Participant 5)

The author's journal notes are in line with these views on how the ADSSC recognizes employees' performance:

Mr. A and Mr. O stated that, despite the fact that their performance, as indicated in the DPRM, is overall outstanding, they have not yet received any compliment from management, except from their Director. (Journal Note 9, 23.08.2014)

Perceiving personal benefits and a deterring rewards scheme was totally absent at ADSSC. (Journal Note 25, 20.01.2015)

Third, all participants agreed that the ADSSC should integrate some organizational measures and mechanism in its policies to recognize employee efforts to institutionalize the CMA. An example appears below:

ADSSC has to work on accommodating the performance aspect of its policy. It has to link the company's objective to support its optimistic stage. ADSSC has introduced internal SLAs that can help in regulating the relationship between the various departments and can be further linked to the department's performance. (Participant 1)

Recognition of employees who had an outstanding performance is what we miss right now. On the other hand, there are no actions taken against low-performing employees. Not even a warning letter. (Participant 2)

The recognition should be in the form of a recognition meeting with the management representative, a letter of appreciation. On the other hand, punishment needs to be given to the worst performers, including a warning letter. (Participant 3)

To monitor the performance of the staff and give bonuses and employee of the month recognition would give some incentive for the people to work better. (Participant 4)

Nothing in my hand other than allowing early daybreak. Also, I would go easy with them in approving their casual and unplanned leaves. I would give them a privilege over low-performance individuals. Also, I would reflect my gratitude for their performance in the annual evaluation. It might help the employees get in the bonus list, in case the company decides to do so. (Participant 5)

The author's journal notes are in line with these views about ADSSC measures and mechanisms required to recognize employee efforts to institutionalize the CMA:

Item no. 14, 15, and 17 were discussed in detail. I've illustrated the CoP perspective and the importance of having personal scorecards linked to the departmental/corporate performance, monitoring tool, and possible rewarding and deterring scheme in the ADSSC's personal policy manual. (Journal Note 23, 18.12.2014)

On the other hand, he stated that the promotion scheme at ADSSC is outmoded, as it does not allow growing grade-wise. Positions are

associated with personal grades, and this affected his promotion. Other than that, he would love to stay. (Journal Note 25, 20.01.2015)

The literature review indicated that successful technology implementation can produce a number of benefits at the organizational level but that some end users often feel that they gain nothing from the technology except additional tasks and duties (Kudray & Kleiner, 1997; Taher et al., 2012). Thus, it is important for an organization to extend the benefits gained from automation to individuals (M Hesson, 2007; Silva, 2007; Silva & Backhouse, 2003; Taher et al., 2012). For example, prior to issuing an NOC, TSS workers spend so much of their time looking for previous approvals, as-builts, and site plans (affection plans) due to the inadequate archiving system.

When individual investments are necessary to benefit another functional unit, the organization should acknowledge or reward contributing functional units and individuals. This reward can be financial or may take the form of social recognition (L. Dorthy, B. & W. Kraus, A., 1985; Taher et al., 2012; World, April 2002). A performance policy can be a supportive tool for overcoming the lack of perceived personal benefits and recognition that employees can feel. A default performance policy includes departments and individuals' performance indicators, benefits, and recognition schemes. For example, the internal recognition of the best employee of a department can create a sense of accomplishment and system ownership among employees.

The author's definition of the emergent theme and interview extracts confirm the importance of providing personal benefits to outstanding employees. This is a natural response to increasing user acceptance of the suggested BPR and BPA initiatives. A lack of perceived personal benefits is a challenging factor that might expose the BPA and BPA initiatives in the UAE's public sector to a dramatic failure.

Chapter 7: Implications, Limitations, Recommendations, and Conclusion

This chapter concludes the dissertation with a discussion of the research implications (empiric, theoretical and practical), limitations, future research possibilities, and the conclusion.

7.1 Implications

The implications of this study are empirical, theoretical and practical. The empirical implication can be found in reporting the statistical significance of the degree of integration and institutionalization of the CMA system at the ADSSC after the execution of the suggested interventions. The statistical significance of the degree of integration and institutionalization of the CMA exists at the individual item, dimension, and circuit levels.

From a theoretical implication perspective, this research examined the organizational and individual resistance factors in terms of the CoP. It extends the CoP to comprehend organizational and individual resistance factors and proposed a new framework (see Figure 6-1).

The practical implications of this research offer recommendations of techniques to ADSSC management driven by the leadership, project management, and change management literature and customized to suit the UAE public sector:

- Introducing personal scorecards to all employees to recognize employee efforts to meet the corporate objectives and key performance indicators.

- Revamping the employees' annual performance to reflect employees' efforts to meet the corporate objectives and key performance indicators.
- Increasing employees' perception of personal benefits by adjusting the personal policy manual to include rewards and deterrence for employees' performance.
- Enhancing the mechanism of performance review meetings to help meet the corporate objectives.
- Increasing project sponsorship, especially for strategic projects, by assigning a PES or PSC that represents the highest possible hierarchy of the organization.
- Enhancing the current practices of engaging concerned stakeholders for all strategic projects by engaging them in the design and implementation stages to overcome the lack of technology know-how that critical stakeholders may face.
- Smart-marking all strategic projects prior to initiation by introducing the objective and benefits to the organization, business units, and individual employees.
- Publicizing all successful strategic projects at all possible levels to ensure business units and employees' buy-in for similar projects.
- Standardizing the practice of defining project governance to all strategic projects.

- Measuring the effectiveness of all strategic projects before and after implementation and consistently announcing the outcomes.

7.2 Limitation

This research was based on the clearance management application at Abu Dhabi Sewerage Services Company (ADSSC). The population targeted to participate in the survey comprised CMA users. However, some of the expected participants were out of reach because of national services engagements, annual leave, or voluntary resignation. In addition, a limited number of the proposed interventions were unfeasible due to financial, administrative, and legislative obstacles at ADSSC. Another limitation is that the research was designed to understand the power relationships within the cultural conditions of the UAE.

7.3 Recommendations for Future Research

Since the UAE's social context pays much attention to power relationships, the author suggests that research be conducted in the domain of the power component of change in the UAE. Both the public and private sectors in the UAE are encouraged to continually integrate Emiratis in their workforce. The UAE government has established measures to meet ambitious Emiratization targets. Since this is happening, the author suggests investigations to understand the impact of business process reengineering and automation projects that contain high-tech elements on the Emirati workforce. As older Emiratis engaged in the public and private sectors might not be fans of technology nor have technology competencies, the author suggests research to understand how technology-driven initiatives can impact this demographic subgroup. As a result of the theoretical implication presented in extending the circuit of power framework to integrate organizational and individual resistance factors, the author

suggests research to empirically examine the proposed framework presented in Figure 6-1 in the UAE context.

7.4 Conclusion

This research set out to understand the impact of power relations in leading GIS-enabled BPR and BPA initiatives in the UAE. The UAE leadership aims to turn its government into one of the top five governments in the world in terms of the quality of public services provided (ADCED, 2008). To achieve this, the government is encouraging all public organizations to undertake BPR or BPA projects. Despite the strategic importance of these PBR and BPA initiatives, UAE public organizations often encounter fierce resistance when trying to implement them (Al-Khoury and Bal, 2007; Al-Yahya, 2009; Hesson, 2007; Yaseen and Okour, 2012; Badawy, 1980; ADCED, 2008). The problem is that the UAE's social culture often clashes with the organizational culture that is needed to successfully achieve change (Badawy, 1980; Muna, 1980; Darwish, 1998; Yaseen and Okour, 2012; Common, 2011). Several organizational and individual factors are behind this clash and give rise to resistance (Taher et al., 2015). Organizational factors include a lack of organizational maturity, conflicts among organizational traditions and ideologies, and poor communication. The individual factors include lack of technical skills among employees, lack of perceived benefits, fear of losing power, and the absence of project sponsorship.

The author argues that introducing knowledge management and change management at the organizational level will address organizations' maturity and stability issues. In addition, introducing a comprehensive communication plan could eliminate the conflicts among traditions and ideologies adopted by various teams and individuals in organizations. The BPR and BPA initiatives can be compromised if

project sponsorship is not practiced. Therefore, the author suggests a new level of project management that is augmented with leadership characteristics (e.g., project executive sponsors and project steering committees). In addition, establishing proper project governance and practicing frequent performance review meetings are essential to strengthening project sponsorship. Planning statements, stakeholder impact analysis, and user-need assessments can be used as techniques to ensure comprehensive communication among business units and individual employees.

Encouraging business unit decision makers and individual employees to participate in the BPR and BPA initiatives at the design and deployment stages can eliminate the lack of technical knowledge and know-how that might face the suggested initiatives stakeholders. System developers should conduct education sessions with all impacted stakeholders to ensure that they understand the objective and the benefits of the suggested initiative. The author argues that a policy adjustment that includes a performance policy based on employees' performance scorecards can increase the perception of personal benefits among employees. Managers might take a personal initiative to recognize the "best employee of the month" based on outstanding performance. Finally, the author argues that attention should be paid to the power relationships among business units and employees, especially given the particular cultural conditions of the UAE. Standard operating procedures and a responsibility assignment matrix can be used to regulate the positional power and meet the organization hierarchy.

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Appendix A: ADSSC Approval



شركة أبوظبي لخدمات الصرف الصحي
Abu Dhabi Sewerage Services Company

Ref: ADSSC/SPCD/ /13/
Date: 16th December 2013
Fax: +97126943772

To: Alan Thomson
ADSSC Managing Director

Dear Sirs,

Subject: Permission to use ADSSC as an academic case study

As you might be aware, I've been enrolled at the Abu Dhabi University's Doctor of Business Administration program (DBA) since 2011. My DBA dissertation titled "*Circuits of Power Approach to Leading GIS-Enabled Business Process Reengineering: The Case of Abu Dhabi Sewerage Services Company*" is about the GIS-enabled business process reengineering and automation initiatives.

Since the data collection is an integral part of my dissertation, I would like to seek your approval to use ADSSC in my case study and conduct relevant data collection.

Collected data, analysis and the outcome of this study will be solely used for academic purposes and subsequent academic publication.

Thanking your for your continuous support

Yours faithfully,



Eng. Nader Bin Taher
Asset Performance Department Manager
Strategic Planning and Communication Dept. Manager



Telephone: +971 2 416 8591, Fax: +971 2 416 0517 | PO Box 108801, Abu Dhabi, United Arab Emirates | www.adsscae

Appendix B: Abu Dhabi University IRB Approval

Nader Bin Taher

Subject: RE: IRB Application Nader Taher

Date: Monday, March 31, 2014 7:26:10 AM Gulf Standard Time

From: Essam Dabbour <essam.dabbour@adu.ac.ae>

To: Vlad Krotov <vlad.krotov@adu.ac.ae>

CC: Leiser Silva <lsilva@uh.edu>, Nader Assad Bin Taher (ADSSC)

Dear Dr. Evan

The IRB application submitted by Mr. Nader Taher is now **approved**. Good luck for the candidate in his research.

Essam Dabbour, PhD, P.Eng.

Department of Civil Engineering
College of Engineering, Abu Dhabi University
P.O. Box 59911 Abu Dhabi, UAE
Office: AD-2F-255
Tel: +971-2-501-5634
Fax: +971-2-586-0182
essam.dabbour@adu.ac.ae

From: Vlad Krotov

Sent: Tuesday, March 25, 2014 5:32 PM

To: Essam Dabbour

Cc: Leiser Silva (lsilva@uh.edu); Nader Assad Bin Taher (ADSSC) (nader@adssc.ae)

Subject: IRB Application - Nader Taher

Dear Dr. Essam,

I hope everything is well on your side.

I would like to submit an IRB application together with the required supplementary materials on behalf of Nader Taher, our DBA student, for your review and approval.

Please let us know if you need anything else.

We are looking forward for your decision.

Thank you,

Dr. Vlad Krotov

Assistant Dean of Graduate Programs &
Assistant Professor of MIS, College of Business Administration

Abu Dhabi University
P.O. Box 59911
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Appendix C: Informed Consent Form

INFORMED CONSENT FORM

!
!

You are invited to participate in a research project conducted by Nader Asaad Taher – a Doctor of Business Administration student at Abu Dhabi University. The purpose of this research is to devise a framework that can be used by managers to successfully introduce and integrate Geographical Information Systems (GIS) in UAE's public utility companies. This research is conducted under the supervision of Dr. Leiser Silva (University of Houston) and Dr. Vlad Krotov (Abu Dhabi University).

This research will help UAE organizations gain better understanding of how to implement GIS. Moreover, answering this survey will help ADSSC improve GIS-related operations. Results of this study will be shared with all study participants.

The survey has 21 questions and should take about approximately 10-15 minutes to complete.

Please note that your participation is voluntary; you are not required to participate in this study. If you decide to participate in this study, you can terminate your participation at any time without any consequences. Your name will not be matched with your responses, so your confidentiality will be protected. Under no circumstances the researchers will reveal your identity and your participation in the study to a third party. This consent form will be kept separately from the document containing your responses to questions in order to protect your confidentiality.

If you have any questions or concerns about this study, please feel free to contact the principal researcher at nader@adssc.ae or +97128180500 or his dissertation supervisors at lsilva@uh.edu or vlad.krotov@adu.ac.ae.

[Please sign below to confirm your willingness to participate in the study]

I, _____ **[PRINT NAME]** consent to participate in the study conducted by Nader Asaad Taher, College of Business Administration, Abu Dhabi University with the supervision of Dr. Leiser Silva and Dr. Vlad Krotov.

Participant signature

Date

!

نموذج الموافقة على المشاركة في الاستبانة

أنت مدعو للمشاركة في مشروع بحثي يجريه السيد / نادر أسعد بن طاهر - طالب ببرنامج الدكتوراه في إدارة الأعمال بجامعة أبو ظبي. يهدف هذا البحث إلى وضع إطار يمكن استخدامه من قبل المديرين التنفيذيين لإنجاح دمج نظم المعلومات الجغرافية في الجهات الحكومية بدولة الإمارات العربية المتحدة. ويجري هذا البحث تحت إشراف كل من الدكتور / ليسر سيلفا (جامعة هيوستن) والدكتور فلادكروتوف (جامعة أبو ظبي).

هذا البحث يسهم في مساعد الجهات الحكومية بدولة الإمارات العربية المتحدة للحصول على فهم أفضل لكيفية تطبيق نظم المعلومات الجغرافية، وعلاوة على ذلك، فإن الإجابة عن هذا المسح سيسهم في تحسين العمليات المتعلقة بنظم المعلومات الجغرافية في شركة أبوظبي لخدمات الصرف الصحي ، وسيتم مشاركة نتائج هذه الدراسة مع جميع المشاركين فور الانتهاء منها.

تتكون هذه الاستبانة من 21 سؤالاً ، ويستغرق إكمالها 10-15 دقيقة تقريباً.

يرجى الملاحظة بأن مشاركتكم في هذه الاستبانة هي مشاركة طوعية ، لذا يمكنكم إنهاء مشاركتكم في أي وقت دون أية تبعات تذكر. كما أنه لن يتم ربط أسماء المشاركين بالردود المقدمة من أجل حماية خصوصية المشاركة في هذه الاستبانة، بالإضافة إلى أنه لن يتم تحت أي ظرف من الظروف الكشف عن هوية المشاركين في هذه الاستبانة لأي طرف آخر ، وستبقى استمارة الموافقة على المشاركة في هذه الاستبانة بمعزل عن وثيقة الاستبانة الأساسية ، وذلك للتأكيد على حماية خصوصية المعلومات المقدمة.

إذا كان لديك أي أسئلة أو استفسارات حول هذه الدراسة، يرجى عدم التردد في الاتصال بالباحث الرئيسي على قنوات الاتصال التالية: nader@adssc.ae أو 97128180500 أو على المشرفين القائمين على هذا البحث silva@uh.edu أو vlad.krotov@adu.ac.ae

[يرجى التوقيع أدناه لتأكيد استعدادكم للمشاركة في هذه الدراسة]

أنا، _____ أوافق على المشاركة في الدراسة التي أجراها السيد / نادر أسعد بن طاهر من كلية إدارة الأعمال بجامعة أبو ظبي بإشراف الدكتور / ليسر سيلفا والدكتور / فلاد كروتوف.

التاريخ

اسم المشارك

Appendix D: Survey Questionnaire

Section 1: Demographic Data

For each of the statements below, please mark as appropriate.

Personal Information

1. How old are you?
 19 years old or younger
 20 – 29 years old
 30 – 39 years old
 40 – 49 years old
 50 years old or older
2. Your gender:
 Male
 Female
3. Which of the following described best your position within the organization?
 Executive
 Manager
 Section Head / Team Leader
 Entry-Level Employee
 System Supporter
4. For how long have you been interacting with Technical Services Section?
 2 years or less
 3 – 5 years
 6 – 10 years
 11 – 15 years
 16 years or more
5. For how long have you been working in Abu Dhabi Sewerage Services Company?
 2 years and under
 3 – 5 years
 6 – 10 years
 11 – 15 years
 16 years and above

Section 2: Clarence Management Application Institutionalization Assessment

For each of the statements below please check the box that indicates best the degree to which you agree or disagree with the statement.

Item		Your Response (please check one)				
		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1	My line manager or CMA sponsor is contributing to achieve goals and objectives of the E-NOC initiative with the help of the CMA					
2	By using the CMA, I contribute to goals and objectives of E-NOC					
3	The CMA is useful for monitoring various activities within the organization					
4	The CMA provides me with valuable information and helps me perform my duties					
5	The CMA operates in line with my responsibilities and authority within the organization					
6	I share with others knowledge and information on how to improve operations and use of CMA (e.g. proposing additional features for the system, helping CMA users on how to use it)					
7	The data management tools of CMA provide me with timely data and information					
8	Whenever the CMA breaks down, I report this immediately to avoid delays in handing the customers' request.					
9	My line manager or CMA sponsor is committed to the success of the CMA and the E-NOC the as they contribute to the government goal					
10	I am committed to perform my duties with no delays					
11	My participation in user needs assessment sessions for the CMA is important for proper implementation of the system					
12	Sharing knowledge and information about technical spot check and SOP's with others contributes to success of CMA and the E-NOC initiative					
13	The main purpose of the CMA is to contribute to the E-NOC initiative					
14	I understand how I can use CMA to contribute to the E-NOC initiative and ADSSC as a whole					
15	The CMA reporting tools are effective in monitoring my daily performance					
16	The CMA provides an accurate assessment of my performance for my annual performance evaluation.					
17	The CMA helps me in self-monitoring my performance regularly					
18	I believe that ADSSC achieved the E-NOC initiative objective by implementing the CMA					
19	I perform most of my daily tasks through the CMA					
20	I am aware of the disciplinary or reward measures that ADSSC has to ensure that I use CMA in my work					
21	The CMA is an important part of my daily routine					

نقل قسم ال وول: البيانات بالديموغرافية
 رجا اختيار الأنسب من بين ال ال التالتالية :

البيانات الشخصية	
1.	م تبلغ من العمر؟ ☐ 19 عاما أو أصغر ☐ 20 - 29 عاما ☐ 30 - 39 عاما ☐ 40 - 49 عاما ☐ 50 عاما أو أكثر
2.	الجنس: ☐ ذكر ☐ أنثى
3.	أي م التالي هو أفضل و ف لمو م التطبيق في المؤسسة؟ ☐ تنفيذي ☐ مدير / ☐ رئيس قسم رئيس فريق ☐ مختلف ☐ م م النظم
4.	كم م م عطف تعاملك/ تفاعلك مع م الخدمات اللغائية؟ ☐ سنتان أو أقل ☐ 3- 5 سولات ☐ 6 - 10 سولات ☐ 11-15 سنة ☐ 16 سنة أو أكثر
5.	كم م م عطف عملك في م شدة أب وظلي لخدمة الص فف بالصحي؟ ☐ سنتان أو أقل ☐ 3- 5 سولات ☐ 6 - 10 سولات ☐ 11-15 سنة ☐ 16 سنة أو أكثر

القسم الثاني: تقييم نظام التراخيص الإلكتروني

يرجى وضع الاختيار الأنسب لمدى موافقتكم أو رفضكم لكل من العبارات التالية :

