

SOCIO-TECHNOLOGICAL ANALYSIS OF DAD AFGHANISTAN

Socio-technological Analysis of Development Assistance Database Afghanistan: A Case Study

Mohammad Sediq Bezhan
Supervisor: Professor Rocci Luppicini (Ph.D)

Thesis submitted to the
Faculty of Graduate and Postdoctoral Studies
In partial fulfillment of the requirements
For the Master's Degree in Communication

Department of Communication
Faculty of Arts
University of Ottawa

© Mohammad Sediq Bezhan, Ottawa, Canada 2013

Abstract

Improvement in information sharing and communication about the foreign aid resources between the donors and the aid-recipient countries have always been considered very important. In recent years, the integration of advanced technology in the area of aid coordination has received a tremendous amount of attention. The following thesis studies the influence of technology in the area aid coordination within the context of Afghanistan. Guided by the Actor-Network Theory, the thesis examines how the social and technological aspects of the Development Assistance Database (DAD), as an advanced aid information management technology, influences aid coordination and information sharing between the donors and the government of Afghanistan. Using a case study methodology, the research also investigates whether or not the DAD adheres to the principles of aid effectiveness. The findings reveal that although technology had a profound impact in the area of aid management in Afghanistan, there are several areas that still face challenges. The present study highlights these challenges and recommends the appropriate solutions.

Keywords: Actor Network Theory, Aid Effectiveness, Development Assistance Database, Case Study, Afghanistan, Donor-government Communication

Acknowledgements

I would like to express my sincere gratitude to my supervisor, Professor Rocci Luppicini for his tireless support and encouragement. I am thankful for his great advice and insight throughout the research. Moreover, I should thank my committee members, Dr. Rukhsana Ahmed and Dr. Mahmoud Eid, for their guidance and valuable inputs.

I am grateful to the Open Society Foundations for providing the scholarship for the program. In particular, I would like to thank Rasjit Basi and Barbara Dente for their support and patience.

Finally, I would like to thank my dearest friends, the Afghan Communication Scholarship Program students, who became my second family in Canada and helped me get through so many ups and downs during the past two years. I am indebted to all of them for their support.

Dedicated to my inspiring parents for their unconditional love and endless support!

Table of Contents

Chapter 1: Introduction	7
Overview	7
Research Questions.....	11
Thesis Organization	13
Chapter 2: Literature Review	14
Key definitions.....	14
Theoretical Frameworks	16
ANT and Information Systems Research.....	19
Aid Effectiveness Principles	22
Context of Aid in Afghanistan.....	25
Aid Distribution Channels	28
Aid Management in Afghanistan	29
Introduction of ICT in Aid Coordination	30
Communication and Aid Coordination	32
ICT and Aid Coordination	35
AIMS and Aid Management	38
Role of DAD in Aid Effectiveness.....	41
Chapter 3: Methodology.....	45
Research Design Rationale	45
Case Study.....	46
Site Selection	47
Sample	48
Data Collection	50
Data Analysis Techniques.....	53
Validity and Reliability	54
Field Notes and Memos.....	55
Ethical Considerations	56
Role of Researcher	56
Summary	57
Chapter 4: General Findings	59
Environmental Scanning	60
Technology Actors.....	70
DAD and Aid Effectiveness principles	75

Chapter 5: Discussion and Recommendations	90
Discussion of Findings:	91
Recommended enrolling strategies	93
Summary	101
Chapter 6: Conclusion	103
Limitations of the study.....	104
Contribution and Future Research Implications.....	105
References	107
Appendixes.....	121

Chapter 1: Introduction

Overview

The integration of technology to leverage communication and information sharing into the field of aid coordination and management is a recent development that has occurred only during the past three decades (Ghani, 2003). Since the early days of development aid, there have been serious efforts to utilize technology as a means to improve communication and information flow between the donors and the aid-recipient countries and vice-versa (Silva, 1999; Lindsay, 1966).

Schofield et al. (2004) studied the impact of technology on aid coordination and found that technology has greatly improved the speed of communication and the flow of information between aid-recipients and donors. They also, however, found that technology can have a negative impact on the quality of information exchanged between two organizations.

According to the study, some of the factors linked to the improved information sharing were timely communication and sufficient information flow between the donors and the aid-recipient countries (Scholfield et al., 2004). A study on the effectiveness of aid in Rwanda, for instance, revealed that since the establishment of DAD Rwanda, the number of donor funded projects aligned with the Rwandan government priorities has increased from 5% in 2000 to 93% in 2006 (UNDP, 2008). In Afghanistan however, where more than 85 % of the development aid has bypassed the government channels, being spent through private NGOs or the donor agencies themselves, with no or very little government involvement, the information sharing process has been seriously challenged (DCR, 2010). Lack of regular and timely meetings between the government of Afghanistan and the donor agencies, as well as the absence of a strong donor-government communication mechanism are believed to be responsible for the wastage of aid

resources (ACBAR, 2009). This researcher, therefore, assumes that regular communication and strong information sharing mechanisms are imperative for effective use of development aid.

Information and Communication Technologies (ICTs) are considered essential for effective aid coordination and management (Ghani, 2003). The integration of technology in aid coordination is a relatively new advancement and a number of applications have been developed in recent years. These applications are usually referred to as Aid Information Management Systems (AIMS). The Organization for Economic Cooperation and Development (OECD), an international organization which promotes the free market system and oversees the aid flow between the member countries, defines AIMS as “Web-based and/or offline databases which record and process information about foreign aid flow in a country” (OECD, 2006).

An AIMS is intended to support improved aid coordination and thus effective aid spending. Although these systems have been used in basic form with limited functionalities since their invention in the 1970s, the advanced databases of AIMS have only evolved in the last two decades (OECD, n.d.). With the increase in the flow of development aid from donor countries to developing countries in the late 1980s, the demand for aid information management applications increased dramatically. Since the early 1990s, several aid information management applications have been developed and presented to the market, though very few of them have been able to respond to the needs of both the donor and the aid-recipient countries (MoF, 2012).

The Development Assistance Database (DAD) has been one of the most successful AIMS applications in the past two decades. Although there were several earlier AIMS applications, the DAD has been one of the most widely used AIMS applications to date (MoF, 2012). According to the owner and developer, Synergy International Systems (2012), DAD is presently being used in more than 35 countries around the world.

DAD introduced a new era of integration of web-based technology that focuses primarily on the improvement of communication between the donors and the aid-recipient governments. The introduction of web-based technology into the field of aid coordination brought a tremendous number of changes in the management of development aid in the world (Schofield et al., 2004). The speed of communication and information flow between a donor country in Europe and an aid-recipient country in Asia has increased dramatically after the integration of advanced technology in aid management.

Existing communication and aid management research reveals that AIMS applications, especially DAD, have been very successful in the timely sharing of information. According to an evaluation report by Rwanda's Ministry of Finance and Economics (2010), DAD has been instrumental in ensuring effective communication between the donor countries and the Rwandan government. India, Pakistan, and Bangladesh have also reported considerable improvement in the flow of information regarding development aid after using the DAD (OECD, 2006). According to Maharashtra Finance Department (2011), despite certain technological drawbacks, the use of DAD has expedited the information sharing process and increased accuracy of information about development aid by 35 % in the last 3 years. Similarly, countries like Iraq, Sierra Leone, Maldives, Vietnam, and Kenya have also reported a huge positive impact of the DAD on their communication with the development partners (MoF, 2012).

Despite the success stories, researchers investigating the challenges have reported several cases of dissatisfaction about AIMS applications. The challenges reported in these studies are primarily concerned with the lack of accuracy of information in the system or/and miscommunication of development aid-related information (MoF, 2012). Sri Lanka's Reconstruction and Development Agency (RADA) (2009) reported multiple cases of false

reporting in the DAD, due to the system's inability to discern the correct versus the false information. In other aid-recipient countries, duplication of aid-funded projects was reported due to double entry of information in the DAD.

Afghanistan is one of the countries facing challenges of its own kind with the DAD. In 2010, the Afghanistan Ministry of Finance (MoF), as the administrator of the DAD in country, reported 5000 wrong entries in the system. This alarming discovery resulted in a serious impasse in the information-sharing processes between the government and the donors because, on several occasions, the MoF had reported false information that was produced by the DAD and communicated to media and the donor agencies (ACBAR, 2011).

The challenges described above are considered neither purely technological nor entirely sociological. In some cases, the technological errors and deficiencies appeared to have disrupted the information production and dissemination process, while in other cases the organizations responsible for the systematic entry of the correct information appears to have ignored the proper communication patterns in feeding the information to the system.

Given the complexity and severity of the above mentioned situation, looking at the problem only from a technologically deterministic perspective, which attributes changes solely to technological advancements, or a sociological deterministic one, which considers all technological advancements attributable to social change, would be a mistake. Therefore, the current research investigates the influence of the DAD on aid coordination by focusing on both technological aspects consisting of the software and hardware of the system, as well as the social aspects which comprise the organizational setting, human actors and the natural setting for the system. Guided by the Actor-Network Theory, the research explores the socio-technical

dynamics of the technology (e.g. DAD) in aid coordination and information sharing between the donors and government of Afghanistan.

Furthermore, the study examines how and if the DAD adheres to the aid effectiveness principles, on which the DAD's main features are being based on. This part of the analysis is guided by the framework of aid effectiveness which is comprised of five key principles adopted at a donors' conference in Paris, in 2005 (The Global Funds, 2011). Using the principles of aid effectiveness as a supporting guiding framework, the study seeks to examine the influence of DAD Afghanistan in the information flow and communication between the government of Afghanistan and donors, with the aim of providing an effective use of aid resources.

Research Questions

With the purpose established above, the study explores the following research questions:

RQ1: How does ICT (AIMS) influence the communication and information sharing process between the donors and the government?

RQ2: What are the benefits and challenges of the use of technology in aid information management?

RQ3: How does the DAD adhere to the aid effectiveness principles in Afghanistan?

Using a qualitative case study approach, the study examines the technological and social aspects of DAD Afghanistan, and its influence on the communication and exchange of information between the donors and the government, from a communication standpoint.

The scope of the research is limited to the study of DAD in Afghanistan. The study/researcher assumes that a thorough study of DAD in the context of Afghanistan has never been conducted before; the only literature available on DAD Afghanistan consists of evaluation reports and reform papers, which focus on the system in terms of its technology (OECD, 2003;

OECD, 2004; OECD, 2006; Synergy Int., 2003; MoF, 2009; ACBAR, 2009). The present study explores the DAD with a focus on socio-technological elements and the natural setting in which the DAD operates. The study focused on exploring the DAD in three donor agencies based in Kabul, the Afghan Ministry of Finance, and one civil society organization. While the donor agencies and the Ministry of Finance have provided the research with an objective and insider look at the technology and its organizational setting, the civil society organizations have offered a subjective, outsider view on the system. The interviews have focused on the influence of ICT on aid coordination from a communication point of view.

In order to get the most representative sample, the donor agencies were selected based on their funding portfolio size (e.g. small size, medium size, and large size) and their degree of involvement in using DAD (e.g. no involvement, basic involvement and extensive involvement) (MoF, 2012). Similarly, the civil society and media organization members were selected based on their involvement in overseeing the aid management process in Afghanistan, their presence at donor-government conferences and the frequency in which they used the DAD.

The primary data collection includes twelve interviews. They are as follow: four employees of the Aid Management Directorate of the Afghan Ministry of Finance, six employees from three donor agencies who were active users of the system, and two employees of a donor organization which did not subscribe to the DAD. The representation of a donor agency that does not use DAD in this study helped the researcher understand the challenges, either social or technical, that persuaded some donor agencies to refuse to use DAD. It was interesting to see the challenges in the system from a non-user perspective. Finally, two persons from civil society and the media, who are frequent users of DAD Afghanistan, were interviewed. They were selected

from the group of journalists and civil society members who actively oversee the development aid activities in Afghanistan.

Thesis Organization

This study has been divided into six chapters. The present introductory chapter provides a brief overview of the influence of communication on aid coordination, states the problem, discusses the purpose of the study, and highlights the rationale behind conducting the study on DAD Afghanistan. Chapter 2 places the research in context, by providing a detailed background on the foreign aid and aid coordination in Afghanistan. It also discusses the theoretical foundations of the study and reviews the relevant literature on communication and aid coordination, and ICT and aid coordination - particularly AIMS. In Chapter 4, the methodology, data collection procedure, and analysis phases are discussed. Chapter 5 reports the findings and chapter 6 conducts an advanced analysis of the findings, providing recommendations. Finally, the last chapter of the study provides a conclusion and recommendations for future research.

Chapter 2: Literature Review

The chapter is divided into the following five sections. The first section of the chapter defines the key words and concepts used in this study. The second section discusses the guiding theoretical frameworks. In the third section, a detailed literature research on the history of aid in Afghanistan, communication and aid coordination is presented. The fourth section highlights the role of ICT in aid coordination and the current state of research available in academic literature. The last sections will expand on the history and application of ANT in the ICT research.

Key definitions

This section defines and describes the most common terms used throughout the thesis. Some of these terms include communication, aid coordination and management, AIMS, the Paris Declaration, aid effectiveness principles, donor, aid, and aid recipient country/government.

Communication is primarily being described as information exchange and is a “complex process with many components” (Adler, Rosenfeld, Proctor, & Winder, 2006, p.6). In its basic form, communication is important in every field of work. In aid management, communication between development partners is essential for the useful allocation of aid resources in the developing countries. In a more complex form, communication for the purpose of management of information, empowers the ownership of the aid-recipient governments and improves donors’ accountability towards citizens (Ghani, 2005).

Aid management/ aid coordination is defined as “the process by which a recipient government integrates and plans external and internal resources in support of national goals, priorities and strategies, and the implementation of its development programs and activities” (UNDP website, retrieved 2012).

AIMS are IT applications, usually databases, which are used to build trust, transparency and accountability that can in turn counter corruption and resource misuse (OECD, 2006). AIMS are essential in aligning donor procedures and practices with government systems. In short, the adoption of AIMS is imperative to the successful implementation of the Paris Declaration on Aid Effectiveness (MoF, 2012).

The *Development Assistance Database* (DAD) is an Aid Information Management System (AIMS) which has been developed by Synergy International for the management of aid resources, public investment and budgeting purposes (Synergy Systems website, retrieved 2012). It is a web-based, country-level information management system that partner countries use to track and manage development assistance (HLF4, 2011).

The Paris Declaration on Aid Effectiveness is a document which has been created at a forum in Paris in February - March 2005. It defines the responsibility of both donor and partner countries for delivering and managing aid in terms of five guiding principles: Ownership, Alignment, Harmonization, Managing for Results, and Mutual Accountability (DFR, 2008). The Paris Declaration provides a practical framework of reform meant to increase the impact of aid on poverty reduction and asks both the donors and the developing countries to support the improved systems of aid management, as an increased level of aid by itself, is unlikely to accelerate growth and reduce poverty (OECD, 2006).

Aid is a voluntary transfer of money and technical assistance from one country to another, the objective of which is the benefit of the recipient country. Lancaster (2007) defines foreign aid as, "a voluntary transfer of public resources, from a government to another independent government, to an NGO, or to an international organization (such as the World Bank or the UN

Development Program) with at least a 25 percent grant element, one goal of which is to better the human condition in the country receiving the aid" (p. 9).

In OECD's Glossary of Aid-flow Terms (2001), donor is defined as, "any entity including sovereign governments, intergovernmental institutions, private non-profit entities, and private for-profit organizations that contributes funds" to a developing or low-income country (p.9). The term *aid recipient* refers to any entity that receives resources, including governmental, quasi-governmental, non-governmental, or private institutions (OECD, 2001). It is also used to refer to a country that receives financial resources and technical assistance for relief or development purposes.

Aid transparency can be described as the accountability of government to donors, and vice-versa, as well as accountability of both donors and the government to citizens. On a more specific note, Aid Info (2009) defines aid transparency as publishing of "detailed, comprehensive, up-to-date, comparable, forward- and backward-looking information about aid in a common electronic format" (p.5).

Theoretical Frameworks

Aid information management is a complex communication system which involves the collaboration and effectiveness of many actors. Therefore, researching an information system in this environment requires a holistic view of at least two major aspects, the social and technological components of the system.

Socio-technical theories generally discuss the relations between humans and technologies, more specifically, the use of technologies in the organizations. In traditional socio-technical theories, these aspects were defined in terms of an interface between human (social) and non-human (technological) systems (Cherns, 1976).

Socio-technical theories related to human-machine relations are found in the works of 19th century theorists such as Karl Marx and Max Weber. Marx theorized that machine systems for production were designed so that labor was an unimportant attachment to capitalist industries (Leiss, 1990). Historically, technology and social systems were dialectically related: technology and society changed together. Avoiding a priority problem, Marx argued that technology combined with labor relations act as determinant forces. Critical theorists, Marcuse and the Frankfurt School may have had similar conclusions: “The organization of labor and technologies produce desires and determines social character rationality” (Feenberg, 1991; Leiss, 1990; Marcuse; 1964; Noble, 1984). Other theorists of the 1950s argued that technologies do not determine human nature, relations or institutions; rather, there are cultural, ecological, psychological and social factors independent of technology at work in determining human nature. (Herbst, 1976, pp. 3-8; Rose, 1989, pp. 87-101; Trist, 1981).

In the 1950s and 1960s, French theorists Jacques Ellul (1962, 1964) and Louis Althusser (1963) refused the human deterministic view which privileges human agency over technology. For Ellul, human nature was unrecognizable in its total integration into technological systems.

While much less deterministic than Ellul, Althusser (1963) also rejected existential theories of human superiority. He argued that economy, humans, society and technology were constituted by the other. Humans and society are not determined by economy and technology, but neither are humans free to determine technology or their relations with technology (Althusser, 1963).

During the 1980s and 1990s, work in science and technology studies (STS) helped us revise conventional thinking about socio-technical systems or socio-technology (Grint & Woolgar, 1997, pp. 6-38; Law, 1987). In what amounted to attempts to counter determinist

notions of Critical Theorists, Contextualists argued that context decides which of the technologies and humans should be privileged (Bijker, Hughes & Pinch, 1986; Law, 1987). Contextualism asserts that the importance of technology and human agency can only be determined by the context.

A common approach to researching innovation in information management systems is to focus on the technological aspects of the innovation, while the social aspect is considered the context in which the development and adoption of the systems take place. Technological determinists assume that all outcomes of technological change are attributable to the technological aspects rather than the social setting (Grint & Woolgar, 1997). At the other extreme is Social Determinism, which argues that social categories are decisive in bringing technological change (Law & Callon, 1988, as cited in Tantall & Gilding, 1999).

The Actor-Network Theory (ANT), on the other hand, declares that the world is full of hybrid entities, which consist of both human and non-human elements (Latour, 1993). ANT deals with the separation of social-technological entities by denying that purely technological or purely social relations are possible (Tantall & Gilding, 1999, p.957). The theory was developed to analyze situations in which separation of these elements is somewhat impossible (Callon, 1997, p.3).

ANT offers the concept of heterogeneity to explain that systems such as the DAD Afghanistan and the data entry officers, both in the government and the donor organizations, work together to ensure the flow of information and communication for better aid coordination and, thus, they both have their own significance in the process of information production. Therefore, instead of looking at the question of whether a phenomenon is social or technological it raises the question of which one is weaker or stronger in the process (Latour, 1988b, p.27).

The analysis of the study will be guided by the Actor Network Theory. Several innovation and technology theories are applicable in studying an information management system. ANT uniquely focuses on settings where both technological and social aspects of a phenomena are at the core of effective system functioning.

Since the study intends to explore both the technological (DAD Afghanistan) and social elements (data entry officers and policymakers) of a phenomenon, ANT is utilized as the primary guiding framework for the analysis.

ANT and Information Systems Research

Throughout history, several approaches have been developed to study the interaction and collaboration of human and technology in organizations (Cresswell et al., 2010). A very common approach to researching innovation in ICT is to focus on the technical aspects of an innovation and to deal with the social aspects as the context in which its development and adoption have taken place (Tantall & Gilding, 1999). According to Grint and Woolgar (1997), the technological determinist views, insist that technological changes and development are only attributable to the technology context, not the social. At the other end, much attention is paid to the study of social relations relegating the technology as something that can be changed based on social requirements (Law & Callon, 1988).

One of the most moderate approaches to study ICT and the information systems is the Socio-Technical Systems (STS) perspective. STS describes the interrelatedness of the social and technical aspects of an organization as a whole (Luhmann, 1986). STS emphasizes the joint optimization and shared achievement of both developments in technological contribution and people's work, together.

In the context of our current research, a socio-technical approach can be best described as a system (e.g. the Ministry of Finance, donor agencies, civil society and citizens) where technical aspects (e.g. DAD Afghanistan) and social aspects (e.g. relationship between the stakeholders such as MoF, donors and the civil society/ citizens) are interrelated. Therefore, the extent of collaboration between these actors is determinant to the system's functioning (Cresswell et al., 2009).

The Actor-Network Theory (ANT) draws upon the STS perspective. The central idea of ANT is to investigate how networks come into existence, to find out how associations are formed and how they move, how actors are enrolled into a network, and how networks achieve stability and become productive (Dolin & Lowe, 2002; Callon, 1986). This is clearly illustrated by Law (1997), as cited in Creswell, 2009), where he describes how objects, such as office, computer and phone are serving to create a manager as a source of power; however, if the manager is studied in isolation, and not part of a network, he is “relatively powerless.”

ANT is based on three key principles: *agnosticism*, *generalized symmetry*, and *free association*. The *agnosticism* principle promotes a fair and impartial approach towards all the actors involved in the project under consideration, regardless of their nature (human or non-human) (Callon, 1986b).

The *generalized symmetry* tenet, advocates for a neutral vocabulary for human and non-human actors when explaining the conflicting viewpoints between different actors. The principle argues that neither technical nor social elements in these “heterogeneous networks” should be given special explanatory rights (Law, 1987). Finally, the *free association* principle advocates the elimination and removal of any prior biases between the technological and social aspects of a network (Collan, 1986b).

In short, all the above principles of the ANT promote impartiality and removal of any biases towards all the actors in consideration - whether human or non-human - and emphasize the abandonment of any distinction between the social and technical. As Collan (1986) explains, “the rule which we must respect is not to change registers when we move from the technical to the social aspects of the problem studied” (p.200).

