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Muhammad Al-Abdullah
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AN ACTOR-NETWORK THEORY APPROACH IN INVESTIGATING
THE INFORMATION SYSTEMS PERSPECTIVE OF ANTI-MONEY
LAUNDERING COMPLIANCE THROUGH A CASE STUDY OF THE
FOREIGN ACCOUNT TAX COMPLIANCE ACT (FATCA)
IMPLEMENTATION IN A JORDANIAN LOCAL BANK

By Muhammad Al-Abdullah

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University.

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Virginia Commonwealth University, 2015

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List of Acronyms

AML	Anti-Money Laundering
AMLU	Anti-Money Laundering Unit (the Jordanian national unit that is responsible for the Jordanian AML laws and monitoring processes)
ANT	Actor-Network theory
APG	Asia Pacifica Group (a FATF-Style Regional Body)
BPC	Business Process Change
CBJ	Central Bank of Jordan
CFATF	Caribbean Financial Action Task Force (a FATF-Style Regional Body)
CFT	Counter Terrorist Financing
DBA	Database Administrator
EAG	Eurasian Group (a FATF-Style Regional Body)
ESAAMLG	Eastern and Southern Africa Anti-Money Laundering Group (a FATF-Style Regional Body)
FATCA	Foreign Account Tax Compliance Act
FATF	Financial Action Task Force (the standard-setting agency for AML).
FFI	Foreign Financial Institution
FI	Financial Institution
FIU	Financial Intelligence Unit (a national level unit that is responsible to monitor and ensure efficient AML progress in their country).
FSRB	FATF-Style Regional Bodies (the regional agencies that co-ordinates and follow up with the mutual evaluation reports in order to help their jurisdictions to successfully implement the FATF recommendations).
GAFILAT	Latin America Anti-Money Laundering Group (a FATF-Style Regional Body)
GIIN	Global Intermediary Identification Number (an ID that the foreign financial institutions get when they sign the FATCA agreements with the IRS).
HIRE	Hiring Incentives to Restore Employment.
ICT	Information and Communication Technologies.
IGA	Intergovernmental Agreement (an agreement that the USA is building with the Jurisdictions. This agreement is to solve the issue of conflicts between the FATCA law and the national confidentiality laws in these countries).
INCSR	International Narcotic Control Strategy Report.

IRS	Internal Revenue Service
IT	Information Technology.
JLB	Jordanian Local Bank
KYC	Know Your Customer (a form within the bank that has all the required information about the client. It is usually attached with the documents required).
MENAFATF	Middle East and North Africa Financial Action Task Forces (the FSRB for the Middle East and North Africa region).
MENAFATF	Middle East and North Africa Financial Action Task Force (a FATF-Style Regional Body)
ML	Money Laundering
MLRO	Money Laundering Reporting Officer (the employee at the local entity that reports any suspicious activities to the FIU)
MONEYVAL	Council of Europe Anti-Money Laundering Group based in Strasbourg, France (Council of Europe). (A FATF-Style Regional Body).
OPP	Obligatory Passage Point (the point, defined by the focal actor, through which all actors need to pass to result in a successful translation process.
PFFI	Participant Foreign Financial Institution
RO	Responsible Officer (the employee who is responsible to coordinate the reporting process from the foreign financial institution to the Internal Revenue Service about their US account holders).
SAR	Suspicious Activity Report (a report from the local entities (like banks) to the Financial intelligence unit that include suspicious ML activity.
STR	Suspicious Transaction Report (A report within the local entities (like banks) that include suspicious ML transaction).
TIN	Tax Identification Number.

Abstract

AN ACTOR-NETWORK THEORY APPROACH IN INVESTIGATING THE INFORMATION SYSTEMS PERSPECTIVE OF ANTI-MONEY LAUNDERING COMPLIANCE THROUGH A CASE STUDY OF THE FOREIGN ACCOUNT TAX COMPLIANCE ACT (FATCA) IMPLEMENTATION IN A JORDANIAN LOCAL BANK

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2015

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Implementation of the Foreign Account Tax Compliance Act (FATCA) goes beyond a technological modification to automate the identification of US clients and

report their information to the IRS. FATCA implementation requires foreign financial institutions (FFIs) to learn the new requirements, to modify their organizational structures and their employees' relationships and responsibilities, and to adjust the technology that helps the employees collect new FATCA-related information and to process that information so that it can be reported to the IRS in the correct format. In spite of that, research on FATCA implementation has focused on studying each constituent separately. However, according to the information systems (IS) body of research and from a systems thinking perspective, the whole (the bank that is complying with FATCA as a system) is more than the sum of its parts (the information, technology, and social structures that it includes). For this reason, this dissertation argues that in order to achieve an effective FATCA implementation and reduce tax evasion activity, FATCA implementation should be studied from an IS perspective. This will assist in appreciating the complexity of FATCA implementation and compliance and will help practitioners to better anticipate future uncertainties.

The dissertation uses actor-network theory (ANT), as it is a socio-technical theory, to investigate the implementation of and compliance with FATCA in a Jordanian local bank. Our interpretation revealed a number of problems in the bank's compliance initiative; among them were the issues of overlooking technology, information, and the bank's customers as actors with interests of their own. Accordingly, we provide eight propositions that can enhance the effectiveness of FATCA compliance.

Tax-evasion has been shown in the literature to be a predicate crime involving money laundering (ML), i.e., a crime that generates proceeds that need to be treated in secretive ways so that they can be falsely legitimized. We argue in this dissertation that the findings of our case study could provide lessons for the anti-money-laundering (AML) domain in relation to its structurally coupled domain of ML. Thus, we presented some lessons that can be tested in the ML/AML domains.