م	موضوعات الاستبيان	الخيارات المتاحة (يرجى اختيار أحد الخيارات التالية)				
		1 لاوافق بشدة	2 لاوافق	3 محايد	4 أوافق	5 أوافق بشدة
1	يسهم مديريّ المباشر أو راعي نظام التراخيص الإلكتروني في تحقيق غايات وأهداف برنامج شهادات عدم الممانعة الإلكتروني بمساعدة نظام التراخيص الإلكتروني .	☐	☐	☐	☐	☐
2	إنني أسهم في تحقيق غايات وأهداف برنامج شهادات عدم الممانعة الإلكتروني من خلال استخدامي لنظام التراخيص الإلكتروني .	☐	☐	☐	☐	☐
3	إن نظام التراخيص الإلكتروني مفيد لرصد الأنشطة المختلفة داخل الشركة .	☐	☐	☐	☐	☐
4	يوفر لي نظام التراخيص الإلكتروني معلومات قيمة تساعدني في أداء واجباتي الوظيفية .	☐	☐	☐	☐	☐
5	يعمل نظام التراخيص الإلكتروني وفق نطاق السلطة و المسؤولية الممنوحة لي .	☐	☐	☐	☐	☐
6	أشارك الآخرين المعرفة والمعلومات التي من شأنها تحسين عمليات نظام التراخيص الإلكتروني. (مثال: اقتراح ميزات إضافية للنظام، ومساعدة مستخدمي النظام على كيفية استخدامه)	☐	☐	☐	☐	☐
7	توفر لي أدوات إدارة البيانات بنظام التراخيص الإلكتروني المعلومات والبيانات في الوقت المناسب .	☐	☐	☐	☐	☐
8	أقوم بالإبلاغ عن أعطال نظام التراخيص الإلكتروني فور حدوثه لتجنب تأخير إنهاء طلبات العملاء .	☐	☐	☐	☐	☐
9	إن مديريّ المباشر أو راعي نظام التراخيص الإلكتروني ملتزم بإنجاح كل من نظام التراخيص الإلكتروني وبرنامج شهادات عدم الممانعة الإلكتروني لمساهمتها في تحقيق هدف الحكومة .	☐	☐	☐	☐	☐
10	أنا ملتزم بأداء مهامي دون تأخير يذكر .	☐	☐	☐	☐	☐
11	إن مشاركتي في جلسات تقييم احتياجات المستخدم عامل مهم في تطبيق النظام على نحو سليم .	☐	☐	☐	☐	☐
12	تقاسم المعرفة والمعلومات مع الآخرين بشأن نقاط المراجعة الفنية والإجراءات التشغيلية يسهم في إنجاح كل من نظام التراخيص الإلكتروني وبرنامج شهادات عدم الممانعة الإلكتروني .	☐	☐	☐	☐	☐
13	إن الهدف الرئيسي من نظام التراخيص الإلكتروني هو الإسهام في مبادرة برنامج شهادات عدم الممانعة الإلكتروني .	☐	☐	☐	☐	☐
14	إنني واع بأن معرفتي باستخدام نظام التراخيص الإلكتروني تسهم في مبادرة برنامج شهادات عدم الممانعة الإلكتروني وفي نجاح الشركة أيضا .	☐	☐	☐	☐	☐
15	تسهم تقارير نظام التراخيص الإلكتروني في مراقبة أدائي اليومي بفعالية .	☐	☐	☐	☐	☐
16	يوفر نظام التراخيص الإلكتروني تقييما دقيقا لمستوى أدائي ويترج في تقييم الأداء السنوي .	☐	☐	☐	☐	☐
17	يسهم نظام التراخيص الإلكتروني في مراقبة أدائي الذاتي على نحو منتظم .	☐	☐	☐	☐	☐
18	أنا أعتقد بأن الشركة قد حققت أهداف مبادرة برنامج شهادات عدم الممانعة الإلكتروني من خلال تنفيذ نظام التراخيص الإلكتروني .	☐	☐	☐	☐	☐
19	أقوم بتنفيذ معظم مهامي الوظيفية اليومية من خلال نظام التراخيص الإلكتروني.	☐	☐	☐	☐	☐
20	أنني على علم بالإجراءات الجزائية أو الحوافز التي ترصدها الشركة لضمان استخدام نظام التراخيص الإلكتروني في أداء مهامي الوظيفية .	☐	☐	☐	☐	☐
21	يعتبر نظام التراخيص الإلكتروني جزءا مهم من عملي اليومي الروتيني .	☐	☐	☐	☐	☐

Appendix E: Publication Approval



AMERICAN SOCIETY
FOR COMPETITIVENESS

May 26, 2015

RE: "Business Process Reengineering: Addressing Sources of Resistance and Sabotage Tactics"

Dr. Taher,

I am pleased to inform you that your article has been recommended for publication in *Journal of Competitiveness Studies*. It will be published in a future issue.

Thank you for considering *JCS* as an outlet for your work.

Sincerely,



Abbas J. Ali
Editor in Chief
Journal of Competitiveness Studies

Nader Assad Bin Taher (ADSSC)

From: onbehalfof+sanjay.singh+adu.ac.ae@manuscriptcentral.com on behalf of sanjay.singh@adu.ac.ae
Sent: Monday, April 13, 2015 11:40 PM
To: Nader Assad Bin Taher (ADSSC); Vlad.krotov@adu.ac.ae; Isilva@uh.edu
Subject: IJOA MS IJOA-10-2014-0809.R1 Decision
Attachments: Attached standard file: * Open-Access-licence-agreement.pdf

13-Apr-2015

Dear Dr. Bin Taher,

Following your revisions it is a pleasure to accept your manuscript entitled "A Framework for Leading Change in the UAE Public Sector" in its current form for publication in the special issue of International Journal of Organizational Analysis.

Thank you for your contribution. On behalf of the Editors of International Journal of Organizational Analysis, we look forward to your continued contribution to the Journal.

Yours sincerely,

Dr. Sanjay Singh and Prof Peter Stokes

Guest Editor, International Journal of Organizational Analysis sanjay.singh@adu.ac.ae

Appendix F: Interviews

Interview No.1

Place: Participant 1 Office
Date: 21.10.2014
Time: 01:07 pm (35 minutes)
Entry Type: Interview
Entry Name: Interview with Participant 1
Status: Approved

Opening statement

Greetings! As you are aware, I am conducting a research on system institutionalization tackling a geospatial system. One of the examples here in ADSSC, is the clearance management application (CMA). I would suggest that the interview would be run in Arabic, for your easy reference. The interview will take 15 to 20 minutes at maximum. In addition, there is an information consent form (ICF), which you need to look at and sign accordingly. As soon as I am done with the interview script, I will send it to you for your review and acknowledgment. So, let's start the interview now in Arabic!

Section 1: Demographic Data

Q1-1: How old are you?

A1-1: I am 34 years old

Q1-2: What is your position at ADSSC?

A1-2: My position at ADSSC is GIS Specialist in Abu Dhabi

Q1-3: For how long have you been interacting with the Technical Services Section?

A1-3: I was employed in ADSSC in 2007 as a GIS developer and since then I have been interacting with the Technical Services Section to provide them with maps and data. I think I have been interacting with them for 7 years.

Q1-4: For how long have you been working in Abu Dhabi Sewerage Services Company?

A1-4: 7 years

Section 2: Interview Script

Q2-1: Why has CMA been initiated in the first place?

A2-1: There are government and organizational drivers. The government triggers the e-government / SMART government. The organizational trigger is summarized in automating all possible businesses and organizing / unifying internal processes and reducing paper works.

Q2-2: What do you think are the objectives of implementing CMA?

A2-2: As I've indicated, ADSSC is looking to minimize paper works. In addition, we were in need to have a data center to save and retrieve data through an automated approach. Third, we were in need to have a clear workflow / process used by all users unifying all TSS sections. Currently, departments and sections in different areas use different workflows despite the fact that we are all in the same organization. For example: the case of TSS of Abu Dhabi, Western Region and Al Ain. The differences present in workflow process as well as in the nature of application types. Fourth,

some of the users would require an access to the GIS to enable them to take proper decisions. The CMA has facilitated that kind of integration between process automation and the availability of geospatial reference. The user are not any more using different system. All are integrated in one system, the CMA.

What about the management! What were there objectives? There was no performance tools or performance tracking for TSS employees. Also there was no way to monitor numbers of applications received and processed. So why are they looking to monitor these issues? To understand were they (employees) stand. If people resigned, are we will be able to track those application that were processed by them, are we managing these application properly, do we have a good reference to what went on during a specific period... without going back to individual users. The automated CMA tolls helped us in achieving what we looked for. mmmm.....interesting!

Q2-3: How did you contribute to the CMA implementation?

A2-3: My contribution can be seen in tow roles: CMA project management team member and GIS specialist. Being a GIS specialist, I've looked at the initial design of the project and detailed that design to RFP after holding a consultation session with end-users. Also, I've managed to push the tender process further till the award, handling technical review and assessment of all technical submissions done by the invited bidders. I do extend the support to evaluate the GIS contractor upon completing the contracts. On the other hand evaluating the future need and plan new project accordingly, including maintenance plans. Since the CMA belongs to the GIS as system owner, I do also provide system support activities to all GIS users, in terms of training, solving bugs, handling application administration role to add, edit and delete functionality of users domain /rights. Being part of the CMA project management team, my contribution can be clustered in two stages. Stage 1 involves the user need assessment and defining the application functional requirement. Stage 2 was basically looking at the project maintenance requirement, approving application acceptance plan, testing the application, and consolidate users findings /bugs and repair them accordingly.

Q2-4: What are the obstacles that you have faced during the design and implementation phases of the CMA?

A2-4: We have faced two type of obstacles: technical (GIS / system related issues) and non technical (human). Technical obstacles can be seen as shortage of budget, system resources (servers) and data accuracy - especially that the provided solution is integrated with the GIS data. Such integration is aimed to reducing the users dependency on As-builts drawings. Having backlogs of as builts was a real risk while considering the data accuracy. Non-technical obstacles presented in users mentalities resisting usage of IT / computer system. This may happen because of either they do not know how to use the introduced CMA or they do not want to shift to an automated business, preferring manual and paper works. Business process used in ADSSC differs from city to another. This includes changing the ownership of ADSSC, from Abu Dhabi Water and Electricity Authority (ADWEA) Executive Council of the Emirate of Abu Dhabi. In addition, moving the TSS section from the Asset Information and Standards Department (AISD) to Asset Performance Department (APD). Thus, results changes in adopted process workflow, rules and responsibilities. From an organizational level, did you face any obstacles?

Q2-5: Why do you think that these obstacles upturned?

Q2-5: Defining the CMA ownership to us (GIS team) was a challenge, despite the fact that TSS are the main users. The communications between departments were not so good. This is due not only to the fact of being held responsible but also monitored. CMA provides to decision makers some performance monitoring reports and users (departments) were a bit embraced. Also the CMA provides individual users with tools to track their performance, figures about number of applications was handled by him, duration, etc.... the CMA enables these kind of monitoring tools. CMA provides a dashboard for decision makers to monitor the performance of his staff against signed internal and external service level agreements (SLA), for example the Customer Services Department (CSD) are using the performance indicator against the staff as a report output to the Regulation and Supervision Bureau.

Q2-6: How did you manage to overcome these obstacles? Did you have the necessary resources for overcoming the obstacles? Did you have the authority? Or did you reported to your manager?

A2-6: If we are talking about the non-technical obstacles, user resistance to use the CMA, the project sponsorship plays a vital role in putting pressure on users to use the system, No alternative solution. Secondly, restructuring APD to include TSS and GIS was very helpful in putting both sections into a communication channel that lead to better understand the system and eventually persuade the TSS individuals to use the CMA, automating 16 types of workflow. Such achievement helped other departments, such as; Projects, Planning and Forecasting, CSD and O&M (that are afraid of potential monitoring system) to recognize that there are no more paper works and they need to start using the CMA. Third is the vision of Abu Dhabi Government to achieve the ENOC outcomes. The sooner the ADSSC implements the CMA, the better position they are in the ENOC participation.

Addressing technical issues, the management starts to understand current position of ADSSC in the formula of ENOC and the necessary to be ready for its implementation. Therefore the management has supported us with resources (financial and contractual resources) to disengage from ADWEA data center, initiating maintenance plans (with various options) and pushing up the data accuracy of ADSSC GIS.

Upon the successful implementation of the CMA, the CSD has requested ADSSC management to grant APD with budget (on urgent basis) to launch a similar system to the CMA to automate and reengineer CSD process workflows.

Is it possible to say that CMA becomes a role model system? Yes, you may go further and say that CMA becomes a benchmark. The Deputy Managing Director, as a member of the ENOC executive committee, has directed the APD and IT to launch similar initiative to CMA to ensure automating and reengineer all business processes in the company. This is a natural reflection of hearing the success story the CMA from ENOC team.

In many occasions, ADSSC senior management request the GIS team to do some changes in CMA tools, reports, etc. however, these changes would have had a serious impact on the CMA performance. In addition, requested changes were out of GIS control and require special coding via specialized contractors. So how did that

happen? Why? The project manager used to report to the AMD Director where the latest exposes this information to senior management. It seem that massages to senior management was ambiguous. Later on this issued was resolved because the project manager become the AMD director and he become a member in ADSSC senior management.

I would like to emphases on the importance of the communication between us as system initiator /owner and the system users. The project management team members present most of the CMA internal stakeholders, for example: Nader (you) presenting the management, Warda presenting IT, Maitha and Khulood presenting GIS, Omar Chakfa presenting AISD, Emad presenting TSS. In addition, some of the project management team was presenting also external stakeholders from example: Khulood and Maitha as ADSSC representatives in Abu Dhabi Special Data initiative (AD-SDI) and Emad and Mohamed as ADSSC representatives in ENOC. We have managed to mitigate any ambiguity before it happened and thus result a successful implementation. We will continue working on engaging the stakeholders in all our projects.

I am glad that the recognition of CMA started externally, through positive report/feedback sent from ADSDI and ENOC to ADSSC senior management. This has resulted framing CMA implementation story positively. mmm...really interesting!

Q2-7: What ADSSC would do to ensure high adoption of the CMA?

A2-7: I wish that ADSSC starts to think linking the CMA users appraisal and promotions with their performance (usage of CMA). The performance monitoring exercise shall use CMA reporting tool and nothing else. Thus should make the user more responsible and accountable and starts to worries about his performance. Also, I wish that the management exercised some pressure on other CMA users (departments) to actively participate in the CMA. The CMA does not only automate the internal processes of the TSS but also regulate its the relationship with other departments. How do you think that ADSSC can do it? ADSSC has to work on accommodating the performance aspect in its policy. It has to be link to the company objective to support its optimistic stagey. ADSSC has introduced internal SLA's that can help in regulating the relationship between the various departments and can be further tight to the department's performance.

Q2-8: Do you think that the CMA becomes an integral part of users' daily routine? Why?

A2-8: As I GIS Specialist my role is to support the CMA users. Also, as a CMA admin, I provide them with access rights. The CMA users approach me on daily basis raising issues and bugs that occurs in CMA during their operations. Fore example, yesterday, there was an error on the function of system notification emails. I've noticed that the users are informing us about the system bugs stating that this would affect their work. Thus indicate that users are using the CMA frequently and on daily basis. They do recognize the problem due to their daily check! If something happens today, we will find the complain emails in our inbox either on the same day or the day after. We have seen in other systems that issues occurred and complains start to reach after 1 week or so. Another example is the report bugs. This might not be on daily basis, but could happen once a week or a month. This indicates that TSS team

depends on the CMA reporting tools to prepare their monthly reports that is being presented to the ARP and the AMD Director!

The CMA provides a data repository center that enable CMA users to recall any application at any time. Also, CMA is used as a tool that can help the users to avoid accessing many applications in order to take a decision. In addition, the CMA also used as a new channel to communicate with the customers on timely manner. As soon as TSS staff is done with an application, the customer will receive a notification, immediately. The CMA reduces the paper works, which is a major issue to TSS due to limited space to restore applications and as-builts. Is it true to say that the CMA provides and satisfies the TSS team needs to function efficiently? Yes, absolutely you can say that. The CMA truly automates all processes required to produce an NOC.

End statement

Really, it's an interesting interview! Your role, too! You present a system designer, implementer and supporter. Nader, thanks for this interview and I wish to you all the best in your dissertation and hope that you can reflect your dissertation outcomes on the CMA to take it the next level.

Interview No.2

Place: Nader's Office
Date: 23.10.2014
Time: 02: 55pm (41 minutes)
Entry Type: Interview
Entry Name: Interview with Participant 2
Status: Approved

Opening statement

Greetings! As you are aware, I am conducting a research on system institutionalization. This research will help me to put forward technical recommendation to ADSSC in the future. I will start the interview in English, however, please feel free to switch to Arabic when you need. So please feel free and relaxed, and let's start the interview!

Section 1: Demographic Data

Q1-1: How old are you?

A1-1: I am 27 years old

Q1-2: What is your position at ADSSC?

A1-2: My position at ADSSC is Technical Services Engineer, Asset Management Division.

Q1-3: For how long have you been interacting with Technical Services Section?

A1-3: For 3 years.

Q1-4: For how long have you been working in Abu Dhabi Sewerage Services Company?

A1-4: For 3 years

Section 2: Interview Script

Q2-1: Why CMA has been initiated in the first place?

A2-1: To process the NOC that is related to sewerage services. To use it as a recording base and center for application processed. On the other hand to avoid paper works. It's also related to the government vision to become an e-government and paperless. What else you might think of? Time management and ensure distributing the work equally. In addition to introduce a monitoring tool to monitor the employee performance and their efficiency, for example: how many application a specific employee has processed.

Q2-2: What do you think are the objectives of implementing CMA?

A2-2: I think that the CMA still did not achieve all objectives. Any new system may take time till it reaches the set objectives. However, by now, we got rid of paper works. Also, by now, we have a tool to monitor the TSS individuals, in terms of number of application processed, duration. The system becomes our daily routine. I think that the system achieved the objective of the government and ADSSC in particular to reduce the paper works and become e-government.

Q2-3: How did you contribute to the CMA implementation?

A2-3: Actually in the design phase, I was not much involved as I joined TSS in the final stage of the CMA design. However, I have an input of the work flow process and

handling aspects for example: process steps, workflow requirement. I've put forward some suggestions related to document required on each workflow. For the time being, I am currently acting as approval one were I receive application and re-distribute them to employees (reviewers). I was in a direct contact with my line manager and some times with the Department Manager. During this interaction, I've highlighted some issues where it can enhance the system and my line manager was listening to me and extend his support. Some time there was conflict of technical assessment of some cases where we disagree with each other. However, most of the time he did agree with me after detail discussion due to my experience of being exposed frequently to different cases.

Q2-4: What are the obstacles that you have faced during the design and implementation phases of the CMA?

A2-4: AT the design stage, the CMA was not clear enough to me, at least from the processes / procedure wise. There was no clear instruction of how to use the CMA and what are the roles and responsibility associated with the assigned role. I think this is due to the role assignment exercise, which was a bit vague during the design stage. As soon as the testing phase starts, the role becomes much clearer. There were technical issues were not being considered which accumulated as obstacles to use the CMA. For example: some request required an inspection prior to a decision to be approved or rejected. However, due to miss communication the inspection team will pursue the inspection despite of the nature of the original request. Upon receiving the inspection result, the TSS are obliged to reject the request, du to un clear technical view. The rejection might result in delaying the customer further and re-process the request once more. Now, potential solution is to set up a function that enable us to process the request forward and backward between the referral department to ensure a proper decision making. During the implementation phase, I faced some issued with regard the GIS land base in terms of accuracy and updates. Such issues can impact the decision taken. Most of the time, these issues create a conflict between my line manager, the Department Manager and myself. Responsibility border is another major issue that led us to have a frequent conflict. Let me give you an example: in some cases the conflict exists in the level of "is there is an ADSSC line in /outside the plot boundary (this is an accuracy issue). However, the conflict continues further on "how far is the line from the plot edge and defining the safety distance". This is a responsibility / decision power issue. Who have the exceptions rights? Do you have matrix for it? The Section Head, the Department Manager and the Director can make exceptions. There is no matrix made available to us indicating the exception rights, its just embedded in the practice. How would you evaluate the existence of a responsibility / exceptions right matrix to your function? It's vital, in deed. Incase the Director, decided to reduce the approval hierarchy in the CMA, what would you need to become a decision maker? Accurate data and trust from management. We do have a good communicating channel with the GIS team as system developer, conveying to them our comments and suggestions. However, we have noticed that they are very slow when it come to implementing / recovering a bug. I think they have some reasons and rational behind the delay in fixing bugs. Staff and budget are the concern, I think. Do you have a common workflow for of Abu Dhabi and Al Ain TSS section? No, workflows and associated minimum document required are totally different.

Another obstacle that can be highlighted is the collaboration of other department who play a referral role in the CMA. Some department is ignoring their part in the CMA,

for example: Projects Division. They justify that by being most of the time on sites, and accessing the webcam turned to be difficult and required permission other wise they have to be available in ADSSC premises. I think this is not true, they are afraid of taking a responsibility. Why you are saying this? Previously, getting the cost estimate requires the department manager approval, but with the CMA, the project representative is required to decide and hold account of his part. As you know, there was a shuffling in the senior management positions, do you think the y new Projects Director will give such room of authority for his engineer to do it? Yes, he will do it. What about them, are they afraid to take a decision? I think yes. They are not willing to talk a responsibility. I can see them poor in using technology. Does the GIS team provide them with the training? Let me do it the other way around. Have you been provided with training before using the CMA? I have not took a proper training; it was just an introductory session. How would you evaluate the CMA interface? It's easy to deal with. I am a fan of using technology. I could not feel any difficulties in using the CMA at all. However, other employees may face difficulties in using technology or IT tools. Regardless of the interface ease, a proper training should be delivered to all users. What else? Referral department representatives who are using the CMA felt that they are monitored. Auto reminders about pending request are sent to them on daily basis. They do not like this thing. I think the CMA helped the referral department to better organize their recommendations, fast tracked the application and presents an instant tool to take a decision.

You have mentioned “management trust” can you elaborate more? Due to data accuracy and update, decision proposed were rejected or let's say heavily argued. But after a while and based on physical evidences like maps, as-builts or report, my line manager start to recognized my ability to analyze any case and propos a decision. Some times this goes to how he would interoperate the as-builts. I do not claim that I have more knowledge than him because I've just turned out of the development program. But what I can say that I am exposed to very diversified scenarios via our day-to-day operations and in a better position to analyze an proposed a decision. Unlikely my line manager / or the new department manager who been reached only for specific cases, other that this I am not expect him to read every single case that he signed on.

Q2-5: Why do you think that these obstacles upturned?

A2-5:

Q2-6: How did you mange to overcoming these obstacles? Did you have the necessary resources for overcoming the obstacles? Did you have the authority? Or did you reported to your manager?

Q2-7: What ADSSC would do to ensure high adoption of the CMA?