ANT has been widely used in ICT and information systems research, to investigate the success and failure of a number of technological innovations, a few of which are listed here. Grint and Woolgar (1997) have used ANT to explain the Luddite movement in England in the last century. McMaster et al. (1997) have used in the adoption of a particular approach to systems analysis by a local council in the UK. Vidgen and McMaster (1996) have applied ANT to studying the car parking systems in the UK. Latour (1988a) has used ANT to discuss the achievements of Louis Pasteur, some of the processes undertaken by scientists in their research and their laboratories (Latour 1987); the simultaneous invention of the Kodak camera and the mass market for amateur photography (Latour 1991), and the life and death of the Parisian public transportation system known as Aramis (Latour 1996).

A second supporting guiding framework for the study draws on the principles of Aid Effectiveness, as found in the Paris Declaration for Aid Effectiveness. The Declaration, which is the outcome of a donor countries conference in Paris in 2005, entails five key principles that both the donor and the recipient countries have to uphold in investing aid resources. The principles include: *ownership, mutual accountability, harmonization, and managing for results* (OECD, 2005). The principles discuss all aspects of ensuring aid effectiveness in the context of an aid recipient country.

Since the second part of the study seeks to answer the question: “How does the DAD adhere to aid effectiveness principles in Afghanistan?” the study draws upon the framework of aid effectiveness to analyze the contribution of the DAD in implementing the aid effectiveness principles.

Aid Effectiveness Principles

In March 2005, the Paris Declaration has been endorsed by over one hundred ministers, heads of donor agencies and representatives from the aid-recipient countries. These representatives have committed to their countries and organizations adhering to the five principles of Aid Effectiveness known as the Paris Declaration Principles (PD principles) while delivering their assistance to the aid-recipient country and in turn, aid-recipient countries have committed to supporting the donor countries in implementing the PD principles. Among others, one key focus of the PD principles (i.e. *alignment, ownership, harmonisation, mutual accountability, and managing aid for development results*) is the use of the aid-recipient countries’ systems and institutions for coordinating the aid resources (Ojaka et al., 2011).

Ownership is one of the five pillars of the Paris Declaration on Aid Effectiveness. In 2005, the Paris Declaration placed emphasis on ownership as primarily referring to developing country governments’ abilities to “exercise leadership over their development policies and strategies and coordinate development actions” (OECD, 2008). The *ownership* principle emphasizes the articulation of development priorities through national development strategies, with the aid-recipient countries taking the lead role in coordinating aid at all levels in conjunction with other development resources (OECD, 2010). Ownership also emphasizes the use of the government-administered aid management system by donors. The DAD is fully endorsed under this principle, and development partners are asked to commit to use

the aid-recipient country's aid information management system to ensure effective communication and information sharing with the government (DFR, 2009).

Alignment, one of the five principles of the Paris Declaration on Aid Effectiveness, refers to the provision of aid by donors in ways that respond to partner countries' development priorities, supporting and using partner countries' own systems and institutions (OECD, 2010).

According to OECD's Aid Effectiveness Monitoring Report (2008), for aid to be most effective, it needs to respond to the partner countries' priorities and be provided in a way that uses and strengthens the partner countries' own institutions and systems. Within this principle, there is a specific emphasis on the use of the countries' systems, such as DAD in order to understand the government priorities and avoid duplication of projects in the country.

Aid harmonization is about bringing donors together to streamline the way they provide aid. Both the Rome Declaration on Harmonization (2003) and the Paris Declaration on Aid Effectiveness (2005) recognized that the multitude of donor approaches to preparing, providing, and managing development co-operation, could result in unnecessary duplication of efforts and a greater burden on aid managers who deal with a multitude of policies and procedures. This principle encourages donors and aid-recipient countries to implement common arrangements and procedures, simplifying the way in which aid is provided. It also encourages them to work together to enhance complementarity in development cooperation by, for example, implementing a more effective division of labor at the country level.

Although the harmonization agenda focuses mainly on how donors work with each other, it cannot be implemented fully by donors working in isolation. Harmonization is closely related to ownership and alignment. When partner countries implement their commitments to strengthen

their systems, the easiest way for donors to harmonize is often to use the country's own systems (DCR, 2010).

The Paris Declaration (2005) calls for a stronger management of development results, alongside efforts to strengthen mutual (donor-partner country) accountability. Further, the Accra Agenda for Action (2008) reiterates the importance of the *mutual accountability* principle, emphasizing greater transparency and accountability in the use of all development resources. This principle urges the development partners and the aid-recipient country to remain transparent to each other and the citizens. It requires each donor to report to each other on their aid spending and continuously communicate about the aid-funded projects (OECD, 2008).

The Paris Declaration on Aid Effectiveness calls for better results of the aid resources spent in a country. Improving the ability of countries and institutions to manage for results is central to the international community's efforts in support of country-level outcomes, such as the Millennium Development Goals (DFR, 2009). The Paris Declaration calls for stronger management of development results, committing developing countries and donors to work together to manage aid for the achievement of development results. *Managing for results* is a general principle of management that involves using information about results to systematically improve decision making and strengthen performance. Developing countries are expected to develop cost-effective, results-oriented reporting and smart aid information management systems, while donors commit to using any such arrangements and refraining from requiring separate reporting (OECD, 2010). *Managing for results* is an objective in its own right – citizens are fully entitled to know how aid resources are being used. It is also a way of establishing powerful motivations that help improve the effectiveness of all aid resources in achieving development results.

Context of Aid in Afghanistan

Foreign assistance has played an important role in Afghanistan's history. Afghanistan received its first monetary assistance from the East India Company during the British rule in South Asia (Tolonews, 2011). Although the financial assistance did not put Afghanistan in the aid dependent nations category, the country has yet to achieve fiscal sustainability. With the economic and political changes in Afghanistan, the degree of its aid dependency has changed since the early 1980s. To better understand the role of foreign aid in the context of Afghanistan, it is imperative to understand the history of foreign assistance and its role in the development of the country starting with the early 19th century.

The history of foreign assistance in Afghanistan can be divided into the several phases, each of which is characterized by factors influencing the country's dependency on foreign aid. The following section provides a brief overview of aid history in Afghanistan.

In order to modernize the centralized economy, several attempts were made to boost the economic growth during King Amanullah's regime. They included widening the revenue base such as the imposition of taxes on people's income, properties and tourism (Tolonews, 2010). However, these domestic revenues were not enough to finance the needs of the country, resulting in the economy running into a fiscal deficit.

In order to address the deficit, the government sought foreign assistance from major donor countries at the time. The major sectors receiving support in that period were infrastructure and education. Selected results of such assistance can be cited: the construction of Malalai and Estiqlal schools by French government, Amani High School by Germany, and Habibia by the US government. Due to lack of information, it is difficult to track the exact volume of foreign assistance, the type, and the results achieved during these years (Pain & Goodhand, 2002).

During the 1960s, in order for the country to survive the pressures of the super powers during the Cold War period, the Prime Minister at the time, Mohammad Daud Khan, sought foreign assistance from both the USA and the Soviet Union. According to Rubin (1995), by the 1960s foreign aid accounted for more than 40% of the state's budget. From the late 1950s to the 1970s, Afghanistan received 50% of its foreign assistance from the former USSR and 30% from the USA. Approximately \$ 160 million of this was in the form of loans (DMU, 2010).

During this period assistance was also received from multilateral donors such as the World Bank and the Asian Development Bank (ADB). Foreign assistance mainly focused on infrastructure and the agricultural sectors. (Tolonews, 2012) The major outputs were the Salang Pass and 1200 km of paved roads, which played an active role in economic growth (Tolonews, 2011).

The 1970s were marked by an economic downturn due to severe droughts, low agricultural production, its consequent famine, and a centralized economy which damaged private investment. The World Bank (WB) advised a decentralization of the economy. The outcomes of such reforms were largely unsatisfactory, as assessed by the Western nations, resulting in the reduction of their financial assistance (Tolonews, 2011).

The deteriorating situation made the country rely primarily on the former USSR's assistance. During the Soviet occupation of Afghanistan, the amount of aid resources from the USSR to Afghanistan increased. This helped Afghanistan develop its infrastructure and boost private investment. In the 1970s, the total amount of loan Afghanistan received from the USSR stood at \$ 11 billion (DMU, 2010).

During the USSR occupation, US provided huge sums of money to Mujahiddin. Due to the lack of proper records, it is not possible to assess the exact amount of foreign assistance in

support of the Mujahidin. However, some available data confirms that the USSR's aid to the Afghan Government contributed to Afghanistan in 1980 alone was \$ 1 billion, which grew further in subsequent years (Steve Coll, 2004).

The official inflow of assistance to Afghanistan stopped after the downfall of Dr. Najeebullah's regime, which also marked the end of the Cold War, in 1992 (Tolonews, 2011). However, small scale humanitarian assistance from a few countries via NGOs and UN agencies continued between 1992 and 2001 (DCR, 2010). Due to the unavailability of information, it is not possible to present the exact amount of assistance during that period.

The post-Taliban era was a turning point in the history of Afghanistan as it was the first time, since the withdrawal of the Soviets from Afghanistan, the country moved to the top of the aid-recipient's list (DCR, 2010). The international community, therefore, re-entered Afghanistan, a country with a war-torn infrastructure, feeble economy, and a weak government incapable of delivering basic services to its people (Pain & Goodhand, 2002).

The re-intervention process began with the establishment of the Interim Government in late 2001. In response to a large number of needs and challenges in the country, a remarkable volume of development assistance has come to Afghanistan.

Since 2002, the international community has pledged \$ 90 billion for a period of 11 years (2002-2013) in the form of loans, financial grants, in-kind and technical assistance to Afghanistan (DCR, 2010). Out of the \$ 90 billion pledged, \$ 57 billion has been spent in a wide range of development and reconstruction projects, as well as poverty reduction efforts.

From 2002, the volume of total foreign aid to Afghanistan has raised from \$ 2.3 billion to \$ 16.8 billion in 2010. The year 2010, marked a peak of assistance committed to funding

development related activities in Afghanistan (DCR, 2010). Appendix 1 illustrates the total amount of foreign aid flow to Afghanistan from 2002 to 2010.

Aid Distribution Channels

For the bulk of foreign aid spent from 2002 to 2010, two main channels of fund delivery have been used: (i) off-budget, and (ii) on-budget. Off-budget support consisted of assistance that bypassed the government's public finance system with little or no involvement of the government in the planning, implementation and monitoring of the projects. While, on-budget support included those proportions of assistance that have either been given to the Government as bilateral support or that has been provided through Trust Funds. Bilateral support is a direct contribution from a donor country to an aid recipient government without the involvement of multilateral agencies like World Bank, Asian Development Bank, African Development Bank or Trust Funds.

A Trust Fund is a pool funding mechanism through which several donors can contribute to the government's priority projects (World Bank, 2010). Most on-budget projects are designed, implemented and monitored by the government (MoF, 2009). Administered by multilateral agencies such as the World Bank, the European Union and the Asian Development Bank, the Afghanistan Reconstruction Trust Fund (ARTF), Law and Order Trust Fund for Afghanistan (LOTFA), and the recently established Afghanistan Peace and Reintegration Trust Fund (APRTF) have provided the largest by far sources of on-budget support to the Government of Afghanistan (World Bank, 2010). Appendix 2 lists the total off-budget and on-budget shares from 2002 to 2012.

Aid Management in Afghanistan

Most literature on aid coordination in Afghanistan has been concerned with donors' lack of coordination and recommended more meetings and communication between the government and donors, while insisting on adherence to the treaties signed (Steinberg, 2011). Steinberg (2011) posits that the aid management reform in Afghanistan began in the 1980s when Afghan government realized that the donor community, within itself, is not coordinated in Afghanistan. In the past, the information about foreign aid flow has generally been kept by different government organizations which were responsible for implementing the aid-funded projects. Although Afghanistan has received foreign aid throughout its history, it has never had a designated aid tracking and reporting entity in place. Before 2002, the Ministry of Finance was responsible for managing and signing financial agreements between the government of Afghanistan and donor countries (Tolonews, 2012).

With the influx of donors in 2002, the Afghanistan Minister of Finance at the time, Dr. Ashraf Ghani Ahmadzai, established the Afghanistan Aid Coordination Authority (AACA), the first independent body dedicated to the management of foreign aid in Afghanistan (DFR, 2009). Funded by UNDP and overseen by the government, the body was then moved to the Ministry of Finance structure, where its scope of work was broadened from record keeping of foreign aid, to tracking, assisting in the formulation and implementation of projects and providing policy advice on aid management issues (MoF, 2012).

Since the establishment of this body, there have been continuous efforts to improve the management of information on foreign aid, thus ensuring aid effectiveness (MoF, 2012). In 2003, the formulation of the Afghanistan Aid Policy (AAP) and the creation of the Development Assistance Database (DAD) are considered some of the innovations brought about by this entity.

AAP, which was drafted in 2003 and approved only in 2010, aimed at improving the following:

(a) coordination (b) management (c) mobilization, and (d) the effectiveness of foreign aid in Afghanistan (AAP, 2006; DFR, 2009).

Although the government of Afghanistan still struggles with the management, coordination and effective implementation of aid resources in Afghanistan, the establishment of the now-called Aid Management Department (formerly the Afghanistan Aid Coordination Authority) represents a pivotal step in leveraging an aid-dependent country like Afghanistan (ACBAR, 2008). Since the creation of AAP, the government has shifted its focus on modernizing aid coordination and management tools. The first step in the modernization of the aid coordination system in Afghanistan has been the introduction of DAD as the first web-based information management system ever used in the history of Afghanistan in 2002 (DFR, 2009). DAD was developed by Synergy International Systems, administered by the government of Afghanistan and financed through UNDP.

Introduction of ICT in Aid Coordination

Both aid coordination and ICT are relatively new areas of study which have been evolving in the recent years. The integration of ICT as a communicative tool in aid coordination is a more recent development, which only dates back to the last three decades. The communicative impact of ICT in aid coordination began to unravel when Sagie (1984) investigated the influence of ICT in the information exchange process between a charity and an aid-recipient organization. The study revealed that due to the complex nature of the technology, it was difficult for all members of both organizations to operate the system easily. But as soon as the employees of the organizations learned the use of the technology and adapted to it, the

quality of communication patterns between the two organizations significantly improved and the cost of information sharing was reduced (Sagie, 1984).

More recent research about the communicative impact of ICT on aid coordination shows that without the aid management databases it would have been very difficult to keep track of the current volume of aid flow in the world (OECD, 2006; MoF, 2012; DMU, 2012; Ali, 2008). Sagie et al. (2001) believe that ICT has not only reduced the cost of communication between two organizations, but has also considerably improved the quality of information shared within the organizations. Contrary to the former, Schofield et al. (2004), while agreeing that the cost of communication between the organizations has improved with the integration of technology, they argue that due to the rapid progress of technology, the quality of information and the contents of the messages have been negatively affected. They believe that the integration of ICT within aid coordination has been too rapid to be absorbed effectively.

The above arguments are contradictory in nature. Such arguments call for further research with regards to the communicative aspects of the technology in aid coordination. In the present research, the existing literature on the role of communication in aid coordination/management, and the integration of ICT in aid coordination, especially aid information management systems will be reviewed.

Although the thesis is focused on the Development Assistance Database (DAD) in Afghanistan, the literature review will provide an international perspective of the ICT and aid management by providing anecdotal information from different studies around the world. The aim of this international perspective is to inform the reader about the effects and the role of ICT

in other geographical contexts and cultures, as well as the benefits and challenges of the aid information management systems around the world.

Communication and Aid Coordination

“The significance of communication is essential in all forms of development cooperation since communication is part of interaction, which in turn, is a way to cooperate” (Eriksson & Modin, 2003, p. 4). According to Palm and Wiklund (2006) the proficiency of international development cooperation depends on a well-functioning communication between all the stakeholders, which also serves as an essential foundation for implementing a genuine partnership in development cooperation. Communication is the process of conveying or exchanging opinions, ideas, or information verbally and nonverbally and coordination is the harmonized interaction between people or things to accomplish a goal or an objective (Mishra, Mishra, & Ostrovska, 2012). A sound communication pattern between an aid recipient country and a development partner can positively affect the implementation of aid-funded projects and impact the effectiveness of development aid in the long-run (Aidin, 2007). Karlsson (1998) argues that without interaction, dialogue and communication, it is difficult to establish a partnership.

Most aid-recipient governments experience difficulties in maintaining a smooth flow of information and timely communication patterns with their partnering donor countries (Bach et al., 1993). The difficulties do not only disrupt the daily communication patterns between the donors and government, but also hinders the effectiveness of foreign aid in the long run. According to Aidinfo’s annual report (2008) titled “Better Information, Better Aid”, easier access

to aid information for partners can reduce the overhead cost for donors and aid recipient countries.

According to Nadoll (2006), “aid coordination is a shared responsibility” (p. 4); therefore, both the recipient government and the donor should work together to reduce extensive communication costs and share accurate information.

With the above stated, it is not just the cost of the information which has created concerns among developing countries and their funding partners. Florell and Magnusson (2007) argue that another limitation to international development cooperation is the irregular association of the donor and recipients. An irregular association is described as the absence of a structured mechanism between two partners in terms of exchange of information and transfer of funds. According to Florell and Magnusson (2007), the problems have been known since the 1960s and the focus was to solve the problem at theoretical levels rather than practical.

In Sudan, a persistent refusal by the donor community to report to the local government according to the government’s approved reporting format, led to a huge impasse between the donors and the recipient partners (Nezami, 2009). Nezami elaborates that the information the local government wanted from the donor countries required certain concise details about their aid investments which the donors were refusing to provide (Nezami, 2009).

In Afghanistan, the Agency Coordinating Body for Afghan Relief (ACBAR) (2010), a Kabul-based NGO, reported that the absence of structured and systematic communication between the government of Afghanistan and the donor agencies has led to “unresolvable” crisis of aid coordination in Afghanistan. The Swedish International Development Agency (2005) believes that a dialogue should be transparent, based on mutual trust and should involve all

shareholders (i.e. Government representative, recipients, civil society and development partners). According to the ACBAR (2010) report, lack of communication has resulted in a situation where donors feel that the government is not interested in information about their aid spending and therefore several of them have stopped reporting to the government of Afghanistan (ACBAR, 2010).

Quality and the accuracy of information exchanged between the aid-recipient governments and the development partners is another key concern. Research investigating the quality of information flow between a donor organization and a government entity, demonstrates that the faster the information exchange between the two, the worse the quality and accuracy of information (Gilani, 2005; Sagie, 2001). The research further explains that the inaccuracy of information and poor quality of information is that the partners pay so much attention to the speed of information-sharing rather than the substance of it (Gilani, 2005). The solution, Sagie (2001) proposes, is strengthening effective communication between the partners in order to balance both the speed of information exchange and the quality/accuracy of information. Both of the mentioned research studies have demonstrated that establishing effective communication patterns can impact the quality and speed of information. Now, the main question is, can technology leverage communication?

According to Gilani (2005), technology is the answer to improving communication. He argues that since the invention of the Computer Mediated Communication (CMC), the speed of information has improved dramatically. Even though, some believe that CMC has not really affected the quality of communication in a better way, Gilani (2005) insists that the quality of communication has improved as well. Mason (n.d.) supports this argument and posits that, in the past, the exchange of information between two organizations would take much more time than

what it requires now. For instance, if an organization communicated something via post, it would have taken days for it to get to the recipient. In case the recipient was not satisfied with the quality of the information, they would have had to respond back, which would again have taken days until their response was delivered to the sender, while now everything is just a click away (Mason, n.d.). In the cases where the quality of information is not good, it could be revised and amended with the support of technology within seconds.

The use of ICT as a facilitating tool for aid coordination has been significant since the evolution of computer-based technologies. The Russian are considered the pioneers in integration of technology in aid coordination (Aidin, 2007). In 1996, the first Aid Management Information System was introduced in Russia to ensure the flow of information between development partners. Initially named Donors Assistance Database, the system was used to track 22,000 aid-funded projects worth \$100 billion (Silva, 1999). The strong communicative aspect of the system encouraged the Russian to promote the use of the system in different government organizations for several years to come.

ICT and Aid Coordination

“ICT refers to technologies that help in the communication and transmission of information” (Baqir, 2009, p.1). ICT includes Internet, computers, satellites, mobile phones, radio and television, and hardware and software devices (Baqir, 2009). Yildiz (2007) states that the communication of information is as important as the collection, storing, and sharing of the information (Baqir, 2009). Strand (2010) believes that ICT can have significant influence on reducing corruption, improving transparency of information by allowing citizen access to information, increase in coordination, by facilitating information sharing, and allowing citizens

to communicate with the government. ICT plays a significant role in bringing people and organizations together (Baqir, 2009). Archangel (2007) defines ICT as a tool that promotes communication through electronic resources. According to the proceedings of the High Level Forum for Aid Effectiveness (HLFAE) (2011), a better placement of aid with national priorities requires better coordination of aid between donors and the partner country and better coordination is maintained through timely and reliable information exchange between both partners.

There is no doubt that ICT has left a positive impression as a significant communication tool in the arena of aid coordination since the birth of Microsoft Excel Spreadsheet and Access. The web-based IT has made it possible to overcome the challenges of aid information (HLFAE, 2011). ICT is a vital tool for countries that are willing to adapt to results-based management in order to inform citizens and donor countries about the development progress accomplished with the resources invested (Accascina et al., 2006).

In the 1970s, the use of Excel Spreadsheet in reporting development aid, in its basic form, marked the beginning of the integration of information management technology into aid coordination (Sagie et al., 2001). Gradually, moving from excel spreadsheets, the development of computer databases brought ease in book keeping for aid management professionals. The speed in which the information is exchanged between a donor country and their development partner has been tremendously affected by the integration of technology in coordination. Research investigating the impact of technology on coordination of information between the organizations highlights several advantages.