CHAPTER 1 INTRODUCTION

1.1. INTRODUCTION

This dissertation research is a case study that uses actor-network theory (ANT) to investigate the implementation of and compliance with the Foreign Accounts Tax Compliance Act (FATCA) in a Jordanian local bank (JLB). As such, in the manner of a single case study, this can provide lessons for the money laundering (ML)/anti-money laundering (AML) domains. The introductory chapter presents an overview of the research by providing background information on the problem, a discussion of the problem domain, an articulation of the dissertation's argument and relevant questions, and, lastly, a description of the remaining chapters.

1.2. BACKGROUND

The Internal Revenue Service (IRS) enacted FATCA in 2010 as section 501(a) of the Hiring Incentives to Restore Employment Act (HIRE). HIRE itself was introduced as a reaction to the financial crisis of 2008-2010 that resulted in increasing unemployment rates as well as a growth in the U.S. public debt, which was partially affected by tax evasion (Brodzka, 2014, p. 11). As an initiative intended to reduce tax evasion by U.S. taxpayers through offshore accounts, FATCA required foreign financial institutions (FFIs) to collect and report information on the U.S. taxpayers' accounts to the IRS. Under FATCA, a

failure to comply results in 30% of any U.S. source of income being withheld from the FFI, including payments of interest, dividends, rents, salaries, wages, premiums, annuities, compensation, remuneration, emoluments, and other fixed or determinable annual or periodical gains, profits and income, if such a payment is from sources within the United States. (Brodzka, 2014, p. 13)

The law was enacted based on research which claimed that, each year, the IRS fails to collect \$100 billion because of tax evasion (Byrnes et al., 2014, p. 2). However, there is no reliable mechanism to calculate the amount of money involved in tax evasion (Byrnes et al., 2014, p. 7).

Although FATCA was enacted as part of the HIRE law to reduce the US debt by reducing the amount of tax-evasion money, the effect of FATCA is argued to reduce the global money laundering activities. Tax evasion itself is recognized as a predicate crime for money laundering, which is a global security issue (Van Kommer, 2013). In other words, tax evasion is a crime that is part of the bigger crime of ML. Researchers have shown that there is a connection between tax evasion and ML. In fact, Storm (2013) conducted a study that specifically investigates the link between tax evasion and ML. The author concluded that, on the basis of the literature of both concepts, the analysis of the court cases, and the judgments made in these court cases, tax evasion and money laundering are related. This is not necessarily because tax evasion constitutes the act of money laundering, but that money laundering certainly constitutes tax evasion. As Quirk

(1997) points out, “money that is laundered for reasons other than tax evasion represents income that also tends to evade taxes” (p. 12).

ML is a critical security issue because, much criminal activity, such as drug trafficking, smuggling, terrorism financing, and other syndicate-based activities, are typically transacted using cash, or they are meant to produce cash flow. Thus, ML becomes necessary to legitimize the funds that are gained through such illegal activities (Schneider, 2010). However, ML is not limited to cash increases as it rapidly expands to include non-cash transactions and profits, which are more difficult for authorities to identify.

Several researchers have shown that there has been an increase of ML activities. From a quantitative perspective, producing exact statistics on any aspect of ML is problematic, if not impossible, since it is a well-concealed and organized activity. Still, some researchers have made efforts to quantify ML and prove that the activity is increasing (Agarawal & Agarawal, 2006; Schneider, 2010; Schneider, 2013).

From a qualitative perspective, Demetis (2010) argues that it is safe to say that money laundering amounts are increasing on the basis of two indicators. Firstly, the transition to the information age and the development of computers and information technologies create security issues that may make these systems prone to exploitation by launderers (Granville, 2003). Secondly, according to a research report from the International Monetary Fund, there is clear evidence that countries that have been open to the economic globalization were at an increased risk of ML due to the interconnectedness

of markets. Radulescu (2010) says, “the evolution of underground phenomena emerges from the fact that organized crime groups have welcomed the globalization by organizing international networks for the purpose of exploiting the open borders system” (p. 73).

Anderson et al. (2012) note that information technology has added a new dimension to traditional criminal practices, with ML among them. Cyber laundering (CL) is defined as the transition of ML into cyberspace utilizing information technologies and the Internet (Demetis, 2010). Online banking systems have attracted new schemes to ultimately render the different AML and anti-tax evasion policies and measures more difficult to apply. Technology creates opportunities of disintermediation in that it allows a direct connection between the buyers and the sellers without the involvement of a middleman. Therefore, any laws or measures to identify and reduce both ML and tax evasion cannot be enforced effectively because of this more direct process (Angell, 2000 as cited in Demetis, 2010).

To counter both ML and tax evasion, transnational regulating agencies (such as FATF) created a reporting system that requires local agencies (e.g. financial institutions) to collect information about their customers, monitor their transactions, and report information as well as suspicious activities to national level controllers (such as the financial intelligent units [FIUs]). FATCA is an example of such laws. Although there has been a good deal of progress in complying with FATCA, the literature on FATCA has introduced several serious issues with the implementation and the reporting that are

required. These issues will be discussed in the next section, referred to as the problem domain. This dissertation will study the compliance of a foreign financial institution in Jordan with the FATCA rule. This study seeks to identify these issues in compliance; and consequently, to provide lessons to the ML/AML domain (Demetis, 2010).

1.3. THE PROBLEM DOMAIN

In this section, we will discuss the issues of FATCA implementation as presented in the literature. However, our interest in the dissertation is to understand how technology, employees, and information interact within FATCA compliance, and how FATCA implementation can be affected if this interaction is not recognized and managed.