A2-7: I wish that the company to come up with a reward and punishment scheme. Recognition of employees who had an outstanding performance is what we missed right now. On the other hand there are no actions taken against low performed employee. Not even a warning letter! ADSSC management has to enforce the usage of the CMA a cross the department. The CMA is not an APD application, its ADSSC's one. The CMA presents our company! What else? I would like to strongly emphases on the rewarding and punishment scheme. ADSSC management should better use the CMA reporting tools to measure the employees' performance and hence

reward or punished the TSS individuals. This will build on a trust between the TSS individuals and the AMD/ APD management. In addition, the ADSSC management has to provide enough budgets to the GIS team to enhance the CMA and meets all users requirements. As I said before the CMA is ADSSC and the ADSSC management might invest heavily in the CMA.

Q2-8: Do you think that the CMA becomes an integral part of users' daily routine? Why?

A2-8: For TSS employees, I would definitely say yes, its an integral part of our daily routine. More than 90% of the TSS works are in the CMA. The employee is obliged to use the CMA to do his day-to-day works. How many workflows you do have in TSS? 16 workflows. How many of them are in the CMA? All workflows are captured in the CMA but only 14 workflows are activated. What about the remaining 2 workflows? We are using the municipality system to deal with them is not any more paper-based. We are trying now to put / replica them in the CMA, but we have a shortage of staff. What is the one thing that you need to see in the CMA? I wish that the CMA to be linked with other systems (entities) for example: Abu Dhabi municipality's portal. This is the role of E-NOC, isn't it? Yes. If you will get the chance to become the TSS Section Head what would you change in the CMA? I would change the workflow approval hierarchy. Currently there are many approvers are in the loop, I would go and reduce it to approver 1 (engineer) or 2 (section head). This is to fast track the requests and save time. Why you would do so? Because of the time consuming, most the requests were delayed with approval 2 and approval 3. Do he has the time to do the review? I do not know. Have you discussed these suggestions or desired changes with your line manager? Yes, I did that. I've also shared these suggestions with my colleagues and they agree with me that it's required to save time and fast track requests. Why your manager will accept this suggestion? If this is implemented he might lose some power, isn't it? I don't think so; the Approval 3 (current department manager) would like to get rid of the responsibility of approving requests. How many applications are you processing in a month? Roughly around 2000 applications, which need to be processed in 3 working days.

End statement

Really, it's an interesting interview! Your interview was very helpful in understanding how the CMA works and what are the obstacles you are facing in implementing the CMA. Once more, thank you.

Note: This was added by Participant 2 upon closing the recording file.

"I do not want to voice record this, but frankly speaking we (all TSS engineers) think that the Mr. M is technical incompetent. Because of that we have requested the line manager, Mr. A and our director (you) through informal discussion that we need to reduce the approval hierarchy to ensure the work smoothness and delivered accurately and timely manner."

Interview No.3

Place: Participant 3 Office
Date: 28.10.2014
Time: 02: 43pm (42 minutes)
Entry Type: Interview
Entry Name: Interview with Participant 3
Status: Approved

Opening statement

Greetings! As you are aware, I am conducting a research on system institutionalization understanding how to systems becomes used in day-to-day routine. I will start the interview in English, however, please feel free to switch to Arabic when you need. So let's start the interview!

Section 1: Demographic Data

Q1-1: How old are you?

A1-1: I am 28 years old

Q1-2: What is your position at ADSSC?

A1-2: My position at ADSSC is Acting Section Head of Technical Services and prior to that I used to be a TSS Engineer.

Q1-3: For how long have you been interacting with Technical Services Section?

A1-3: For October 2010.

Q1-4: For how long have you been working in Abu Dhabi Sewerage Services Company?

A1-4: The same period. Almost 4 years.

Section 2: Interview Script

Q2-1: Why CMA has been initiated in the first place?

A2-1: First, to get rid of paper works and converts to electronic system. Other organizations that we deal with are using electronic system too. Secondly, need for an archiving system. We worked for long time with no archiving system document storage was literally incompetent as most of the doc's were send out to stores area. Thirdly, we were not in a position to measure and monitor our KPI's that have been defined by the department / division management, are we going right? Or not? Fourthly, adopting an electronic system at ADSSC in similar fashion of other organizations. You have mention that you are using KPI's to monitor TSS performance, can you elaborate? TSS has some KPIS related to responding to customers' enquiries in timely manner, specifically 4 working days. The specified response timed was set according to the signed SLA's with other government organizations. The signed SLA's helped ADSSC to ensure efficient services delivered to ADSSC customers. Does the specified KPI's designed to be used on the departmental or the corporate level? Specified KPI's contributes to both, departmental (to monitor TSS performance / TSS individual performance) and corporate level. Based on the performance results, we initiate some changes related to applications handling approach. Fore example we have reassigned employees to different grouping to handle a specific workflows and eventually redistribute the work. I think your answers to question 1 does cover question 2 also, isn't it? Yes, in deed.

Q2-2: What do you think are the objectives of implementing CMA?

A2-2: Generally speaking the CMA has two objectives: general, which is the necessity to have a corporate system that help ADSSC to achieve the government objective of being e-government by 2020 and specific to ADSSC which is to get rid of paper works, establishing an archiving / document management system, setting a smart way to track application (new and previously submitted ones) including history tracking.

Q2-3: How did you contribute to the CMA implementation?

A2-3: We held several meeting with the system developers to discuss how to automate current business processes used in TSS and better enhance customers' application handling. Also we have tested the system for short period by processing dummy requests till the end of the agreed process including final results to customers. Also, during the test period, we had several meeting to highlighted bugs and issues to the system developer in order to fix them prior to the official launch of the CMA and our management to put them into the picture. During the implementing phase I played two roles, the Engineer and the section head. As an engineer, I worked on the system as part of my daily work and have the chance to highlighting bugs and issues appears in the CMA and GIS web viewer to the system developer (some times via scheduled meeting) and to our management that can be used to enhance the system. So, from what you have said, your contribution can be seen in the following stages: design, testing and implementation.

Q2-4: What are the obstacles that you have faced during the design and implementation phases of the CMA?

A2-4: we have faced to types of obstacles, the first one is related to customers and the second one related to employees or end-users. Customer obstacles were very challenging and can be seen as:

Convincing the customers to work with this new system, what are the requirements? The customers were totally surprised and by now they have to apply online.

New requirement were raised, for example: CAD files.

Submittal methods, is via the customer services rep' setting at the counters or via online.

Convincing the customer to wait till he gets the online approval (very challenging). The reason behind saying that is the customer used to receive an advanced copy of manual notification as soon as the engineer signed it. But now he has to wait for the electronic approval that signed by the department manager.

With regard to the employees:

I would start with the training. Training was inadequate and short. For us, individuals who participate through out the project were able to understand the system. But new employees have not got a proper training.

Inconsistent / inaccurate submittals (by the customer services representatives). Some of the requests were repeated more than once, some of them were wrongly identified (selecting wrong workflows)

In case of application get rejected, normally the applicant will reapply the request again and the CSD representative will upload the TSS checklist (reviewer comments) and eventually any reviewer will see previous ADSSC comments. However, because the CSD representatives were not familiarized with the CMA functions and workflows minimum requirement documents, the CSD representatives will proceed processing the request to TSS till it reaches another reviewer, who will put further

comments and results in rejecting the request for the second time and eventually delaying the customer. 1349

CSD employees were un-aware of the importance of the minimum documents required for each workflow. These documents were not set for nothing. Every document is a piece of information that is crucial for decision-making. Unfortunately, the CSD employees were uploading these documents in wrong up-loading tabs. Thus results in spending extra time to relocate the files / information.

I would add also another obstacle related to systems integration. Integrating the CMA with other systems run by other organization. For example the CMA and municipality NOC portal. To work with the both system, we used to access the municipality NOC portal and print out all requests. After that re uploading the requests to CMA and process them further. On the last stage we will print out the CMA results and re-upload them in the municipality NOC portal.

Q2-5: Why do you think that these obstacles upturned?

A2-5: we have discussed this in the previous question. However, I would emphasize on the importance of the awareness and training session prior official launch of the any system. Ok. How you would evaluate the relationship between you and the project manager / project management team? There was a continuous exchange of letters, emails and exchange views and requirements of the new system during the stages of the project (design, testing and official run). Generally speaking, the communication was very successful. Can you be more specific? All comments and suggestions that we put forward were discussed and the GIS team will revert back with the implementation plan of these bugs and issues. On the other hand the section head exchange these info to the department manager and the director, whereas the later follow up the issues by himself. Prior being a section head, you were a TSS engineer. How would describe your relationship with you section head and department manager what would you say? Both TSS and GIS were under two different departments. Parallel to launch the CMA, the ADSSC management decided to rearrange the organization structure. One of the results was merging the GIS and TSS in one department. Upon both sections being merged the communication became much easier and effective. The department manager who was at the same time the CMA project manager understood all our requirements. This gave an indication that the department manager is not in favor to a section than the other but is in favor to push things up and fast track the usage of CMA. How many employees are in TSS? 13 employees. What about their nationality? Majority are locals. What about their age? The majority are young, you can say from 24 -35. What about the non-locals? We have 2 non-locals who have long experience of over 20 years. One of them built his experience in the company and the other one joined ADSSC 7 years back. How you would evaluate the user acceptance of the CMA of both categories: locals and non-locals young and old? We, as young locals we have been exposed thorough learning path to use technology and we came to know the benefits of using technology in our life and get rid of classical paper based exercises. With regards to non-local / old aged employees they do prefer classical paper based works as they always claim that it is more sustainable and remain available on call, unlikely the usage of system where system may be exposed to failures. To be honest, the non-local employees were cooperative enough to use the proposed system and obsolete paper based works. I've noticed also that they have a real interest to do this shift but they have fear from the use of technology. They might not be computer literate, thus become a brier. They kept in thinking of the downside of shifting to an electronic system, thinking about

how this might reduce their performance and thereafter not reaching the required performance. Also, I think that they were afraid of using their own system and information. Why they might conclude that? I think this is due to the awareness. The section head did not work on the awareness of the CMA usage well. You've stated earlier that you had an issue with the archiving and document control. Later on you said that the CMA has solved this issue, can you elaborate more? Previously, and in individual efforts, we've designed a simple excel sheet to track applications, however, not all of us has an access to the excel files. When the person in charge is due to leave we were struggling to find a piece of information out of this excel sheet. We do not know the coding or the file architect that he used to use. Alternatively, we have to ask one of the old employees about it. What about now? I can retrieve any request at any time including its detailed history and associated requests, by a single click. How would you interoperate their reaction? Some of them were extremely happy, as none of us will harass them any more and they will keep doing their work peacefully. The rest were afraid to lose their jobs, since the data and information became available at any time with minimal effort. Why? Some of them want to be a key resource in TSS. The rest were in opposition that everybody shall come to him prior to a decision being made.

So far, we have talked about the TSS employees, customers, the system itself, what about the management? The management at the department level showed to us clear interests on the CMA. Why? Because the department manager and the CMA project manager is the same person. I think he had the power and authority to boost the implementation of the CMA. How did you reach to this conclusion? We knew that the senior management considered us out of their radar. They were not interested. They were happy about the current practices. But the project manager through his relationship forced the senior management to implement the CMA at least for a pilot area of workflows. After sometime of the system launch, the senior management started to recognize the effort spent on the CMA. They started to feel they benefited and how productivity was increased. By now, I would say that the management became one of the main support bodies of the CMA.

Q2-6: How did you manage to overcome these obstacles? Did you have the necessary resources for overcoming the obstacles? Did you have the authority? Or did you reported to your manager?

A2-6: I think you have answered this question earlier, so let's jump to Q7

Q2-7: What ADSSC would do to ensure high adoption of the CMA?

A2-7: First, ADSSC senior management has to set a budget for CMA scale up and enhancement on annual basis to use latest technology and grants better efficiency. Secondly, to execute awareness session to all users and departments, educating them about the objectives and benefits to ensure wider adoption of the CMA. Third, to motivate the CMA users. How? In TSS we handle more than 2000 requests in a month. The management has to use the CMA performance-reporting tool to recognize employees who processed successfully more number of applications, who is the best employees, who are the worst employees, who delays the work, who contributes more to achieve the Departmental operational measure. The recognition should be in a form of one to one recognition meeting with the management representative, a letter of appreciation. On the other hand, punishment needs to be present for worst performers, including a warning letter. Having a rewarding and punishment scheme in ADSSC will increase the competition and enhance employees' performance. Every

body will compete to be come the man of the month! I think having a recognition scheme will to the employee to innovation and production of new suggestion and ideas. Fourth, ADSSC should think to establish a steering committee to monitor the CMA performance and usage. Like any other organization ADSSC, has its own system the “CMA” and they need to ensure its adequacy and usability.

Q2-8: Do you think that the CMA becomes an integral part of users’ daily routine? Why?

A2-8: Yes. In TSS, all the 13 employees are using the system in daily bases. All type of application is being processed through the CMA, except some. Can you be more precise? Yes. In TSS we have 16 workflows and all are captured in the CMA. However, 14 of them are currently in use via the CMA. The remaining 2 workflows are NOI and plot extensions. We do have some technical obstacles in using CMA for these two workflows. For example, the NOI required to be seen on large-scale since some requests covers large areas. The CMA has limited capabilities (maximum 2000) to set individual scale review. For plot extension, we have to select the plot number and the sector to identify the location of the plot and further process the request; however, some plots are new and become very difficult to identify them. This is due to adopted land base. Do you do any thing else besides working on CMA? Does the CMA covers you need? Yes in deed. The CMA covers my need starting from assigning requests, to follow up and monitor my staff. There is no need to go even out of my office to search for a request or its history. However, for the indicated requests (NOI and Plot extension) some manual works need to be made.

End statement

Really, it’s an interesting interview! Your interview was very helpful. Once more, thank you and wish to you all the best.

Interview No.4

Place: Nader's Office
Date: 30.10.2014
Time: 08: 40 am (35 minutes)
Entry Type: Interview
Entry Name: Interview with Mr. Participant 4
Status: Approved

Opening statement

Greetings! As you are aware, I am conducting a research on system institutionalization, which can be explained as how the system becomes part of employees daily works. We have selected some key TSS staff to run the interview with to better understand why the system has been initiated, what are the objectives and what can be done to ensure the high adoption of the CMA. I will start the interview in English, however, please feel free to switch to Arabic when you need. So please feel free and relaxed, and let's start the section 1!

Section 1: Demographic Data

Q1-1: How old are you?

A1-1: I am 31 years old

Q1-2: What is your position at ADSSC?

A1-2: Senior Technician

Q1-3: For how long have you been interacting with Technical Services Section?

A1-3: I've been in TSS for 6 years

Q1-4: For how long have you been working in Abu Dhabi Sewerage Services Company?

A1-4: 6 years. Have you been exposed to any other departments? I've worked along side with other departments, say GIS, but not in direct. Who are those departments? Planning and Forecasting just to retrieve information that we need to do our work and make better decisions. O&M because we've sent most of our application for further review. That's about! What about customer services department? Yes, of course. I do deal with them on daily basis, they always refer to us in there is missing information. Also, I deal with GIS a lot, cause most of our information comes from the GIS so if we find something missing or any small information they we could not find, they will provide us with it.

Section 2: Interview Script

Q2-1: Why CMA has been initiated in the first place?

A2-1: the CMA was initiated to speed the process of application, creates an electronic archive that any one can use and find information at anytime and to give access for customers to apply wither they are at home or offices or any time. It's also a way for managers and approver 1's to monitor the performance of the team, to monitor the performance of each application type which is been delayed, which been going fast and basically change the process of each application.

Q2-2: What do you think are the objectives of implementing CMA?

A2-2: the objective is to put ADSSC into a fully electronic service provider, which goes inline with the vision of Abu Dhabi government for the 2030. Also, it's a way

that everything can be monitored and be studied; so that any processes that taken time can be increased or decreased. The main purpose to decrees the time and increases the quality of what comes out. So you are talking about time management? Yes, time management and in creasing quality, cause the main thing is the data accuracy and quality of work.

Q2-3: How did you contribute to the CMA implementation?

A2-3: during the research phase I provided them with the requirement of the applications, what type of application that we received, and further information that they wanted to know, all work flow for each type of application and provide any further knowledge that they would require. During the testing phase, I went through the system and see if there are any bugs or kicks and provide them with about. Once it's in the production, we would all work on it and problems or issue that comes up I would refer to Injazat or the GIS team directly to take action before delays occurred in the product. How frequent you communicate with GIS team? I am doing this on daily basis. If there are any issues or any thing happens, it will be on daily basis to get things resolved before re occurred aging. How do you feel about them? They are very good. They are very understanding and at the top of their work to try finish this problem before looking at he next one. (8.08)

Q2-4: What are the obstacles that you have faced during the design and implementation phases of the CMA?

A2-4: the obstacle that we have faced is to change the mindset of the people. Because practically the have been working for so long paper-based, so changing the routine of their work is little different to computer based. Also we faced problems with customers, same kind of a problem, where everything is paper-based and we are going electronically. We had to change the requirements and this lead to little problems with the customer. Were needed to teach them how to apply online which took time, as well. Also, bugs within the system. Other problems that we faced is once it's in the production phase, the phased problem is like document going missing, application going missing. A big problem that we faced is problem due to land base not being updated, which was because of a third party. Application could not be uploaded because plot information was not there. So this caused issues. We had to resolve this by applying some application manually and some application online. Another problem we faced was when we got the update; if the plot information were changed we would lose all data for that plot. I think Injazat did a work a round that so we would lose any information there. That's all about issues and obstacles. Looking around you, have your colleagues face any problems in using the CMA? Are they all in the same acceptance level? The CMA is user friendly, every body is able to use it and know how to use it. The only obstacles are ho they would go around of what they used to do (the process), how they manage the time to do the work. What do you think about other functional units perceptions? For customer services department they had a big issues at the beginning because ot complete big change for them, instead of just receiving the application and send it to us, they have to upload the application and they have to train their staff which took some time. For O&M, they liked the system and they want to adopt the system with them as well, so that they can apply it for their staff. So, instead of having one focal point, hopefully in the enhancement stage they would have a section for them and distribute it for their staff. Why do you think that's? It's easy for them to monitor the work. They can track the works out and when it comes back. How you describe the relationship between you and the section head,

department manager, and the director in terms of handing workflows on daily basis? Well it's increased as you can process the work to my line manager in one click, regardless if he is available or a way, every thing become faster because it's electronic. And if there are any issues, straight a ways you can send the application back and contact me saying what is a kind of a review they would like. Every thing can be send back through an email. How they feel about the system? I feel that every body is happy about the system, because every body knows where their work is, what is target is for the day and what they need to achieve. As you have indicated, one if the reasons behind initiating the CMA was the archiving system, what about it now? In the beginning we have a problem of the search within the CMA, which was highlighted to Injazat team, and Rolta say for example capital case or lower case. Small bugs like that were fixed. Even drop down list for areas and sectors were fixed too. By now you can find any application.

Q2-5: Why do you think that these obstacles upturned?

A2-5: For obstacles for staff and customers, it's a new system. So any new system and routine that they had its difficult for people to adopt as a new routine and change their ways. For customer they used to deal with ADSSC on paper based. Every thing was set for them. Once we have to change the requirement for pdf's and electronic sources causes a little delay with them. No much of a problem but causes a delay for them. For employees, we have different ages with the group and the younger ones who just joined they are easy to adopt cause instead of learning on the old way (paper work), there are learning straight on CMA. We the older people, being the company for a while, they have got already a regime that they follow and how to check. And that's all changed and that caused a little delay. And also to show them what the goal is of the CMA and what it can achieve to able to process the work faster looking at what is you work, where is it what is the status and this kind of a thing. The current section head is form your age group, what would happen if the section head was changed to be one of the older guy in your group, how you would see that? The age is not a barrier. Every person has a different mindset and probably wants the work done in a deferent way. But having the CMA work will be done in same process. So no matter what mindset is person has, the workflow always remain the same. Do you think he would not change the workflow? If it is feasible and going to enhance the process and quality, why not. And who can decide that? the division manager, he should be able to decide wither the study or the proposal goes well. How would you evaluate your department and division manager? He is up for suggestions. He would listen to proposals, if its good, and pushes for it and if he saw errors he would point them out and say if you would change this or that what would happen. They are all up for suggestions, both of them. Do you think that they are up to guide or direct you on your day-to-day job? Of course, they have more knowledge that I do. You spend your time (all day) looking at applications while they do spend 20 or 30 minutes to sign / approve them; they do not have the exposure on those application that you dealing with, how would you see that? It's true, but we give them our feedback and suggestions and explain how this application could improved, by going through the process with them, how this application would go and if we change something how could be going wrong.

Q2-6: How did you mange to overcoming these obstacles? Did you have the necessary resources for overcoming the obstacles? Did you have the authority? Or did you reported to your manager?

A2-6: For staff, there were trainings held, personally I was good at the CMA, I would go and help the people on the CMA. Including targets and achievements., so people would have ore understanding. Have you done any training session to your colleagues? On one-to-one, yes I had but not as a session. Are you willing to do so? If needed, yes I will do it. It's not a problem. Dealing with Injazat, there are on top of what ever the issue we had, so that they had gone over it. Dealing with Rolta, they are helpful. Whatever we had issues they took them into consideration and try to rectify it. Communicating between Injazat, Rolta, the GIS team and my self was very good. Every body is in the loop. No one is missing any information. Lucky my manager allowed me to contact them directly without going through him cause he understood that I understood the CMA.