Vivian C. Prothro (1976), in a book called “Information Management systems – Database Primer”, describes databases as a new way of storing data and increasing cost-efficiency in information sharing. Further, she defines databases as collection of application programs, distributed in a software package, that are used to store, process and share information (Prothro, 1976). The author also emphasizes the significance of these “systems” as evolutionary communication tools between two organizations. Subscribing to this notion, Heacock and Sasaki (2010) argue that the presentation of the information to citizens through online tools and/or through other easily accessible mediums, such as web-based databases, can greatly improve the transparency of aid information in both the recipient and the donor country. Argyres (1999) contends that the information systems aided coordination directly by making information processing less costly. He also argues that by establishing a "technical grammar" for communication, the systems have helped to create social conventions around which firms could coordinate their activities, thus limiting the need for a hierarchical authority to promote coordination (Argyres, 1999).

Furthermore, Sagie (2004) posits that specificity of the information, which is an important element in communication, has been considerably improved with the integration of ICT in aid management. The exchange of documents between the development partner and the aid recipient governments in the early days of aid management (e.g. in 1970s), highlights the inaccuracy and mismanagement of the information on aid resources.

The documents accessed from the Afghanistan Ministry of Finance's archives shows that in the past, due to limitations in communication channels, the donor-government agreements were short and almost incomprehensible as compared to what they are today. For instance, only a one-page agreement was signed between the governments of Iran and Afghanistan, in 1975, for

the provision of \$10 million loan to the government of Afghanistan. This one-page agreement outlines only a few details of the loan such as amount, date signed and signatories. However, several other details such as the maturity period of the loan, instalments and other important information were missing (MoF Archives, 2012). While the agreements signed between the development partners and the government of Afghanistan after 2002, through the DAD, are well-organized and conclusive of every single detail about the funds and, most importantly, the agreements are accessible and amendable at any time by the development partners and the government of Afghanistan.

The above example of DAD's effectiveness illustrates that the integration of ICT in aid management and the introduction of Aid Information Management Systems (AIMS) marked an important step in fostering the quality of aid information and improving the speed of information exchange between the donor and the recipient countries.

Aid Information Management Systems (AIMS) are designed to help the developing countries and their partners overcome communication challenges (Accacina et al., 2006). AIMS are ICT applications that are usually in the form of databases (Accascina et al., 2006). AIMS help both the aid recipient countries and the donor countries stay connected with each other and maintains information flow and thus enhances the transparency of development aid in a country. In addition, it allows the aid recipient governments to incorporate aid flows onto their national budgets and improve the overall assistance with country priorities.

AIMS and Aid Management

Before discussing the role of the AIMS in aid management, it is imperative to explore the concept of *management* and *aid management*. According to Lane (1976), management is a

process of planning, organizing resources, implementing a plan, monitoring the plan, and, if required, modifying the initial plan. Management is a broad concept that encompasses almost every walk of life. *Aid management*, on the other hand, is very specific to planning, monitoring, implementing, impact assessment and organization of the foreign aid and internal resources of a given country. As described, the management of aid involves a rather comprehensive set of tasks and responsibilities, from planning to impact assessment, which are complex and bureaucratic. To support information management, which is a huge task in itself, efforts have been made to integrate ICT to aid management.

CDDE (2009) defines AIMS as, “software applications that record and processes information about development activities and related aid flow in a given country” (p. 4).

AIMS contributes to the efforts towards the implementation of the five Effectiveness Principles – ownership, alignment, harmonization, management for results and mutual accountability – which in turn contribute to effective and better use of aid resources in a country. (Accascina et al., 2006) AIMS are also intended to assist aid recipient countries in managing their aid flow (CDDE, 2009).

According to Accascina et al. (2006), aid recipient countries are responsible for customizing their AIMS to their country context, while ensuring that the customization does not undermine the implementation of aid effectiveness principles. In 2004-2006, in order to assist the AIMS user countries, the United Nations Fund for Development (UNDP) identified the best practices for AIMS users around the world by conducting a “lessons learned” assessment series in different regions around the world (Accascina et al., 2006). Below are some of the observations and recommendations from this evaluation process. Proper consideration of the following recommendations is instrumental to the success of AIMS in any aid recipient country:

- “Governments providing leadership; applicable policies for information disclosure and exchange; complete and verified development data; classification systems that are in line with acceptable standards; adequate staff; and
- Donors providing complete, reliable and comprehensive project data, including full disclosure of financial assistance; mid-term projections of assistance delivery, including disbursement schedules; validated data across reporting sources and well defined conditionalities,; as well as resources and training for setting up an AIMS”
(p. 4).

AIMS do not only help in tracking the aid flow in a country but also help with effective planning and decision making (Accascina et al., 2006). By providing a harmonized format for aid reporting, AIMS contribute to reducing the hectic bureaucratic procedures at the donors’ agencies and the recipient country governments’ offices.

AIMS are usually web-based systems ensured to be user-friendly and easily accessible.

Accacina et al. (2006) describes AIMS as following:

Aid Information Management Systems (AIMS) are central to changing the way donors do business. They help to align donor procedures and practices with government systems. AIMS help to build trust, transparency and accountability that can, in turn, counter corruption and resource misuse. In short, the broader adoption of AIMS is key to the successful implementation of the Paris Declaration on Aid Effectiveness including mutual accountability for development results. (p. 1).

AIMS promotes regular reporting of donors to a unified country system and insists on the accuracy of information entered into the system (CDDE, 2009). Because the validity of information verified in the AIMS depends on the quality and frequency of reporting by the donors and the government, it is imperative that they have regular communication with each other (Accascina et al., 2006). An important requirement for effective aid management is the availability of easy, timely and up-to-date information about planned and ongoing aids flow by funding agencies (Nadoll, 2006).

Role of DAD in Aid Effectiveness

This is a great system... you can go to any country, to any part of the country, to any topic area that needs to be addressed and you can see what the plan is, how much it costs, what the time line is and whether someone has pledged funds for this particular project or not.

(Bill Clinton, UN Special Envoy for Tsunami Recovery)

Implementation of aid effectiveness principles. It would be unfair to speculate whether DAD has completely failed or succeeded in achieving its overall objective which is to ensure the effectiveness of foreign aid in the developing countries. However, the significance of the system in the implementation of the aid effectiveness principles can be explored on so many different levels and from various aspects.

Depending upon the context of each developing country, DAD has produced different results. Proceedings of HLFAE (2011) argue that the usefulness of the DAD is strictly tied to the success or failure of other aid coordination activities in a developing country. It further explains that the customization of aid effectiveness principles to the context of a country can undermine the sound functioning of the DAD (HLFAE, 2011). Some developing countries have tried to customize the indicator of the aid effectiveness principles, based on the context of the country. Afghanistan, for instance, has added a capacity building indicator under the principle of *mutual*

accountability, based on which the donor countries are expected to report their capacity building activities and their results to the government of Afghanistan (ACBAR, 2009).

Since there is no room for the above mentioned indicator in the DAD, having been introduced by a specific country, there are two options for the developing country. It would have to either request the developer [Synergy Systems International] to add the indicator in the software, which would be costly for the developing country, or completely ignore using it. In the latter scenario, the DAD would not be able to implement the mentioned principle in its entirety and hence the implementation of the mutual accountability principle would be completely affected.

Geographical information. Another valuable piece of the communication work by DAD is the provision of geographical information on aid resources (DAD Viet Nam, 2006). Access to geographical data in the developing countries which are in a post war recovery phase, is not easy (Ghani, 2003). Due to the lack of population census (Ghani, 2003), insecurity (MoF, 2012), and low capacity in the sub-national administrations (ACBAR, 2009), it is difficult for the developing countries to collect accurate information about the geographical distribution of aid resources. DAD is a valuable tool when it comes to geographical information about aid spending (Radelet, 2006). The fact that DAD can produce aid reports with different classifications (e.g. such as classification by donor, by year, by province etc.) has made it a favorite tool for planners and policy makers. DAD allows the policy makers and planners to understand the existing level of investments of aid in the country and avoid duplication of projects in one geographical area and also promotes a balanced distribution of aid resources in the aid recipient country.

Access to information. Partner country's easy access to information about aid resources is central to success of aid investments (Ghani, 2003). There is no doubt that a number of donors

have certain restrictions in sharing information about their aid investments with the partner country. Although, from a development point of view, there should not be any withholding of information when it comes to investment of aid resources in a developing country (ACBAR, 2009), certain donors still hold back certain information from the partner countries. The United States Agency for International Development (USAID) is one of the few donor agencies that shares only a certain level of information with the government of Afghanistan, through the DAD, while it holds back the information about the portion of their aid investments that they think would “endanger the life of” the USAID and other US contracting agencies employees in Afghanistan (MoF, 2012).

Apart from USAID and a few other donors which have similar policies for “confidentiality of information”, there are other donors who share information based on certain conditions (MoF, 2012). Some donors agree to share information to only one source (e.g. a particular government agency, system or information bank) rather than several sources. Hence, DAD can be a handy information bank, where donors share their information because it is a single unified source and it also represents the entire government’s institutions. The structured features and easy accessibility of the DAD makes the system attractive for donors to deposit their information (Synergy Intl, 2012). In Iraq, until December 2011, DAD Iraq had recorded information about \$180 billion aid-funded projects in the country (HLFA4, 2011). Similarly, DAD Afghanistan has been able to record over US\$ 45 billion since 2003.

But the question arising is what is it that donors still complain about and why is it that some donors refuse to deposit information into the system while some citizens question the effectiveness of the system? The answers to these questions are being explored in the following section, which discusses the reliability of DAD and the accuracy of information in DAD.

Aid transparency. Transparency of aid information is one of the most important areas of discussion in the field of aid management. Mary Robinson of OECD (2008) defines aid transparency as, “basic expression of mutual accountability”. Transparency is also defined as the result of full access to aid information (Access Info, n.d.). Several mechanisms have been put in place by the International Financial Institutions (e.g. The World Bank, IMF, and OECD) to enhance the transparency of aid information in the developing countries. These mechanisms comprise , but are not limited to, donor-government coordination meetings, annual donor financial review reports, aid monitoring surveys and, last but not least, the DAD.

Since the main focus of the aid transparency is timely communication between the partner country and donors and provision of easy access to information for citizens (both at the donor country and the recipient country), DAD’s role as an important mechanism for enhancing aid transparency comes as no surprise. According to Aid Info (2009), DAD does not only facilitate and improve communication patterns between the donors-government-citizens; it also reduces the cost of duplicate information requests. AidInfo’s “Costs & Benefits of Aid Transparency” report (2009) estimates that if donors use the aid transparency mechanism efficiently they can save up to US\$ 7 million a year as a result of reduced cost of duplicate information requests, while recipient countries can save approximately \$0.8 million a year.

Table 1: Efficiency benefits from reduced time spent reporting aid information

Category	Low estimate	Middle estimate	High estimate
IATI Donors	\$2.8m	\$7.2m	\$8.5m
Recipient Governments	\$0.5m	\$0.8m	\$1.2m
Total	\$3.3m	\$8m	\$9.7m

Source: Aid Info Report (2009).

Chapter 3: Methodology

As stated in chapter 1, the purpose of this study is twofold. First, the current research investigates how ICT leverages aid coordination by focusing on both the technological and the social aspects of the DAD. Second, the study examines the relationship and correspondence of the DAD to aid effectiveness principles. Both purposes of the study are explored by posing the following research questions:

RQ1: How does ICT (AIMS) influence the communication and information sharing between the donors and the government?

RQ2: What are the benefits and challenges of the use of technology in aid information management?

RQ3: How does the DAD adhere to the aid effectiveness principles in Afghanistan?

Research Design Rationale

This study was qualitative in nature and utilized a single case study research design. Myers (1997) outlines four qualitative traditions as being particularly significant in Information Management Systems (IS) and ICT research: case study research, ethnography, grounded theory and action research.

A qualitative method is concerned with finding out the “how” and the “what is” in order to investigate and address the questions or describe phenomena as they exist. Also, the qualitative research method is known as an important research method in ICT and IS (Merriam, 1985; Yin, 2003; Lodico, Spaulding, & Voegtler, 2006).

According to O'Connor (2002), qualitative approaches attempt to uncover meanings via analysis of multiple sources of information, including interviews, observations, audio-visual materials, and researcher-developed documents. Furthermore, Keyton (2011) posits that

qualitative research is also known and regarded as best method in the study of communication. Keyton (2011) insists that qualitative research “provides an intimate view of human communication” (p.69).

Considering that the intended study focuses on the effect of ICT on the coordination between donors and government and the quality of the phenomena, a qualitative case study methodology would best serve the purpose of this research.

Case Study

The case study research is a prominent type of qualitative research method and has become a widely used research study across various academic disciplines (Bryman, 2004).

A case study is a complete set of inquiries that allows the researcher to conduct an in-depth research into a complex phenomenon (Creswell, 2007). It is a non-empirical research “that investigates a contemporary phenomenon within its real-life context” (Yin, 2003, p.13). A case study is intended to focus on a particular unit of analysis of the studied phenomena and is particularly useful where there is the need to understand a particular social issue, problem or/ and situation in great depth with thick description (Creswell, 2007; Darke et al., 1998; Yin, 2003).

Although a case study research method is a type of qualitative research methods, the evidence or collected data could be qualitative, quantitative or mixed in nature. With such versatility, the case study method could be used within several philosophical worldviews including the Positivist, Interpretive or Critical (Eisenhardt, 1989; Stake, 1994)

A case study design could be a single case study or multiple case studies and may involve several levels of analysis, as well as an embedded design structure (Creswell, 2007). A single case study involves the collection of data and consequent analysis of one case, while multiple case studies involve the collection and analysis of data for several cases.

Although in the past several other research designs, including action research (Ytterstad et al., 1996) and ethnography (Hughes et. al., 1992; Orlikowski, 1991; Preston, 1991; Davies, 1991; Davies & Nielsen, 1992) have been used in ICT and IS research, considering the uniqueness of the proposed research topic and complexity of the phenomena, the current research has utilized a single case study research design to investigate DAD Afghanistan from a socio-technological prospective.

The case study methodology was used because the study mostly focuses on “how” technology leverage aid coordination and “how” the DAD adheres to the principles of aid effectiveness. Also, the case study methodology was a logical choice because in the past this methodology was used in several socio-technical studies of the ICT that had employed ANT as their theoretical frameworks (e.g., Callon, 1986a, 1986b; Monteiro & Hanseth, 1995; Akrich, 1992; Law & Callon, 1992; Stanforth, 2007; Walsham, 1997).

Site Selection

Following the logic of the ANT, the study has tried to give equal importance to both the technical and social aspects of the DAD. Figure 3 illustrates the technical and social areas that have been studied using both, primary and secondary data sources. The model is based on Kathrin M. Cresswell, Allison Worth and Aziz Sheikh’s (2010) study that investigates the role of ANT in understanding the implementation of information technology developments in healthcare.

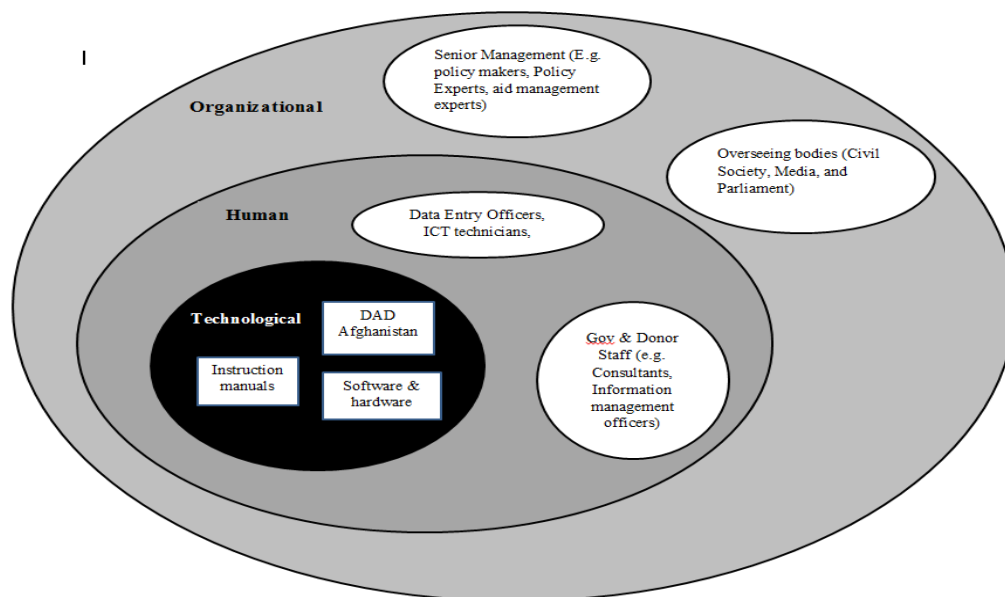


Figure 3.1: Site selection model adapted from Cresswell et al. (2010).

Sample

The study uses different non-probable sampling techniques, namely snowball and quota sampling for the data collection.

A non-probability sampling is the most common of the sampling techniques used in qualitative research since it provides fast, easy and readily available subjects (Castillo, 2009; Statpac, 2011).

Although the findings from a non-probability sampling technique might be problematic in terms of generalization of the research findings, relative generalization can be made from research findings that have used non-probability sampling technique (Creswell, 2003; Yin, 2003).

The “non-probability sampling technique is used when participants help researchers obtain their sample by identifying other similar participants” (Keyton, 2006, p. 128). In addition, a criterion sampling technique was used to include participants from all the stakeholders in play.

First, following the criterion sampling technique three categories of participants have been identified, including the data entry officers, aid management policy experts, and public users, including a financial affairs journalist who works for one of the top news networks in Afghanistan. Then, following a pre-determined criterion of selection, one participant from each of the three identified groups was interviewed. The selection criteria for the participants were: their current or ex-employer (i.e. donor, government, civil society, and media), expertise in ICT, work experience, gender and age. Finally, using a snowball sampling technique, based on the responses and recommendations of the first group of interviewees, further participants were identified and recruited.

The number of samples was another issue for the researcher. There is no consensus on an acceptable sample size for qualitative interviews, but sample sizes between 5 and 60 have been suggested before (Creswell, 1998; Charmaz, 2006; Green & Thorogood, 2009). While the choice of a sample size is dependent on various factors such as, types of data collection methods, budget, available resources, time, energy, the availability of participants, and expertise of the interviewer, it has been suggested that the ideal size should follow the concept of saturation (Glaser & Strauss, 1967; Strauss & Corbin, 1998).

While there is the tendency to go for higher sample size just to be on a safer side, for the purpose of the present research, a medium size sample of 12 participants has been chosen, as suggested by Creswell (1998) and Charmaz (2006). This was based on the assumption that getting a higher availability of participants might be problematic and time consuming. Also, a sample size of twelve is an acceptable number of samples for a single case study. Therefore, using a non-probability sampling technique, twelve participants from government of Afghanistan, donor agencies, journalists and end-users of DAD were selected for interviews.

To better understand the DAD and the socio-technical aspects of it, four government employees who used DAD on daily basis were interviewed. This government participants views, as the administrator of the system, was very insightful. Then six users of the DAD from the donor agencies were interviewed and their responses provided the researcher with the suggestions and ideas for further research participants from civil society and the media. A journalist and a student were interviewed at the end. The journalist and the student provided unbiased responses about the system, based on their experience of using the system as end-users.

A solicitation letter was emailed to each of the participants immediately after they were identified. All of the participants, except the university student who was requested via phone call, were solicited through email.

The solicitation letter encouraged their participation in the study and assured them of the confidentiality of their responses, as well as informed them of their right to withdraw from the study at any point. The letter also asked them to read the informed consent form, before signing it. An informed consent form that detailed the topic, the aim of the study as well as the manner the information obtained would be used later, was sent to the participants (See Appendix 6).

Data Collection

As stated in chapter 1, the data sources for this study involved interviews from primary sources and published data on the AIMS and aid effectiveness in Afghanistan. The first phase of data collections included semi-structured interview of each of the twelve selected participants.

The semi-structured and open-ended nature of the interview processes provided flexibility for the participants to use any descriptive words that they found appropriate during the interview. In addition, it provided the opportunity for the researcher to formulate follow up questions when deemed necessary, or to seek more clarification based on the responses.

An interview questioning guide derived from the research question (see appendix 3) was developed. The guide was sent to each of the respondents prior to the interview date to facilitate and manage the interview processes. Advance provision of the interview questioning guides to the participants facilitated the interview process by reducing the time allocated to it, considering that the interview process can be otherwise time-consuming. In the same time, it emphasized the importance of proper time management (Berglund, Daniels, & Pears, 2006).

The present study has used a semi-structured interview technique which is basically a structured interview in which the questions would elicit responses easily identifiable by themes and topics (Yin & Kuo, 2006). The advantage of using a semi-structured interview technique is that it enables the researcher to hover around a variety of themes and topics by asking follow-up questions, yet controlling the direction of the interview.

While copies of the interview questioning guides were sent to each of the twelve participants in advance, they were allowed to also elaborate on their own side of the experiences and expectations. The “telling the story” stance in a qualitative research interview allowed the participants to share their practical experience using their own references, phrases and words. A support for this kind of approach came from Dick (1990) who argued that in a qualitative research interview “the starting point is a question that is almost content-free” (p.9).

Although the advanced interview guide makes the researcher's task easier and prepares the participants for the interview, the researcher does not have to just “use or rely on questionnaires or instruments developed” (Creswell, 2009, p.175).

The questions developed for the DAD data entry officers focused on three main areas of interest: the challenges and benefits of the system, technical characteristics and organizational structure influences. Questions for the policy level participants (e.g. aid management specialists,

development experts and policy advisors) focused on three topics: the information disclosure issues, challenges and benefits of technology in aid coordination and social issues related to ICT. The questions for the technical level participants were about the communicative influence of ICT on aid management, as well as the significance of the system on the implementation of the aid effectiveness principles.

Lastly, the questions for the outside users of the DAD (e.g. student and journalists) tried to explore the effectiveness of the DAD as an information sharing tool for citizens and an information bank for the academia. The General Interview Questions (GIQ) were based on the premises of the ANT, the Aid Effectiveness Framework and the existing literature on ICT and aid management.

The interviews were conducted either *face to face* or by phone. The *face to face* interviews took place in mutually agreed upon locations and time. Steps were taken to ensure minimal or no disturbance throughout the interview process, such as securing a room or place exclusive for the interview. It is important to mention that the security of the participants in Kabul City was also an important consideration for the researcher. When a phone interview was an option, it was initiated by the researcher/interviewer and was conducted at a mutually agreed time that ensured minimal or no disturbance for both the researcher and the participant.