FATCA is anticipated to extend the U.S. tax reporting system to the financial accounts that are held by U.S. residents even outside the United States. Therefore, the IRS created a “complex set of withholding, information reporting, and due diligence requirements, which are directed toward so-called ‘foreign financial institutions’ ” (Bergthold & Lenz, 2013, p. 17). Enforcement of the law started in January 2013 (Orchowski & Solomon, 2014, p. 19). However, compliance with the law created several problems and difficulties. According to Bergthold & Lenz, understanding FATCA’s current regulations is a daunting task because it is not just a tax issue; it is a business issue that requires different departments (e.g. operations and IT, and legal) to work together to effectively comply with FATCA (p. 21).

Different issues with FATCA compliance are introduced in the literature. Orchowski and Solomon (2014) argue that FATCA implementation is complex as it introduces a new withholding and reporting system that needs to be integrated with the current policies of the FFIs. FATCA's primary purpose is not the withholding but the reporting of information, which requires technical changes (i.e., developing new information technologies), practical changes (FFIs are required to engage with the U.S. for the first time), and legal changes (i.e., developing ways to overcome the conflict of national laws and FATCA). Brodzka (2014, p. 5) asserts that a major issue with FATCA compliance is the significant cost for FFIs. The costs of implementing FATCA worldwide are \$500-\$1000 billion, while the estimated running costs are \$10-\$30 billion. At the same time, the estimated tax revenues over 10 years are \$8.5 billion, which is 1% of the cost of implementation (p.14). This would be similar to asking the "world to pay 100 USD for the US to get less than 1 USD" (p. 14). These costs include new information technologies, new data on account holders that was not required and major organizational changes in financial institutions. Furthermore, Bergthold and Lenz (2013) note the issue of the immaturity of the FATCA legislation. It is an ongoing law inasmuch as the IRS is still issuing notices and amendments either to provide new requirements or to provide further explanations on existing ones.

In the same vein, a 2012 KPMG survey on 129 financial institutions at a global (43%) as well as local level (57%) asked FFIs about challenges in implementing FATCA

compliance. the FFIs cited meeting FATCA's account identification requirements (27%), achieving compliance with documentation requirements (20%), having the right system in place (19%), having the ability to generate and send reports (16%), governance and oversight issues (10%), and understanding the withholding requirements (7%) (KPMG, 2012, p. 15).

Even though it is a work in progress, FATCA and compliance with it are accompanied by considerable challenges, which include understanding the regulation from a FFI perspective that was never previously exposed to the U.S. tax system, the structural changes required in the organization to comply, the technological changes required to comply, the informational requirements that were not needed before, resolving the issues of complying with conflicting rules, and, finally, justifying the cost of compliance that exceeds the monetary return on investment in complying with the rule. In response to the last point (justifying the cost of compliance), supporters of FATCA argue that the law is not only to solve U.S. national issues (regaining the revenue from evaded taxes), but that it also helps in assisting to solve international security issues, such as tax evasion, as well as reinforcing the transparency of the international financial flows (Brodzka, 2014, p.14). This will reflect on the global issue of ML, of which tax evasion is a predicate crime.

Tax evasion is considered to have a large impact on the economic stability of the global financial system. According to the statistics presented by Reuter and Truman (2004), estimated criminal proceeds in the United States in 1990 amounted to \$471.1

billion. Tax evasion represents 55.7% of this amount, which is approximately \$262.2 billion. Tax evasion's connection to ML makes it a significant activity that needs to be effectively addressed.

ML has always been recognized as an important security issue because of its connections to many organized crime activities (FATF, 2009). Although efforts against money laundering have intensified globally, the results are still disappointing in terms of reducing ML activities and increasing the number of convictions in ML cases (Demetis, 2010; Sharman & Chaikin, 2009).

This failure can be attributed to the complexities of compliance with the rules that the international efforts create. These complexities include operational difficulties that emerge from the rise of legislative efforts, the techno-centric approach to comply with the new rules, lack of concordance in the enactment of laws, and a lack of communication and feedback between the regulator and the complier (Demetis, 2010). Each of these determinants will be discussed following an overview of the AML domain structure. It is important to note that the AML domain, as will be discussed in the next section, incorporates all the controls and rules needed to limit all of the crimes that are related to money laundering, including tax evasion. This relation, along with the problems provided for FATCA compliance, makes it important to discuss the broader AML system and its problems that are applicable to FATCA.

According to both the literature and the actual practice of AML, there are three levels to the AML domain: the transnational, national, and local levels (Demetis, 2010). At the transnational level, organizations are responsible for creating the regulations and norms for AML. They have created a series of international initiatives to act on ML/AML. Transnational organizations include the United Nations (UN), the European Union (EU), the International Money Funds (IMF), the World Bank, the Financial Action Task Force (FATF), and the Basel Community on Banking Supervision (BCBS). FATF became the core organization that introduced the forty recommendations on AML and nine special recommendations on Counter Terrorist Financing (CTF), which became the global standards for AML/CTF.

In order to ensure compliance with such regulatory requirements at the national level, Financial Intelligence Units (FIUs), Central Banks, Tax Collectors, Law Enforcement Agencies, along with several others, emerged (Demetis, 2010). They are responsible for monitoring the compliance of the institutions at the local level (e.g. banks, casinos, insurance companies, accountants, and realtors). FIUs are also responsible for aggregating and analyzing all reports forwarded by the local agencies and deciding on whether to pursue any convictions.