You have shown good exposure to the CMA and its objective. Also you've seems to have a thorough participation thought out the project. In addition, you have also shown a good communication with the system developers. Have you been in a position to put forward some suggestions? Yes, I have. My line manager always ask me if I have any suggestions of what can be change to increase the performance. Is it admin or technical ones? A bit of both, admin and technical suggestions. For an example: how the group is managed. Cause we have three groups before and now we have two groups. One of the group consider for shop drawings, notice of intent, route approval ... etc, which is different type of applications. We've re arranged them to consider similar type of application workflow, so that staff can focus more and speed up the process. Technical suggestion would be little of workflow issues. For example option to have application to be sent back in case of any issue that approver one wants the reviewer to looked at. You cannot send the application back, it has to be sending through the system and try to retrieve the application stuck to he reviewer inbox. Some of the suggestion that we had were effective and can be implemented, the rest could not be done, where the application need to be reprogramed, which in this case is not feasible. The GIS team gives us a feedback of what suggestion could be implemented right now and what can be implemented in the enhanced future project. Is this because of you, who have a good relationship with them? Not really. This is because of the good relationship between TSS and the GIS team to work together and enhance the system that we are working on.

Q2-7: What ADSSC would do to ensure high adoption of the CMA?

A2-7: They could implement the CMA in other departments and divisions and get other people involved and got their business go electronically. To have a monitoring, monitor the performance of the staff and give bounces and achievement of the employee of the month some sort of incentive for the people to work better. This would increase the competition among the staff. So if one person is lazy and the other person is working, the lazy person might think that I need to do more work. This might bee a motivation for them. The CMA currently can monitor each group of application wither these applications were processed fast or not. Hopefully in the enhancement program would have for individuals, groups and divisions. This would show which group or person is working well and could be given a bounce or something like that or a reward. More training and more awareness about CMA, what are objectives and targets are. Also, how the CMA would like to other entities with their systems. On a scale one to ten, ho would you rate the CMA user awareness on the objectives, benefits, etc.? I would rate that 7 out of 10 because there are a lot that can be done to people awareness, more training and explain more what is each tool

can do out of the CMA. If you would be asked to run training sessions, would you be able to do it? I am not the best to do that but yes I can do it. What about the TSS employees, do you think they will be able to do it too? Yes, I think so.

Q2-8: Do you think that the CMA becomes an integral part of users' daily routine? Why?

A2-8: As of now in TSS, practically, I would say 90%are using the CMA on daily basis. Couple of applications is till being to be used in the CMA, for example: notice of intent. Within a few months and after the enhancement program, I think they will be able to do that. the CMA become like a 2nd hand, you have to use it. Why would you say that? All of our work is based on CMA, now. All of our works comes through the CMA. If works comes through the CMA and processed in the CMA, what about the analysis, is it done through the CMA too? The CMA is linked to the WebGIS, whatever the information, contracts, searching for plots, checking if the application has been send for inspection before, checking the history of the application, wither being approved, or an undertaken was collected or any thing related to that application, checking the network, the DMS you can do all that in the CMA. It's very useful. Every thing is being used through the CMA. Really it's interesting to listen to this. What do you think that can be done to better the adoption? Increasing the speed of the CMA, cause some tome due to the load of the Internet or the server causes a little of delay. If they were able to access outside work, for now we have a current issue of employee is outside of work and application comes to him, no one can retrieve the application. If a person was on holiday and application has received by him, he could be able to send it to approver one so that he can take necessary action instead of being delayed with him.

End statement

Thanks you for your answers. Really, it's an interesting interview! Your answers were very concentrated. Once more thank you and wish you all the best.

Interview No.5

Place: Participant 5 Office
Date: 30.10.2014
Time: 01: 53pm (43 minutes)
Entry Type: Interview
Entry Name: Interview with Participant 5
Status: Approved

Opening statement

Greetings! As you are aware, I am conducting a research on system institutionalization understanding how to systems becomes used in day-to-day routine. I will start the interview in English, however, please feel free to switch to Arabic when you need. So let's start the interview!

Section 1: Demographic Data

Q1-1: How old are you?

A1-1: I am 38 years old

Q1-2: What is your position at ADSSC?

A1-2: Now current position I am Acting Department Manager of Asset Performance and previously section head of technical services section of Abu Dhabi.

Q1-3: For how long have you been interacting with Technical Services Section?

A1-3: more than 3 years.

Q1-4: For how long have you been working in Abu Dhabi Sewerage Services Company?

A1-4: With ADSSC from the establishment stage, 2006. Before that, with Abu Dhabi Municipality as Senior Operation and Maintenance in Operation and Maintenance Department. Total experience is around 12 years on the same business, sewerage business.

Section 2: Interview Script

Q2-1: Why CMA has been initiated in the first place?

A2-1: from my point of view and according to what I found during my assignment as a section head, I have noticed that there are lot of problems. This includes unavailability of adequate archiving system. The applications history is not handy and available for all employees so that any employee can take a proper decision, the process and procedure of employees' interactions, the ambiguity of the application process owners and decision maker. Monitoring of the employee performance is not clear since it was been tackled on manual basis so it become very difficult to take further decision on employees performance and thus reflect in the ambiguity of how to develop further employees capabilities. The KPIs that will help us to understand the employees' capabilities and performance were not in place so we were not able to handle development activities either on the level of employees or at the section level. Thus way we come up with the latest version of the CMA and activate it accordingly to reach our objectives.

Q2-2: What do you think are the objectives of implementing CMA?

Q2-2: from what I've stated earlier (the problems), this is what we need to solve and thus become our objectives: centralized archiving system, reporting tool, monitoring for employees KPI's, application process and process and procedure, how to develop

and fast-track applications, to ensure responding to customers on timely manner. There are many things but refer back to the stated problems. This is on the operational level at TSS, what about at the level of government and the company? From a company prospective, the objective is to satisfy the customer 100%. So in order to satisfy the customer, you need to ensure your timely response – as fast as possible with the desired quality. So in case you send out your response positively that is fine considering to be as fast as possible, and incase of a rejection, then you need to explain to the customer why and what can he do further. So, satisfying our customer is a corporate objective and it appears in the company strategy. The second part is the government direction to be come an e-government. In order to achieve this, we at ADSSC have to establish an electronic system that can accommodate achieving the government direction Now a days we can be reached by the customer through smart phones apps and upload his request. Not only this, but also to reach back the customer and response to his enquiries via the same platform. So this is the strategy of the government and we have to work to achieve this strategy. 724

Q2-3: How did you contribute to the CMA implementation?

A2-3: before joining TSS and I being part of Asset Performance Department I came to know that the GIS team has proposed the CMA for the TSS team to work on. The CMA was to automate the business process adopted by the TSS in addition to archive and organize application handling. However, the CMA was not operated. After holding the position of TSS section head, I've proposed to the department manager to use the CMA since its in place. The department manger further elaborate that the CMA is scheduled for improvement to accommodate the new changes happens in TSS in particular and APD in general. The department manager has assigned me as a team member in the development / enhancement of the CMA to cooperate with the GIS team and provide them with the flowchart, the process, reports type...etc. upon the completion of the project, the enhanced CMA become ready for implementation. We have started the test period and we were anxious about CMA users reflection being rejecting the CMA. The anticipation was that the TSS consists of new generation employees who are aware of technology and ready to use the technology and automated system. On the other hand we have the old generation employees who are not in favor of technology use and relaxed and satisfied in their manual operation. But me as a section head, and under the direction of the Department manger, we forced the CMA on TSS employees and put it in operation noticing what would it be required to overcome any potential resistance. For any newly introduced system there are upside and downside. Downside Need to be discovered and will work on its accordingly. If we are not using the CMA then we will not be able to experience it and will end up with a system that is redundant.

Q2-4: What are the obstacles that you have faced during the design and implementation phases of the CMA?

A2-4: the first obstacles is to educate the team about the new system, how to use, what are the benefits, what are the objectives. There after, after conducting training session to TSS staff, explaining the objectives, usage, ... etc, it become clearer that the team was segregated to two groups: the first group are totally supporting the system while the second group resists the system claiming that they were happy about their achievements and there is no need to change. I've dedicated an effort by introducing some awareness about the CMA and tried to solve issues that upturned case by case. That is all about TSS. One of the external obstacles that there are many

departments will work on with the CMA. One of these departments, who receive initially the customers' request, is the Customer Services Department (CSD). CSD management raised many issues about the CMA handling and why the system is initiated. So we start with explaining the objective of the system and why we need it. We've also explained to CSD how the system will help / facilitate their work. This creates a positive boost to accept the system. Initially, and after introducing the CMA to CSD, they were enthusiastic to use the CMA. Other issues raised later on by the customers themselves, were they used to have a paper-based submission, they knew all requirements and they were used to it, but now, thing has to go through the system. We've putout some leaflet and awareness messages for our customers educating them about how to apply and how to retrieve check the status of their requests. CSD representatives in the municipality counters were a bit a annoyed with the CMA but it become clear to them that the system reduces number of customers who are applying via the system. Let's say that CSD representatives are receiving 100 customers per day, after applying the system they are only receiving 50 customers only were the reset re applying online. When we look at the application desired to be received by the CMA, we do have 3 to 4 portal where customers are applying on. These portals are municipality portals. To implement the CMA, CSD were advised to handle the first portal in behalf of the TSS team, so they will be aware about the new request and upload them into the CMA. This went very well. However, when we asked the CSD to takeover the 2nd portal, they refused. The rejection was based on the limited resources that they have. Immediately, we've come up with solutions. The solution proposed is that we will integrate with the various municipality portals were such integration will reduce the claimed effort by CSD. CSD were relaxed. Other departments like O&M and Projects. O&M were happy about the system and we faced no problems. Unlikely, Projects Division refused to deal with the system with no reasons. Why do you think that happened? I think this is due to existing mentalities on how to run the business in Projects Divisions. Also, I would say that there is a lack of awareness about the importance of the CMA for the company and to our customers and to Abu Dhabi government. That's it all about TSS, other departments and customers.

On the other hand, there are some other obstacles related to the system itself. As you know, any new system will have some technical issues. This is must. We are trying as much as possible to fixe them, for example: missing application, system slowness, base map issues, issue related to business flowchart such as modifications. Most of these obstacles can be solved. Some of the issues were solved (by the technical team in GIS, with the support of Injazat) while the rest have been raised to the director to look at and further direct. The director advised that there would be a V.O. in the current contract to fix the list of bugs and issues related to the system. Are you planning to engage the CMA users to participate in finding solutions via the V.O.? Yes. Exactly, this is what we will do. I think this is the case with the CMA for CSD, isn't it? Yes indeed.

In addition, we have received many complements about the CMA by other departments. Is it only the functional department or the management too? The top management was complementing us too, because we are achieving the company objectives. In addition, were achieving the government objective too. Also, the CMA have been locally and internationally recognized and won many awards. It's amazing! Management continuous support, from the senior management or director, to the CMA initiative is an evidence of management satisfactory / complement. A good

example that can be given is the management approval of the new initiative to copy the CMA to CSD.

Let us go back and talk about the obstacles from employees prospective. Why do you think it happens? I've mentioned some interpretation of this obstacle earlier and I think it presents 90%. Rejecting a change is some thing that exists in most of us. The argument is that, if I am doing well why I need to change? I will reject the change. Second, most of the employees who reject the change (the CMA) are not evolved in the use of technology, and thereafter prefer to work on paper-based / manual approach. They are happy about their performance. They are happy about their achievement; they are relaxed with their approach, so why do they think to change? Third, when I joined the TSS, I've noticed that some employees are reluctant to exchange info and transfer of knowledge. I came up with an action to start sharing info. I was clear that nothing called "I am only the person who knows". This was done on manual basis. Employees might escape a bit or overseen. The CMA does that in an automated manner. There is no way that knowledge sharing will be over looked, it's a system! Every body now knows what is going on, what is the flow chart and process adopted who is doing what.

We have faced another type of resistance that is fear to lose the job. I think this is due to Emiratisation plan. The expatriate employees have noticed ADSSC insistance towards the Emiratisation plan. They saw new Emirati developpees threaten them in their jobs. They will not share with them knowledge and info. Thus, they remain as the single and focal point of obtaining a specific info. This is the responsibility of the section head to overcome the as obstacle of knowledge transfer. The section head has to become very knowledgeable and capable to monitor the process of knowledge transfer. He would be very successful if he managed to achieve 70-80% of the knowledge transfer exercise. Generally speaking, we found that old and expatriate employees were reasonably flexible in this matter in comparison to CMA adoption. For good sake, the adoption of CMA was based on instruction. It's a combination of 1) section head interest to implement the system, 2) the department manager to force it and 3) the director to monitor and evaluate the implementation.

In general I have put several recommendation when it comes to our business. The good thing in the AMD that we are optimistic individuals. We adopt the open door policy and having multi discussion at all levels. We may meet even twice or three times a day to discuss several things including issues, problems and recommendations. I recall some suggestion related to integration with other departments. The director is aware of that. He went one step a head to have internal integration prior to integrating with E-NOC. Another one is to relook at the flow chart and reduce the application approver hierarchy. We are studying this suggestion right now through the current GIS contract. This would decently shorten the time required to response to the customer. Despite of technical attempt to formalize this action, we have exercised some option and remedies. For example, in case of application rejection, approver 1 will take the action, thus the application is not any more required the Approver 2 or 3 actions. Do you think that your staff is capable to take that kind of responsibility? We have not concluded the option to reduce the approver hierarchy till we become sure about the team capabilities to exercise decision-making. However, we have suggested that an option to consult approver 2 and 3 should exist.

Currently you are approver 3 in the CMA, if you will reduce the approvers' hierarchy to approver 1 or 2, does that reduce your influence and decision-making? I do not see it this way. The section head, which is approver 2, is exposed to daily work. Approver 3 remain as an overseeing person to monitor the process and business operation. By reducing the approver hierarchy we will achieve the objective of the company to response to customer enquires in timely manner. Approver 3 remain involved in the monitoring process by viewing the set KPI's and direct corrective actions approver 3 remains accountable for the performance of the team in general and will act accordingly. Approver 2 can be seen as process owners. Overall, I wont see that it will impact my decision power. I am still there and can flip the table at anytime, but based on facts and figures. In case of special exception, the consultation option will be available to satisfy the accountability measures.

Q2-5: Why do you think that these obstacles upturned?

A2-5: I think you have answered this question earlier, so let's jump to next question.

Q2-6: How did you manage to overcome these obstacles? Did you have the necessary resources for overcoming the obstacles? Did you have the authority? Or did you reported to your manager?

A2-6: I think you have answered this question earlier, so let's jump to Q7

Q2-7: What ADSSC would do to ensure high adoption of the CMA?

A2-7: I would see that the top management should push forward the maintenance project to accommodate the new needs, raised by CMA users (individuals or departments). In general, they should give us the required resources. Second, top management should step-in to enforcing the CMA on department that resists effective participation, despite of our executed awareness and outreach. This is for the interest of the company and the government. You have mentioned earlier that you would like to give more responsibility to your staff, how you would measure their accountability? Does the CMA allow you to do so? Currently no, but we will address that through the maintenance project. On the other hand there is no recognition scheme at all for accountable or outstanding performance individual. I've not seen in ADSSC personal policy a statement that allow for bounce, or bounce leaves or even early day break-of. ADSSC management should think about encouraging outstanding performance individuals. This would allow the staff to be come creative too. Have you take a step ahead in this matter? Nothing in my hand other than allowing then for early day break-of. Also, I would go easy with them on approving their casual and unplanned leaves. I would give them a privilege in comparison to low performance individuals. Also, I would reflect my gratitude of their performance through the annual evaluation. They might hit, almost, a perfect score. This might help them to be in the bounce list, in case the company will do so.

Q2-8: Do you think that the CMA becomes an integral part of users' daily routine? Why?

A2-8: Yes. We have 16 type of request in TSS, and almost 80% are through CMA. To be specific, how many workflows are run through the CMA? 14 workflows. For example, NOI is being received through the municipality portal. As soon as it get through the CMA we will be automating all applications. What about the last workflow? It's miscellaneous. The average number is so tiny that can be neglected. You may say 15 to 20 applications out of 2000 applications.

In addition, the CMA assisted us on archiving issues, data entry, and review of daily work and status of progress. Also, it helps the customers to apply and retrieve his request online and thereafter reduces the workload on us. Yes, I can feel the CMA achievements now and it's an integral part of our day to days work.

End statement

it's an interesting interview! Your interview was very helpful. And wish you all the best.

Appendix G: Journal Notes

Journal Note 01

Place: Nader's office
Date: 16.06.2014
Time: 10:30 am (20 minutes)
Entry Type: Meeting, Reflection
Entry Name: Thoughts exposure of action plans_01

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M, Male, Manager

Discussion: I've exposed my thoughts to Mr. M to setup 19 action plans that may lead to enhance the usage and the efficiency of the CMA.

Reflection: He was in shocked

Discussion: We discuss in details proposed action plans, specifically the one that talks about performance i.e. action number 13,15 and 17

Reflection: He was moderate in general, but as soon as we reached the performance issue, i.e. action number 13,15 and 17 he showed anxious. I think this has to do with his new assignment as a department manager and ADSSC pre-commitment to existing MOU with other entities with regard to ensure timely response to technical enquiries

Discussion: Action owners were discussed and I've requested him to arrange a meeting with all action owners and start developing an implementation program in 2 weeks.

Reflection: He did not like the idea, as he will receive a new task considered challenging. Prior to hold his new post, he was in conflict with his peer in Al Ain (Head of Technical Services Section in Al Ain) and the head of GIS in Abu Dhabi, despite the fact that he has very limited info about GIS and its functionality. The conflict with the Head of GIS started with his assignment as ADSSC Representative in E-NOC initiative and he was unable to deal with the technical requirements. He was often neglecting the head of GIS consultations for technical issues. And thus create some issues in relation to data exchange mechanism (which is under the head of GIS responsibility).

Discussion: Discussion was closed

Reflection: I think he was a bit relaxed when got to know that I will be part / chairing of the meeting, as he will not be in a situation to fight, for those new action plans, against who were used to be his peers.

Journal Note 02

Place: Mr. M's office
Date: 19.06.2014
Time: 08:30 am (30 minutes)
Entry Type: Reflection, General Notes
Entry Name: CMA issues in Al Ain

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M, Male, Manager

Discussion: Mr. M briefed me about the meeting held with TSS Al Ain, on 19.06.2014, where they discuss CMA issues and problems and actions forward.

Reflection: His brief was detailed and I felt that he is seeking my recommendation against action he took during the meeting. Seems to be un confident but transparent.

Discussion: TSS Al Ain team was happy about the CMA performance however; they are facing issues missing requests. Based on immediate investigation, during the meeting, they came to know that all missing requests were submitted by, the customers, online. Immediate action was taking to stop the online submission by closing the online access with a notification of "apologies for maintenance".

Reflection: Despite that fact that CMA is based on performance monitoring philosophy and knowledge sharing, TSS Al Ain shown eager to keep the CMA, recognizing amount of benefits that they may los, in case of retaining to manual / paper based duties. As a department manager, I liked the way that he act and his decision was adequate and justified.

Discussion: It was agreed that remaining workflows will be activated in due time.

Reflection: Agreeing on deploying all workflows indicates the level of acceptance that hey have for the CMA and acknowledging the benefits that they are receiving out of it.

Discussion: Discussion was closed

Reflection: I think Mr. M was successful in containing Mr. OD and his 's team in Al Ain and imposing my thoughts, which was discussed in 16.062014.

Journal Note 03

Place: Al Wathba Meeting Room
Date: 23.06.2014
Time: 12:00 pm (60 minutes)
Entry Type: Meeting, Reflection
Entry Name: April/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.
Mr. DL, Male, Manager.
Mr. AH, Male, Manager.
Mr. MC, Male, Employee, Asset Information.
Mr. BH, Male, Employee, Planning and Forecasting
Mr. LZ, Male, Team Leader, Strategic Planning.
Mr. AK, Male, Employee, Strategic Planning.
Mrs. AA, Female, Employee, Strategic Planning.

Discussion: All Managers were able to share their departmental performance, for review, justify and discussion of red and yellow KPIs and initiatives.

Reflection: This is the first time since 2011 were all departments managers set to gather and discuss their KPIs and initiatives. Looks very defensive at the beginning but later, attendees felt that we had a group discussion on how to improve AMD performance.

Discussion: Action 9: Review of CMA hot issues as a part of Asset Performance Dept. review of KPIs and initiatives.

Reflection: Mr. M was able to defend and justify his departmental performance related to time /performance of employee in handling customers' technical requests. He looks un relaxed. However, down the road he as able to take control and elaborates on potential action plan to increase KPI's results.

Discussion: Instruction to proceed with detailing action 17.

Reflection: Mr. M was relaxed to announce that he will detail this action and will report on its readiness for implementation by end of July. Other departments' representatives were a bit shocked, as this is the first time that recognition of employees will be in place in AMD.

Journal Note 04

Place: Nader's office
Date: 25.06.2014
Time: 02:00 pm (30 minutes)
Entry Type: Reflection, General Notes
Entry Name: Introductory meeting with Rolta

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.
Mr. AR, Male, Support, Consultant..

Discussion: Introduction of Mr. M to Ganesan.

Reflection: Mr. M was enthusiastic about it as this is his first meeting with the GIS support team / contractor (Rolta). Unlikely, Mr. AR was more into "I've got to deal with a new guy?"

Discussion: We had a discussion about CMA maintenance tasks including scope and financial elements.

Reflection: The discussion was led by myself followed by Mr. M, after he feels that he were able to have input. I've managed to push Mr. M to talk and express his thoughts about potential CMA enhancement tasks. Mr. M exposed to us that he is familiar with the maintenance tasks required by TSS Abu Dhabi and Al Ain teams and should be able to support Rolta in this task.