Due to the large volume of results, using the qualitative data method responses should not be entrusted to memory, a careful record-keeping process is therefore very important (Benbast, Goldstein & Mead, 1987; Hartley, 2004). To ensure such a record keeping, notes and memos were written down and all interviews were audio-recorded and transcribed.

A second source of data for the study was the published documents related to the case (See appendix 4). A document analysis technique was used to analyze the secondary data source.

According to Sharan Merriam (1985), documents comprise of a variety of written, visual, and physical material that help shed further light on the case.

The documents used for the study included a wide range of AIMS user manuals including the DAD Afghanistan developer manuals and users' manual, the donor and the government policy guidelines for using the DAD, training and guiding documents for users, PR policy guidelines, DAD upgrading reports and other valuable documents which might not have been otherwise, accessible through interviews. The information extracted from these documents helped the researcher in validating and cross-checking the information obtained through the semi-structured interviews.

The use of secondary data sources in the research study has been acknowledged as having the potential to provide valuable insights into situations in a cost effective manner (Liedtka, 1992; Cowton, 1998; Harris, 2001). Secondary data sources also tend to support the researcher who wishes to arrive at more extensive conclusions than the primary data would allow (Harris, 2001). However, the researcher remained cautious about the validity of the documents that were used as a secondary source as Yin (1994) cautions the researcher about verifying the validity of the documents in order to avoid incorrect data being included in the collected data. According to Yin (1994), there is always a danger if the investigator is inexperienced and mistakes some types of documents for sheer truth.

Data Analysis Techniques

Data analysis is the process whereby the collected data is moved into some form of explanation, understanding or interpretation.

Since the research questions in this study are in conjunction with the ANT, the interview questions and secondary data sources have been segmented to correspond with each

of the research questions.

An inductive approach was followed while conducting the microanalysis on several DAD guidelines and aid policy documents. Microanalysis is the analysis of data word by word and the “coding of meaning found in words or groups of words” (Strauss & Corbin, 1998, p.68). The analysis uncovered more than 96 themes. Allan (2003) describes a major downfall to microanalysis, due to the multiple concepts uncovered creating confusion and divergent data. However, the several concepts which emerged helped in joining the large amount of data collected, allowing for a compilation of all the concepts into three major categories and 9 subcategories (see appendix 7).

Data analysis also involved categorization, tabulation, recombination of data, cross-checking of facts and discrepancies in findings, from the interviews of the academic members and assessment of the policy documents in order to identify the associations (Yin, 2003; Hartley, 2004; Creswell, 2005).

The three methodological principles of the ANT which are *agnosticism*, *generalization* *symmetry* and *free association* guided the analysis process and protected it from any prior biases of the researcher towards either of the technology or human actors.

Validity and Reliability

Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. The terms *validity* and *reliability* are traditionally associated with quantitative research methodologies. *Validity* is the extent to which the instrument measures what it was actually intended to measure, and *reliability* deals with the accuracy and the precision of the measurement (Cooper & Schindler, 2006; Creswell, 2009).

For a qualitative research such as this study where data collected was not quantifiable, validity and reliability of the study depended on the purpose of the study and the argument (Lincoln & Guba, 1981; Winter, 2000; Stenbacka, 2001; Creswell, 2009). To establish reliability of the research results, the researcher should provide “rich and thick description” of the setting, the subjects, procedures, interactions, etc., in order to ensure that the limitation and boundaries of the data are clear (Lincoln & Guba, 1985; Geertz, 1973).

Validity (trustworthiness) was also established using the observations made on site and during the various interactions with the participants, the interviews proceedings with aid management specialists and DAD technicians, and the members of media, students, as well as the evidence from the secondary data (Mathison, 1988). In addition, other validation techniques including member checking, were used throughout the data analysis process in order to make sure that the analysis is balanced and the findings are presented without any unwanted bias (Creswell, 2009).

Field Notes and Memos

Notes and memos were kept throughout the data collection process. The notes include the observations during the interviews and collecting the secondary data. This allowed the researcher to build a researcher's log based on the Harris Cooper's model (2010). The notes helped the researcher to revisit the information during the data analysis process for verification and validity purposes. It helped the researcher clarify its doubts about the information that could have an impact on the credibility and reliability of the research. Furthermore, memos were taken during the coding and the data analysis process.

Ethical Considerations

Ethical consideration is very important in any research study, and is meant to ensure that no one suffers harm, embarrassment or loss of livelihood as a consequence of the research activities (Cooper & Schindler, 2006). Marshall (1998) defines research ethics as professional codes of conduct applied in collecting, analyzing, reporting and publishing the information about the research subjects, with full understanding of privacy, confidentiality and the correct coding of information given by the subjects.

In this study this was accomplished by notifying the participants of the aim, methods, anticipated benefits and potential hazards of the study, and by seeking and obtaining their permissions as participants. No activities in the study caused any physical or emotional harm to the participants, and no gift was accepted in the course of this study. The findings were neither fabricated nor plagiarized, but were accurately presented based on the analysis of the data. The participants were not identified by name or any other identifying information. The researcher did not profit in any form from the information or results of this study and the participants remain protected in accordance with the University of Ottawa's Research Ethics Board guidelines.

Role of Researcher

In a qualitative research, the researcher is the instrument of the research, and the research relationships are the means by which the research gets done (Maxwell, 2005). The researcher has worked at the Afghanistan Ministry of Finance for nearly two years and been an observant of the coordination and information sharing process between the donors and the government of Afghanistan. On this topic, Keyton (2011) warns that prior acquaintance and familiarity with the participants can result in researcher's bias. There were margins for such influence in the research, given that the researcher was acquainted with the participants during his services at the Ministry

of Finance. Therefore, in order to counter these effects, techniques such as cross-checking and validating the data against the existing literature on aid, e-governance and AIMS was done throughout the process. Field notes and memos were checked regularly to guard the research against unwanted biases.

On the other hand, the researcher's past experience at the Ministry of Finance, his knowledge of the aid situation in Afghanistan, and also his access to resources at the Ministry and the donor agencies through personal contacts, were tremendously helpful in obtaining the information which would have been, otherwise, impossible for an outsider to access.

Summary

This study was qualitative in nature and utilized a single case study research design, an important research methodology in ICT and social sciences research. Data sources involved one primary source as well as a secondary source; the primary sources were 12 selected participants in Kabul City from several governmental and non-governmental organizations.

Data collection was done in two phases. In the first phase, one participant from each of the three identified groups was interviewed and building on the responses and suggestions/recommendations of the first three interviewees, further participants were identified and recruited. The second phase included the collection of valid and trustworthy secondary data, which aimed at supporting the validation of data from the interviews. As illustrated in the table in appendix 4, 11 published documents, which included aid policy papers, DAD monitoring and evaluation reports, DAD user manuals and conference papers were collected and analyzed in this phase.

Once the data analysis process was over, the report writing process was initiated immediately. The advanced analyses of the findings and conclusions/ recommendations were the last two phases of this research.

Chapter 4: General Findings

This section presents the analysis of the in-depth semi-structured interviews and published documentation on the DAD and aid effectiveness. Since the two data collection sources are chosen to balance each other, the findings of both are presented together under the categories that have emerged from the collected data. In order to cover the context, the social and technical aspects of the DAD actor-network and to discuss the contribution of the DAD to aid effectiveness, the categories and sub-categories are divided according to the order of the research questions. The theoretical framework guides the findings and discussion of the findings section, as well as the division by categories and sub-categories.

The incorporation of data from the interviews and the secondary sources produced 96 codes, which have been divided into 3 major categories and 9 sub-categories. The first category is *environmental scanning*, which deals with the positioning of different human actors and how they create alliances for protecting the DAD-actor network. The second category, *technology actors*, discusses the role of technological actors, artifacts and text in ensuring a successful alignment of interests. The third section discusses the *role of DAD in aid effectiveness* and its adherence to the aid effectiveness principles.

The interview questions were drawn upon the ANT's three methodological principles, which are *agnosticism*, *generalization symmetry* and *free association*. The participants were asked questions related to the ANT's *translation* process (problematization, interestment, enrollment, and mobilization) which takes place between actors when operationalizing the DAD.

Environmental Scanning

ANT assumes that technologies are always defined through their use in an environment that includes non-technical elements (Callon, 1991). In the same way, humans are defined through their use of objects – our existence in the world being based on the existence of these objects. It means that technologies are not defined by their internal specifications but by their relationship with human actors and other social process.

The above argument was quite evident in the responses of the interview participants. According to the participants, the DAD actor-network, despite its technological sophistication, requires a copious amount of input from those at the policy-making level and the ICT experts. In addition, it requires a sound organizational infrastructure and even political support to function. For instance, government participant #2 stated that if it wasn't for the revisions and upgrades introduced to the system by the ICT experts in the past 10 years, the system would have failed to correspond to the needs of the country, given that it is an imported system. "The reason DAD has come so far is because it had the required political support from the top ranking [government] officials and the organizational infrastructure funded by the donors," he included.

This dependency of human and non-human actors on each other can be a weakness, as much as it is strength. There are many actors who refuse to be enrolled in the actor-network due to various reasons. In the context of Afghanistan, a country that tops the list of the most corrupt countries in the world (CPI, 2013), technological advancement can be considered a threat for those actors who benefit from the unaccountability and the lack of transparency of information. According to donor participant #7, some people always consider technology a threat. "Technology reduces the government bureaucracy and eliminates the room for under the table [bribery] deals," he included.

Apart from corruption, there are several influential social factors that could potentially have direct or indirect impact on the process of information sharing at the DAD actor network. A thorough analysis of the participants' responses shows that the inscription of goals can be challenged by these social factors and can even lead to the destabilization of the actor-networks.

There are two important areas that have to be considered for an environmental scanning of the DAD-actor network: *organizational structure*, which includes changes and processes within the organization which can affect the negotiation of actors, and the *external environment* which represents the exogenous forces to the organizations that are influential in the actor-network's alignment of interest process.

Organizational Structure. The role of the organizational structure was one of the most prevalent discussions in the interviews with the participants. According to the participants, the hierarchical system in the organization was considered as one of the key elements that could positively or negatively influence the way information sharing works in the organizations. The more freedom the data entry officers or the system operators were given in an organization, the more efficient the information sharing process would become.

The participants' responses touched upon some of the main components of the Kimberly (1976) and Agarwal's (1979) concept of organizational structure, which includes *organizational size*, *employee turnover*, and *number of hierarchical levels*. The findings of the interviews indicate the significance of these non-human actors in the information sharing process, which are explained below.

Organizational size. Kimberly (1976) describes organizational size as the number of full-time paid staff. But the term has also been used to measure the "total assets of the organizations" (Agarwal as cited in Oldham & Hackman, 1981: p.71). In ANT terms, the size of

the organization is a measure that could be used to describe both the human and the non-human actors of an organization.

Additionally, Nayar (1989) argues that the duration and security of the jobs at an organization are other important elements of the organizational size. Providing full-time and long-term contract to the ICT staff at the organizations was considered a crucial factor in the long-run stability of the DAD actor-network as well as the sustainability of a smooth information sharing process between the donors and the government. Donor participant #10, who has been working as DAD data entry officer in three different organizations during the past 3 years, admitted that he had left his two previous jobs because the contracts were short term and had no guarantee of extension. He added that he had finally settled down in his third job because it was a full-time, one year contract with possibility of extension. “SSAs [special service agreements], which are short term contracts, do not only diminish your passion for your job, it affects the quality of your work as well.” he concluded.

The findings also revealed that the donor organizations that provided long term contracts for their ICT staff were much more successful in terms of aid information management and exchange of information with the government, than those with short-term contracting staff. It became evident from the findings that the stability of the DAD actor-network was not just tied to the proper functioning of the technology but also to the performance of the ICT staff and the intra-organizational politics.

Employee turnover. Employee turnover can be represented by the rotation of the workers in the job market due to a variety of reasons (Abassi et al., 2000, as cited in Ognari, 2007). Relevant literature highlights several contributing factors to employee turnover, some of

which include *organizational factors* and *job related factors* (Ongari, 2001; Shaw et al., 1998; Price, 2000).

Organizational factors include job stress, lack of commitment in the organization, and job dissatisfaction (Firth et al., 2004). *Organizational factors* range from organizational instability, to work predictability and high level of inefficiency (Alexander et al., 1994). The findings of this study indicate that employee turnover in the DAD actor-network have not only been caused by organizational factors and job related factors but also by a third factor that seems to be missing in literature, the *external factors*.

The *external factors*, unique to the case of DAD Afghanistan, are the growing expansion of the job market in Afghanistan versus the limited number of professionals. According to the participants, given the ever-expanding job market for educated and professional ICT staff in post 2001, the ratio of employee turnover has increased. Donor participant #7, for instance, said that over the past two years, he has received job offers from several places, including other donor agencies, with competitive benefits. "I got as many as 3 job offers in one year without even applying for them," he concluded.

The findings revealed that although the issue of employee turnover is not limited to the field of ICT in Afghanistan, it is less visible in other fields. According to donor participant #6, there is competition between organizations to attract young professionals who are familiar with the new technology. "The person who was working here before me, works at a different organization now and he is being paid almost three times more than what he was getting here," she added.

Taking into account the vast employment opportunity for ICT professionals, the competition between organizations to get the best professional ICT employees has produced

winner and losers. The winners are the donor agencies offering attractive remuneration packages and the losers are the government ministries with the lowest salary scale in the market. For example, participant #6 said that she started working with the government but she moved when she was offered the same job at a donor organization with much better benefits. She added “I needed to support my family and I could only do that by working for an NGO or donor organization, so I came here [to the donor organization].”

The findings indicate that the government is concerned about losing its professional ICT staff due to low wages structure. According to government participant #4, since the government has the lowest salary scales in the market, it is difficult to attract and keep ICT experts. The government has sent many of its ICT professionals to foreign countries, “including the US” where they were trained in the design and operation of databases, particularly the DAD, but upon their return they left the government and joined NGOs and private companies offering better pay (Government participant #4).

Other contextually unique findings of the study, link to *job related factors to nepotism*. *Nepotism* is favoritism granted to certain people in a work environment (Merriam Webster, 2013). An independent report by Altai Consultancy in 2010, which studied the salary differences within the same profession in the government, revealed that due to rampant favoritism in several government organizations, people who work on the same rank in a government organization receive considerably different salaries. The report highlighted that some government employees who are favored by their superiors received top-up salaries from the donor funding, while others of the same level, received only a government salary (ALTAI, 2010).

However, according to the participants, nepotism does not just end with a difference in salary. According to government participant # 2, it is not about only the salary or benefits of the job, it is more about the treatment they receive from their peers and superiors. He added:

Obviously, if your boss is from your ethnicity or province, they would give you a good top-up salary, phone cards [prepaid talk time cards] and transportation, otherwise you are being treated disrespectfully. You have no voice in the decision-making process of the organization.

Organizational hierarchy. The level of hierarchy defines the power distribution structure within an organization. It is the division of decision-making power granted to the employees within an organization. From an actor-network perspective, equal treatment of actors within an actor-network can result in sustainable alignment of interests (Monteiro & Hanseth, 1998).

The findings of the current study highlighted extreme hierarchical challenges within both the donors and the government organizations. Analysis of the findings shows that a major drawback in the timely exchange of information between the government and donors was considered to be the centralization of the decision-making authorities at the top of the organizations. Both the government and the donor organization participants admitted that they have suffered from the centralized and top-down decision making issues in their respective organizations. According to the government participants, the donor agencies in Kabul are those who suffer the most.

The 2011 Survey on Monitoring the Paris Declaration indicates that donor agencies in a partner country have to go through many layers of approval process in order to share a single piece of information with the DAD and the media (OECD, 2011). Donor participant #7 agreed with the finding of this report and added:

We go through so much trouble to get an approval from our headquarters for sharing an unclassified piece of information [about aid-funded projects]. When journalists contact us

and ask for information about a certain project, we ask them to wait until we get an approval from our headquarters.

He also stated that it takes days for the headquarters to respond to their request which affects the credibility of the donor agencies and their work in the eyes of the people of Afghanistan.

The findings revealed that the approval process for sharing project information or the approval of any minor activity at a donor agency is bureaucratic and time-consuming. It is agreed that there has to be changes in this area. Most of the participants believed that the donor representatives/ agencies based in Afghanistan should be given more control and authority over their daily activities, as well as the exchange of information with the partner government.

External environment. External environment, also called the operating environment, is comprised of the conditions, factors, events, entities and policies surrounding an organization that influence its decision-making abilities (Nayar, 1989). Some of the main factors affecting the DAD actor-network, according to the participants of the study, were the information privacy guidelines and the donor aid policies.

The analysis of the participants' responses reveals that many of the donors see the system's requirements against their information privacy guidelines, and in order to avoid a confrontation with the government, they simply complete their forms in the system with false information. Donor participant #9, who is a policy analyst at a donor agency, stated that "every donor has a certain limitation when it comes to disseminating information about their activities." For instance, according to her, there are concerns that, sharing information about the donors' implementing partners or contracting companies, can endanger the life of the companies' employees. She included that since the system is online and accessible by anyone, it is easy for

kidnapping gangs to retrieve the names and addresses of these companies from the system and use the information against them.

A United States Agency for International Development's (USAID) report on the US aid funded projects in Afghanistan, supports the above reasoning and emphasizes that safety of the donor organization and project implementing partners' staff is a priority for the United States and therefore, withholding certain information from the public is part of their information privacy policy in Afghanistan (USAID, 2010). The report further explains that the reason behind withholding the information from the government and the public is that the government is simply unable to provide personal and financial security for the implementing partners of the USAID.

Politicization of aid. The term *politicization of aid* is used to describe the tying of aid resources to political agendas. Aid resources, which are tied to political agendas, are also called *tied aid*. Politicized aid or tied aid is one of the most criticized forms of aid in the world. The problem with the politicization of aid is that once the aid money is tied to political objective, it no longer serves its main cause of poverty reduction and development (Ghani, 2003) thus becoming a tool for political gain.

Once aid becomes politicized, the information related to the aid also becomes political, therefore subject to secrecy and confidentiality. Confidentiality of the aid information is what the study participants believed to be one of the biggest challenges, given that tax payers in the donor countries and citizens of the recipient country have the right to access this information. Participants said they believed that since donors are the primary owners of the aid information and can control the flow of information, they can influence the process of information-sharing in both positive and negative ways.

The findings of the study revealed that in recent years, donors have adopted stricter aid policies that prevent sharing of some important pieces of information regarding their aid projects. Such setbacks in the release of information cause serious problems in the process of information sharing. For instance, given the increase in the amount of tied aid in the past few years, many donors refuse to reveal the total amount of funding that they have allocated for a school project, said government participant #3. He added that, when entering project information into the DAD, the total cost of a project is a mandatory field that has to be filled out. If that field is not completed, the entire project entry will be rejected by the system.

Participants' responses showed that there were dozens of similar cases where important information was withheld by the donors because of their aid policy restrictions. Although, several other reasons were also given by the participant as to why the donors refuse to share information, the most prominent reason was said to be the policy restrictions on disseminating the aid information.

Corruption. Participants discussed the issue of corruption in the government and the donor agencies as the key obstacle against information sharing. Participants emphasized that the DAD is considered a threat by corrupt officials both at the donor and government agencies given that it minimizes the opportunity for “embezzlement” and “bribery” (Government participant #2; Donor participant #6). Government participant #2 also added that, “once a project is entered into the system and it is public, it completely eliminates the opportunity for corruption. Therefore, corrupt officials have hired strong lobbyists to undermine the DAD.”

Participants were concerned about corruption as one of the main causes for the lack of transparency in aid information. According to the Transparency International's 2012 Corruption Perception Index, Afghanistan is the third most corrupt country in the world after Somalia and

North Korea. Transparency of aid information is considered important for legitimacy of the government and effective development planning. Providing a foggy picture of the aid to the citizens during the past 12 years, has weakened the central government's legitimacy, and as a result, challenged its control over the provincial governments, said donor participant #10. A weak central government that is unable to punish the corrupt officials in the provinces has paved the ground for increase in the corruption.

Trust issues with the ICT. According to the participants, Kabul-based media and civil society organizations use the DAD on a regular basis. However, the media agencies do not trust the system because it is being administrated by a government that's known for corruption. An initial analysis of the participants' responses showed that both the donors and the government of Afghanistan have failed to convince the Afghan media about the authenticity of the information available in the DAD, either because the government has a bad reputation or citizens don't trust ICT.

It is both of the above, according to donor participant #5. He added that the results of a small survey conducted by their agency on people's trust of the ICT in Kabul, show that since computer databases and internet are newly introduced phenomena in society, people have little faith in them. Although, he didn't share the finding of the survey with the researcher because it was for the internal use of the organization only, he said that technology is not only considered untrustworthy but destructive. "It was astonishing to see that even the media agencies had restricted the use of Internet research for journalists. It was because the Internet was considered a waste of time for journalists and destructive to their work environment," he concluded.

Similarly, in 2008, the Agency Coordinating Body for Afghan Relief (ACBAR), a Kabul-based non-governmental organization's coordination body, reported that a growing lack of trust

in ICT has undermined the credibility of the DAD and thus media agencies, people and in some cases, the donors, believe that the information reported in the DAD presents a painted picture of foreign aid in Afghanistan.

From a social perspective, the organizational structure is influential in regards to the trustworthiness and reliability of the technology (Latour, 2008). Although the government is promoting the DAD as an independent system which is overseen by the donor civil society organizations, the fact that the DAD's main servers are located inside the Ministry of Finance and that the Ministry of Finance's Aid Management Department has the right to change any given information in the system at any time - without the prior consent of the donors - challenges the trustworthiness of the system. Moreover, the presence of donor agencies paid foreign advisors and consultants at the IT section of the Ministry of Finance, raises doubts about the independence of the DAD.

Thus far, the findings covered the social aspects of the system, including the organizational structure, the external and internal factors, and the socio-cultural practices that influence the integration of ICT in the arena of aid management in Afghanistan. In the following section, the findings related to the equally important technical aspects of the system and their role in aid management activities is presented.