On the local level, institutions must deploy a series of internal controls and monitoring practices such as the “Know Your Customer” principles (KYC), “Customer Due Diligence” (CDD), and “Enhanced Customer Due Diligence” (ECDD). They are also

required to monitor sanctions lists for individuals, organizations, and nations that are designated as terrorist or high risk, and to monitor the “Politically Exposed Persons” (PEPs) list. Local institutions must engage in monitoring the transactions of their customers and report any transaction that creates suspicion of money laundering behavior to the Financial Intelligence Unit (FIU) (see Figure 1).

According to Demetis, the AML domain’s structure is thought of as a hierarchy wherein there are different levels of power (p. 99). Notably, this perceived hierarchy shapes a belief that problems can be overcome by enacting new rules and regulations (p. 98).

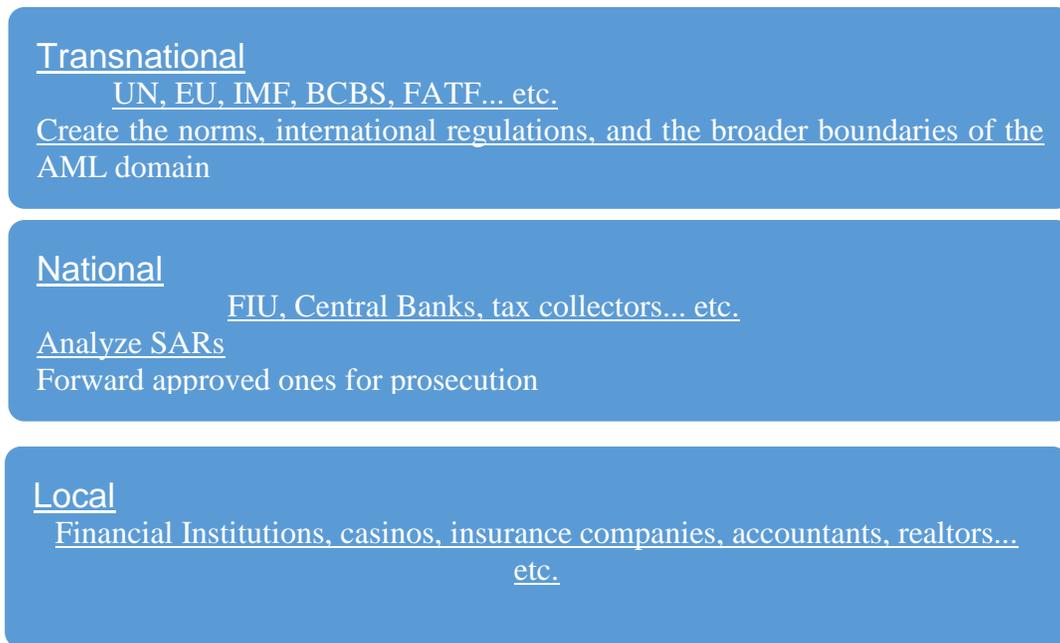


Figure 1: The Three-Tier Hierarchical Model of AML

In regard to the problems of effective compliance with the AML domain, the measures of ML activities and the measures and controls in AML are flawed. For example, suspicious activity reporting (SAR) is a primary control in AML, and it requires financial institutions to monitor their clients' transactions and report any suspicious activity to the FIUs. This monitoring is based on (1) the transactions the client makes and (2) the due diligence required for specific clients who are on sanctions lists provided by the transnational agencies. Financial institutions utilize software systems that will automatically monitor the transactions of the customers and generate alarms in the case of a suspicious activity. A 2012 Dow Jones report found that almost half of the automated alerts that companies get from their clients' sanctioned screenings are false positives, i.e. the system falsely recognizes a normal transaction as a money laundering activity (Dow Jones & Company, 2012). Furthermore, in transactions screening, the occurrences of these false alerts is much higher. The methods used to screen more effectively have actually resulted in the creation of new and more complex issues in detection by increasing the number of parties involved, which, in turn, further complicates protocols (Demetis, 2010).

Demetis and Angell (2006) added that the capabilities of computers and technology in recording not only customers' transactions but also employees' actions, created an intrinsic "blame culture" (p. 159). This means that if an investigation reveals an act of money laundering, then the employees who may have unintentionally overlooked the act will also be blamed. This creates a "fear-driven" compliance culture in which employees

report every single alert generated by the system, including those false positives. Consequently, a backlog in processing the forwarded reports is created, and it takes more than eight to ten months from the time the alert is generated until it is actually forwarded to a Law Enforcement Agency (p. 162). In the same vein, in regard to FATCA, banks are currently utilizing software to automatically identify if a customer meets any U.S. indicia and are reporting their information to the IRS. But because no empirical data shows the performance of such technology, we are unable to make any judgments from a FATCA perspective.

Gordon (2011) writes,

These measures to prevent money laundering and terrorism financing in the financial sector have been endorsed by nearly every country in the world. The only major problem is that they do not seem to work. In fact, this Article argues they cannot work, and that they need to be rethought. (p. 507)

After revising the overall system to prevent money laundering and revising the roles of the private sector, the government agencies, and law enforcement agencies, Gordon argues that leaving a significant amount of the implementation of AML measures in the hands of the private sector is wrong (p. 507). Furthermore, he makes an interesting point in that he argues that regulators do not revise the efficiency of the law they enact. They simply audit the application of the laws by the private institutions like banks (p. 522). For example, the

mutual assessment process is the process in which the jurisdictions are evaluated on their level of compliance with the FATF recommendations that are the standards of the AML global system. But, there is no assessment conducted on the efficiency of the recommendations in reducing the ML activities

From another perspective, AML deficiency stems from interoperability issues, on both the regulator and the complier's side, which is a result of the increased number of stakeholders involved in AML. From a regulatory perspective, the creation of effective laws, policies, and monitoring procedures is a complex issue that can affect criminal opportunities (KPMG, 2014). From a compliance perspective, it is imperative to have objective quality control that will overcome any issues that limit the consistency and cooperation. According to the KPMG survey of 317 participants from 48 countries, 84% of the respondents expressed concerns regarding the pace of regulatory changes and their significant impact on the institutions' operations (pp. 6-7).