Discussion: Discussion closed.

Reflection: Mr. M was trying to exposed to us that he is familiar with the maintenance tasks required by TSS Abu Dhabi and Al Ain teams and should be able to support Rolta in this task.

Journal Note 05

Place: Al Wathba Meeting Room
Date: 30.06.2014
Time: 01:00 pm (60 minutes)
Entry Type: Meeting, Reflection
Entry Name: May/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.
Mr. DL, Male, Manager.
Mr. AH, Male, Manager.
Mr. MC, Male, Employee, Asset Information.
Mr. BH, Male, Employee, Planning and Forecasting
Mr. LZ, Male, Team Leader, Strategic Planning.
Mr. AK, Male, Employee, Strategic Planning.
Mrs. AA, Female, Employee, Strategic Planning.

Discussion: All Managers were able to share their departmental performance, for review, justify and discussion of red and yellow KPIs and initiatives.

Reflection: This is the second time since 2011 were all departments managers set to gather and discuss their KPIs and initiatives. Looks very defensive at the beginning but later, attendees felt that we had a group discussion on how to improve AMD performance. The group felt that such DPRM's would continue.

Journal Note 06

Place: Nader's office
Date: 10.07.2014
Time: 09:30 am (60 minutes)
Entry Type: Action, Reflection
Entry Name: Official introduction of CMA institutionalization action plans

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.
Mr. A, Male, Team Leader.
Mr. HM, Male, Employee, Technical Services.
Mrs. AB, Female, Team Leader, GIS.

Discussion: Introducing the list of action plans and associated action ownership.

Reflection: The attendees were a bit uncomfortable about the idea, except Mr. A. Mr. HM was looking to the performance measures from a deferent angle – related to annual appraisal and promotion. He asked about detailed of the proposed action plan.

Discussion: Discuss in details those actions and why those actions were selected.

Reflection: Lot of questions were raised about the purpose of those actin plans. The response was that designed action plans will help the director, the manger, the team leader as well as the individuals to monitor self performance and educate the other / management and other divisions about the APD tasks and staff performance – which ends up outstanding. Also, it was indicated that perceiving others knowledge about APD job would help the management to approve extending the chart and obtain additional resources to overcome the extreme overloaded on existing staff.

Discussion: Schedule of implementation/delivery.

Reflection: All were highlighted that they are busy and end of July – as a target – is extremely impossible. However, the group agreed to deliver the following by end of July: 1, 4, 5 13, 15. Item 16 were in final stage of testing - except NOI.

Journal Note 07

Place: Al Wathba Meeting Room
Date: 23.07.2014
Time: 01:00 pm (15 minutes)
Entry Type: Meeting, Reflection
Entry Name: June/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.
Mr. DL, Male, Manager.
Mr. A, Male, Team Leader.
Mr. HM, Male, Employee, Technical Services.
Mr. MC, Male, Employee, Asset Information.

Discussion: The Director indicates that during the previous DPRMs were found mean less as the department manager, without the involvement of the senior staff, runs most of the reports/discussion. The director started that DPRMs were made to enhance the communication between the senior staff and the department manager and establish a platform for discussion based on performance and resource management.

Reflection: All attendees were welcomed the idea, except Mr. M. Mr. M by nature is talkative and loves to demonstrate controls. APD staff understands that Mr. M is not technically qualified for his post however; they tend to go with the flow. Opening the chance to them to talk during the DPRM may embarrass Mr. M and puke him a bit! This makes become a platform for technical skills battle.

Discussion: APD Performance for the month of June 2014.

Reflection: Overall performance was excellent except related KPIs to NOC. The team indicated that despite the fact that top management understand the pressure on APD related to NOC, still no action were placed about increasing the resources.

Journal Note 08

Place: Mr. M's office
Date: 17.08.2014
Time: 02:00 pm (20 minutes)
Entry Type: Reflection, General Notes
Entry Name: Recap meeting: Returning from leave

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.

Discussion: General Discussion

Reflection: During the discussion I found that Mr. M was trying to avoid having direct questions about the CMA or any thing related. I think he was focus more into the system performance. Reasoning behind thinking about that is his section head (Mr. A) went for emergency leave and the 2nd in command will be going for emergency leave too. Basically he will be stacked with the CMA operation for this whole week. These signs pushed me not to open the CMA actions plans, but I think it will be interesting to see how he would act this week!

Journal Note 09

Place: Baynouna Meeting Room
Date: 25.08.2014
Time: 11:15 pm (15 minutes)
Entry Type: Meeting, Reflection
Entry Name: July/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.
Mr. A, Male, Team Leader.
Mr. HM, Male, Employee, Technical Services..
Mr. O, Male, Team Leader, Technical Services.
Mr. W, Male, Team Leader, Technical Services.

Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of July 2014 was very good 2 out of 6 KPI's scored below 60% the target. Remaining KPI were either meeting or exceeding the target.

Reflection: Generally speaking, APD performances were outstanding in comparison with other departments. The employees them selves (Mr. HM, Mr. O and Mr. A) were leading the discussion. This shows that they are not only interested to but also proud to discuss their performance. KPI's discussed in the meeting were very thorough and contains deep analysis supported by factual figures.

Discussion: Action Plan updates: The team indicated that they were under pressure due to the fact that some staff were on summer leaves. Delivered items 2 and 12 were not up to expected level and will be redelivered

Reflection: It looks that the team is not interesting in producing performance measures. Also seems that they are not interested in further educating others about their job. Mr. A and Mr. O were stated that despite the fact that their performance - as indicated in the DPRM is overall outstanding – they have not yet received any compliment from management, except from the AMD Director.

Journal Note 10

Place: Nader's office
Date: 03.09.2014
Time: 10:00 am (30 minutes)
Entry Type: Meeting, Reflection
Entry Name: Welcome back meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Welcome back statements.

Reflection: Despite the fact that Mrs. H was on maternity leave for more than 3 months. However, she was in contact with the GIS staff. Also came to know that she pass by couple of times to head office to update her email so that she can be alert of what is going on.

Discussion: Introduction of action plans: Action plans were discussed in details, starting from the rational behind these actions to expected benefits (incremental and radical)

Reflection: Generally, Mrs. H was interested on those action plans and the way of execution. Couple of items was suggested to be re-priorities: E-noc and CMA updates. Also she highlights the possibility of merging the feedback and complains logs to gather and push it to be online (e-form). As soon as I reached the bye in with Mrs. H, I gave her the action-analysis sheet to take a look and further revise her suggestions. The meeting concluded in a very positive way with a big welcome to to do waiting list actions, where unlike that would happened with any body else coming bake from leave!

Journal Note 11

Place: Mrs. H's office
Date: 10.09.2014
Time: 12:00 pm (30 minutes)
Entry Type: Reflection, General Notes
Entry Name: Casual Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section
Mr. HM, Male, Employee, Technical Services.

Discussion: DPRM-Action Plan.

Reflection: Mr. HM saw me in the corridor while I am doing my daily routine pass by AMD staff and stopped me to ask about performance personal scorecard. He seems so interesting. I've answered back that doing that, now, might be difficult due to budget issues. He stated that he will work with Mrs. H / Injazat to see possible usage of CMA reporting tool to monitor / register personal performance results.

Discussion: Action plans update: As soon as I completed my round, I went to Mrs. H office and found Mr. HM there. Mr. HM left the office to allow me to talk to Mrs. H freely. Mrs. H updated me on the status and forwarded some suggestion with regard to potential merge or deletion of action plans. Also she proposed a full e-form template to capture complains and the feedback.

Reflection: Both Mr. HM and Mrs. H are enthusiastic about those action plans. Mrs. H starts to update me on the status without asking her even. Despite the fact this period considers a busy timing due to new tender technical evaluation that needs to be done prior to commercial opening, Mrs. H managed to find the time to work on those action plans. Also, we managed to determine some gaps that can be used in the new tender to come up with performance measures that can be used to evaluate the employees and the system. The meeting, although it was not planned, turns as a brain storming session.

Journal Note 12

Place: Nader's office
Date: 17.09.2014
Time: 01:00 pm (10 minutes)
Entry Type: Reflection, Action
Entry Name: Casual Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action Plan update - Item 3: Mrs. H proposed a presentation about CMA reporting tool and how these report can be used. Presentation sessions will be announced as soon as the presentation will be completed.

Reflection: I think Mrs. H is aware of the problem. She was open to the idea and did proposed a presentation. However, the presentation does not create full awareness about the reporting tools. She justified that by stating that the presentation session will demonstrate life usage of reporting tool and prepared presentation is for introductory purposes.

Discussion: Action Plan update - Item 6 and 8: Mrs. H confirmed that design of feedback and complain log was completed. User feedback and complains and complement statements are captured in one form. The form was designed to be available through portal. All feedback complains and complements statement will be reviewed and sent back to end-user to inform them about the status. System support (Injazat) will have an access to all complain in order to fix them and respond back to end-users. The form was sent to ADSSC IT for implementation.

Reflection: The design was good. Mrs. H know how things should be done, especially when it comes to complain. I was surprised when she added the complements statement. I think she was looing for end-user appreciation to the effort done through the CMA. She has logic behind that!

Journal Note 13

Place: Al Wathba Meeting Room
Date: 17.09.2014
Time: 01:30 pm (15 minutes)
Entry Type: Meeting, Reflection
Entry Name: August/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.
Mr. A, Male, Team Leader.
Mr. HM, Male, Employee, Technical Services..
Mr. O, Male, Team Leader, Technical Services.
Mr. W, Male, Team Leader, Technical Services.
Mr. LH, Male, Employee, Technical Services.
Mrs. H, Female, Team Leader, GIS Section
Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of August 2014 was very good 2 out of 6 KPI's scored below 60% the target. Remaining KPI were either meeting or exceeding the target.

Reflection: Generally speaking, APD performances were outstanding in comparison with other departments. This shows that TSS individuals are not only interested to but also proud to discuss their performance. KPI's discussed in the meeting were very thorough and contains deep analysis supported by factual figures.

Discussion: Action Plan updates: The team indicated that they were under pressure due to the fact that some staff were on summer leaves. Items 3, 6 and 8 and 12 are in progress

Reflection: It looks that the team is not interesting in producing performance measures. Also seems that they are not sync with GIS team.

Journal Note 14

Place: Swihan Meeting Room
Date: 18.09.2014
Time: 10:00 am (60 minutes)
Entry Type: Reflection, General Notes
Entry Name: Corporate Performance Review Meeting - CPRM 2

Participants:

Mr. LT, Male, Executive.
Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. MH, Male, Executive.
Mr. OM, Male, Executive.
Mr. HN, Male, Executive.

Discussion: KPI code: SC.P1.K2.A: Response to customer enquiries index: % of Customer applications & queries processed on time (APD) was 84% where that target was 94%. Justifications was discussed and executive management direction on that matter was to keep watching TSS team performance on the divisional/departmental level and extend all kind of support to overcome the performance issue ASAP.

Reflection: This action (item 9) is linked to dimension 1 of the social integration circuit “organization roles that place system stakeholders (champions and resisters) in their position”. This action considered an example of Asset Management Division Director (champion) commitment to CMA results and how results can be improved. Discussing this KPI on the ADSC corporate performance review meeting (CPRM) was important. On the other hand this also can be seen as organization management commitment toward monitoring performance of employees.

Journal Note 15

Place: Mrs. H's office
Date: 08.10.2014
Time: 12:00 pm (15 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action Plan update - Item 3: users feedback session was split to two sessions to accommodate geographical administrative borders, (Abu Dhabi and WR, and Al Ain)

Reflection: Mrs. H decision to split the session was absolutely correct! I think she was after avoiding negative criticism that my raise by the “reporting tools” users.

Discussion: Action Plan update - Item 3: attendance was almost perfect except the absence of Mr. M and Mr. A (key CMA staff / champions). She elaborated that Mr. A was off but upon receiving the invitation he asked Mr. W (2nd in command) to attend. Mr. M situation was a bit strange. Despite his acceptance of the invitation, he did not show up!

Reflection: I think Mrs. H started to figure the CMA champion and resistor, she stated that Mr. M presents a unique case! Sometimes she feels that he is a champion while rest of the time she feels that he is a big resistor.

Discussion: Action Plan update - Item 3: outcomes were expected. The tools available at the CMA are too operational. Management reporting tools are missed, for example: KPI monitor, management dashboard). Also, some existing was to be obsolete as it has alternative way to show results. She elaborated that based on the user feedback / survey, the GIS team will be able to develop new tools to accommodate users' requirements. User requirements session will be deployed to know what type of info s required to be displayed.

Reflection: Mrs. H got that right! I think she masters the user need assessment exercise. She came up with a survey where “reporting tool” users were pushed to assess existing reports. Mrs. H, literally, masters how to promote CMA despite of users' negative criticism.

Journal Note 16

Place: AI Wathba Meeting Room
Date: 06.11.2014
Time: 09:45 am (15 minutes)
Entry Type: Meeting, Reflection
Entry Name: September/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.
Mr. A, Male, Team Leader.
Mr. HM, Male, Employee, Technical Services..
Mr. O, Male, Team Leader, Technical Services.
Mr. W, Male, Team Leader, Technical Services.
Mrs. H, Female, Team Leader, GIS Section
Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of September 2014 was very good. Most of the KPI's were meeting or exceeding the target set.

Reflection: Generally speaking, APD performances were better than the previous month (august). It was an outstanding performance against other AMD' departments. KPI's and its associated result were discussed in details. Analysis used in those KPI's are deep and supported by figures.

Discussion: Action Plan updates: GIS team has demonstrated their upcoming projects (Spatial workflow project and maintenance VO). Seems that both will start early Dec 2014.

Reflection: starting these projects early Dec 2014 will facilitate the execution of some action items namely: 7, 12 and 15. These action are classified as high priority and required budget.

Discussion: Action Plan updates: it was decided that a details discussion will take place on Nov 9th 2014

Reflection: I do acknowledge the load on the APD staff. Some actions need to be merged to ensure adequate implementation and follow up. Usage of e-tools will facilitate the introduction and follow-up of agreed actions.

Journal Note 17

Place: Mrs. H's office
Date: 09.11.2014
Time: 10:00 am (45 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action Plan update - Item 2: it was agreed that this action would be changed from a quarterly presentation session to biweekly e-memo to all CMA users. Mrs. H, Mr. O and I will develop several e-memos to be ready for shoot early next week (Nov 16th 2014).

Reflection: the idea came from me, by further considering the difficulties of gathering CMA users to attend an introductory presentation. This is due to the spread of staff all over Abu Dhabi emirate. Both Mrs. H and Mr. O have agreed to change the mode of communication immediately and show interest to develop these e-memos

Discussion: Action Plan update - Item 3: first session was conducted from Abu Dhabi and Al Ain (refer to Journal Note 15).

Reflection: I think Mrs. H is on top of that.

Discussion: Action Plan update - Item 4: it was agreed that this action would be launched by end of September 2014. However, it seems that it will be pushed for end of November.

Reflection: Mrs. H has been overloaded with ADSIC staff and awarding of the new project as well as the new VO (maintenance VO). In addition, developpee staff were sent out from obligatory out-office training which was arranged by ADSSC HR. it was agreed that this action will be pushed for end of November.

Discussion: Action Plan update - Item 6 and 8: A new e-tool was put in place to capture users feedback: complains, suggestions and complements. Official announcement email was sent out to all CMA/ GIS users on Nov 9th 2014.

Reflection: Mrs. H was very enthusiastic about it! Prior to lunch Mrs. H and her team was teasing the e-tool, intensively.

Discussion: Action Plan update - Item 7, 12 and 15: the GIS team was successful in obtaining Technical Committee approval on the Maintenance VO. The Maintenance VO will start on Dec 1st 2014.

Reflection: Mrs. H was successful in obtaining the buy-in from the Technical Committee. Pre arrangement with Rolta is in place to further enquire about the possibility to proceed with these actions via the approved VO.

Discussion: Action Plan update - Item 10: Anew contract is about to be awarded to Rolta to expand the current CMA to engage the CSD and other external stakeholder via system integration.

Reflection: Mrs. H and I are confident about the project. This indicated the successful stereotype that the CMA placed. Further communication with ADSIC will be set to see how this would take place to integrate with the E-NOC. ADSSC will be the first entity to integrate with E-NOC. This will leave a positive recognition of ADSSC internally and externally (within ADSDI community).

Discussion: Action Plan update - Item 1 and 11: it was decided that we would have a quarterly session to brief CMA users about: E-NOC update, CMA update, reporting tools update and general feedback. The decision to do this merge is due to acknowledgment we made to the difficulties of gathering CMA users spread all over the emirate of Abu Dhabi to attend various feedback quarterly sessions.

Reflection: I think this is a collective view (Mrs. H, Mr. O, Mr. A and I) on how to better plans quarterly sessions.

Journal Note 18

Place: Nader's office
Date: 25.11.2014
Time: 09:00 am (10 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.

Discussion: Action Plan update - Item 5: it was agreed that 2nd draft would be submitted on Dec 7th 2014. The second draft will include RACI and SOP of Technical Services Section SOP.

Reflection: Mr. M proposed to me to give a look at the proposed RACI and SOP. He is still not sure what is this action is aimed for. I've explained to him that this action is aimed to create standard operating procedure to reflect the current practices in CMA. The SOP should include RACI matrix to better explain level of authorities and responsibilities of all CMA users.

In addition he claimed that he is facing issues with Al Ain TSS team to unify business processes adopted in both Abu Dhabi and Al Ain. I gave some direction on how the SOP should look like and what need to be included. This include capture of CMA business processes / flowcharts.

Journal Note 19

Place: Al Wathba Meeting Room
Date: 06.11.2014
Time: 09:45 am (15 minutes)
Entry Type: Meeting, Reflection
Entry Name: October/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager.
Mr. A, Male, Team Leader.
Mr. HM, Male, Employee, Technical Services..
Mrs. H, Female, Team Leader, GIS Section
Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of October 2014 was very good. Most of the KPI's were meeting or exceeding the target set.

Reflection: Generally speaking, APD performances were lower than the previous month (September). However, It is still an outstanding performance against other AMD' departments. KPI's and its associated result were discussed in details. Analysis used in those KPI's are deep and supported by figures.

Journal Note 20

Place: Nader's office
Date: 07.12.2014
Time: 09:30 am (5 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.

Discussion: Action Plan update - Item 5: it was agreed that 2nd draft would be submitted on Dec 7th 2014. The second draft will include RACI and SOP of Technical Services Section SOP. Unfortunately he missed the deadline line. I send him a reminder on Dec 7th 2014 at 09:17 via email.

Reflection: Mr. M jumped to my office and was nervous a bit. He thought that I would send him a warning letter / notification, as we have agreed that proposed action items need to be given a priority. He kept claiming that Al Ain team was raising issues when it comes to unifying business processes with Abu Dhabi. But he could manage to overcome that. He proposed Dec 14th 2014 as a new deadline.

In my opinion, Al Ain TSS team is directly connected to ADSSC DMD. Since Mr. M is still Acting APD Manager, he is a bit afraid to go through a clash with Al Ain TSS.

Journal Note 21

Place: Swihan Meeting Room
Date: 11.12.2014
Time: 10:00 am (60 minutes)
Entry Type: Reflection, General Notes
Entry Name: Corporate Performance Review Meeting - CPRM 3

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. MH, Male, Executive.
Mr. OM, Male, Executive.
Mr. HN, Male, Executive.
Mr. AM, Male, Team Leader, Strategic Planning.
Mrs. AA, Female, Employee, Strategic Planning.
Mr. AAZP, Male, Support, Consultant.
Mrs. AP, Female, Support, Consultant.

Discussion: KPI code: SC.P1.K2.A: Response to customer enquiries index: % of Customer applications & queries processed on time (APD). The index results started to increase from 59.84% to 70.77% with continuous increase in application received from (1208) Abu Dhabi and (856) Al Ain to (2170) Abu Dhabi and (1431) Al Ain despite maintaining the same staff number all the way. In addition to that, we've discussed the impact of national services on staff. External resources is required to keep up with the target / or at least maintaining the same achieved result during the 3rd CPRM.

Reflection: This action (item 9) is linked to dimension 1 of the social integration circuit "organization roles that place system stakeholders (champions and resisters) in their position". This action considered an example of Asset Management Division Director (champion) commitment to CMA results and how results can be improved. Discussing this KPI on the ADSC corporate performance review meeting (CPRM) was important. On the other hand this also can be seen as organization management commitment toward monitoring performance of employees.

Journal Note 22

Place: Nader's office
Date: 17.12.2014
Time: 12:30 am (5 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.

Discussion: Action Plan update - Item 5: it was agreed that 2nd draft would be submitted on Dec 14th 2014. The second draft will include RACI and SOP of Technical Services Section SOP. Unfortunately he missed the deadline line once more. Mr. M jumped to my office and claimed that he reported sick for 14th and 15th Dec 2014. But he will send me the draft in 10 minutes. I received the 2nd draft via email at 12:13, comment on it and send back for discussion on Dec 18th 2014.

Reflection: when Mr. M jumped to my office he was very nervous. He thought that I would definitely, this time, send him a warning letter / notification for missing the deadline for the 2nd time. I've calmed him down and accepted his apologies. But also, I was firm in requesting the SOP and RACI file to be delivered to me today, which he did via email at 12:13.

The comments that I've put were as follow:

1. RACI is ok.
2. SOP TSS Abu Dhabi and Al Ain are OK. You might need to enhance the table to add column represents application-processing type (online / manual). Also need to specifying one more addition clause explaining application /documentation registry.
3. General: cannot we come up with one SOP for both Abu Dhabi and Al Ain? Jaime / Mr. M to discuss.