Technology Actors

A central tenet of the ANT is the notion of general symmetry between the technical and the social world, in which no a priori distinction is made in the treatment of human and non-human actors (Rose & Jones, 2005). In the case of the DAD, the non-human actors (technological actors), which include the DAD system, computers, servers, and the Internet

service Provider (ISP), are equally important in the inscription of the goals, creation of alliances and stabilization of the DAD actor-network.

Although the symmetrical treatment of human and non-human technology is considered important in systems such as the DAD, a complete dependence on an imported technology or human actors could impact the long-term stabilization of the actor-network. When discussing the technological aspects of the DAD with the participants, an interesting pattern about total dependency on technology emerged.

Participants discussed the over-dependence of the government of Afghanistan on the DAD and described it as “unhealthy” in the long-term. According to government participant #4, neither the government nor the donors own the DAD, the servers of the system are still in New York and the rights are still withheld by Synergy International. Karagozoglu (2005) describes the dependence of the development countries on foreign technology, if not accompanied by parallel development of technology infrastructure, as harmful to the long-term technological self-sufficiency of these countries. According to him, when there is too much reliance on an imported technology as an information sharing tool between the organizations, there could be negative consequences. There has to be a clear exit strategy in the long run.

It was evident in the participants’ responses that an exit strategy for the DAD was missing. The technology used in the DAD is very advanced and almost impossible to be replaced by another technology in Afghanistan. According to the participants, considering the high cost of the technology, its replacement in the long run was imminent. As stated by government participant #1:

Currently, UNDP is financing the system through a pool of funding that is provided by several countries. However, we know that the funding will stop at a certain point. Sooner or later, we have to take over the responsibility of financing the DAD.

Initiation and development. Participants discussed several other aspects of the DAD that affect the information sharing process between the government of Afghanistan and the donors.

The analysis of the participants' responses and document reviews show that DAD's multiple reforms, from version 2.0 to version 6.0 in 2013, has had its positive and negative impacts as well. Version 2.0 was a basic information database that was available only for offline use. The second version, introduced in 2005, was the first online version with several new features and a more user-friendly interface (MoF, 2012). According to donor participant #9, the worst version of the DAD throughout the process of reform and upgrading was the version 5.2, which was very heavy to load and had a very confusing interface.

The good and bad upgrading continued until the last and most current version 6.0, which was introduced in 2012. Although this version is more user-friendly and faster to load on slow-speed internet, there are still complaints about certain aspects of the system.

According to Synergy International (Synergy International Systems, retrieved Feb 2013), DAD 6.0 offers the latest analytics, including Chart, GIS, Report and the Executive Dashboard. It also provides a new interface data reporting capability, as well as e-form and work-flow technology for streamlining role-based business processes. The new version, "offers a rich user experience that empowers the average non-technical user to turn raw data into actionable information for decision-making" (Synergy International website, 2013, p.2).

Although the current version of the DAD offers a variety of options for users, there are concerns that the system is aiming for something beyond its realistic objectives, hence, has lost its quality. Donor participant #5 expressed concerns over one of the key objectives of the system, which is delivery and dissemination of information for aid transparency. They said that having

added too many wishful objectives in the recent upgrading process, it has lowered the quality of the system.

System design and portal. The participants' responses revealed that although the DAD's interface was not very different from any other database in the market, it was certainly more user friendly than others. Most of the ICT professionals who participated in the study – both from donor and government organizations - were quite satisfied with the design, however, they admitted that the system could become even more accessible and user friendly.

One of the key problems discussed by the participants was the difficulty to browse the system at 150 kb/sec internet speed, which is the common speed of internet used in offices in Afghanistan. Some of the suggestions they made to solve this problem included reducing the number of pages that were needed to be filled out per single project, integrating the fields in a single page, and removing the pictures and heavy graphs from the start-up page and inner pages.

Donor participant # 7 said:

We have to focus on the practical use of the system in terms of information sharing and aid effectiveness, rather than the statics of it. The fancy design and pictures would not help the objectives of the system; it would just make the system difficult to load with the existing speed of internet in Afghanistan

In addition, the multiplicity of the mandatory fields to be filled out for every entry was another concern for the participants. An analysis of their responses revealed that too many unnecessary mandatory fields meant too much unnecessary work and a waste of time and resources for the organizations. It was also found that there was a consensus among almost all the participants that the entry of a project into the system could use half the time and space than what was now required, if the above suggested changes were made to the system.

Internet and computers. In most cases, the Internet and computers are considered an internal part of the databases because they are part of the black boxes that comprise the database

itself (Cressman, 2009). However, in the case of the DAD, the importance of computers and the internet service is very much visible for a variety of reasons. First, the low Internet speed and the little knowledge of computers in Afghanistan, highlight the significance of the two technology actors in the process. A database without computers and the knowledge to use the computers can accomplish nothing. Similarly, an online database and a computer without Internet are useless.

According to the participants, since the first version of the online DAD was released in 2005, the Internet has been an integral part of the system. The Internet was a new phenomenon in Afghanistan in 2005, according to government participant #1. Donors provided financial contribution to set up the Internet for government offices, and the first ministry to receive fully functional Internet network was the Afghanistan Ministry of Finance.

Computers were also provided to the Ministry by different donor agencies in early 2003 and the only use of the computers, at the time, was for basic computer training for employees. Later, with the introduction of several key databases at the Ministry, including the procurement database, budget database and ultimately the aid information management database [DAD], the use of computers was streamlined. Today, computers play an important role in the aid management efforts of the Ministry. According to government participant # 1, “it is fair to say that the ministry would stop functioning without the computers and database systems that are operating [at the ministry] right now.”

In summary, this section of the findings highlighted the significance of the technological actors and the technical influence of the DAD in the information sharing and communication processes. The technical aspects of the system are influential to the performance of the system, its adherence to aid effectiveness principles and the achieving of aid effectiveness in the long run.

DAD and Aid Effectiveness principles

Several participants emphasized the importance of the DAD as an aid effectiveness tool. The participants confirmed that the DAD has had a profound effect on the transparency of aid information. Although there was not a consensus on whether the DAD has been successful or not, most of the participants were certain that it has been able to improve the transparency of aid in some areas. For instance, donor participant #10 said that she believed DAD has been a significant tool, at least, in promoting the knowledge about aid spending within the government organizations.

In the interviews, the aid effectiveness principles and their relevant indicators were used to measure the success or failure of the DAD. The interviewed participants were also asked specifically about the adherence of the DAD to each of the principles of aid effectiveness.

In the following sections, the analysis of the participants' responses to each of the five effectiveness principles is presented:

Ownership. Ownership is one of the founding principles of aid effectiveness (The Paris Declaration) that emphasizes the control of aid recipient governments over their development policies and aid spending (OECD, 2006). The principle stresses that only government-led processes can lead to sustainable development and aid effectiveness.

One of the mechanisms that has been designed to ensure the recipient government's ownership in the development process is DAD. The DAD is intended to, "serve as a decision-support tool for the government to coordinate development efforts in the country" (Synergy Int'l, 2012, para. 2).

The many areas of government ownership over its developmental affairs and the DAD's contribution to those areas were discussed with the participants. The analysis of the participants'

response under the ownership principle is divided into the following two main sections, decision making and government leadership.

Decision-making. When participants were asked about the role of the DAD in adhering to the ownership principle, their responses were divided. The majority of them were confident that the DAD has ensured the involvement of the government in the decision making process, with regards to the development projects which are funded by the donor countries. According to participant #1, donors are obliged to share detailed project information with the government through the DAD in order to seek the government's approval prior to the implementation of a project. This way DAD plays a significant role in ensuring the control of the government in the implementation of aid-funded projects in the country.

Ghani (2003) posits that although it is difficult for an aid-recipient government to be in control of the decision-making process on development projects in the country, for the sake of sustainable development and economic growth of the country, it is absolutely vital for the government to be, at least, involved in the process. It was observed that almost all the participants agreed with the notion that the recipient government's involvement is key to aid effectiveness and that the DAD is one of the primary tools that can ensure that. Participant #6, who has been a donor employee for four years now, said:

Because the donors have to go through the government approval process via DAD, it means DAD is significant in strengthening the government's role in the decision-making process.

In addition, the participants identified the involvement of other stakeholders in the decision making process, including the donor agencies headquarters, the implementing partners (line ministry and contracting companies), as extremely important. Although the implementing partners are the last in the chain of decision-making, they are important players in the process

too. They also communicate their decision through their special access in the DAD that allows them to comment on and change the information in the system.

Government leadership. Participants had mixed views on the Afghan government's leadership in the development initiatives in the country. Government participant #4 described the leadership process with regards to the development efforts in the country, particularly foreign aid-funded efforts, as "incompetent" and "inadequate". He also projected that the government may lose even more control of the development efforts if the same sort of leadership crisis continues within the government.

According to the OECD (2008), government leadership is essential for ensuring sustainable economic growth and the country's development. Aid recipient governments have to plan for the long-term economic impact of their development project as the opportunity to receive donor funds may diminish in the future. Therefore, linking the outcome of each development project to the national development strategies of the country is important. The DAD can play a significant role in facilitating this, according to government participant #2. The system has been designed to strengthen the government's ability to lead the process of project planning and implementation, ensuring that the projects will contribute to the national priorities set forth in the Afghanistan National Development Strategy (ANDS).

Although this is how things should work in an ideal world, according to donor participant #7, it does not often happen that way in reality. He explained how donors bypass the DAD and how government's ownership and involvement in the design and implementation of the projects are undermined:

"Some of the donors do not enter their project's initial design or project proposal in the system to see if the project actually contributes to the national priorities. Instead, what they do is they design the project, start the procurement work and then enter the project."

According to donor participant #7, once the procurement work is done, donors enter the project in the DAD for government's review. She further added that it is too late for the government to do anything about it. Although the system marks the project as unaligned to government priorities, it is too late to do anything.

A general conclusion under this category that stems from the interviews was that the system should be stricter in terms of the government participation in the design process, by allowing the government to lead the process of project design and implementation, rather than just overseeing them.

Alignment. Alignment of foreign aid-funded projects with the partner government's priorities is another key principle of the Paris Declaration. "Donors base their overall support on partner countries' national development strategies, institutions and procedures" (OECD, 2008). The alignment principle also emphasizes the use of the local systems by the donors.

According to Synergy's website (2012), one of the main responsibilities of the DAD is to assess the alignment of aid-funded projects with the government's national priorities and alert the partners about those projects that do not contribute to the development strategy of the country.

Several issues related to the alignment principle were discussed during the interviews. The analysis of the participants' responses is presented under the two following sub-categories which are *strengthening national priority programs*, and *using the national procurement system*.

Strengthening national priority programs. An analysis of the participants' perspectives on aid alignment with the help of the DAD reveals that the performance of the system has not been satisfactory for a variety of reasons. Donor participant #8, who claimed that he had been proposing several reforms for the DAD's alignment functionality, said that during the past 5 years he has not seen any of the projects being rejected or simply "highlighted" by the system as

not aligned with the national priorities. He claimed that he has himself been responsible for entering many unaligned projects into the system. Similarly, donor participant #5 expressed similar concerns about the alignment support provided by the system and said:

The system has many flaws... you can always cheat your way in the system. There are several flaws in the design that allows people to fill in wrong information just to get their projects entered.

However, some government participants mostly seemed optimistic about the DAD's performance in aligning the aid-funded project with the national programs of the country.

Government participant #4 said:

I don't see any problem with the system, if some people deceive the system by entering wrong information. They should not be proud of what they do. Effective use of aid resources in Afghanistan is not just the responsibility of the government; it is the donors' commitment as well. We all have to work together to ensure that [aid effectiveness].

Using the national procurement system. When asked about the DAD's support of the alignment principle, interestingly, most of the participants brought up the issue of the use of the national procurement system. They emphasized that one of the commitments that donors have made under the principle of alignment in the Paris Declaration is the use of the recipient country's national procurement and aid information management systems. According to donor participant #10, donors must respect their commitment and use the national systems including the DAD in order to make aid effective. He included:

I am not saying donors have to completely rely on government systems. I understand that since these systems are new, they could be a bit unreliable at times, but if we [donors] really want to help the country stand on its own feet, we have to support their national systems.

An analysis of the participant's responses revealed that, with some further reforms, the DAD can ensure the donors' use of the national systems and databases. According to the participants, there are certain fields in the DAD that are not mandatory to be filled out by the

donors and one of them is the field on “use of national systems” (DAD user manual, 2009. p.8).

While stressing the importance of this function of the DAD, government participant #1 said:

When a donor enters a project into the system, this specific field asks them whether or not the project that they have entered has used the national systems [national procurement systems]. Unfortunately, the field is not mandatory and the person who enters the data can leave it blank. This field has to be made mandatory.

Participants also emphasized that making the field mandatory will let the government measure each donor’s support to the alignment principle and their commitment to aid effectiveness.

Harmonization. Participants’ perspective on the role of the DAD in adhering to the harmonization principle was mixed. Some participants said they believed the DAD did not have the required design to ensure the harmonization of aid in the country, while others contended that DAD’s performance in following this key principle of aid effectiveness has been satisfactory – if not extraordinary.

Under this principle, the DAD is required to identify “aid flow patterns, gaps, duplication of efforts, and priority areas, thereby promoting harmonized, transparent, and effective delivery of aid” (Synergy Int’l, 2012, para. 2).

A number of topics relating to the harmonization principle and the role of the DAD in supporting the component of the principle were discussed during the interviews. A brief analysis of the participants views on the issue are presented under the two following themes: *Unified reporting system* and *effective division of Labor*.

Unified reporting system. During the Paris Conference in 2008, all the donor countries committed to following a unified reporting system that has been agreed upon by the aid recipient country (OECD, 2006). The DAD has been one of the reporting tools that the donors have agreed

upon to use in 34 developing countries, which currently receive the bulk of the overall foreign aid in the world.

The analysis of the participants' responses showed that government participants viewed the DAD as an effective reporting tool. The government participants maintained that in their experience, if the donors fully commit to updating the system at least once a week, the system would serve as the best reporting tool. Government participant #1 said:

There are certain parts of the year when the donors do not have much work to do so they get the opportunity to update the information in the DAD regularly. If you visit the system at that time of the year, you can get a complete picture of aid in the country, which is amazing. My point is that if donors commit to using the system regularly, it is the best unified reporting tool.

Furthermore, the analysis of the responses of the government representatives, reveals that the government has fulfilled its commitment and has gotten rid of all other aid reporting formats (e.g. excel sheets, letter formats), completely relying on the DAD. According to government participant #4, "We have committed to a unified reporting format in Paris [Conference] and we stand by it."

In contrast, some other donors are not happy with using the DAD as the only reporting tool for a variety of reasons. Many of the donor participants were concerned with being pushed too hard by the government to use the DAD as the only reporting format. A common issue that many of the donor participants discussed regarding this aspect was the inefficiency of the database as a reporting tool. Donor participant # 5 said that it lacks many important areas that need to be included in a project report.

The findings also revealed that there were many unnecessary mandatory fields in the reporting format of the system, which the donors had to fill out, while there were many other important aspects of a financial report that were not considered in the system at all. Further, it

was revealed that the donors do agree on a unified report format with the government, but not necessarily the format provided by the DAD. “Let’s come up with a new unified format which is inclusive of what we want and also what the government wants. It has to be a win-win situation,” said donor participant #6.

Effective division of labor. One of the key components of the harmonization principle, which has been stressed upon in several documents, is the proper and effective division of tasks and responsibilities (PD, 2005; OECD, 2008; Ghani, 2008). The idea behind the effective division of labor is to remove duplication of responsibilities and to eliminate any kind of parallel mechanism for development efforts in a developing country.

The interviewed participants discussed extensively the issue of effective division of labor during the interviews and they stressed the importance of this component for the efficacy of aid investments in Afghanistan. An analysis of the discussions on this component revealed that for a better use of foreign aid in Afghanistan, it is imperative to remove parallel institutions and duplicate systems that exist in both the donor and the government agencies. Several areas of the duplication and parallel mechanisms were identified in the responses of the participants:

Institutional duplication. Institutional duplication was one of the issues that was brought up by participants on several occasions. Participants’ views reflected that there were several units within the government, donor agencies and the civil society that were doing the same job. For instance, participant #7 posited that there are many units within the government of Afghanistan, which do the exact same job as the units in the United Nations Assistance Mission (UNAMA) in Kabul. He included:

We have an Aid Management Department in the Afghanistan Ministry of Finance which is dedicated to the management of aid and the dissemination of aid information with the support of the DAD. Then there is also a unit in UNAMA office in Kabul, called Aid

Coherence Unit, supported [funded] by several donors and does the exact same things as the government department.

The analysis of participants' responses showed that the existence of such parallel structures does not only put a financial burden on the donors and wastes the donor country's tax payer money; it also creates confusion in the mandates of the departments. This confusion in the division of labor ultimately impacts the communication between the donors and the government departments and the effectiveness of aid in the country.

Parallel mechanism. Many government respondents put forward difficulties relating to the donors' development policies and strategies which counter the objectives set in the Afghanistan National Development Strategy (ANDS) – a document that has been developed and finalized in consultation with the donors. The responses of the participants also implied that certain donors follow their own aid coordination mechanisms and have their own aid management databases.

An analysis of several aid effectiveness documents also revealed that the parallel mechanisms and practices are clearly against the donors' commitments to the Paris Declaration on Aid Effectiveness (2005), the Afghanistan Compact (2008) and the Kabul Conference (2010) in which donors committed to avoid creation of parallel structures and mechanisms in the partner country and to support and strengthen the partner government's efforts.

The donor participants were not concerned about the use of parallel mechanisms and said they felt there is a need to improve the quality of government's aid management mechanisms including the DAD before eliminating the parallel ones at the donor offices. However, the government participants rejected the donors' claim about the quality of aid management efforts by the government and called it "another excuse" for donors to be lazy (government participant

#4). He added that if the government-run systems are not good enough, donors can help the government in making them better.

Managing for results. On several occasions during the interviews, participants discussed the issue of results management as an essential part of the aid effectiveness efforts. Participants' responses reflected that planning aid-funded projects based on the results, could lead to a better use of aid resources in the country. The Organization for Economic Cooperation Development (2008) describes the *managing for results* principle of aid effectiveness as management and implementation of aid funded projects in a way that focuses on the results and objectives that have been set forth by the aid-recipient country.

To adhere to this principle, the DAD has to perform the crucial task of tracking the results of the development projects, and linking those results to the ANDS objectives, thus supporting informed decision-making by the government and the donors (Synergy, 2012).

When asked about the role of the DAD in supporting the results management of the aid-funded projects, many of the interviewed participants pointed out the fact that an entire unused section of the DAD is dedicated to linking the results of the projects to ANDS and the aid effectiveness indicators. They emphasized that if this section would be used effectively, it would ensure that the projects are aligned with the ANDS results.

In addition, participants viewed the results-management section of the DAD as the most important section of the system for long-term planning and informed decision-making with regards to future development projects. However, a major drawback that the participants reflected upon was the fact that the system was too slow to load with low-speed Internet. Another challenge was that the entire section on result management was too heavy to load with low speed Internet and involved several fields and tables to fill.

Two major sub-categories emerged as a result of the analysis of the discussion under this principle. Each of the sub-categories is discussed separately in the following section.

Informed decision-making. Informed decision-making in aid management is a two way-communication process between the donors and the partner country, which is central to effective spending of the aid resources in a country (Action Aid, 2011). According to the interview participants, decision-making about the development projects has to take place based on clear and undistorted aid information. The results of the projects and how it links to the overall development objectives of the country has to be central to the process (Donor participant #10).

The government participants' views reflected that there are several ongoing projects the donors had decided to fund without consulting with the government or considering the contribution that these projects would make to the national priorities of Afghanistan. Such ill-informed decision-making instances do not only undermine the particular project's future maintenance and integration into the government programs, but hinders the entire partner government's strategic planning process.

Reflecting on the responses of the participants, it could be claimed that in order for the decision-making process to be mutual, clear, and based on the interest of both the donor and the partner country, the DAD's results-management section has to be made a mandatory. Furthermore, the information presented in the section has to be accurate and concise.

Result-based management for aid effectiveness. Result-based management (RBM) for aid effectiveness is a strategy of management that focuses on performance and the achievement of results (e.g. output, outcome, and impact). In this approach, activities under the project are designed based on the outcome and impact (ICRC, 2008).

AIMS have been considered a significant tool in supporting the RBM for aid effectiveness because accurate and concise information about the aid landscape of a country constitutes the backbone of this approach. The DAD's enhanced capacity to ensure the preciseness and accuracy of aid information is one of the reasons that make the system cohesive in contributing to RBM.

Under this sub-theme participants discussed the possibility of expanding this part of the DAD to a full-scale result-based planning tool. Government participant #2 and donor participant #7, who were part of the RBM expansion group of the DAD, said that, given the importance of the results project planning and management of aid, they are working hard to establish a fully functional RBM section in the DAD by mid-2014.

Additionally, another contributing expansion to the RBM was the Result-Based Budgeting (RBB), which the participants discussed extensively during the interviews. The RBB is designed to link the results of the government funded projects to the objective of the development strategy. The RBB is supported by budgeting database called the State Budget Planning System (SPBS). According to the participants, this database will be linked with the DAD for better RBM results.

An overall analysis of the participants' responses in this section showed a steady progress in the RBM's expansion each year from its introduction in 2004. The role of technology, based on the analysis, has been pivotal in this steady progress.

Mutual Accountability. Accountability of the donors to the government of Afghanistan and government's transparency about spending of the aid resources was another key issue during the discussions with the participants. Participants' views reflected that consistent and regular

communication between the donors and government leads to transparency of development efforts and thus, aid effectiveness.

An interesting finding from the participant's responses about mutual accountability was that it was usually the donor and government who should be accountable and transparent to each other while citizens, who are the ultimate beneficiary of the development resources, were completely ignored. Emphasizing on the fact that mutual accountability should not have to be limited to government and donors, media participant #12 said:

Both [donors and government] are accountable to citizens. That [accountability] can happen by providing timely information about projects and being transparent about their activities. I personally believe DAD can play an important role in this situation.

Participant #12 also added that the DAD can work as a one-stop shop for citizens to learn about the aid resources, only if the donors and the government both commit to keep the information in the system updated and enter the correct information.