Additionally, AML stakeholders have an arbitrary belief that regulators believe constantly updating technology is a requirement to effectively fight against ML. This drives compliers to update systems as quickly as possible and has caused unexpected structural complexities (Demetis, 2010; Demetis & Angell, 2006). Organizational change itself is inescapably risky, especially when it involves the introduction of new technology (Hemmingway, 1997). Not only do sudden changes in technology destabilize organizational structures, but there is also often a blind assumption that these advances are

reliable assets that will automatically enhance the effectiveness of the organization's processes. As Demetis and Angell (2006) point out, despite there being an ever-expanding list of failures associated with the adoption of new technologies, there still exists a general belief that computerization provides a competitive edge (p. 159). This belief begets a blindness to the actual operational issues of installing, adapting to, and using new technologies (p. 159).

Accordingly, when technologies do not function according to expectations, the processes along with the complying entities frequently cannot recognize the problems with the new technology. However, it is important to note that this dissertation is not a condemnation of AML technology per se, but rather is an attempt to illustrate the importance of considering the underlying interaction between the technology and its users in compliance with AML rules (including FATCA) to increase the effectiveness of the domain. Implementing information technologies will create uncertainties that tend to destabilize the compliers' (e.g. financial institutions') status and operations. This destabilization can result in one of two things: the first is an unhealthy situation that threatens the bank's viability, or the second is an innovative opportunity that will enhance the bank's compliance with the new regulations (Demetis & Angell, 2006).

Finally, the absence of communication and feedback weakens the AML system, which creates a situation in which compliers do not trust themselves. It also increases the structural complexity because of inadequate support for users (KPMG, 2014).

Consequences from this lack of communication and feedback vary but include (1) the loss of interest of compliers in developing their understanding and enhancing their efficiency; and (2) a lack of understanding of what needs to be reported, which, in turn, produces opportunities for criminals who have an understanding of the AML system. Gordon (2011) points out that the tendency for regulatory agencies such as FATF is solely to evaluate the efficiency of the AML system and not its effectiveness in preventing money laundering or terrorist financing (p. 522). Accordingly, AML initiatives are disconnected from their real-world application, and this negatively affects AML's efficacy in the external environment.

It is important to note that tax evasion is also subject to the same reporting system and utilizes the same requirements as ML and, by extension, AML. Thus, the issues mentioned in the AML domain are inherently related to compliance with FATCA. Therefore, an analysis of FATCA and the issue of tax evasion along with its corresponding issues is also an analysis of the domain of ML and AML.

1.4. CONCEPTS AND BASIC DEFINITIONS

The purpose of this section is to clarify and define the major terms used in this dissertation. The Foreign Accounts Tax Compliance Act (FATCA) is a law enacted by the U.S. IRS to reduce the amounts of money and income that are concealed by U.S. residents (i.e., citizens and Green Card holders) in offshore accounts. The law generated a cross-borders tax reporting system that increased the transparency of financial flows. As a result, it was argued that FATCA not only helps the U.S. in increasing the taxes that the

government collects, but it also helps the international transparent financial flow system, which can reduce international money laundering.

The definition of money laundering is ambiguous and has been stated differently in the literature. According to the FATF (2009), money laundering is the process of hiding the illegal origins of criminal proceeds. In economic research, money laundering is defined as the activity that transforms an unusable illicit asset into one that has actual purchasing power and is legally usable for reinvestment or consumption (Masciandaro et al., 2007). In this dissertation, these definitions are combined to define money laundering as the process of transforming illicit funds to conceal their origins, to legalize them, or to invest the money in the legal market. In response to this combined conceptual definition, anti-money laundering (AML) is defined as the established system of controls, laws, and regulations that force regulated industries such as financial institutions, law and accounting firms, real estate agencies, and insurance agencies, among others, to actively prevent or report any suspected money laundering activity.

In order to understand this issue fully it is also necessary to describe the concept of an information system (IS). According to Lee (2004), an information system is an instantiation of an interaction between a technical system (including but not limited to software and hardware), a social system (including an organizational structure, a virtual team, or a division of labor), and a knowledge system including science or people's intentions and the meanings they attach to their actions (p.13). The important point to

mention here is that the resulting system's properties are not the sum of the properties of its subsystems alone; other properties actually emerge from the interaction across these subsystems. From an IS perspective, there is a dynamic relationship between technology, organizations, and the information that mediates or results from the interaction. Lee notes:

Once the technical system is designed and implemented so as to provide the information required by the social system, the technical system itself would be changed, where the change would then trigger new and different organization requirements for the social system to satisfy. Then, once the social system is designed and implemented so as to deliver the organization required by the technical system, the social system itself would be changed, where the change would then trigger new and different information requirements for the technical system to satisfy. These mutually and iteratively transformational interactions can be expected to continue without end. Hence, whatever results from them is not determinate but emergent. (p. 11)

Finally, the term "complexity" is defined as the inability of an expert or a team of experts to fully explain the technological system across time and distance in an organization (McQuade, 2001, p.17). In her work on complexity, Sally Squires (1988) expands upon this definition of complexity and how it can affect our decisions by introducing the term "glass cockpit syndrome." Using pilots as an example, Squires says that the increased

reliance on technology and automation threatens to overwhelm pilots and others who deal with stressful situations. This process which leads to an overwhelming amount of information, leads to faulty communication among crews and can result in poor decisions that can cause accidents. In the banking industry, it is no different, for increasing digitization and complexity can lead to communication issues and information overload.