Journal Note 23

Place: Nader's office
Date: 18.12.2014
Time: 01:30 pm (30 minutes)
Entry Type: Reflection, General Notes
Entry Name: Item 14, 15, and 17

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. HD, Male, Manager.

Discussion: Item no. 14, 15, and 17 were discussed in details. I've illustrated the COP prospective and the importance to have a personal scorecards linked to the departmental / corporate performance, monitoring tool and possible rewarding and deterring scheme in ADSSC personal policy manual (PPM).

I've also, illustrated that this subject was raised by one of the ADSSC Board Member in meeting 01/2014 and the Chairman of ADSC directed the BSD Director to establish the task.

In addition, I've told him that I had a side meeting with H.E the Chairman of ADSSC in which I reminded him about the personal scorecards and possible linking to departmental / corporate performance and creating associated tasks like establishing a monitoring tool and possible rewarding and deterring scheme in ADSSC personal policy manual (PPM). The Chairman was enthusiastic about it and was vey keen to see this at ADSSC.

Reflection: At the beginning, he showed interest and he is looking for a help to reach to this level of HR maturity, as the system and top management does not support such ideas. I think I've shocked him when I said that this issue was discussed in the board meeting. He was like "What!" at this moment I recognized that he might be the biggest barrier that can face the implementation of the personal scorecards. He further show resistance by highlighting issues that present barriers to implementation, such as PPM and how it can impact the promotion scale / policy. Further to that he said that he might talk to the BSD Director to get his feedback on what went on / discussed with the Chairman. Generally speaking, change to accommodate personal scorecards and adjusting ADSSC personal policy manual (PPM) is relatively easy but challenging tasks. HR guys at ADSSC are not matured enough and might mis-use this opportunity and create chaos at in HR practices.

Journal Note 24

Place: Swihan Meeting Room
Date: 21.12.2014
Time: 09:00 am (90 minutes)
Entry Type: Reflection, General Notes
Entry Name: Strategic Review Meeting

Participants:

Mr. LT, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. OM, Male, Executive.
Mr. HN, Male, Executive.
Mr. HO, Male, Manager.
Mrs. BA, Female, Manager.
Mr. AM, Male, Team Leader, Strategic Planning.
Mr. AAZP, Male, Support, Consultant.
Mrs. AP, Female, Support, Consultant.

Discussion: The meeting was set to discuss the strategy update, KPI's and initiatives. During the meeting I've highlighted the importance of creating a personal scorecards and linking them to departmental / corporate performance. However to ensure that this task go well, other associated items like: review ADSSC PPM and promotion scale / policy, job description (JD), reporting tool need also to be reviewed to provide a rewarding and deterring mechanism. I've mentioned that this issue was discussed at the board meeting 1/2014 but not happened till moment. Also, I mentioned that AMD is ready to be a pilot Directorate for this exercise.

Reflection: Most of the attendees including the consultant recommended to go ahead with this task, except Mr. HN and Mrs. BA. I think they are worried lose control on HR activities, especially when it comes to unscheduled promotions due to performance, for example. They have further said that this needs to be discussed in the HR committee to obtain a decision. I think this is a maneuver set to obtain the DMD blessing before taking any action.

Journal Note 25

Place: Nader's office
Date: 20.01.2015
Time: 13:00 am (10 minutes)
Entry Type: Reflection
Entry Name: Mr. HM' resignation

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. HM, Male, Employee, Technical Services..

Discussion: Mr. HM has passed by my office and submitted his resignation. We had chitchat for a few minutes, trying to understand why to submit a resignation. Mr. HM indicated that he loved the environment at ADSSC especially at the TSS. He further indicated that there was no more room to grow and being promoted. He felt that he has a capacity to do more. On the other hand he stated that the promotion scheme at ADSSC is outmoded, as it does not allow growing grade wise. Positions are associated with personal grades and this affected his promotion. Other than that, he would love to stay.

Reflection: Mr. HM had figured out that ADSSC HR is not mature enough to deal with the spirit of personal policy manual rather than its text. Perceiving personal benefits and deterring rewards scheme was totally absence at ADSSC. This is what pushed Mr. HM to resign. Mr. HM is a sharp guy and had spotted it, immediately. He knew that things might change at ADSSC, but very slowly - especially when it comes to hard rewards scheme such as grades promotions (according to ADSSC personal policy manual procedures).

Appendix

Journal Note 26

Place: Nader's office
Date: 25.01.2015
Time: 09:00 am (60 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action plans were discussed in details covering progress, deletion, addition, enhancement proposed against each action item. Summary sheet is attached.

Reflection: Mrs. H was ready to discuss the status of action plans. She was well prepared but at the same time she was a bit worried about actions progress as some of them are behind schedule. Some actions were reassigned from Mr. M to Mrs. H. Reassignment was due to the Mr. M absence (operationally).

Mr. M was unable to show up lately (the lasts 2 weeks) due to some personal issues, despite the fact that he knew that TSS face a shortage of staff. The shortage of staff happened due to voluntary turn over (resignation) for example, the resignation of Mr. Mr. HM. Also National service initiatives run by the government pulled out some key staff from Abu Dhabi and Al Ain (2nd batch). 4 employees were assigned for 3rd batch, which is expected to start on March 2015. In addition to that another key person in TSS Abu Dhabi was injured in a football match and he went for 60 days sick leave.

Journal Note 27

Place: Al Wathba Meeting Room
Date: 26.01.2015
Time: 11:00 am (10 minutes)
Entry Type: Meeting, Reflection
Entry Name: November/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.
Mrs. H, Female, Team Leader, GIS Section
Mr. HM, Male, Employee, Technical Services..
Mr. O, Male, Team Leader, Technical Services.
Mr. AMH, Male, Employee, Technical Services.
Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of November 2014 was low. Most of the KPI's were not meeting or exceeding the target set (77.5% for Abu Dhabi and 71.9% for Al Ain).

Reflection: Generally speaking, APD performances increased in comparison to the previous month (October). Despite the fact the scores are still low but APD management still have a valid justification. KPI's and its associated result were discussed in details. Analysis used in those KPI's are deep and supported by figures.

Discussion: GIS performance

Reflection: the GIS performance was outstanding. They demonstrate an excellent control of GIS activities.

Journal Note 28

Place: Nader's office
Date: 27.01.2015
Time: 09:00 am (10 minutes)
Entry Type: Reflection, General Notes
Entry Name: Action item no. 15

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. S, Male, Employee, Technical Services

Discussion: action item no. 15 - Auto-generated performance brief proposal was discussed with Mr. S. Despite the fact that Mr. S is one of the expatriate-old mind set employees, he showed interest to the subject.

Reflection: I think his enthusiastic being derived from a workload / staff available prospective. National service scheme played a vital role in staff availability. Most of the junior staff in TSS are due to national service. The section head of Abu Dhabi and a key person in Al Ain went to national services as part of the second batch (Dec 2014). We are expecting 4 more employees to attend the third batch due in March 2015. The workload kept in increasing dramatically. TSS staff are unable to accommodate the workload. Some measures were suggested to senior management including the usage of secondment staff from a consultant. "The Auto-generated performance brief will help CMA users to understand the upcoming work volume and better forecast their efforts. In addition, it will help them to plan their/ subordinate staff availability", Mr. S said.

Journal Note 29

Place: Al Wathba Meeting Room
Date: 26.01.2015
Time: 11:10 am (10 minutes)
Entry Type: Meeting, Reflection
Entry Name: December/2014 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.
Mrs. H, Female, Team Leader, GIS Section
Mr. HM, Male, Employee, Technical Services..
Mr. O, Male, Team Leader, Technical Services.
Mr. AMH, Male, Employee, Technical Services.
Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of December 2014 was low. Most of the KPI's were not meeting or exceeding the target set (52.6% for Abu Dhabi and 67.9% for Al Ain).

Reflection: Generally speaking, APD performances were dropped than the previous month (November). Despite the fact the scores are low but APD management still have a valid justification. KPI's and its associated result were discussed in details. Analysis used in those KPI's are deep and supported by figures.

Discussion: GIS performance

Reflection: the GIS performance was outstanding. They demonstrate an excellent control of GIS activities.

Journal Note 30

Place: Swihan Meeting Room
Date: 12.02.2015
Time: 10:00 am (60 minutes)
Entry Type: Reflection, General Notes
Entry Name: Corporate Performance Review Meeting - CPRM 4

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. MH, Male, Executive.
Mr. OM, Male, Executive.
Mr. HN, Male, Executive.
Mr. AM, Male, Team Leader, Strategic Planning.
Mr. LZ, Male, Team Leader, Strategic Planning.
Mrs. BA, Female, Manager.
Mr. HO, Male, Manager.
Mr. AAZP, Male, Support, Consultant.
Mrs. AP, Female, Support, Consultant.
Mrs. OP, Female, Support, Consultant .

Discussion: KPI code: SC.P1.K2.A: Response to customer enquiries index: % of Customer applications & queries processed on time (APD). The index results started to fluctuate (62% October, 76% November, 59% December) with continuous increase in application received from (1858 October, 2187 November, 1961 December) for Abu Dhabi and (1181 October, 1202 November, 1363 December) for Al Ain despite of losing some staff due to resignation or training coerces in December 2014. In addition to that, we've discussed the impact of national services on staff. External resources is required to keep up with the target / or at least maintaining the same achieved result during the 3rd CPRM.

Reflection: This action (item 9) is linked to dimension 1 of the social integration circuit "organization roles that place system stakeholders (champions and resistors) in their position". This action considered an example of Asset Management Division Director (champion) commitment to CMA results and how results can be improved. Discussing this KPI on the ADSC corporate performance review meeting (CPRM) was important. On the other hand this also can be seen as organization management commitment toward monitoring performance of employees.

Journal Note 31

Place: Mr. HD Office
Date: 23.02.2015.
Time: 12:00 pm (30 minutes)
Entry Type: Reflection, General Notes
Entry Name: Item 14 and 17

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. HD, Male, Manager.
Mr. NB, Male, Employee, HR.

Discussion: Item no. 14: Personal scorecard:

I've asked Mr. HD if there was any progress of initiating the personal scorecard initiative and to our discussion that took place 2 months ago. He replied that he does not recognize what I was talking about. I had to refresh his memory by saying "it's the personal scorecard that the chairman instruct your boss to do in liaison with the strategy. The strategy guys will be after you soon to report on the progress". "Yes, ... I got it! Can I ask Mr. HD to join us to better discuss this issue", Mr. HD said.

Reflection: I tried to show the importance of the topic by re-highlighting the level of the initiative sponsor, which is in this case the chairman, and potential follow-up that he might be got soon from the SPCD guys. I think I managed to poke him and refresh his memory. Asking Mr. HD to join us was a clear indication that he has nothing been done yet. From my experience and interaction with ADSSC HR for that last 10 years, Mr. HD is an exit door for any problem. He does talk but no work.

Discussion: Item no. 14: Personal scorecard and 17: performance evaluation- detail discussions:

I addressed the issue in details and up to the point by describe the importance of implementing and fast-tracking the personal scorecards. Also, I indicated that Asset Management Division is ready to be the pilot functional unit implementing the personal scorecards, whether its Asset Management Division, or a department or even a function unit within the division. In addition, I mentioned that in order to progress with the PSC supporting elements need to be revised and made ready, such as; revamping JD's and performance evaluation (PE) form to include the PSC scoring. Also, I was very clear in stating that the current PE is not adequate as it focuses only on HR aspects and neglects technical / operational and managerial measures.

Reflection: I felt that they were put in a corner. All success factors are made available for them. The only missing piece is the determination and effort that they need to do. We agreed that will do a workshop by next week and ask a support form SPCD and their consultant.

Journal Note 32

Place: Mr. AM's office
Date: 25.02.2015.
Time: 10:40 am (20 minutes)
Entry Type: Reflection, General Notes
Entry Name: Item 14 and 17

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. LZ, Male, Team Leader, Strategic Planning.
Mr. AM, Male, Team Leader, Strategic Planning.

Discussion: Item no. 14: Personal scorecard:

I shared with Mr. LZ and Mr. AM the outcome of the meeting happened between Mr. HD (HR) and myself. It seems they are also pushing from their side to close this initiative. Also, there is a necessity to expand the review to address the JD's and performance evaluation.

Reflection: Mr. AM and Mr. LZ were anxious about IT. They tried hard to push the personal scorecard (PSC) initiative but HR guys were resisting it. I told them that they need to work out a workshop with HR and us (AMD) ASAP so that the nail down the PSC. Also, they were glad to hear that AMD can be used as a pilot and scale of implementation (division, department or functional unit) can be determined by HR and them-selves. Both Mr. LZ and Mr. AM agreed with expanding the scope to include revamping JD's and performance evaluation according to a corporate initiative coded SO.P1.K3.N1.

SO.P1.K3.N1 details:

- **Succession Planning:** Define a clear succession plan for all key positions of levels 1 & 2
- **Revamp Individual Performance Appraisal Process:** Define and communicate a clear process for personal objectives definition, appraisal & feedback that must be followed by all employees
- **Training courses identification for key functions:** Identify training courses based on competencies for key positions (levels 1, 2 & 3)
- **Strategic Competencies Mapping & Assessment:** Define strategic competencies required for key functions & assess current level to identify gaps
- **Customer Focus Training Program:** Training Program to incorporate customer management capabilities to all departments that have direct contact with external customers
- **Leadership Training Program:** Training Program to incorporate key management & leadership competencies for levels 1 & 2

Journal Note 33

Place: Mr. HN's office
Date: 25.02.2015.
Time: 11:05 am (05 minutes)
Entry Type: Reflection, General Notes
Entry Name: Item 14 and 17

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. HN, Male, Executive.

Discussion: Item no. 14: Personal scorecard:

I shared with Mr. HN the outcomes of meeting took place with (1) SPCD Team, (2) HR Manager. I gave him a brief about the component of the SO.P1.K3.N1. Mr. HN agreed, finally, to go a head with SO.P1.K3.N1 and action item 14 - personal scorecard (PSC).

Reflection: Mr. HN has been assigned as acting SPCD Manager, in addition to his duties as BSD Director. He is not fully aware of the details of ADSSC corporate strategy. I am trying to help him, from time to time, based on ADSSC Chairman and MD directions and his request. Mr. HN stated that he will do the required to ensure that the PSC workshop happen during the month of March 2015. I think, things become clearer by now to Mr. HN, SPCD and HR. PSC is must to be implemented. Its part of the ADSSC corporate strategy. Doing nothing about PSC and corporate initiative coded SO.P1.K3.N1 consider a moral crime to ADSSC!

Journal Note 34

Place: Al Wathba Meeting Room
Date: 22.03.2015
Time: 11:00am (15 minutes)
Entry Type: Meeting, Reflection
Entry Name: January and February / 2015 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.
Mr. M , Male, Manager, Manager Asset Performance Dept.
Mrs. H, Female, Team Leader, GIS Section
Mr. HM, Male, Employee, Technical Services..
Mr. O, Male, Team Leader, Technical Services.
Mr. AMH, Male, Employee, Technical Services.
Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of January 2015 was average 77% (yellow zone). Most of the KPI's were not meeting or exceeding the target set (64.6% for Abu Dhabi and 96.4% for Al Ain).

APD Performance for the month of February 2015 was poor 67% (Red zone). Most of the KPI's were not meeting or exceeding the target set (49.4.% for Abu Dhabi and 94.5% for Al Ain).

Reflection: Generally speaking, APD performances were increased than the previous month (December 2014). Despite the fact the scores are average for January 2015 and poor for February 2015 but APD management still have a valid justification. KPI's and its associated result were discussed in details. Analyses used in those KPI's are deep and supported by figures. Al Ain scores were dramatically increased because the calculation methods proposed by Mr. M suggests deleting all missing applications that presents almost 10%. Action was taken to look into missing applications in liaison with the DMD.

Discussion: GIS performance

Reflection: the GIS performance was outstanding. They demonstrate an excellent control of GIS activities.

Journal Note 35

Place: Nader's office
Date: 26.03.2015
Time: 02:30 pm (30 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting – March 2015

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action Plan update - Item 1: Sessions are progressing according to plan.

Reflection: Mrs. H was on top of it.

Discussion: Action Plan update - Item 2: E-memos are according to schedule. The 4th one was issued today March 26th 2015.

Reflection: according to Mrs. H and various feedbacks, which were received from the CMA users, the CMA users were satisfied with the e-memos. They were looking for an update about the E-NOC. I suggested to Mrs. H that the 5th one should address how E-NOC works along with the CMA to response to customers' enquiries.

Discussion: Action Plan update - Item 3 and 11: Four sessions were set to address all CMA components including reporting tool. The first sessions was executed in [12.03.2015].

Reflection: The session was successful. She directs all the attendees to participate in the e-log to capture their complains suggestions and complements. I think Mrs. H is on top of that. Both Mrs. H and myself agreed merging Item 3 and Item 11. The scope can be merged as consultation sessions which was planned

Discussion: Action Plan update - Item 4: It was agreed that upon launching a new feature or disconnection of the services a notification to all users will be sent out. For example: Two e-notifications were sent on March 2015: Auto-generated performance tool 2nd pilot test in CMA [15.03.2015]. Web GIS services continuity notice [25.03.2015].

Reflection: this action was well defined and it's under control. Mrs. H liked the idea. E-notification is used frequently.

Discussion: Action Plan update - Item 5: Action completed

Reflection: Nil

Discussion: Action Plan update - Item 6 and 8. No action is made on March 2015

Reflection: Nil.

Discussion: Action Plan update - Item 7: Listed as mid priority in maintenance project.

Reflection: Most probably will be taken out of the maintenance list and pushed for 2nd batch, if any.

Discussion: Action Plan update - Item 9: Includes CMA hot issues in the agenda of the division/department performance review meeting

Reflection: This action started in [DPRM 05/2014] and still continuing. However, for DPRM for March is not yet executed. This is due to the fact that the ARP system is still on hold. We are expecting the DPRM to be re-activated on May 2015.

Discussion: Action Plan update - Item 10: Approval on Mobile app' Function requirement Document [29.03.2105]

Reflection: Mrs. H was confident about this action and sees that as a sense of eager to achieve success from end-users prospective. I disagreed with Mrs. H and try to explain to her that some end-users might take that chance and keep raising the expectation bar of the functional requirements, which might lead to deflect the scope, and after that lead to delay in the project. She disagreed with what I've said!

Discussion: Action Plan update - Item 12: CSD, Referral Department and Reviewer roles manual were delivered.

Reflection: there are some delays due to workload but still manageable.

Discussion: Action Plan update - Item 13: seems to be on hold till launching the performance tool.

Reflection: Current weekly meeting are held to discuss outstanding the department performance in general.

Discussion: Action Plan update - Item 14: on hold

Reflection: Refer to JN 28, 31, 32 and 33.

Discussion: Action Plan update - Item 15: this action is in progress. The 2nd pilot test in CMA is set for [15.03.2015] and the deployment is expected on [26.03.2015]

Reflection: looks like that the action is progressing. But there are a lot of aspects that need to be recognized during the design of the tool. For example: duration, working ours calculation methods...etc.

Discussion: Action Plan update - Item 16: this is scheduled for the maintenance VO.

Reflection: Nil

Discussion: Action Plan update - Item 17: Further discussion was made with HR Manager, SPC Specialists and BSD Director - refer to JN [31, 32 and 33].

Reflection: this seems will not progress. SPCD might reinitiate it when they will start reporting ADSSC strategic performance to Abu Dhabi Executive council.

Journal Note 37

Place: Nader's office
Date: 30.04.2015
Time: 01:30 pm (30 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting – April 2015

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action Plan update - Item 1: On- going. Sessions are progressing according to plan. The second session was executed in 28.04.2015.

Reflection: Mrs. H was on top of it.

Discussion: Action Plan update - Item 2: On-going. E-memos are according to schedule. The 5th one is scheduled in May 2015.

Reflection: the GIS team is kept busy with the GISWORX'15. We have been notified that we will be awarded with the Excellence Award in the field of mobile application. Currently the team is busy in preparing the necessary aspects of ADSSC both at the GISWORX'15. Senior Management was astonished with such achievement! The senior management agreed to issue a letter of appreciation to AMD-GIS staff congratulating them with such achievement.

Discussion: Action Plan update - Item 3 and 11: On-going. Remaining session are scheduled for 12.05.2015, 07.09.2015 and 06.12.2015]. I've asked Mrs. H to send a reminder email to all users about the next session.

Reflection: the team was a bit hesitating that these sessions might have low attendees. This is due to the fact that the GIS and CMA become very wildly and no training might be required for exiting users. For new users / new employees I think it will be a must. By the way, I've explained to the GIS team that we have to have a pre-scheduled session to conduct rather than having ad-hock sessions. Will reduce the workload on the GIS team. On the other hand it will help the GIS team to achieve the target set in their performance scorecards.

Discussion: Action Plan update - Item 4: On going

Reflection: Nil

Discussion: Action Plan update - Item 5: Action completed

Reflection: Nil

Discussion: Action Plan update - Item 6 and 8. Second session was successfully conducted on [28.04.2015]. Remaining sessions are scheduled for [03.08.2015 and 14.12.2015].

Reflection: this is under control. I think the end-user liked it! It give a n opportunity for all end-users to put forward their feedback complains and complements, if any and at any time.

Discussion: Action Plan update - Item 7: Listed as mid priority in maintenance project.

Reflection: Most probably will be taken out of the maintenance list and pushed for 2nd batch, if any. Nothing much happens since last month (March 2015).