Providing “a complete, reliable, and transparent picture of the aid landscape” is one of the core responsibilities of the DAD under the mutual accountability principle (Synergy Int'l, 2012, para. 2). The two following themes and corresponding sub-themes emerged from the discussions under this principle:

Aid transparency. Since its establishment, strengthening the transparency of the aid information has been an essential part of the DAD's mandate. The participant's views on the DAD's adherence to the aid transparency principles (e.g. proactive publishing of aid information, citizen's right to access aid information, and provision of timely, accurate and comparable information) reflected that the system has been quite successful and has performed well.

According to the participants, the more user-friendly the system gets, the better it could perform in terms of satisfying the users with information. Government participant #1 posited that

people's knowledge about aid investments in the country has considerably improved in comparison with a few years ago. It was clear from the participant's responses that with every reform that was brought to the DAD, the system had become more user-friendly.

Moreover, at the time of the interviews with the government participants, the researcher was told that a survey is underway which is designed to measure the system's user satisfaction (e.g. donors, government, and citizens). Government participant #3 and donor participant #5 who were, both, actively involved in conducting the survey said that it is going to be another step further towards improving the system. He included that the outcome of the survey will allow the system administrators to further improve the functionality of the system in terms of user-accessibility and user-friendliness.

An interesting finding that emerged from the discussion about aid transparency was that although the DAD was initially introduced in 2002, it had several features that could support the principles of aid transparency, which were developed later in 2004. Therefore, it can be claimed that the DAD had considered aid transparency principles before they were developed in 2004.

Accountability to all. Another pattern which was visible in the responses of the participants was the emphasis on accountability of the government to citizens. Most of the participants claimed that the literature on aid accountability only discusses the accountability of the donors to partner governments and partner government to donors, while the most important component of the accountability discourse, which accountability towards the citizens of both partner countries who are the aid beneficiary and the aid providers, is completely left out.

Although all the participants acknowledged the importance of the donor and the government's responsibility to be accountable to the end-users of aid resources who are the citizens of the aid recipient country, as well as the providers who are the tax-payers of the donor

countries, there were some differences of opinions among the participants about the level of responsibility which the donor and the government have in this regard. The donors believed that they have less responsibility towards the partner country's citizens as compared to the partner country's government. According to donor participant #9, "it is fair to say that it's our job to report to the government of Afghanistan rather than the Afghan public, and it is their government's responsibility to be accountable to their citizens." He also included that they let the government of Afghanistan use DAD to inform their citizens and gain legitimacy by being transparent.

An analysis of the participant's responses about the sense of accountability to the public revealed that the donor agencies tend to feel much more responsible to their own country's government and citizens, than to the partner country. On the contrary, the government of Afghanistan feels responsible to both the Afghan citizens and the donor country's tax payers. From the response of the government participants, it was also found that the government considers donors to be as responsible about transparency and accountability to Afghan citizens, as they are to their own citizens and government.

In the above category, we presented the findings related to the contribution of the DAD to aid effectiveness and the system's adherence to the principles of aid effectiveness. Using the aid effectiveness principles as a guiding framework for this category, the findings revealed that although there were several areas of the DAD that require reforms and changes, there were evidences that a strong coherence existed between the aid effectiveness principles and the system.

Chapter 5: Discussion and Recommendations

The purpose of the present case study was to explore the socio-technical dynamics of the technology in information sharing between the donors and the government of Afghanistan, and their ultimate impact on aid effectiveness. This chapter will provide an analysis of the findings presented in the previous chapter. Then drawing upon Latour’s (1987) enrolling strategies and Callon’s (1986) translation process, it will propose solutions to the challenges that affect the performance of the system in the current structure of sociotechnical relationships.

But before analyzing the findings, it is important to understand the current structure of the relationship between the social and technical aspects of the DAD and how they affect its performance. The following model which illustrates both the technological and social aspects of the system is based on the findings of the study presented in chapter five:

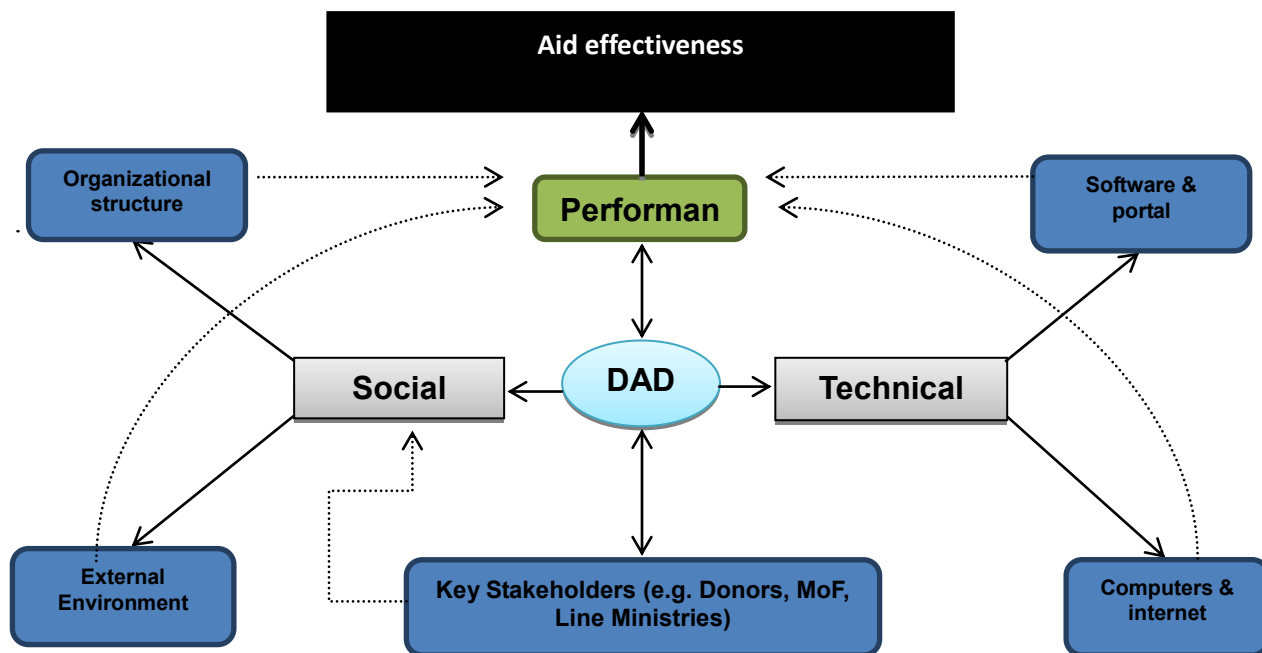


Figure 6.1: DAD Socio-technical model

Discussion of Findings:

In the existing structure of relationships between actors, the technical actors and social processes perform in two distinct ways. The social and technical aspects of the system are treated asymmetrically. The stakeholders of the system put too much emphasis on the social aspects of the system and the way the organizational process works, while the technical aspects of the system are completely avoided. The donors seem to distance themselves from the non-human aspects of the system. The technical challenges of the system seem to be blamed on the Ministry of Finance, as the administrator of the system.

The analysis of the findings of the study revealed that some of the stakeholders consider themselves part of the organizational problem with respect to corruption, bureaucracy, and nepotism but refuse to accept any responsibility for the challenges that exist on the technical side. For instance, participant #4 said that he had seen first-hand that government officials would simply detach themselves from any kind of inconsistencies and duplication of information in the system, simply blaming everything on the system developers and financiers (e.g. Synergy International Systems Inc. and UNDP).

Moreover, although the donors and the government of Afghanistan, both agree about the aforementioned problems hindering the inter-organizational communication and information sharing process, they refuse to see technology as the solution for the problem. Technology is considered a completely non-influential actor in the organizational processes. On top of that, as discussed in the findings chapter, some officials consider technology the main cause of the existing challenges in the communication between donors and government.

However, research has shown that in a heterogeneous network, the social and technical aspects are inseparable. Damasevieius (2007) posits that it is difficult to separate the social

aspect from the technical, because they are interdependent. The integration between the social and the technical aspects can ensure the success, while its absence can lead to the failure of projects. Boczkowski (2004) illustrated this in the case of the evaluation of videotex-based media, where he found that videotex newspapers could not be understood in isolation from the ongoing process of technical construction.

Furthermore, the existing structure of the relationships between the social and technical aspects of the system not only ignores the alignment of interests between different actors in the DAD but also poses a threat to its long-term stability. A comparative analysis of the aid information management strategies and the objectives of the DAD shows major differences between the two. The aid information management strategies of both the donors and the government have set ambitious benchmarks, while the goals set for the DAD are much more realistic and feasible. In order to achieve the long and short-term objectives, the strategic benchmarks for aid information management, aid effectiveness, and the DAD's long-term objectives have to be aligned. For example, a major difference between the objectives of the system and those of the strategy documents is the timeline of aid coordination activities. The DAD does not follow the same timeline for a project's approval as set in the Afghanistan Aid [management] Policy (AAP).

In such situations, Latour (1987) proposes a series of enrolling strategies (also called translation of interests), which are aimed at aligning interests in an actor-network. The process is comprised of five major steps, which are aimed at redefining the enrollment process in an actor-network, in order to align the interest of the involved actors. The steps include: *appealing to others' explicit interests, promoting your own interest, suggest detours, reshuffle interests, and*

become indispensable. Using the described process, the study proposes increasing the interests of the actors and re-enrollment of the actors for long-term stabilization of the DAD actor-network.

Recommended enrolling strategies

Appealing to others' explicit interest. The first step of the strategy requires the initiating actor to appeal to the interest of other actors. The initiating actor in the network is expected to conduct negotiations with the enrolled actors to reaffirm their commitments to the actor-network. In the case of DAD, in order for the government to prevent the collapse of the DAD and stabilize it, the initiating actor (Ministry of Finance) has to redefine its objectives of the system so that it is much more appealing to the donors and the line ministries. In simple terms, Latour (1987: 108-121) calls this "I want what you want". The ministry has to persuade both the donors and the line ministries that the ultimate goal of the system is to ensure the smooth information flow between all the stakeholders, which does not only improve the success in their work but results in aid effectiveness in the country as well.

Based on the findings of this study, there are several influential factors that have to be considered while appealing to the interest of the actors. Some of the most significant ones include: *political agenda*, *negotiation capability*, and *extent of investment portfolio*.

Political agenda. The political agendas, financial motivations and the social needs of the actors are some of the vital aspects that have to be fully studied by the initiating actor prior to the enrollment process in an actor-network. In the case of the DAD actor-network, given that the aid money is politically driven, it is imperative for the Ministry of Finance - as the initiating actor- to study the political agendas of the actors before appealing to their interests. For instance, if a donor is interested in funding development projects in a particular province, because their soldiers are based in that province and aid is used as a tool to win the hearts and minds of the

locals, the Ministry of Finance has to convince the donor with contenting reasons that the DAD can be a good tool for the donor to reach its objective.

Similarly, when a donor country's political motives behind provision of aid resources are the gaining of exposure among the international community and being recognized as a generous contributor, the Ministry of Finance has to devise negotiation strategies that would appeal to the donor's interest. This can be done through a thorough study of the donors' aid policies and long-term military plans in the country.

One evident fact from the findings was that most of the donors want to publicize their development efforts in Afghanistan, which is something that can be used as the central theme for negotiations while approaching the donors. For instance, donor participant #6 admitted that one of the main reasons that their organization has agreed to enter the aid information into the DAD is because the information becomes public and helps publicize their development efforts. Therefore, during these negotiations, the DAD has to be promoted not just as a tool that facilitates information dissemination and communication between the donors and the government but also as a publicity tool for donors' development efforts.

The inter-government negotiations must consider the interests of the line ministries and their departments in the province. At these negotiations, the central theme of the discussions can be the elimination of the bureaucratic producers from the information sharing and communication processes and the eradication of corruption. These themes are for the government organizations the most appealing themes that can be used for promoting the DAD, given that the core objective of the DAD is improving information sharing.

Negotiation capability. The negotiation capacity of a donor's representative is key to the tailoring of the messages in a way those appeals best to their interest. Some of the donor agencies

in Afghanistan do not delegate authority to their representatives who are based in Kabul. The decision making power usually lies with the people who are based at the headquarters of these donor agencies in the donor country. A 2010 review of the donors' approval process conducted by ACBAR showed that more than half of the donor agencies based in Kabul have no or very little authority to make any commitment with the government of Afghanistan, without approval from their headquarters in their home countries. Therefore, it is imperative for negotiators to know the level of authority of the donor representatives they are dealing with.

Financial portfolio of the donor. The investment portfolio of the donors does influence their interests and ambitions. Interestment of the donors who have larger portfolios might require broader goal-setting and an in-depth assessment of their needs by the initiating actors. The larger the amount of the donor's assistance portfolio, the better the chances are that they will be persuaded to enroll, given that the DAD has a reputation in other countries in managing the information of projects worth millions of dollars. The approach, however, must be systematic and the agenda for the negotiation has to be prepared based on the interest of the donor.

Latour (1987) recommends catering to the "explicit interests" of the actors while they are being enrolled (p.108). Given that the large donors' explicit interests does not simply revolve around information sharing but also aid effectiveness, it is important to promote the DAD as a large database of information management that does not only serve as an information sharing tool between the government and the donors but also as a proven contributor to the effectiveness of development efforts.

Furthermore, the DAD can be promoted as an exposure and publicity tool for small and medium scale donors during the enrollment process. In Afghanistan, the large size donors such as the United States, the World Bank, and the Asian Development Bank are known to the Afghan

people as generous supporters of the country because of their large investment portfolios and extensive exposure in the media. However, the small and medium-size donors like Turkey, Denmark, Canada and others receive very little publicity for their work.

Promoting your own interest. Latour (1987: p.109) describes this phase of the translation process as “why don’t you want what I want”. After appealing to the actors’ explicit interests, in this step, the initiating actor starts promoting its own interests and persuades other actors that what he/she believes is of equal benefit to both sides. This is the step where the government (the Afghan Ministry of Finance) can promote the DAD’s aid information transparency aspects as critical for the government’s legitimacy in the eyes of the people.

As discussed in the literature review of the study, aid transparency is one of the main reasons for which the donors and the government use ICT in aid management (CDDE, 2009). An aid transparency agenda for the interestment of donors and line ministries is appealing to both. The initiating actor can capitalize on the fact that the donors are committed to improving good governance and the legitimacy of the partner government (PD, 2006), which can be achieved by the government’s transparency in the country. Donors could be reminded that the only way to enhance transparency is to adhere to the principles of aid transparency embedded in the DAD.

The following principles of the Aid Transparency Index (2012), to which all the donors have committed to adhere to, could be included in the negotiations.

Relevance and accessibility of aid information. According to the Aid Transparency International Index (ATI) (2012), information about aid resources should be presented in plain and readily comprehensible language and formats, appropriate for different stakeholders. Information should be made available in ways appropriate to different audiences. ATI also

recommends the translation of information in the local languages for a better understanding among the locals. Given that the information exchanged between the donors and the government of Afghanistan is in English, precise and accurate translation of information in the official languages of the country is recommended.

Timeliness and accuracy of aid information. Information should be made available in a timely manner to permit the analysis and evaluation of aid and the engagement in aid processes (ATI, 2012). This means that information needs to be provided while planning, as well as during and after the implementation of aid projects and programs. Information should be managed so that it is up-to-date, accurate and complete. According to ATI (2012), it is particularly important that the relevant information is provided in line with annual and mid-term planning and the budget cycles in recipient countries.

Comparability of aid information. Donor agencies engaged in funding and delivering aid, should collect, manage, compile and publish detailed information in formats that permit comparison within and between countries (Access Info, 2012). In particular, donor-held information that relates to the recipient country should be made available in a format which can be easily reconciled with the recipient country's detailed budget classifications and planning and the budget cycles (Aid Transparency Index, 2012).

It should be ensured that the information provided includes the aid data at the transaction level, containing classifications by country, location, sector, recipient, purpose and modality.

The above elements of aid transparency can, on one hand, promote the interests of the Ministry of Finance and on the other, remind the donors of their obligations to the aid transparency initiative that are only achievable by endorsing the DAD.

With all of the above stated, according to Latour (1987), sometimes actors do not go out of their way to follow you, particularly if you are powerless and the other actors are stronger and more powerful. Therefore, he recommends a much more powerful alternative argument which he describes as *detours*.

Suggest detours. In this phase, which could be used as an alternative for the second step, the initiating actor does not shift to the enrolling actors' interest, abandon its own interest, or completely ignore the enrolling actors' interest and imposes its own, but simply offers a shortcut (Latour, 1997).

In the case of the DAD, when there is a conflict of interests in the negotiation process, the Ministry of Finance can find common grounds using the several compacts and agreements signed during government-donor conferences, including the Bonn Conference (2001), Berlin Conference (2004), London Conference (2006), Rome Conference (2007), Paris Conference (2008), Moscow Conference (2009), Hague Conference (2009), London Conference (2010), and Kabul Conference (2011).

The agreements made in these conferences have always proposed a middle ground on some key disagreements between the government and the donors, some of which included the aid delivery modalities at the Paris Conference (2008), aid transparency and report at the London Conference (2010), the use of DAD as a harmonized aid reporting format for government and donors at the Kabul Conference (2011) and others. Such references can strengthen the negotiation process and allow both the government and the donors to reaffirm their commitments to better information sharing and communication that will ultimately lead to aid effectiveness.

According to Latour (1987), a detour is appealing only if the three conditions are met: "the road is clearly cut off; the new detour is well signposted; the detour appears short" (pp. 111-

112). In the current study, this step should be used if it is felt that the second enrolling strategy is flawed, and is not persuasive enough for the donors and the line ministries. The Ministry of Finance can re-devise some of the objectives that were presented in the second strategy and re-present them by convincing the donors that “if you come my way, you will reach your objective faster.” (Latour, 1987, p.111). Latour (1987) also recommends that the alternative objectives presented in this step have to appear easily achievable for the enrolling actor, and the plan for achieving those objectives has to have clear benchmarks.

Reshuffling interests. There are certain conditions that can challenge the detour stage in an actor-network (Latour, 1987). Some of these conditions that can pose potential challenges to the alignment of interests and re-enrolment of actors in the DAD can be the following:

Detour agenda is not engaging to all. A lot of times, the detour agenda is not appealing enough for all the enrolling actors. Therefore, one of the biggest problems with detours in the translation of interests is that revising the agenda of the negotiations to appeal to the interest of some of the actors can conflict with the interest of the others. The Ministry of Finance may have a tough time convincing all the donors and line ministries with the same negotiation agenda. The donors may favor the transparency of their efforts to their own country’s tax payers and governments over the Afghan citizens, while an agenda that is focused on dissemination of information to the Afghan citizens may be more appealing to the ministry.

Keeping that in mind, the *reshuffling of interests* step suggests generalizing messages rather than devising separate appealing messages for every single actor. This is particularly difficult in a situation where a large number of enrolling actors are involved. The reshuffle is done through a merger of the first and second steps of the translation of interests (e.g. appealing to others’ interest, and promoting your own interests) to come up with a common ground that is

appealing to all the enrolling actors. This is obviously done when the Ministry of Finance fails to devise a proper and effective detour.

Detour does not cut off the other alternatives. This happens when the suggested detours do not completely cut off the alternatives that existed before the detour (Latour, 1987). In such situation, the actors are confused whether to accept the detour option or the alternatives that are still available. This means that the Ministry of Finance must make sure that, when they approach the donors with a detour that suggests alternatives for reaching the goals of the DAD, the previously proposed options for appeal are completely removed from the table. This ensures that the messages devised for all the donors are aligned with the donors' explicit interests and vice-versa.

Detour is flawed. A flawed detour is when the positioning and messaging of the detour is not fully planned in advance and lacks appeal to the actors' interest (Nayar, 1988). The detour that the Ministry of Finance proposes should be included in the step-by-step plans that target the donors and line ministries, and strengthen the aid transparency and information sharing processes. Donors are also responsible to commit to the proposed detour and ignore the alternatives. Line ministries, on the other hand, need to adhere to the Ministry of Finance's enrollment requests, as the government's prime stakeholders in the DAD.

Become indispensable. This is the last step of the process that ensures that the previous steps that have been taken by the Ministry of Finance and its partners have not been in vain and that the DAD actor-network will survive. Once the first set of important actors are enrolled using the above translation techniques, the DAD actor-network gains momentum and moves towards long-term sustainability. Within no time, the DAD and the enrolled actors become a routine black box for other actors.

A strong alliance of donors (e.g. USAID, World Bank, Japan, ADB) signing up for the DAD, endorsing the system as an effective information sharing and communication tool will attract other medium and small-size donors to self-enroll in the system. The stronger and the bigger the support to DAD gets, the more it will ensure the long-term stability of the actor-network.

According to Latour (1987), this is the phase where the initiating actors become an Obligatory Passage Point (OPP). Latour (1987) includes that the initiating actors would simply set at a particular place, and the others would flow effortlessly through them and participate in further constructing their network and spreading their black boxes. The donors and the line ministries would simply rush to enroll when they learn about the usefulness and strength of the system.

Although the enrollment process and alignment of interest in the DAD actor-network is a time-consuming and cumbersome process, if it is done following the above mentioned enrollment process, the DAD would become indispensable for all the donors and government ministries and ensure the survival of the system. A strong DAD with all the actors' interests fully committed to it would ensure a smooth information sharing process and ultimately the effectiveness of the aid investments in Afghanistan.

Summary

This chapter discussed the findings presented in chapter 5. The discussions in this chapter implied that one of the main challenges that has hampered the information sharing process and aid effectiveness in Afghanistan has been the segregation of human influences from technology. Moreover, the rampant corruption and political unwillingness to adapt to technological advancement has further deteriorated the situation.

Finally, it has been found that the technology actors (e.g. DAD, Internet, Portals and computers) have all been fully accessible and flexible to adapt to the needs of the human actors (e.g. ICT staff, policymakers, aid management strategists and others), while the challenges have always been posed by the human actors who have refused to use technology due to all the factors described in the findings.

Considering the above challenges, in order to enroll or re-enroll the human actors, the study proposed a five step “translation of interests” process that appeals to the interest of the donor and government agencies. The five step strategy, which is based on Latour's (1987) enrolling strategies, recommends techniques that would make the enrolling process of the actors appealing and viable for the initiating actors.