1.5. ARGUMENT AND RESEARCH QUESTIONS

FATCA compliance incorporates the interacting components of information technology, social systems, and information, which are the constituent parts of an information system (Lee, 2004). As such, the interaction between these components needs to be monitored and taken into account. The issue in FATCA compliance specifically, and in AML compliance in general, is that practitioners rely extensively on technologies which, when applied, create unforeseen uncertainties that are not dealt with appropriately (Demetis & Angell, 2006). Users typically do not appropriate technologies for their specific needs. Rather, they incorporate updates and emerging applications into the older versions of the programs they are currently using, thus leaving existing vulnerabilities in place and further complicating systems.

To design a successful FATCA compliance initiative (i.e., information system), Lee et al. (2015) published a paper calling for a shift in the research body from designing an “IT artifact” to designing an “IS artifact.” Lee et al. argued that:

We conceptualize “IS artifact” so that it refers to a system, itself consisting of subsystems that are (1) a technology artifact, (2) an information artifact, and (3) a social artifact, where the whole (the IS artifact) is greater than the sum of its parts (the three constituent artifacts as subsystems), where the IT artifact (if one exists at all) does not necessarily predominate in considerations of design, and where the IS itself is something that people create (i.e., an “artifact”). (p. 6)

Thus, designing an effective FATCA compliance initiative should not only focus on designing technical artifacts, but it should also benefit from an analysis of the context of the technical artifact. i.e., the design should consider the information and social artifacts.

Although it is a new topic, FATCA has attracted researchers from different fields. Researchers from a legal perspective studied the conflicts and consequences of FATCA on the laws of different nations (e.g., Gobett & Pulle, 2011). Researchers from a computer science perspective worked on reporting technologies that can be used in FATCA compliance (Curtise, 2010). While FATCA itself has piqued the interest of scholars from various disciplines, those scholars tend to approach FATCA from a practical standpoint for solutions rather than a more theoretically grounded academic approach. Such an approach would likely aid in developing a common standard of communication among scholars from different backgrounds. To promote such an approach, this dissertation utilizes actor-

network theory (ANT) to investigate the FATCA compliance in a Jordanian local bank. Such lessons can also be generalized to the ML/AML domain.

Our research argument is that in order to enhance compliance with FATCA, it is important to understand the phenomenon as a socio-technical issue. By doing so, we are able to appreciate the inherent complexities in the management of the problem.

ANT views the world as a network of heterogeneous actors. The stability of those networks is achieved via ongoing negotiations between the different actors until they agree upon and satisfy the interests and roles of each actor. When an actor-network is destabilized, a process called translation occurs, in which the actors negotiate their interests and roles in the new actor-network in order to accept being enrolled. In this dissertation, we will follow the sequence of events in the translation process that the JLB went through to comply with FATCA.

The general research question is:

- What theoretical explanations can ANT provide as a socio-technical theory about the role of technology, social structures, and information in complying with FATCA rules in financial institutions?

The specific research questions are:

- How does the interaction between information, technology, and social structures illustrate the “I.S. artifact” concept discussed by Lee, Thomas, and Baskerville (2015)?

- From an actor-network perspective, how do information, technology, and social structures interact as actors in the JLB bank when complying with FATCA?
- What lessons about ML/AML are suggested from the FATCA compliance in this case study of the JLB?
- What value can this study add to the research of FATCA compliance, specifically, and ML/AML, generally?

1.6. STRUCTURE OF THE DISSERTATION

In seeking to outline the research to answer the above questions, a general literature review is provided to discuss the technology in organizations, and the complexity that results from reliance on technology without accounting for interactive effects between technology, social structures, and information. Also included are sections concerning the literature on FATCA, ML/AML, and actor-network theory. This literature review section constitutes Chapter 2 of this study. Chapter 3 then discusses the research approach and the method utilized to answer the research questions. The research design is then presented to discuss the structure of analysis, data collection, and our case selection. Chapter 4 presents the data collected from the field study and describes the sequence of events in complying with the FATCA initiative within the bank. Chapter 5 presents the theory as it is applied in the case study research. Chapter 6 provides the discussion and the propositions developed from the study. Chapter 7 presents the conclusion of the research and lists its contributions and limitations and, finally, makes suggestions for future research.

CHAPTER 2 REVIEW OF THE LITERATURE (AML) AND THEORY (ANT)

2.1. INTRODUCTION

When technology is implemented into a social system such as an organization, an intertwining relationship emerges between technology and the social system. This relationship forms a heterogeneous network of actors, each with negotiated roles and needs. Within such networks, human actors tend to manipulate and reshape technologies to accomplish their work. These technologies in turn reshape humans' interpretations of their work and practices.

Typically, instead of appropriating technology designed specifically for workers' practices, emerging technologies are adopted to fit in with the current ones in use. This adoption causes uncertainties, complexity, and inconsistency throughout organizations. To avoid this complication, the emergent phenomena of such interactions should be monitored and managed proactively. A partial but effective solution is to handle these uncertainties by creating adaptable and flexible networks that include the united efforts of the human user, the technology's capabilities, and the knowledge and information that mediate the interaction. This adaptive process is complex and requires considerable time and cooperative effort; furthermore, this cooperation may create vulnerabilities. These

vulnerabilities can be exploited intentionally or unintentionally, resulting in criminal activities such as tax evasion.

Since they are at the front line of compliance, it is important to study financial institutions and their heterogeneous actors and to observe how these actors interact and negotiate their roles and interests as part of such a network. This understanding allows us to understand the issues with compliance with rules (e.g. FATCA's) and deficiencies in reducing unwanted activities such as tax evasion.