Discussion: Action Plan update - Item 9: On-going. Includes CMA hot issues in the agenda of the division/department performance review meeting

Reflection: This action started in [DPRM 05/2014] and still continuing. However, for DPRM for March and April is not yet executed. This is due to the fact that the ARP system is till on hold. We are expecting the DPRM to be re-activated on May 2015.

Discussion: Action Plan update - Item 10: Initial approval of the Mobile app' Function requirement Document [14.04.2105] and Customer Cervices CMA initial approval on workflows function requirement Document [30.04.2105].

Reflection: the demands of the users were higher that what was offered originally in the scope by the winning bidders. The PM has to mange that kind of end-user expectations to avoid goal deflection and save the project from suffering from delay and lead finally to failure.

Discussion: Action Plan update - Item 12: CSD, Referral Department and Reviewer roles manual were delivered.

Reflection: there are some delays due to workload but still manageable.

Discussion: Action Plan update - Item 13: Seems to be on hold till launching the performance tool.

Reflection: Current weekly meeting are held to discuss outstanding the department performance in general.

Discussion: Action Plan update - Item 14: On hold

Reflection: Refer to JN 28, 31, 32 and 33.

Discussion: Action Plan update - Item 15: Unfortunately there were sever bugs in the pilot demo. We sat with the developer (this time is India-team) to explain the idea behind the usage of this tool and why we are planning to use this tool.

Reflection: based on the discussion the vendor (India-team) started to understand what we re looking for and how to establish the calculation methods. I am expecting a follow up from Mr. M (as he will be the main users) in addition to TSS senior staff. Also, I am expecting Mrs. H to have a deep follow up with the vendor to complete the task and get rid of Mr. M.

Discussion: Action Plan update - Item 16: This is scheduled for the maintenance VO.

Reflection: Nil

Discussion: Action Plan update - Item 17: Further discussion was made with HR Manager, SPC Specialists and BSD Director - refer to JN [31, 32 and 33].

Reflection: this seems will not progress. SPCD might reinitiate it when they will start reporting ADSSC strategic performance to Abu Dhabi Executive council.

Journal Note 38

Place: Nader's office
Date: 13.05.2015
Time: 11:00 pm (20 minutes)
Entry Type: Reflection, General Notes
Entry Name: Project Delays - Mrs. H.

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Mrs. H shared with me her concern on the project O-11379. The project is going to delay significantly. The contract-closing day was May 3rd 2015 and yet the contract is t submit the end-user requirement. On the other hand she shared with me her fear to lose the project – in case of terminating the contract. She was seeking advice on how to overcome that.

Reflection: Despite the fact that Mrs. H is very active and use to consult me almost in every thing (being her role model), she felt that the project is being collapsed. This is true! The project collapsed because of her management skills / style. Mrs. H is very keen and tend to negotiate and compromise almost every thing. I think she failed to control the project. This failure is applicable to Mr. M also – being her line manager and in charge of the APD. I advised her to carry a PMT meeting to discuss the case and recommend evaluating a recovery plan. In case the recovery plan tends to be unrealistic and deliverable cannot be delivered, she has to apply the contractual procedure. I think she was terrified to take a decision and being hold responsible. I think she has seen my recommendation as rescue rope. I think she will run after closing the contract rather than looking at the recovery plan.

Journal Note 39

Place: Nader's office
Date: 13.05.2015
Time: 01:00 pm (10 minutes)
Entry Type: Reflection, General Notes
Entry Name: Project Delays - Rolta.

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. AR, Male, Support, Consultant..

Discussion: despite the fact that I am not a member in the PMT of the O-11379, I was asked to interfere to discuss option on how to mitigate the risk of delaying the project or any other way forward. I reflected to Mr. Mr. ARmy concerns and he was totally agreed with me. However, he kept saying that the delays were caused by both parties (ADSSC and Rolta). He further said that absence of charismatic project sponsor has impacted the project. E further explained that Mrs. H (the PM) did not demonstrate competent skills to run the project either technically or contractually. On the other hand the same thing appear from Rolta-side, as the assigned PM from Rolta was clumsy! The discussion concluded that there is no way to mitigate the delays occurred. The project has to have a fresh start with a completion period of 5 months – despite the fact that I still have doubt if Rolta can make it in 5 months. I've explained to Mr. Mr. ARthat ADSSC cannot accept such proposal. The only alternative option is to terminate the contract.

Reflection: Mr. Mr. ARwas very clever and fought for an EOT similar to the contract period. Also, he was very honest in explaining reasons behind such delay. He acknowledged that Rolta did a mistake when they have assigned the current PM. They were expecting that they would be controlling the project from overseas office. Mr. Mr. ARwas shocked that I was in deed towards terminating the contract. He was shocked that I was very straight in giving such message – terminating the contract. I've used the previous project as an example O-2505 that was delayed for 6 months. At the end of the day I should look at ADSSC interest.

Journal Note 40

Place: Mr. UD (Executive) Office
Date: 13.05.2015
Time: 02:00 pm (05 minutes)
Entry Type: Reflection, General Notes
Entry Name: Maintenance Progress

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.

Discussion: the DMD called me to enquire about the lose application issue tat occur in the CMA. I told him that we knew about the problem and it's under investigation. We have approached the vendor and Injazat (system support) and we are in the process to diagnose the issue. Further, I told him that Abu Dhabi is facing lose application of 4-6% in comparison to 10% for al Ain. The DMD requested me to detail the investigation and report on status on the second day.

Reflection: I think the DMD was under a huge pressure from Al Ain team – as he acts as an approver 3 in Al Ain. He was in need to understand what went on of the CMA. As soon as I briefed him about the issue of lose application supported by an initial diagnoses, he was relaxed but asked for an immediate action and detail brief in the second day – this indicate how committed is the DMD to the institutionalization of the CMA.

Journal Note 41

Place: Mr. UD (Executive) Office
Date: 14.05.2015
Time: 01:15 pm (15 minutes)
Entry Type: Reflection, General Notes
Entry Name: Shortage of staff of APD

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.

Discussion: I explained to the DMD that we do have a shortage of staff in AMD and APD in particular. The shortage of staff was due to many factors including: National Services initiative, “Absher” employment and budget restriction. The shortage of staff has unfortunately lead APD not to meet the corporate target of APD.O1.K1 “Response to technical enquiries on time”. APD performance is expected to continue in not meeting the target for longer time if no action will be taken to augment APD with extra resources. Also, I explained to him that we wrote several letters and emails to HR seeking a priority in employment for APD. However, there was no adequate response. In addition, I discussed the same matter previously in the 3rd and 4th 2014 CPRM, where the DMD have directed the BSD and HR to act accordingly. The DMD agreed that we need to talk a serious step toward the shortage of staff in APD. He instructed (via email) the BSD and HR mangers to give a priority of employment to APD.

Reflection: I was very honest in drawing a real-situation picture to the DMD on AMD and APD performance. Personally, I did not expect such a quick response from the DMD. Such a response indicate that the DMD realizes the problem and how it might impact the ADSSC image.

Journal Note 42

Place: Mr. UD (Executive) Office
Date: 14.05.2015
Time: 01:15 pm (15 minutes)
Entry Type: Reflection, General Notes
Entry Name: Maintenance Progress (1)

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.

Discussion: further to the discussion captured in JN40 the discussion was made to put the DMD in picture regarding the GIS team analysis. I explained to him that the team discovered that the system has a coding problem and we are in contact with the vendor to fix the issue through a VO. In addition I explained to the DMD that the current engine of the CMA – even if we managed to fix³ the coding – would not be able to cater the huge increase in the number of permit process in the CMA. I advised the DMD that the GIS team along with Injazat (system support) recommend changing the engine to a business process engine. The DMD was not convinced with what was said. He picked up the phone and called a friend in ADSIC (Abu Dhabi System and Information Center) seeking to assign a technical team to investigate the matter and report in 2 business days. During the call he opened the speaker and said “Nader I bull-shitting and I need your tem to confirm what he is saying”.

Reflection: I think the DMD was under a huge pressure from Al Ain team – as he acts as an approver 3 in Al Ain. Also, the DMD lacks of technical knowledge on IT aspects especially the GIS. Despite the fact that he trust my knowledge and experience in GIS aspect, however, he tend to keep teasing us as he goes – a kind of being fun and breaking the ice. But such behavior keeps us uncomfortable at all. The DMD was convinced on the provided solution however, he want to make sure that he will get support from ADSIC and get rid of any responsibility related to the required investment.

Journal Note 43

Place: Nader's office
Date: 14.05.2014
Time: 02:30 pm (20 minutes)
Entry Type: Reflection, General Notes
Entry Name: DPRM's Status

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.

Discussion: APD DPRM's for March and April 2015 were not executed on time, despite the fact that we are in need for this exercise to measure the APD performance. In addition APD March's score will go to the CPRMs. We know in fact that the ARP is not yet updated to take the scoring as performance contract for 2015 and 2016 is in progress. However, I got insider information that the data for the ARP will be requested by mid of June 2015. Therefore AMD' departments shall be ready for it! He said that he will got the data and works to perform March and April 2015 DPRM's.

Reflection: During the discussion I found that Mr. M was far away from such thinking. Mr. M considered DPRM as a compulsory document that need to be submitted and updated on monthly basis. Till moment he could not figure the importance of such document - to perform a control and monitor the progress of APD employees. Because of shortage of staff (due to national services) and continuous increase in permits applications, Mr. M should take the DPRMs seriously and further use it to the interest of the APD. This is only the way to solidify APD argument of its performance (considered in the read zone).

Journal Note 44

Place: Nader's office
Date: 21.05.2015
Time: 10:00 pm (20 minutes)
Entry Type: Reflection, General Notes
Entry Name: Notification of new employment

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.

Discussion: further to my discussion with the DMD (JN41), I explained to Mr. M that we got an initial approval from the DMD to give a priority to APD when it comes to new employment. Also, I forwarded to Mr. M the DMD email to HR instructing them to give a priority to APD for new employment. During the discussion we received an email from HR stating that we have got a new employee in AMD and ready to join us. I shared that email with Mr. M – He was very happy about it. I explained to Mr. M that I had a discussion with AISD manger asking him to support Mr. M with Some staff on part time basis – depending on their workload. He was glad to hear that.

Reflection: Mr. M did not expect such support from the DMD and myself especially when it comes to employment. Also, he was afraid that we would not be able to reach the June 2015 target. Shortage if staff was the major excuse for Mr. M not to achieve the target set for 2015. He recognized that there is a management commitment to support APD with staff to get rid of being out of target. Mr. M has to work hard to show that it is happening.

Journal Note 45

Place: Al Wathba Meeting Room

Date:

Time: 10:00am (15 minutes)

Entry Type: Meeting, Reflection

Entry Name: March and April / 2015 Division Performance Review (DPRM)

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.

Mr. M , Male, Manager, Manager Asset Performance Dept.

Mrs. H, Female, Team Leader, GIS Section

Mr. O, Male, Team Leader, Technical Services.

Mr. AB, Male, Employee, Technical Services.

Mr. MC, Male, Employee, Asset Information.

Discussion: APD Performance for the month of March 2015 was poor 67% (red zone). Most of the KPI's were not meeting or exceeding the target set (49.3.% for Abu Dhabi and 94.2% for Al Ain).

APD Performance for the month of April 2015 was average 75% (yellow zone). Most of the KPI's were not meeting or exceeding the target set (60% for Abu Dhabi and 97.2% for Al Ain).

Reflection: Generally speaking, APD performances were increased than the previous period (January and February 2015). Despite the fact the scores are poor for March 2015 and average for April 2015 but APD management still have a valid justification. KPI's and its associated result were discussed in details. Analyses used in those KPI's are deep and supported by figures. Al Ain scores were dramatically increased because the calculation methods proposed by Mr. M suggests deleting all missing applications that presents almost 10%. Action was taken to look into missing applications in liaison with the DMD.

Discussion: GIS performance

Reflection: the GIS performance was outstanding. They demonstrate an excellent control of GIS activities.

Journal Note 46

Place: Nader's office
Date: 26.05.2015
Time: 02:30 pm (30 minutes)
Entry Type: Reflection, Action
Entry Name: Follow-up Meeting – May 2015

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mrs. H, Female, Team Leader, GIS Section

Discussion: Action Plan update - Item 1: On- going. Sessions are progressing according to plan. The second session was executed in 28.04.2015.

Reflection: Mrs. H was on top of it. The notification to end-users was sent on 07.05.2015.

Discussion: Action Plan update - Item 2: On-going. E-memos are according to schedule. The 5th e-memo was sent out on 12.05.2015. The 6th e-memo is set to discuss E-NOC training sessions/ awareness.

Reflection: the GIS team is kept busy with the Abu Dhabi Excellence Award (ADAEP) as they have been selected to participate in two ADAEP's categories. Since E-NOC will start in early June 2015 (according to ADSIC schedule) I suggested that the 6th e-memo should highlights the E-NOC training sessions/ awareness. As soon as we will shoot out the 6th e-memo, the intervention on this dimension (EP_D1) will be over.

Discussion: Action Plan update - Item 3 and 11: On-going. Remaining session are scheduled for [07.09.2015 and 06.12.2015]. I've asked Mrs. H to send a reminder email to all users about the May 2015 session. The session was conducted on 2.05.2015

Reflection: I think this action becomes matured and the GIS team has a plan to work on. This action will be repeated every year as a part of the GIS awareness / training sessions.

Discussion: Action Plan update - Item 4: On going. There were 5 e-notifications, which were sent to all CMA and GIS users:

- Availability of Base Map satellite image of accuracy of 50cm [07.05.2015].
- Notification of Update the Base map by using ADSIC Geo-data service [09.05.2015]
- Deployment of performance dashboard [09.05.2015]
- Notification of All GIS applications system-down [10.05.2015]
- Notification of All GIS applications back-online [10.05.2015]

Reflection: This action becomes matured. I think that the GIS team found this action is very suable as it presents a channel to communicate with all end-users notifying them about issue / upgrades / enhancement of the GIS and CMA.

Discussion: Action Plan update - Item 5: Action completed

Reflection: Nil

Discussion: Action Plan update - Item 6 and 8. Second session was successfully conducted on [28.04.2015]. Remaining sessions are scheduled for [03.08.2015 and 14.12.2015].

Reflection: This action is under control. I think the end-user liked it! It provides an opportunity for all end-users to put forward their feedback complains and complements, if any and at any time. This action looks to me and to the log administrator, very useful. The GIS team was successful in building up a transparent log where every body can see complains, suggestions and complements. They have encouraged the end-users to use it.

Discussion: Action Plan update - Item 7: Listed as mid priority in maintenance project.

Reflection: Despite the fact that minor enhancement were maid in March 2015on the CMA reporting tool, the CMA end-users demonstrate a good level of satisfaction which can be seen in the feedback log. This is on going action.

Discussion: Action Plan update - Item 9: On-going. Includes CMA hot issues in the agenda of the division/department performance review meeting

Reflection: This action started in [DPRM 05/2014] and still continuing. However, for DPRM for March and April is not yet executed. This is due to the fact that the ARP system is till on hold. The March and April DPRM was executed on time and as planed. I felt that CPRM or an executive rep's has to attend the DPRM in order to give a weight to it and further improve the sponsorship and SC_D1.

Discussion: Action Plan update - Item 10: This action is set to engage ADSSC CMA users in "user need assessment sessions" prior to launch CMA enhancing project/tasks. The GIS team is currently managing several initiatives related to the CMA. These initiatives are O-1379, O-12811, Al Thuraya Excellence Award (ADSSC) and Abu Dhabi Excellence Award, Excellence Award in GIS implementation (EGI 2015). All initiatives are in the delivered successfully or in the mode of delivering, except for O-1379. The project is going to delay significantly. The contract-closing day was May 3rd 2015 and yet the contractor is to submit the end-user requirement [refer to JN 38 and 39].

Reflection: Despite the fact that this action is set to engage ADSSC CMA users in "user need assessment sessions" prior to launch CMA enhancing project/tasks. O-1937 has suffered from a continuous delay in wrapping up / nail down end-users requirements. This is due to the ADSSC and Rolta project managers' skill and management style. I had to intervene in this case to save the project, however, it seems that the project is totally out of control! The project suffers from what so called "goal deflections" and "Dissipating Energies". The only option that we do have is to terminate the contract and re-initiate it again with a new PMs who has project management skills required to lead project and deliver in a short time. The

Award will go for the 2nd lowest (commercial) who has the highest technical score according to the contracts' codes and practices.

Discussion: Action Plan update - Item 12: Users manual for CSD, Referral Department and Reviewer and approver 1, 2 and 3 roles were delivered.

Reflection: there are some delays in the Arabic version for some rules due to workload..

Discussion: Action Plan update - Item 13: Seems to be on hold till launching the performance tool.

Reflection: Current weekly meetings are held to discuss outstanding the department performance in general.

Discussion: Action Plan update - Item 14: On hold

Reflection: Refer to JN 23, 28, 31, 32 and 33.

Discussion: Action Plan update - Item 15: Unfortunately there were several bugs in the pilot demo. We sat with the developer (this time is India-team) to explain the idea behind the usage of this tool and why we are planning to use this tool.

Reflection: based on the discussion the vendor (India-team) started to understand what we are looking for and how to establish the calculation methods. I am expecting a follow up from Mr. M (as he will be the main users) in addition to TSS senior staff. Also, I am expecting Mrs. H to have a deep follow up with the vendor to complete the task and get rid of Mr. M.

Discussion: Action Plan update - Item 16: This is scheduled for the maintenance VO.

Reflection: some action has been made in the VO1 of O-1379 14 items were resolved. We might go for changing the engine of the CMA from SharePoint to Skelta with interrupting the CMA users. This is because of the SharePoint capability and the vendor coding style [refer to JN 40 and 41]

Discussion: Action Plan update - Item 17: Further discussion was made with HR Manager, SPC Specialists and BSD Director - refer to JN [31, 32 and 33].

Reflection: This seems will not progress at the time being. SPCD will reinitiate it (heavily) when they will start reporting ADSSC strategic performance to Abu Dhabi Executive council and to demonstrate strength of ADSSC strategy in front of the ADAEP assessors.

Journal Note 47

Place: Mr. UD (Executive) Office
Date: 08.06.2015
Time: 01:14 pm (15 minutes)
Entry Type: Reflection, General Notes
Entry Name: Maintenance Progress (2): Debriefing to DMD Microsoft team findings

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.

Discussion: further to the discussion captured in JN42 the discussion was made to put the DMD in picture regarding the Microsoft team analysis. I explained to him that the Microsoft team confirms that the vendor (Rolta) has to enhance the coding the CMA in order to over come the system slowness and aspect of lose application. Also, I mentioned to him that we knew that long back and we approached the vendor (Rolta) to do the re-coding. However, they refuse to do that justifying that the problem is not related to coding.

Reflection: the DMD was a bit uncomfortable with the findings. However, I think he become more confident about our recommendations. I think that he been approach by al Ain team were they managed to plant the idea that AD team including myself are un aware of the problem and sorted solution. The Microsoft team recommendation was clear and it supports what we were saying. I managed to use that point and confirm to him our position and potential solutions – most probably terminating the contract)-11379 and issue a new work order to another company to proceed with the CMA enhancement on a specialized business process solution (Skelta).

Journal Note 48

Place: Nader's office
Date: 11.06.2015
Time: 09:00 pm (5 minutes)
Entry Type: Reflection, General Notes
Entry Name: Complaining about increasing workload

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. O, Male, Team Leader, Technical Services.

Discussion: During my daily routine morning-round at 9:00am to monitor the magnitude of work that the APD is handling, Mr. O stopped me to complain about the dramatic increase in number of permits and presents his fair not to achieve the required performance for the month of June. I simply responded back to him that you have always deemed to almost achieve the target. Many efforts and suggestion were put in place to reduce the workload / pressure on you and APD team. Resources were granted from everywhere – 2 resources from a consultant, priority to obtain newly resources in AMD and finally additional resources from other departments on part time basis.

Reflection: Mr. O is very active person but he is very slow in handling permits. I think Mr. O want to give me a notice that their performance for the month of June will be below average (red zone). I have shown to him that June records is very important to me in AMD as it will presents our performance in the 2nd CPRM. I've also, highlight to him that the management may become much softer with us if we could achieve the target. I also, encouraged him to speed up handling the permits – along with his team as some customers / ADSSC departments are complaining against the APD.

Journal Note 49

Place: Nader's office
Date: 10.06.2015
Time: 03:30 pm (10 minutes)
Entry Type: Reflection, General Notes
Entry Name: APD performance

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.

Discussion: I shared with Mr. M what went on with Mr. O this morning. I asked him to keep close distance of what is going on with his team. I encouraged him to practice more his rounds and make himself available all the time. There are many meetings that we need to attend however; these meeting should not take us from preforming our daily duties. I explained to him that this is what positively disguised me earlier among other candidate for the post of the AMD Director– being available to staff all time despite of how busy is my daily agenda. He responded that he would try to push his team as much as possible to meet the target. I explained to him that June' records is extremely important as it will be presented in the 2ndn CPRM. In case he fail to achieve the target, despite of my efforts to provide him with all available resources, he will be invited to justify the delay and hold responsible for it. This might turn to acknowledge his failure in holding up his position and I will forward an official request to our senior management to change him.

Reflection: I think Mr. M understood the issue very well. His reputation and position become threatened. I think he would work hard to achieve the target of June 2015 but won't sustain that for long. This is his personality!

Journal Note 50

Place: Nader's office
Date: 11.06.2015
Time: 09:00 pm (5 minutes)
Entry Type: Reflection, General Notes
Entry Name: Mr. M working for late hours

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.
Mr. M , Male, Manager.