Chapter 6: Conclusion

From the early 1990s, several aid recipient countries began to digitalize their aid coordination activities by using the Aid Information Management Systems (AIMS), including the DAD. The integration of the ICT in the field of aid management profoundly impacted the process of information sharing and communication between donors and the aid recipient governments.

Afghanistan, as an aid-dependent state throughout its history, remained deprived of the ICT benefits until the fall of the Taliban regime in 2001. With the collapse of the Taliban regime, the unprecedented flow of foreign aid in the country forced the government of Afghanistan to adopt technologies that would help the management of the ever-increasing volume of aid in the country. In 2003, the first AIMS, the Development Assistance Database (DAD), was setup in Afghanistan to track, manage and report the foreign-aid related development activities in Afghanistan.

Focusing on the DAD, the current research sought to find out the influence of aid management technologies in the information sharing and communication process between donors and the government of Afghanistan. The current research also studied the correspondence of the DAD's aid effectiveness tools to the aid effectiveness principles of the Paris Declaration and whether the DAD adhered to the principles or not.

The study found that, because of the existence of limited technology infrastructure and administrative and political barriers against technology, 10 years since the establishment of the DAD, the country is still struggling with the use of AIMS for aid coordination activities. There are several social and technical factors that challenge the integration of technology in the field of aid management in the country.

Drawing upon the ANT' framework of translation of interests, the study identified the existing social and technical challenges that prevent the DAD from becoming a stable actor-network. The study found that the challenges were mainly posed by the human actors from the donor agencies and the government who refused to enroll and align their interests with those of the DAD actor-network, due to several socio-political factors. Using Latour's (1987) enrolling strategies, the study made recommendations for appealing to the interests of some of the key actors and their enrollment in the DAD actor-network.

On the DAD's adherence to aid effectiveness principles, employing the aid effectiveness framework, the study found that although there are many areas that had to be improved in order for the DAD to become much more responsive to the principles, the system had been performing in a satisfactory manner in promoting aid effectiveness in the country.

Limitations of the study

There were several challenges involved in conducting a primary research on the DAD Afghanistan. Currently, DAD is being actively used in more than 35 donor agencies based in and outside Afghanistan (MoF, 2012). In the context of this study, it was only possible to recruit participants from the donor agencies that were based in Kabul. Additionally, due to the sensitive nature of aid information, the interview participants had to go through a long approval process within their organizations before they were cleared to participate in the research.

Moreover, bureaucracy in the Afghan government posed further challenges for the researcher to conduct the interviews on time. As a result of this, the entire timeline of the thesis was affected. In addition, staff turnover in the government and the donor offices has been another challenge as the newly appointed staff members were not able to provide useful and satisfactory

answers to some of the interview questions due to their lack of experience with the DAD Afghanistan.

In addition, Synergy International Systems, the main developer and owner of the system, did not respond to the researcher's repeated email requests. The participation of Synergy International Systems could have provided a useful prospective about the development of the system and the existing challenges.

Contribution and Future Research Implications

An important contribution of the study to the ICT research in Afghanistan is the fact that it highlights the significance of technology in fighting corruption and reducing government bureaucracy. The study revealed that those who are involved in corruption are considering technology a threat because it increases transparency and reduces government bureaucracy, thus eliminating the opportunity for corruption.

In addition, the findings of this research open several important areas of investigation in relation to ICT research and aid management in Afghanistan. Despite the extensive import of ICT in the past 12 years and the establishment of dozens of databases within the government structure, very little research has been done on the effectiveness of these systems.

A major database that is interlinked with the DAD is the State Budget Planning System (SBPS) that receives information from the DAD for budget planning and, in turn, feeds expenditure of the budget into the DAD. The effectiveness of the SPBS and DAD are tied to each other. Some of the challenges that the DAD faces, might be related to the SBPS, therefore a thorough study of the effectiveness of the system and its implications on effectiveness of aid in Afghanistan is important.

In addition, communication research on e-governance is of importance for Afghanistan. The research on e-governance can learn from the current study and decide which aspects of the technological and social aspects to look into.

Finally, although the findings and recommendations of this study cannot be generalized for the other 34 developing countries that use the DAD, there are, definitely, lessons that could be learned from the current research findings and used in studying the socio-technical aspects of the DAD and similar databases in other countries. This study could also help advance the use of ANT in the context of the developing countries that struggle with the understanding and investigation of ICT challenges.

References

- ACBAR. (2010). *Aid Investments in Afghanistan*. Retrieved December 10, 2011 from <http://www.acbar.org>.
- Accascina G., Cox A., Nadol J., Silovic D., Hammond B., & Petras R. (July, 2006). *Role of Aid Information Management Systems in Implementing the Paris Declaration on Aid Effectiveness at the Country Level*, DAC Working Party on Aid Effectiveness, Eighth Meeting, 5-7 July 2006.
- Adler, R. B., Rosenfeld, L. B., Proctor, R. F., & Winder C. (2009). *Interplay: The Process of Interpersonal Communication*. UK: Oxford University Press.
- Afghanistan Ministry of Finance & Aid Management Directorate. (2010). *Afghanistan Aid Policy*. Retrieved January 20, 2012 from <http://www.mof.gov.af>.
- Afghanistan Ministry of Finance. (2010). *Donor Cooperation Report*. Retrieved December 15, 2011 from <http://www.budgetmof.gov.af/AMD>
- Afghanistan Ministry of Finance. (2010). *DAD Users' Manual*. Retrieved September 20, 2011 from <http://www.budgetmof.gov.af>
- Afghanistan Ministry of Finance. (2010). *External Assistance at a Glance*. Retrieved December 20, 2011 from <http://www.budgetmof.gov.af>
- Agarwal, N. C. (1979). On the interchangeability of size measures. *Academy of Management Journal*, 22, 404-409.

- Aidinfo. (2009). *The Costs and benefits of Aid transparency*. UK. Retrieved November 2012 from <http://www.aidinfo.org/wp-content/uploads/2009/10/Costs-and-benefits-analysis.pdf>
- Aidinfo. (2008). *Better Information, Better Aid*. UK. Retrieved December 2012 from http://www.aidinfo.org/wp-content/uploads/2008/08/better-information-better-aid_eng1.pdf
- Akrich, M. (1992). The description of technical artifacts. In W. E. Bijker & J. Law (Eds.), *Shaping Technology/Building Society: Studies in Sociotechnical Change* (pp. 205–224). Cambridge, MA: MIT Press.
- Alavi, M. and Carlson, P. (1992). *A Review of MIS Research and Disciplinary Development*. *Journal of Management Information Systems*, 8(4): 45-62.
- Alexander, K. L., Entwisle, D. R., & Bedinger, S. D. (1994). When expectations work: Race and socioeconomic differences in school performance. *Social Psychology Quarterly*, 57, 283–299.
- Allan, G. (2003). A critique of using grounded theory as research method. *Electronic Journal of Business Research methods*, 2(1), 1-10.
- Althusser, L. (1963) *For Marx* (Brewster, B. trans). London: Vintage Press.
- Aufrecht, J., Brough, M., Clarke, A., & Rank, R. (2012). *Pilot Aid Transparency Index*. London: Publish What You Fund.
- Babbie, E. (1995). *The practice of social research*. New York: Macmillan.
- Bach [J.R.](#), Abor, A, [Paul, S.](#), & Jain, R. (1993). *A visual information management system for the interactive retrieval of faces*. Retrieved March 21, 2012 from

http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=234774%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D234774

Baudienville, Geraldine & Davin, Eric. (June 2008). *Aid Effectiveness in Afghanistan paper prepared for the Paris conference*, Commissioned by the French Government. Altai Consulting

Benbasat, I, Goldstein, D. K. & Mead, M. (1987), The Case Research Strategy in Studies of Information Systems, *MIS Quarterly*, 11, pp. 369-386.

Berglund, A., Daniels, M., & Pears, A. (2006). Qualitative Research Projects in Computing Education Research: An Overview. *Australian Computer Science Communications*, 28(5), 25 - 34.

Bijker, W., Hughes, T. P. & Pinch, T. (Eds.). (1987). *The social construction of technological Systems: new directions in the sociology and history of technology*. Cambridge, MA: MIT Press.

Callon, M. (1986). The sociology of an actor-network: The case of the electric vehicle. In M. Callon, J. Law, & A. Rip (Eds.), *Mapping the dynamics of science and technology* (Vol. 23, pp. 19-34). London: Macmillan Press. Retrieved from <http://epl.scu.edu:16080/~stsvales/readings/Callon.pdf>

Callon, Michel. (1991). Techno-Economic Networks and Irreversibility. In Law, J. (ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*. London: Routledge.

Castillo, J. J. (2009). Convenience sampling. Retrieved June 27, 2010 from Experiment Resources: <http://www.experiment-resources.com/convenience-sampling.html>

- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.
- Cherns, A., (1976). The Principles of Sociotechnical Design. *Human Relations*, 2(9), 783-792
- Cooper, H. M., Hedges, L. V., & Valentine, J. C. (2009). *The handbook of research synthesis and meta-analysis*. New York: Russell Sage Foundation.
- Cooper, D. R., & Schindler, P. S. (2006). *Business Research Methods* (9th edition). USA: McGraw-Hill.
- Cowton, C. J. (1998). The use of secondary data in business ethics research. *Journal of Business Ethics*, 17(4), 423–343.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Creswell, John W. (2007). *Research design: Qualitative, quantitative, and mixed methods of approaches*. Los Angeles: SAGE publication.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage.
- Cresswell, K.M., Worth, A., Sheikh, A. (2010). Actor Network Theory and its role in understanding in implementation of information technology developments in healthcare. *Health Informatics Journal*, 18(4), 251-270.
- Cusumano, M. A. & Selby, R. W. (1997). *How Microsoft Builds Software*. *Communications of the ACM*, 40(6): 53-61.

Damasevieius, R. (2007) Analysis of software design artifacts for socio-technical aspects.

INFOCOMP. *Journal of Computer Science*, 6(4), 07–16.

Darke, P., Shanks, G. & Broadbent, M. (1998). Successfully Completing Case Study Research:

Combining Rigour, Relevance and Pragmatism. *Information Systems Journal*, 8, 273-289.

Davies, L.J. Nielsen, S. (1992). *An Ethnographic Study of Configuration Management and*

Documentation Practices in an Information Technology Centre. The Impact of Computer

Supported Technology on Information Systems Development. Amsterdam,

Elsevier/North Holland.

Dick, B. (1990). *Convergent Interviewing*. Brisbane: Interchange.

Eisenhardt, K. M. (1989). Making fast strategic decision in high-velocity environments.

Academy of Management Journal, 32(3), 543-576.

Ellul, J. (1962). The Technological Order. *Technology and Culture*, 3(4), 394-421.

Ellul, J. (1964). *The Technological Society*. (Wilkinson, J. trans). Vintage Books, New York.

Eriksson, J. & Modin, S. (2003) *Communication in development: A study on intercultural*

communication in the development co-operation of Forum Syd in Tanzania, Minor Field

Study, Mid Sweden University, Sundsvall

Feenberg, A. (1991). *Critical Theory of Technology*. New York: Oxford University Press.

Firth, L., Mellor, D. J., Moore, K. A., & Loquet, C. (2004). How can managers reduce employee

intention to quit?. *Journal of managerial psychology*, 19(2), 170-187.

Glaser, B. G., & Strauss, A. L. (1967). *Discovery of grounded theory: Strategies for qualitative*

research. Chicago: Aldine.

- Goodhand, J. (2002). Aiding violence or building peace? The role of international aid in Afghanistan. *Third World Quarterly*, 23(5), 837-859.
- Gregory, F. H. (1995). Soft system models for knowledge elicitation & representation. *Journal of Operational Research Society*, 46, 562-578.
- Green, J., & Thorogood, N. (2009). *Qualitative methods for health research*. Los Angeles: SAGE.
- Grint, K. & Woolgar, S. (1997). *The Machine at Work - Technology, Work and Organisation*. Polity Press, Cambridge.
- Grönlund, A., Heacock, R., Sasaki, D., Hellström, J., & Al-Saqaf, W. (2010). *Increasing transparency and fighting corruption through ICT: Empowering people and communities*. Stockholm, Sweden: The Swedish Program for ICT in Developing Regions (SPIDER).
- Hartley, J. (2004). Case study research. In Catherine Cassell & Gillian Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp.323-333). London: Sage.
- Hanseth, O., & Monteiro, E. (1998). Changing irreversible networks. *Proceedings of BCIS*.
- Heeks, R., & Stanforth, C. (2007). Understanding e-Government project trajectories from an actor-network perspective. *European Journal of Information Systems*, 16, 165-177.
- Herbst, P. G. (1974). *Socio-technical design*. London: Tavistock Publications.
- High Level Forum on Aid Effectiveness. (2005). *Paris Declaration report*. Retrived january 3, 2012 from <http://www.iheu.org/parisdeclaration>

High Level Forum on Aid Effectiveness. (2011). *Paris Declaration report*. Retrived january 3, 2013 from

<http://www.oecd.org/dac/effectiveness/fourthhighlevelforumonaideffectiveness.html>

High level forum. (2005, February). *Paris declaration on aid effectiveness: Ownership, harmonisation, alignment, results, and mutual accountability*. Paper presented at Paris Conference on aid effectiveness, Paris.

Hughes, T. P. (1986). The seamless web: Technology, science, etcetera, etcetera. *Social Studies of Science, 16*(2), 281-292.

Karagözoğlu, Ş., & Filiz Ulusoy, M. (2005). Chemotherapy: the effect of oral cryotherapy on the development of mucositis. *Journal of clinical nursing, 14*(6), 754-765.

Katz, H. (2006). *Global survey or multi national survey? on sampling for global survey*. UCSB, Business Administration. UCSB.

Keyton, J. (2006). *Communicating in groups: Building relationships for group effectiveness* (3rd ed.). New York, NY: Oxford University Press.

Keyton, J. (2011). *Communication and organizational culture: A key to understanding work experience*. Thousand Oaks, CA: Sage.

Kimberly, J. R. (1976). Organizational size and the structuralist perspective: A review, critique, and proposal. *Administrative Science Quarterly, 21*, 571-597.

Krippendorff, K. (1980). *Content analysis: An introduction to its methodology*. Beverly Hills, CA: Sage.

Lancaster, Carol (2007). *Foreign Aid: Diplomacy, Development, Domestic Politics*. University of Chicago Press.

Latour, Bruno. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge: Harvard University Press.

Latour, B. (1988a). *The Pasteurization of France*. Harvard University Press, Cambridge, Ma.

Latour, B. (1988b). *The Prince for Machines as well as for Machinations*. Technology and Social Process. Elliott, B. (Ed). pp. 20-43. Edinburgh University Press, Edinburgh.

Latour, B. (1993). *We have never been modern*. Harvester Wheatsheaf, Hemel Hempstead.

Law, J. (1987a). Technology and Heterogeneous Engineering: The Case of Portuguese Expansion. In Bijker, Hughes & Pinch (eds.) *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Cambridge: MIT Press.

Law, J., & Hassard, J. (1999). *Actor network theory and after*. Oxford: Blackwell Publishers.

Law, J., Callon, M. (1992). The Life and Death of an Aircraft: A Network Analysis of Technical Change. In Bijker & Law (eds.) *Shaping Technology/ Building Society: Studies in Sociotechnical Change*. Cambridge: MIT Press.

Leiss, W. (1990). *Under technology's thumb*, Montreal: McGill-Queen's University Press

Liedtka, L.M. (1992). Formulating hospital strategy: moving beyond a market mentality

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.

Lodico, M. G., Spaulding, D. T., & Voegtle, K. H. (2006). *Methods in educational research: From theory to practice*. San Francisco (CA): Jossey-Bass.

Luhmann, Niklas (1986). The autopoiesis of social systems. In: Felix Geyer and Johannes van der Zouwen (eds.), *Sociocybernetic Paradoxes*. pp. 172-192. London: Sage.

Marshall, G. (1998). [research ethics](#). A Dictionary of Sociology. Retrieved September 22, 2011 from <http://www.encyclopedia.com>

Mathison, S. (1988). Why triangulate? *Educational Researcher Journal*, 17(2), 13-19.

Maxwell, J. A. (2005). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage.

McMaster, T., Vidgen, R. T. & Wastell, D. G. (1997). Towards an Understanding of Technology in Transition. Two Conflicting Theories. *Information Systems Research in Scandinavia*, IRIS20 Conference, University of Oslo, Hanko, Norway.

Mefalopulos, Paolo & World Bank. (2008). *Development communication sourcebook: broadening the boundaries of communication*. Washington, D.C: World Bank.

Merriam, S. B. (1984). *Qualitative research and case study applications in education: Revised and expanded from case study research in education* (2nd Ed.). San Francisco, CA: Jossey-Bass.

Ministry of Finance. (2011). *Donor Performance Assessment Framework – results and lessons learnt on transparency and mutual accountability Report*. Retrieved February 8, 2012 from [http:// www.aidtransparency.net/...content/uploads/2009/.../Rwanda-present...](http://www.aidtransparency.net/...content/uploads/2009/.../Rwanda-present...)

Ministry of Finance and Economic Planning, Rwanda, & OECD (2011), *Medium-term Predictability of Aid in Rwanda: How Comprehensive Are Donors' Forward Spending Plans?*, Discussion Paper presented at the 2011 Government of Rwanda and Development Partners Retreat, Rubavu, Rwanda.

- Mishra, D., Mishra, A. & Ostrovska, S. (2012). Empirical Evaluation of Physical Ambiance on Communication, Collaboration and Coordination in Agile Software Development, *Information and Software Technology* (Elsevier), 54(10), 1067-1078.
- Monteiro, E., & Hanseth, O. (1995). Social shaping of information infrastructure: On being specific about the technology. In W. J. Orlikowski, G. Walsham, M. R. Jones & J. I. DeGross (Eds.), *Information Technology and Changes in Organisational Work* (pp. 325–343): Chapman & Hall.
- Myers, M. D. (20th May, 1997). Qualitative Research in Information Systems. *MIS Quarterly*, <http://misq.org/misqd961/isworld/>.
- Noble, D. (1984). *Forces of Production: A Social History of Industrial Automation*. New York: Oxford University Press.
- Ojakaa, D., Okoth, E., Wangila, S., Ndirangu, M., Mwangi, N., & Ilako, F. (2011). Making aid effective at the community level: the AMREF experience. *Development in Practice*, 21(7), 1013-1022. Retrieved March 23, 2012 from <http://journals1.scholarsportal.info/tmp/13115123589462277398.pdf>
- Organization for Economic Cooperation and Development & IMF. (2004). *Glossary of Foreign Direct Investment Terms and Definitions*. Retrieved February 15, 2012 from <http://www.OECD.org>
- Organization for Economic Cooperation and Development. (2005/8) *The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action*. Paris: OECD. Retrieved March 2013 from <http://www.oecd.org/dataoecd/30/63/43911948.pdf>

- Organization for Economic Cooperation and Development. (2008). *2008 Survey on Monitoring the Paris Declaration: Making Aid more Effective by 2010*. Paris: OECD. Retrieved March 10, 2012 from <http://www.oecd.org/dataoecd/58/41/41202121.pdf>
- Organization for Economic Cooperation and Development. (2009). *Monitoring the Principles for Good International Engagement in Fragile States and Situations*. Kabul: OECD. Retrieved December 10, 2011 from <http://www.oecd.org/dataoecd/18/16/44651689.pdf>
- Organization for Economic Cooperation and Development. (2009). South Learning on Aid Information and Development Effectiveness. Proceedings of of DAD – South conference. Washington DC: OECD.
- Organization for Economic Cooperation and Development. (2011, September 29). Retrieved 2011, from www.OECD.org.
- OECD (2010), *Summary Analysis of DAC Members' and Observers' Reports on their Accra Agenda for Action (AAA) "Beginning Now" Commitments*, paper presented at the DAC Senior Level Meeting 14-15 April 2010, OECD, Paris.
- OECD (2011a), *Future Aid Flows: Preliminary Findings of the 2011 Survey on Donors' Forward Spending Plans 2011-2013*, OECD, Paris.
- OECD (2011b), *OECD Working Group on Bribery: 2010 Annual Report*, OECD, Paris.
- Oldham, G. R., & Hackman, J. R. (1981). Relationships between organizational structure and employee reactions: Comparing alternative frameworks. *Administrative Science Quarterly*, 26, 66-83.
- Orlikowski, W. J. & Baroudi, J. J. (1991). Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research*, 2(1), 1-28.

Paris Declaration on Aid Effectiveness (2005). *Paris Declaration on aid effectiveness –*

Ownership, harmonisation, alignment, results and mutual accountability, High Level Forum2005-03-02, Paris

Prothro, V. C. (1976). *Information management systems: Data base primer*. New York: Petrocelli/Charter.

[Quebral, Nora C.](#) (1972). What Do We Mean by ‘Development Communication. *International Development Review*, 15(2), 25–28.

Rose, N. (1989). *Governing the soul: The shaping of the private self*. New York: Routledge.