The remainder of this chapter is divided into six sections. Section two provides an overview of information systems research that studies technology and organizations. Ultimately, this establishes the importance of socio-technical research on information systems. Section three illustrates the shifts in technology innovations that result from the heavy reliance on automation in today's societies. It seeks to elaborate on the term "technological complexity" that emerges from current techno-centric practices. Section four presents an overview of FATCA, its requirements, and its compliance milestones. Section five is an overview of ML/AML domains. Section six describes the key theoretical ideas around actor-network theory (ANT). It defines the theory, its essence, and its main concepts. Lastly, in section seven, a summary of the main ideas from the literature review is given.

It is important to mention that although this dissertation focuses on FATCA compliance, a section on the ML/AML domains is presented for two reasons. Firstly,

FATCA is a law that is primarily enacted to reduce tax evasion activities. As shown in the previous chapter, tax evasion can lead to ML and both can produce serious social as well as economic harms; therefore, they are both criminalized. Consequently, we argue that a section about ML/AML and how they are structurally coupled is informative about how FATCA and tax evasion are related. Secondly, although this dissertation is about the role of technology in FATCA compliance, its broader implications are lessons for the ML/AML domains. Therefore, it is beneficial to illustrate the current literature about of the AML domain issues that are going to be taken into account in the analysis and concluding remarks of this dissertation.

2.2. TECHNOLOGY AND ORGANIZATIONS

Although technical concepts have been extensively studied in IS research, knowledge about technology, its definition, and its role in organizations remains contradictory. This is largely because technology itself is such a broad concept. Therefore, in this first section, it is necessary to review the different definitions of technology as well as an overview of the progress in defining technology. This discussion will provide the background for the argument that the use and evolution of technology, its ensuing complexity, and organizational changes are critical factors in emerging issues in FATCA compliance.

The literature concerning technology also focuses on the aspects of scope (how technology is used and what technology can accomplish) and role (the interaction between technology and organizations) (Orlikowski, 1992, p. 398).

2.2.1. Technology scope research

Technology is approached from two perspectives. The first perspective relies on a materialistic view that defines it as any tool or equipment that enables us to accomplish our tasks. For example, Blau et al. (1967, p. 21) define technology as “the substitution of equipment for human labor.” This definition restricts the concept to organizations that employ machinery in their activities.

A second approach in the research emerged that further expands the concept to include social technologies. So technology is defined as the “tasks, techniques, and knowledge utilized when humans engage in any productive activities” (Orlikowski, 1992, p. 399). An example of this new definition is the perception of an organization as a place to process raw materials, thereby defining technology as the mechanism and procedure of converting raw materials, rather than simply the tools to do so (Perrow, 1967). However this view has been criticized because it creates further ambiguities on the boundaries of technology and how it should be measured (Mintzberg, 1979 as cited in Orlikowski, 1992). Additionally, Orlikowski (1992) points out that this definition ignores human actions, their variables, and their mediation by machines. Missing from these definitions

is the ability to examine how different assumptions, knowledge, and techniques can lead to different human actions in dealing with the technology or in the social structure.

2.2.2. Technology role research

In researching the role of technology in organizations there are several approaches. One approach argues that technology influences the structure's size, performance, knowledge, and the skills of manpower, productivity, and effectiveness. This approach views technology as an external independent influence on an organization and on human behavior (Giddens, 1984, p. 207 as cited in Orlikowski, 1992).

A second approach to the role of technology in organizations believes that human interaction and appropriation cause technology to develop and therefore change. Rather than leading its own evolution, technology is a product of ongoing human action, design, and appropriation. This approach is criticized insofar as it assumes that the success of the implemented technology is affected only by an appropriate design and management's commitment to this strategy. However, there are other factors beyond managerial intentions and commitment that need to be considered, such as the unintended consequences of structural changes caused by implementation of new technologies (Orlikowski, 1992). From this critique a third approach emerged which is a combination of both.

In this third approach, technology is posited as an external force that has an impact on both the organization and work practices. This impact, however, is moderated

by the human actors and the organizational environment (Orlikowski, 1992, p. 400). For example, the socio-technical research in IS maintains that technology is both an objective reality and a socially constructed product because technology is developed by actors existing within specific social contexts and assumptions. Such research contends that technology is socially constructed, with various meanings attached to it as a whole (Orlikowski, 1992, p. 400). Once a technology is developed and deployed, human actors will habitually draw on it, making it appear as an objective structural property integrated into their image of the organization and its purpose (Lee, 2004). The problem is that reality does not fit into this kind of interaction utopia. In reality, the interaction is mediated with various issues such as that the technology is not carefully designed, installed, implemented, or that the organization is not prepared for the technology's requirements that would allow it to work properly (Lee, 2004, p.12).

Accordingly, Barley (1990) argues that technologies are indeed structured by users and are also manipulated, shaped, and reshaped to accomplish their work. Orlikowski (2000) said that although technology is structured, shaped, and reshaped by its users, the users do not appropriate technologies to their practices. They enact emerging technologies with the current ones in practice. This leads to the need to reproduce existing structural conditions or transform the whole structure (Orlikowski, 2000). Orlikowski adds that users' ongoing enactment of technologies will either reproduce current structural conditions or will create changes that may lead to structural

transformation. This has serious implications for FATCA compliance. With FATCA, if the users implement newer technologies without appropriating the technologies to their practices, the technology may in turn change the users' behaviors, processes, or interactions within the organizational structure. Therefore, the technology can result in structural complexities that may create issues with the compliance process and, consequently, opportunities for tax evasion. As use changes the structure of emerging technology, criminals adapt to new ways of using it, thereby developing new types and methods of crime, which in turn create an impetus for developing newer technologies.