Discussion: Mr. M came to me to inform me that he was staying to late time yesterday. He stayed till 06:30 pm to complete pending approval in his CMA inbox. He told me that Mr. O and Mr. W(TSS team leader) were very chocked that there are no pending permits in his inbox. I congratulate him and further encouraged him to keep on.

Reflection: I think Mr. M was bragging about what he did last night. He was literally happy about it. It seems that our discussion that took place yesterday turned him up. Burt does he will keep up with this energy till the end of the month!

Journal Note 51

Place: Mr. UD (Executive) Office
Date: 11.06.2015.09.2014
Time: 01:50 pm (20 minutes)
Entry Type: Reflection, General Notes
Entry Name: Maintenance Progress (3) - latest quotation

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.

Discussion: further to the discussion captured in JN42 and JN47, the discussion was made to fine tune the maintenance project and overcome the lose application aspect. The discussion went in details and resulted in approving in principle my recommendation to: (1) award the CMA enhancement to the lowest bidder (2) close contract o-11379 – due to bad performance and re-award it to the 2nd lowest (3) ensure that both projects works on the specialized bossiness process engine.

Reflection: Despite the fact that he sits in the Infrastructure committee and E-NOC committee that discuss IT and GIS initiatives, he has shown limited knowledge and no interest on the subject. I felt that immediately. He was looking for a solution rather than understanding the problem. After I explained to him what are the possible / contractual solution that can be made to get rid of the CMA issues and he end up with acknowledging my recommendations and way forward.

Journal Note 52

Place: Via Phone
Date: 14.06.2015.09.2014
Time: 14:00 am (4 minutes)
Entry Type: Reflection, General Notes
Entry Name: CMA being down

Participants:

Mr. UD, Male, Executive.
Nader Bin Taher, Male, Executive, Director Asset Management Div.

Discussion: I got a call from Mr. UD (Executive) to inform me that the CMA went down in Al Ain. I replayed back that the CMA were down for the last 48 hours and we are trying to fix the issue ASAP. We have engaged the vendor and the system support team (in addition to our GIS specialist) to find a solution. I also explained to him in business language the issue and how we are going to solve it and what are the remedies that can be taken at the moment.

Reflection: Mr. UD (Executive) has a very strong control on al Ain team. He is micro managing them. He thought that he could shock me with this news - especially that we are in debate of maintenance works approach. I think what happened is the other way around. Answers to his questions were made and I was ready for such call as I expected it.

Journal Note 53

Place: Nader's office

Date: 22.06.2015

Time: 10:00 pm (20 minutes)

Entry Type: Reflection, General Notes

Entry Name: Terminate the contract O-11397 and way forward including the CMA enhancement VO.

Participants:

Nader Bin Taher, Male, Executive, Director, Asset Management Div.

Mr. M , Male, Manager, Manager, Asset Performance Dept.

Mrs. H, Female, Team Leader, GIS Section

Discussion: We discussed the recommendation and way forward to terminate the contract O-11397 as well as the new VO for enhancing the CMA. I explained to them that we obtained an approval from the DMD supporting AMD recommendation. Also, I explained to them what need to be done as a way forward, in terms of handling the contractual aspect with Supply Department and the contractor.

Reflection: from the discussion Mr. M and Mrs. H were un ware of the contractual implication of such decision. They were not ready for it. Also, I noticed that they have limited knowledge on contractual elements despite the fact that they are running projects. I recommended to them to join some courses to further enhance their contractual skills.

Journal Note 54

Place: AL Mafraq Meeting Room office

Date: 24.06.2015.

Time: 12:30 am (05 minutes)

Entry Type: Reflection, General Notes

Entry Name: Item 14 and 17

Participants:

Nader Bin Taher, Male, Executive, Director Asset Management Div.

Mr. LZ, Team Leader, Strategic Planning.

Mr. AK, Male, Employee, Strategic Planning.

Mrs. AA, Female, Employee, Strategic Planning.

Discussion: Item no. 14 and 17: Personal scorecard:

Mr. LZ shared with us that he have been approached by the HR to participate in a new toll in the HRMS to capture the employee performance electronically. He said that he talked to the HR about the personal scorecard proposal that was raised earlier by myself during 2014-2015. The HR becomes ready by to now to adopt it. Also he mentioned that the HR manger emphasis n the importance of the scorecard implementation prior to the arrivals of the ADAEP assessors. I explained to Mr. LZ that in order to for scorecard to become an effective tool, the HR has to revamp the performance evaluation and employee JDs. Without doing that, the performance scorecard will be useless.

Reflection: Mr. LZ, Mr. AK, Mrs. AA agreed that this is the best chance to force the HR to adopt the personal scorecard. The also agreed that performance evaluation and the employee JD need to be re-designed / revamped. I think the HR is in a critical situation and they need to act immediately! From one end are the ADAEP assessors (who will defiantly look for the personal scorecard as a mechanism to cascade down the corporate strategy to the employee and measure their performance accordingly) and from the other end is the GSEC (who will be looking for the same during the review of the ADSSC corporate performance).

Appendix G: SPSS Output

Pre-Test Frequencies Statistics

	N	
	Valid	Missing
Age	47	0
Gender	47	0
Which of the following described best your position within the organization?	47	0
For how long have you been interacting with Technical Services Section	47	0
For how long have you been working in Abu Dhabi Sewerage Services Company?	47	0

Pre-Test: Age

	Frequency	Percent	Valid Percent	Cumulative Percent
19 years old or younger	1	2.1	2.1	2.13
20 – 29 years old	23	48.9	48.9	51.07
30 – 39 years old	15	31.9	31.9	82.98
40 – 49 years old	6	12.8	12.8	95.75
50 years old or older	2	4.3	4.3	100.0
Total	47	100.0	100.00	

Pre-Test: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	39	83	83	83
Female	8	17	17	100.0
Total	47	100.0	100.00	

Pre-Test: Which of the following described best your position within the organization

	Frequency	Percent	Valid Percent	Cumulative Percent
Executive	2	4.3	4.3	4.3
Manager	2	4.3	4.3	8.5
Section Head / Team Leader	14	29.8	29.8	38.3
Entry-Level Employee	24	51.1	51.1	89.4
System Supporter	5	10.6	10.6	100.0
Total	47	100.0	100.00	

Pre-Test: For how long have you been interacting with Technical Services Section?

	Frequency	Percent	Valid Percent	Cumulative Percent
2 years or less	21	44.7	44.7	44.7
3 – 5 years	14	29.8	29.8	74.5
6 – 10 years	9	19.2	19.2	93.6
11 – 15 years	1	2.1	2.1	95.8
16 years or more	2	4.3	4.3	100.0
Total	47	100.0	100.00	

Pre-Test: For how long have you been working in Abu Dhabi Sewerage Services Company?

	Frequency	Percent	Valid Percent	Cumulative Percent
2 years or less	18	38.3	38.3	38.3
3 – 5 years	14	29.8	29.8	68.1
6 – 10 years	9	19.2	19.2	87.2
11 – 15 years	3	6.4	6.4	93.6
16 years or more	3	6.4	6.4	100.0
Total	47	100.0	100.00	

Post-Test Frequencies
Statistics

	N	
	Valid	Missing
Age	41	0
Gender	41	0
Which of the following described best your position within the organization?	41	0
For how long have you been interacting with Technical Services Section	41	0
For how long have you been working in Abu Dhabi Sewerage Services Company?	41	0

Post-Test: Age

	Frequency	Percent	Valid Percent	Cumulative Percent
19 years old or younger	0	0.0	0.0	0.0
20 – 29 years old	17	41.5	41.5	41.5
30 – 39 years old	15	36.6	36.6	78.1
40 – 49 years old	8	19.5	19.5	97.6
50 years old or older	1	2.4	2.4	100.0
Total	41	100.0	100.0	

Post-Test: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	33	80.5	80.5	80.5
Female	8	19.5	19.5	100.0
Total	41	100.0	100.0	

Post-Test: Which of the following described best your position within the organization

	Frequency	Percent	Valid Percent	Cumulative Percent
Executive	1	2.4	2.4	2.4
Manager	1	2.4	2.4	4.9
Section Head / Team Leader	11	26.8	26.8	31.7
Entry-Level Employee	25	61.0	61.0	92.7
System Supporter	3	7.3	7.3	100.0
Total	41	100.0	100.0	

Post-Test: For how long have you been interacting with Technical Services Section?

	Frequency	Percent	Valid Percent	Cumulative Percent
2 years or less	10	24.4	24.4	24.4
3 – 5 years	15	36.6	36.6	61.0
6 – 10 years	12	29.3	29.3	90.3
11 – 15 years	2	4.9	4.9	95.1
16 years or more	2	4.9	4.9	100.0
Total	41	100.0	100.0	

Post-Test: For how long have you been working in Abu Dhabi Sewerage Services Company?

	Frequency	Percent	Valid Percent	Cumulative Percent
2 years or less	8	19.5	19.5	19.5
3 – 5 years	14	34.2	34.2	53.7
6 – 10 years	14	34.2	34.2	87.8
11 – 15 years	2	4.9	4.9	92.7
16 years or more	3	7.3	7.3	100.0
Total	41	100.0	100.0	

Paired Sample T-test: Individual Item Level

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post_Test: EP_D1_Q1	4.4412	34	.61255	.10505
	Pre_Test: EP_D1_Q1	4.0294	34	.57658	.09888
Pair 2	Post_Test: EP_D1_Q2	4.5000	34	.56408	.09674
	Pre_Test: EP_D1_Q2	4.1471	34	.55772	.09565
Pair 3	Post_Test: EP_D2_Q1	4.3235	34	.58881	.10098
	Pre_Test: EP_D2_Q1	3.8529	34	1.01898	.17475
Pair 4	Post_Test: EP_D2_Q2	4.4412	34	.66017	.11322
	Pre_Test: EP_D2_Q2	3.9706	34	.79717	.13671
Pair 5	Post_Test: EP_D3_Q1	4.3824	34	.55129	.09455
	Pre_Test: EP_D3_Q1	4.0000	34	.60302	.10342
Pair 6	Post_Test: EP_D3_Q2	4.3529	34	.73371	.12583
	Pre_Test: EP_D3_Q2	4.0294	34	.67354	.11551
Pair 7	Post_Test: EP_D4_Q1	4.3529	34	.59708	.10240
	Pre_Test: EP_D4_Q1	3.9412	34	.54723	.09385
Pair 8	Post_Test: EP_D4_Q2	4.5000	34	.82572	.14161
	Pre_Test: EP_D4_Q2	4.1471	34	.78363	.13439
Pair 9	Post_Test: SC_D1_Q1	4.4412	34	.61255	.10505
	Pre_Test: SC_D1_Q1	4.0882	34	1.08342	.18580
Pair 10	Post_Test: SC_D1_Q2	4.5882	34	.55692	.09551
	Pre_Test: SC_D1_Q2	4.1765	34	.71650	.12288
Pair 11	Post_Test: SC_D2_Q1	4.4118	34	.55692	.09551
	Pre_Test: SC_D2_Q1	3.8529	34	.78363	.13439
Pair 12	Post_Test: SC_D2_Q2	4.3824	34	.65202	.11182
	Pre_Test: SC_D2_Q2	3.9118	34	.79268	.13594
Pair 13	Post_Test: SC_D3_Q1	4.6176	34	.55129	.09455
	Pre_Test: SC_D3_Q1	4.0882	34	.71213	.12213
Pair 14	Post_Test: SC_D3_Q2	4.4706	34	.66220	.11357
	Pre_Test: SC_D3_Q2	4.0588	34	.77621	.13312
Pair 15	Post_Test: SY_D1_Q1	4.3235	34	.68404	.11731
	Pre_Test: SY_D1_Q1	3.8529	34	.78363	.13439
Pair 16	Post_Test: SY_D1_Q2	4.0000	34	.77850	.13351
	Pre_Test: SY_D1_Q2	3.5294	34	.99195	.17012
Pair 17	Post_Test: SY_D2_Q1	4.0294	34	.93696	.16069
	Pre_Test: SY_D2_Q1	3.1765	34	1.19267	.20454
Pair 18	Post_Test: SY_D2_Q2	4.3824	34	.55129	.09455
	Pre_Test: SY_D2_Q2	4.0000	34	.60302	.10342
Pair 19	Post_Test: SY_D3_Q1	4.2647	34	.82788	.14198
	Pre_Test: SY_D3_Q1	3.9412	34	.85071	.14590
Pair 20	Post_Test: SY_D3_Q2	4.0882	34	.71213	.12213
	Pre_Test: SY_D3_Q2	3.9118	34	.62122	.10654
Pair 21	Post_Test: SY_D3_Q3	4.6765	34	.53488	.09173
	Pre_Test: SY_D3_Q3	4.2647	34	.56723	.09728

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Post_Test: EP_D1_Q1 & Pre_Test: EP_D1_Q1	34	-.124	.486
Pair 2	Post_Test: EP_D1_Q2 & Pre_Test: EP_D1_Q2	34	.048	.787
Pair 3	Post_Test: EP_D2_Q1 & Pre_Test: EP_D2_Q1	34	.334	.053
Pair 4	Post_Test: EP_D2_Q2 & Pre_Test: EP_D2_Q2	34	.256	.144
Pair 5	Post_Test: EP_D3_Q1 & Pre_Test: EP_D3_Q1	34	.273	.118
Pair 6	Post_Test: EP_D3_Q2 & Pre_Test: EP_D3_Q2	34	.101	.570
Pair 7	Post_Test: EP_D4_Q1 & Pre_Test: EP_D4_Q1	34	.251	.152
Pair 8	Post_Test: EP_D4_Q2 & Pre_Test: EP_D4_Q2	34	-.023	.895
Pair 9	Post_Test: SC_D1_Q1 & Pre_Test: SC_D1_Q1	34	.077	.667
Pair 10	Post_Test: SC_D1_Q2 & Pre_Test: SC_D1_Q2	34	.036	.841
Pair 11	Post_Test: SC_D2_Q1 & Pre_Test: SC_D2_Q1	34	.004	.982
Pair 12	Post_Test: SC_D2_Q2 & Pre_Test: SC_D2_Q2	34	.126	.478
Pair 13	Post_Test: SC_D3_Q1 & Pre_Test: SC_D3_Q1	34	.397	.020
Pair 14	Post_Test: SC_D3_Q2 & Pre_Test: SC_D3_Q2	34	.003	.984
Pair 15	Post_Test: SY_D1_Q1 & Pre_Test: SY_D1_Q1	34	.261	.136
Pair 16	Post_Test: SY_D1_Q2 & Pre_Test: SY_D1_Q2	34	.235	.180
Pair 17	Post_Test: SY_D2_Q1 & Pre_Test: SY_D2_Q1	34	-.086	.628
Pair 18	Post_Test: SY_D2_Q2 & Pre_Test: SY_D2_Q2	34	.456	.007
Pair 19	Post_Test: SY_D3_Q1 & Pre_Test: SY_D3_Q1	34	.066	.712
Pair 20	Post_Test: SY_D3_Q2 & Pre_Test: SY_D3_Q2	34	.566	.000
Pair 21	Post_Test: SY_D3_Q3 & Pre_Test: SY_D3_Q3	34	-.009	.961

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	.41176	.89163	.15291	.10066	.72287	2.693	33	.011
Pair 2	.35294	.77391	.13272	.08291	.62297	2.659	33	.012
Pair 3	.47059	.99195	.17012	.12448	.81669	2.766	33	.009
Pair 4	.47059	.89562	.15360	.15809	.78309	3.064	33	.004
Pair 5	.38235	.69695	.11953	.13918	.62553	3.199	33	.003
Pair 6	.32353	.94454	.16199	-.00604	.65310	1.997	33	.054
Pair 7	.41176	.70141	.12029	.16703	.65650	3.423	33	.002
Pair 8	.35294	1.15161	.19750	-.04887	.75476	1.787	33	.083
Pair 9	.35294	1.20309	.20633	-.06684	.77272	1.711	33	.097
Pair 10	.41176	.89163	.15291	.10066	.72287	2.693	33	.011
Pair 11	.55882	.95952	.16456	.22403	.89362	3.396	33	.002
Pair 12	.47059	.96091	.16479	.13531	.80587	2.856	33	.007
Pair 13	.52941	.70648	.12116	.28291	.77591	4.370	33	.000
Pair 14	.41176	1.01854	.17468	.05638	.76715	2.357	33	.024
Pair 15	.47059	.89562	.15360	.15809	.78309	3.064	33	.004
Pair 16	.47059	1.10742	.18992	.08419	.85699	2.478	33	.019
Pair 17	.85294	1.57888	.27078	.30204	1.40384	3.150	33	.003
Pair 18	.38235	.60376	.10354	.17169	.59302	3.693	33	.001
Pair 19	.32353	1.14734	.19677	-.07680	.72386	1.644	33	.110
Pair 20	.17647	.62622	.10740	-.04203	.39497	1.643	33	.110
Pair 21	.41176	.78306	.13429	.13854	.68499	3.066	33	.004

Paired Sample T-test: Dimensional Level

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post_Test: Episodic_D1	4.4706	34	.53571	.09187
	Pre_Test: Episodic_D1	4.0882	34	.48415	.08303
Pair 2	Post_Test: Episodic_D2	4.3824	34	.46153	.07915
	Pre_Test: Episodic_D2	3.9559	34	.63207	.10840
Pair 3	Post_Test: Episodic_D3	4.3676	34	.51211	.08783
	Pre_Test: Episodic_D3	4.0147	34	.52923	.09076
Pair 4	Post_Test: Episodic_D4	4.4265	34	.53841	.09234
	Pre_Test: Episodic_D4	4.0441	34	.51298	.08797
Pair 5	Post_Test: Social Integration_D1	4.5147	34	.51471	.08827
	Pre_Test: Social Integration_D1	4.1912	34	.57754	.09905
Pair 6	Post_Test: Social Integration_D2	4.3971	34	.50422	.08647
	Pre_Test: Social Integration_D2	3.8824	34	.68599	.11765
Pair 7	Post_Test: Social Integration_D3	4.5441	34	.51298	.08797
	Pre_Test: Social Integration_D3	4.0735	34	.53841	.09234
Pair 8	Post_Test: Systemic Integration_D1	4.1618	34	.65967	.11313
	Pre_Test: Systemic Integration_D1	3.6912	34	.76885	.13186
Pair 9	Post_Test: Systemic Integration_D2	4.2647	34	.48046	.08240
	Pre_Test: Systemic Integration_D2	3.6912	34	.57754	.09905
Pair 10	Post_Test: Systemic Integration_D3	4.3441	34	.52408	.08988
	Pre_Test: Systemic Integration_D3	4.0559	34	.38391	.06584

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Post_Test: Episodic_D1 & Pre_Test: Episodic_D1	34	-.048	.787
Pair 2	Post_Test: Episodic_D2 & Pre_Test: Episodic_D2	34	.189	.283
Pair 3	Post_Test: Episodic_D3 & Pre_Test: Episodic_D3	34	.063	.722
Pair 4	Post_Test: Episodic_D4 & Pre_Test: Episodic_D4	34	.232	.188
Pair 5	Post_Test: Social Integration_D1 & Pre_Test: Social Integration_D1	34	-.086	.628
Pair 6	Post_Test: Social Integration_D2 & Pre_Test: Social Integration_D2	34	.139	.433
Pair 7	Post_Test: Social Integration_D3 & Pre_Test: Social Integration_D3	34	.125	.481
Pair 8	Post_Test: Systemic Integration_D1 & Pre_Test: Systemic Integration_D1	34	.340	.049
Pair 9	Post_Test: Systemic Integration_D2 & Pre_Test: Systemic Integration_D2	34	.249	.156
Pair 10	Post_Test: Systemic Integration_D3 & Pre_Test: Systemic Integration_D3	34	.099	.578

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	.38235	.73915	.12676	.12445	.64026	3.016	33	.005
Pair 2	.42647	.70852	.12151	.17926	.67369	3.510	33	.001
Pair 3	.35294	.71276	.12224	.10425	.60163	2.887	33	.007
Pair 4	.38235	.65202	.11182	.15485	.60985	3.419	33	.002
Pair 5	.32353	.80606	.13824	.04228	.60478	2.340	33	.025
Pair 6	.51471	.79282	.13597	.23808	.79133	3.786	33	.001
Pair 7	.47059	.69567	.11931	.22786	.71332	3.944	33	.000
Pair 8	.47059	.82518	.14152	.18267	.75851	3.325	33	.002
Pair 9	.57353	.65288	.11197	.34573	.80133	5.122	33	.000
Pair 10	.28824	.61829	.10604	.07250	.50397	2.718	33	.010

Paired Sample T-test: Circuits Level

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post_Test: Episodic Circuits	4.4235	34	.42715	.07326
	Pre_Test: Episodic Circuits	4.0382	34	.36929	.06333
Pair 2	Post_Test: Social Integration Circuits	4.4824	34	.39732	.06814
	Pre_Test: Social Integration Circuits	4.0412	34	.48873	.08382
Pair 3	Post_Test: Systemic Integration Circuits	4.2765	34	.45929	.07877
	Pre_Test: Systemic Integration Circuits	3.8500	34	.41869	.07181

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Post_Test: Episodic Circuits & Pre_Test: Episodic Circuits	34	.092	.604
Pair 2	Post_Test: Social Integration Circuits & Pre_Test: Social Integration Circuits	34	-.076	.670
Pair 3	Post_Test: Systemic Integration Circuits & Pre_Test: Systemic Integration Circuits	34	.369	.032

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	.38529	.53831	.09232	.19747	.57312	4.173	33	.000
Pair 2	.44118	.65279	.11195	.21341	.66894	3.941	33	.000
Pair 3	.42647	.49440	.08479	.25397	.59897	5.030	33	.000