Rose, J., Jones, M. & Truex, D. (2005). Socio-theoretic accounts of IS: the problem of agency. *Scandinavian Journal of Information Systems*, 17(1), 133-152

Shaw, D. T., Malthus, T. J., & Kupiec, J. A. (1998). High-spectral resolution data for monitoring Scots pine (*Pinus sylvestris* L.) regeneration. *International Journal of Remote Sensing*, 19(13), 2601-2608

Stake, R. E. (1994). Identification of the case. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 236-247). Thousand Oaks, CA: Sage.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision*, 39(7), 551-555

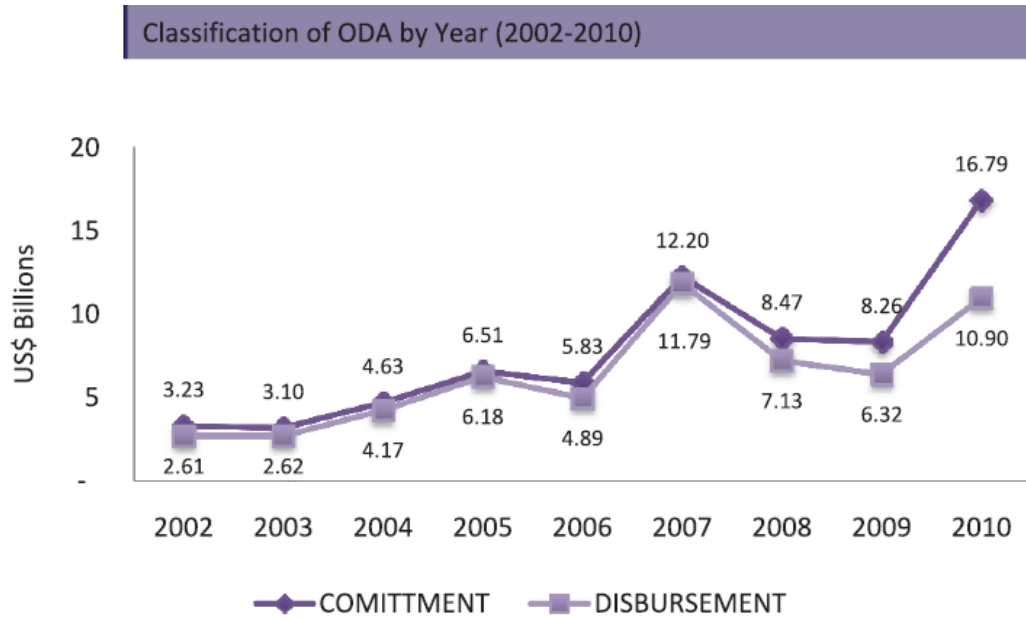
Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.

- Tatnall, A. & Gilding, A, (1999). *Actor-network theory and information systems research*. Paper presented at the 10th Australasian Conference on Information Systems. Retrieved April 2, 2012 from <http://www2.vuw.ac.nz/acis99/Papers/PaperTatnall-069.pdf>
- Tatnall, Arthur. (2011). *Actor-network Theory and Technology Innovation: Advancements and New Concepts*. Hershey, PA: Information Science Reference.
- Te'e ni, D., Sagie, A., Schwartz, D.G., Zaidman, N., & Amichai-Hamburger, Y. (2001). The 138 process of organizational communication: A model and field study. *IEEE Transactions on Professional Communication*, 44(1), 6-20.
- The Reconstruction and Development Agency Rawanda. (2006). Mid-year Review Report. Srilanka, Retrieved March 10, 2013 from http://www.preventionweb.net/files/2078_VL108807.pdf
- Tolonews (Director). (2011). *History of Aid in Afghanistan* [Motion Picture]. Afghanistan: Tolo.
- Transparency International (2011), *Global Corruption Barometer 2010*, Transparency International, Berlin.
- Trist, E. L. (1981). The sociotechnical perspective. In A. Van de Ven & W. F. Joyce (eds.), *Perspectives on organizational design and behavior* (pp. 19-69). New York: Wiley & Sons.
- United Nations (2010), *Review of Progress in International and National Mutual Accountability and Transparency on Development Cooperation*, Background Paper for Development Cooperation Forum High-Level Symposium, revised version, June 2010, United Nations Department for Economic and Social Affairs, New York.

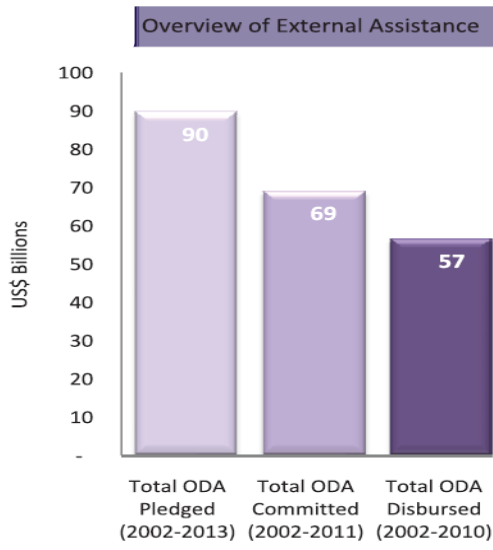
- U.S. Government & Accountability Office. (February 2012). *2012 Annual Report: Opportunities to Reduce Duplication, Overlap and Fragmentation, Achieve Savings, and Enhance Revenue*, U.S. Government and Accountability Office
- Vidgen, R., T. & McMaster, T. (1996). Black Boxes, Non-Human Stakeholders, and the Translation of IT through Mediation. In Orlikowski et al. (Eds.) *Information Technology and Changes in Organizational Work* (pp. 250-271). London: Chapman & Hall.
- Waldman, M. (2008). *Falling Short: Aid Effectiveness in Afghanistan*. Retrieved December 10, 2011 from <http://reliefweb.int/node/260552>
- Walsham, G. (1997). Actor-network theory and IS research: Current status and future prospects. *Paper presented at the Proceedings of the IFIP TC8 WG 8.2 International Conference on Information Systems and Qualitative Research*.
- Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The Qualitative Report*, 4(3&4). Retrieved February 25, 2012, from <http://www.nova.edu/ssss/QR/QR4-3/winter.html>
- World Bank. (2006). *Taking stock: An Update on Vietnam's Economic Development by the World Bank in Vietnam*. Hanoi.
- Yin, R. K. (1994). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.
- Yin, RK (2003). *Applications of case study research*. Thousand Oaks, CA: Sage.
- Ytterstad, B., Smith, G. S. & Coggan, C. A. (1998). Harstad injury prevention study: prevention of burns in young children by community based intervention. *Injury Prevention*, 4(3), 176–180.

Appendixes

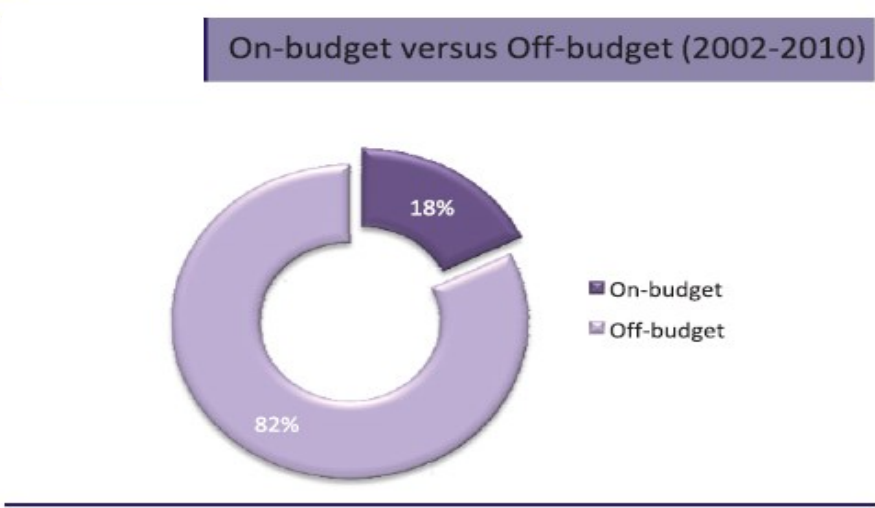
Appendix 1: Total amount of foreign aid flow to Afghanistan from 2002 to 2010



Source: Development Cooperation Report (2010), Afghanistan Ministry of Finance



Appendix 2: Aid resources On-budget vs. Off-budget



Source: Development Cooperation Report (2010), Afghanistan Ministry of Finance

Appendix 3: Interview Guide & Protocol

This interview guideline (protocol) was based on semi-structured interview, a method of data collection for qualitative communication research.

General rules for the interview:

- 1- Face to face interview
- 2- The interview will take place in a comfortable setting for potential participants.
- 3- Each interview will last one to one hour

Kinds of questions:

- 1- General interview questions (GIQ)
- 2- Follow up questions

Interview phases:

- 1- Introduction phase
- 2- Specific Interview questions and follow-up questions
- 3- Wrap-up phase

The interview will proceed with an introduction phase. The introduction phase included, the researcher introducing himself and explaining the benefit of the research project, signing consent form, and some general conversation between researcher and the participant. The second phase of the interview was the warm-up phase. In the warm-up phase the researcher asked some general interview questions (GIQ). Both introduction phase and the warm-up phase will help develop rapport, and general knowledge of participants on topic (Stewart, 2002). As the participants felt more at ease and become familiar with the topic, specific interview questions (SIQ) asked from participant.

During the third phase, the researcher asked some follow up questions if the answers from participants are ambiguous and/or require more details. And finally in the wrap-up phase the participant were asked to add any additional comments that he did not talk about during interview. Also in the fourth phase, if participants had any questions or concerns, the researcher tried to answer them. The interview ended by thanking the participant for his participation in the study.

All questions were organized in a hierarchy to end up answering two main research questions in the study. The answer for Specific Interview Questions (SIQ) and the follow up questions will answer theory based questions (TBQ) and the answer for TBQs will answer the two main research questions (MRQ).

The general interview questions (GIQ) will contribute to answer MRQs as well as review the existing literature on the topic. Stewart (2002) calls this arrangement of questions, a moderately scheduled interview where the questions are specific, but the interviewer enjoys a degree of flexibility to change the order of questions or use additional inquiry. Questions follow some of the “Nine rules for effective question development” (Stewart, 2002, p. 104); questions will be clear—meaning is evident and is easy to comprehend and concise—not too long questions.

Interview:**Phase 1 (introduction):**

Mr. /Ms. (-----), thanks so much for agreeing to take part in this research. The reason that I choose to do this research is (why it is important, recalling my past work experience with the Development Assistance Database (DAD) Afghanistan, benefit of research for both donor agencies and the government of Afghanistan, etc.)

GIQ 1: Mr. /Ms. (-----), could you tell me a little bit about DAD Afghanistan?

Thanks so much Mr. /Ms. (-----) for the information. The purpose of this interview is to highlight the challenges of the DAD Afghanistan, whether technical or organizational, and address. This out of this research will hopefully help your organization have less trouble with using the DAD Afghanistan.

This interview is consisted of 15 questions and will take one hour of your valuable time, and I hope that is ok with you Mr. /Ms. (-----)

Thank you! And before I proceed with questions, I would like to give you this consent form. Please read this and if you don't see any problem, I would like both of us to sign this as an agreement for participating in this research.

Ok sir/madam, do you have any questions?

Thanks for signing this. I once again assure you that you can withdraw from this research project at any time. You would have to let me know if you do that.

One more thing Mr. /Ms. (-----). In order to prevent losing any important details in our interview, I want to record our interview. I will only use the recording to prepare a written transcript.

Thanks for agreeing! / It is not a problem at all. I will just take notes.

Phase 2 (General Interview Questions):

Are you ready to begin the interview?

GIQ to Data Entry Officer,

1. What do you think of the technology of the interface of DAD?
2. Is DAD user-friendly?
3. What trainings did you receive for using DAD?
4. What information do you enter in DAD?
5. Is DAD designed in a way to collect all the information which you think are necessary to be shared?
6. As a data entry officer, what fields do you think are missing in the system?

Follow up questions**GIQ to Policy level employees/ DAD Developers:**

1. What computer language/software and other technological tools are used in creating DAD?

2. What measures are taken into account while adopting DAD to the context of Afghanistan?
3. Who has access to input information in DAD Afghanistan? Why and How?
4. How useful is the information produced by DAD?
5. Does the information entered into the system promote aid transparency? If so, How?
6. Do you think the information produced by the DAD provides a clear picture of the aid investments? If not, what improvements do you think should be made?

Follow up questions

GIQ to DAD Afghanistan's outside users:

1. How often do you access the system to obtain information?
2. How useful do you find the information accessed through DAD?
3. How effective the system is in creating transparency about aid?

Follow up questions

Phase 2 (Wrap-up):

Mr. /Ms. (-----), these were all my questions. Do you have anything to add?

Do you have any questions or concerns? How did you like the interview?

Thanks so much for participating!

Appendix 4: List of documents analyzed.

No	Name of Document	Source	Link
1	Afghanistan Aid Policy	Afghanistan Ministry of Finance & Organization for Economic Development Cooperation	http://www.aideffectiveness.org/Tools/Aid-Management/Action-Plans/Afghanistan-Aid-Policy.html
2	Afghanistan National Development Strategy	Afghanistan Ministry of Finance	http://www.imf.org/external/pubs/ft/scr/2009/cr09319.pdf
3	Paris Declaration & Accra Agenda for Action	Organization for Economic Development Cooperation	http://www.imf.org/external/pubs/ft/scr/2009/cr09319.pdf
4	Corruption perception Index	Transparency International	http://cpi.transparency.org/cpi2012/
5	DAD user manual	Afghanistan Ministry of Finance & Synergy International Systems Inc.	http://dadafghanistan.gov.af/dad/Documents/help/Application/ENG/UsersGuide/DAD_AFGHANISTAN_Analytics_UserManual.pdf
6	State Budget Planning System Manual	Afghanistan Ministry of Finance & Synergy International Systems Inc.	http://dadafghanistan.gov.af/dad/Documents/help/Application/ENG/UsersGuide/AFGHANISTAN_SBPS_UserManual.pdf
7	2011 Survey on Monitoring the Paris Declaration	Organization for Economic Development Cooperation	http://www.oecd.org/dac/effectiveness/2011surveyonmonitoringtheparisdeclaration.htm
8	Development Cooperation Reports (2008-2012)	Afghanistan Ministry of Finance & United Nation Development Program	www.budgetmof.gov.af
9	Afghanistan ICT strategy	Ministry of Communication and Information Technology	http://mcit.gov.af/en/page/4876/5623
10	Afghanistan Compact	OECD	http://www.thekabulprocess.gov.af/index.php/monitoring/benchmarks/afghanistan-compact
11	Aid Investments in Afghanistan	Agency Coordination Body for Afghan Relief	

Appendix 5: DAD opening page and interface

DAD Afghanistan

Contact us: ali.abdullah@unp.org
au.mbwaf@unp.org
 +93(0)700 161 205

For General Public
What can I do in DAD?

Once you enter the DAD system, you will be able to:

- View all the projects
- See project details
- Create Maps, Charts, and Reports

[Click here to enter DAD](#)

[Click here to enter DAD Dari](#)

User Name:
 Password:

[Login](#)

[Request a new account](#) | [Forgot your password?](#)

UNDP Supported by UNDP

(DAD reporting page, Retrieved 30 February 2012)

NATIONAL BUDGET AND AID MANAGEMENT SYSTEMS
 AFGHANISTAN

Contact us: support.fms@budgetmof.gov.af | [About](#) | [Log In](#) | [Help](#)
 Tel: +93(0)700 161 205

Navigation: [List](#) | [Chart](#) | [Map](#) | [Report](#) | [Help](#)

APPLICATIONS

- Core Project
- External Project
- Grant/Loan Profile
- Donor Profile

SEARCH

Advanced Search

FILTERS

Remove Filters
View Criteria

Filter by:

- Funding Source
- Funding Agency
- 1st Level Implementing Agency
- Sub Pillar
- Sector
- Province
- Implementation Status
- DAD Reference Number
- Expenditure Category
- Last Modified On (Month/Year)
- More Filters...

PUBLIC VIEWS

- save as for Funding Agencies
- 1392 BC1 Dev Bgt Report
- 1391 Development Budget
 - 1391 Core Dev Bgt and Allotments
 - 1391 Core Dev Budget By Province
- 1391 BC1 Development
 - 1390 BC1 Dev Budget by Program
 - 1391 BC1 Dev Budget by Sector
 - 1391-02-03 BC1 Dev By Sector
- 1390 Development Budget
 - 1390 Development budget Allotment
 - 1390 Dev Bgt - Commit-EstCF-Inc-Dec
 - 1390 National Development Budget - B
 - 1390 Development Budget Report Crt
- 1389 Development Budget
 - 1389 National Development Budget
 - 1389 External Budget
 - 1389 Allotment
 - 1389 National Development Budget - B
- General Views
 - Commitment And Disbursement By D

List

Funding Agency / Project	2000			2001			2002			2003	
	Title	Committed (USD)	Disbursed (USD)	Title	Committed (USD)	Disbursed (USD)	Title	Committed (USD)	Disbursed (USD)	Title	Committed (USD)
+ Afghan Independent Human Rights Commission											
+ Afghanistan Peace and Reintegration Trust Fund (APRP)											
+ Afghanistan Reconstruction Trust Fund											31,542
+ Aga Khan Development Network											4,000
+ Asian Development Bank								15,415,500			43,645
+ Austcare											630
+ Australia											805
+ Austria											58
+ Avian and Human Influenza Trust Fund/World Bank											
+ Belgium											362
+ Brunel Darussalam											
+ Bureau Population Refugees Immigration											1,578
+ Canada								5,762,741	2,480,000		2,777
+ CDC (Centers for Disease Control & Prevention)											3,053
+ China											
+ Colombo Plan											
+ Counter Narcotics Trust Fund (CNTF)											
+ Czech Republic											
+ Denmark											26,773
+ ECHO								900,000	900,000		
+ European Union (EU)											
+ Faroe Islands											20
+ Finland					452,076	452,076		765,516	765,516		1,296
+ France											
+ Germany											40,152
+ Global Alliance for Vaccination and Immunization											
+ Global Fund											
+ Government of Afghanistan								15,040,000	8,700,000		1,849
+ Greece											
+ HARAKAT											
+ India											
+ International Committee of the Red Cross											90

Copyright 2013 SYNERGY INTERNATIONAL SYSTEMS, INC.

(DAD reporting page, Retrieved 30 February 2012)

Appendix 6: Consent Form

Socio-technological Analysis of Development Assistance Database Afghanistan: A Case Study

Invitation to Participate: I am invited to participate in the abovementioned research study conducted by Mohammad Sediq Bezhan under the supervision of Prof. Rocci Luppicini, Ph.D.

Purpose of the Study: The purpose of the study is to highlight the importance of understanding the benefits and challenges of DAD within the context of Afghanistan and the role of DAD in promoting and enhancing aid transparency.

Participation: My participation will consist essentially of one interview for approximately one hour during which I will be asked questions by the researcher about DAD Afghanistan. The interviews have been scheduled for _____ (place), _____ (date), _____ (time). I will also be asked to review the transcript of interview for accuracy and additional feedback, which should take approximately 10 minutes. I understand that the interviews will be audio-recorded by the researcher.

Risks: My participation in this study will not entail providing personal information about my job and my personal experience in using the DAD Afghanistan; however this may cause me to feel conscious about sharing some information that might cause problems at my working relationship with other organizations and question my personal abilities. I have received assurance from the researcher that every effort will be made to minimize these risks by strictly keeping my participation in the research confidential and anonymous.

Benefits: My participation in this study will contribute to the improvement of the DAD Afghanistan and promoting aid transparency. It will also add to the existing knowledge about aid information management systems in Afghanistan.

Confidentiality and anonymity: I have received assurance from the researcher that the information I will share will remain strictly confidential. I understand that the contents will be used only for the creation of Master's thesis and that my confidentiality will be protected by the fact that only the researcher will have access to the data. **Anonymity** will be protected by the removal of any identifying characteristics from the data during the analysis and report stages.

Conservation of data: The data collected including tape recordings of interviews, electronic and printed versions of transcripts, and electronic and print notes will be kept in a secure manner. The electronic data will be stored on a USB drive and both the drive as well as the printed materials will be kept safe in the in the supervisor's office at University of Ottawa campus. Only the researcher and supervisor will have access to the data and it will be conserved for 5 years.

Appendix7: Coding and categorization sample

Data (Primary/secondary)	Codes	Sub-categories	Categories
<p>Participant#2: I think they do parts of the work, but the system has been designed in a way that the organizational staff doesn't have much input. They just follow a certain pattern of work every day. One of the reasons that I don't like the system is that its designed in a way that it limits your creativities and doesn't allow you to bring improvements in the system. It is designed in Synergy office in New York. If you want to improve the system or bring changes to it, you have to send your suggestion to the government of Afghanistan and then they will send it to Synergy and 95 percent of the time Synergy will reject the suggestions for changes and amendments.</p> <p>Participant# 5: Technologies do come with the challenges. First of all I think in a society like Afghanistan, literacy rate is a huge challenge. People don't have the knowledge to read and write, let alone use of computers. Even those educated still think that internet and computers are bad for their children because of certain websites and etc. I think its important that the system is properly and systematically promoted in the schools, universities and amongst government employees. I think internet and computers are the first things to be promoted as good things.</p> <p>Development Cooperation Report (2010): Unfortunately, GoIRA has limited knowledge about one-third of the total external assistance investments in the country since 2001 as some donors do not disclose project information while others do not have accurate and full information readily available in their disbursement records. These problems continue to persist and, as a result, the DAD, remains incomplete and inaccurate. GoIRA has not been able to verify the development expenditure of its DPs over the past 9 years due to lack of accurate and complete information. Donors' reporting is not satisfactory. Despite several attempts MoF has not been able to get the info.</p>	<ul style="list-style-type: none"> - Officer problems (1) - Senior level politics (2) - Forced over-time work (1) - Computer lab (3) - Recreational use of computer (3) - System development (2) - System correspondence (6) - System internal features (3) - System external factors - Result-based management and the system (9) 	<ol style="list-style-type: none"> 1. Organizational Structure 2. External Environment 	<ol style="list-style-type: none"> 1. Environmental scanning
		<ol style="list-style-type: none"> 3. Computers & Portals 4. ISP 	<ol style="list-style-type: none"> 2. Technology Actors
		<ol style="list-style-type: none"> 5. Ownership 6. Alignment 7. Harmonization 8. Mutual Accountability 9. Result-based management 	<ol style="list-style-type: none"> 3. DAD and aid effectiveness principles

Appendix 8: Research Ethics Boards (REB) Approval

File Number: 06-12-08

Date (mm/dd/yyyy): 07/31/2012



Université d'Ottawa **University of Ottawa**
 Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice**Social Science and Humanities REB****Principal Investigator / Supervisor / Co-investigator(s) / Student(s)**

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Rocci	Luppicini	Arts / Communication	Supervisor
Mohammad Sediq	Bezhan	Arts / Communication	Student Researcher

File Number: 06-12-08**Type of Project:** Master's Thesis**Title:** Socio-Technological Analysis of Development Assistance Database in Afghanistan: A Case Study

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
07/31/2012	07/30/2013	Ia

(Ia: Approval, Ib: Approval for initial stage only)

Special Conditions / Comments:

N/A