In the next section, historical technological innovation periods and their influence on the complexity of organizations are discussed. The knowledge of the progression of these periods is integral to understanding how reliance on technology can result in uncertainties and complexities that affect the efficiency of the compliance process.

2.3. TECHNOLOGY INNOVATION

According to McQuade (2001), Raycroft and Kash (1999) introduced three categories of stages of technology innovation (craft production, mass manufacturing, and synthetic innovation). In craft production, organizations were simple. They relied on innovation through original creativity and inventiveness. Reliance was on simple technologies that helped humans to accomplish their tasks. Mass manufacturing emerged due to increasing consumerism and the requirement for higher volumes of products. In

order to achieve the required level of productivity, reliance on technology and automation increased in the mass manufacturing period.

The technology advanced past an organization's ability to use it under current manufacturing conditions. Therefore, the necessity to develop a cross-functional organizational structure, a structure which could respond flexibly to emergent phenomena, was reinforced. Consequently, synthetic innovation emerged. It integrated technology, management, and human actors into a coordinated, interdependent, networked system in response to the fact that the parts of a network are continuously changing and evolving. Synthetic innovation is often characterized as a cross-functional model of organizations that need to fully integrate and use technology (Raycroft & Kash, 1999 as cited in McQuade, 2001).

As an example of the historical progression of these three categories in action, it is necessary to look at the origins of the banking industry in the 17th and 18th centuries. Merchants stored their gold with goldsmiths in London who possessed private vaults and charged fees for their services. Goldsmiths would then issue a receipt for the deposit. Goldsmiths practiced banking as an ad hoc solution to increased capital appearing in society. At that time, the job was simple and utilized simple tools and techniques; it could be accomplished by one operator: a banker (Quinn, 1997). This is an example of the concept of craft production according to Raycroft and Kash (1999 as cited in McQuade 2001).

Goldsmiths initiated the concept of lending money on the behalf of the depositors, rather than simply holding it for them. Promissory notes evolved and changed the concept of banking. Instead of money deposited to be held in trust, deposits became loans to a goldsmith, who in exchange, loaned the depositor's funds to others and paid interest to the depositor. Problems arose because although original promissory notes were payable on demand, the subsequent loans were payable overtime—introducing the risk of default. This risk initiated a new system of money exchange: credit (Richards, 1929). This was a tangible increase in product, which both enabled and produced a support system to involve larger sums and create more availability. In turn, this created the structure for a wider customer base, which is the concept of mass manufacturing according to Raycroft and Kash (1999 as cited in McQuade, 2001). The job of “banking” was no longer a case of safekeeping that could be managed by a single craftsman. The industry grew into a huge infrastructure marked by professionalism and division-of-labor-based specialties.

Banks as businesses expanded even further from their original concept. They shifted from simple money depositing to small loaning facilities and created “banknotes” as currency. This removed the business further from a tangible exchange to a virtual one, based on confidence in the institution, its policies, and safeguards. Banknotes emerged and were first issued by the Bank of England. The Royal Bank of Scotland first established overdraft facilities, which ensured and bolstered confidence in depositors.

Afterwards, banking clearing houses were established as facilitators for banks to clear transactions between each other, creating the need for trust and security at several new junctions (Faure, 2013).

The use and evolution of banking technologies spread rapidly and became equal to synthetic innovation in terms of their character. Products and services now include ATM machines, telephone transactions, internet and mobile banking, decision support and forecasting systems (such as the automated loan approval system), and internet stock exchange functions. These services all emerged among other technologies and were created to facilitate and improve banks' services to the point that currency only appears at the very end for the user, a consumer needing cash in small amounts. Further, technological advancement developed electronic money, a new type of currency with no physical properties.

Consequently, banks and money management complexities increased. Despite these complexities, there is agreement in the research and professional communities about the overall benefits of technology. For example, IS researchers agree that internet banking offers customers the advantage of lower costs, better interest rates, time and location convenience, and quick, easy transactions. From a banking perspective, technology offers lower costs and better customer responsiveness and satisfaction. Banks were forced to adopt these technologies both to maintain their competitive advantage and because of rules from regulators seeking to ensure consistency throughout the industry

(Abu Shanab & Pearson, 2009). This digitization of currency ensures that everything runs smoothly in the industry because the tangible value of the currency is not decreased simply because it is moved primarily through a virtual mode.

Technological adoption within banking is socially constructed, but it involves different stakeholders (e.g. the academic community, bank owners and decision makers, and the many regulating institutes such as the FATF and central banks, among others). To align the interests of these stakeholders and to reach an agreement on technologies and their use is a cumbersome and lengthy process. Therefore, the stakeholders may obstruct prevention of crimes or may even enable new forms of criminality to develop by exploiting the complexity resulting from the expansion of banking business and the increase in the number of stakeholders involved (McQuade, 2006). At this point, it is helpful to review what is meant by “complexity” and how it specifically affects financial institutions, and how those criminals targeting complexity make use of it.

McQuade (2001) discusses complexity from the perspective of the dynamic intertwining relationship of technological products/tools with the techniques of using those tools. Hence, complex technology varies according to its design, engineering, manufacturing process, and use. This dynamic structure and the continuous evolution of technologies trigger continuous changes in an organization. Consequently, organizational structures must adapt to be more responsive, since they rely on unhindered networking between the different groups and they must be flexible to change according to the

magnitude of uncertainty being revealed when newer technologies are applied (Thomas & Mangel, 2008; Wallace et al., 2004).

In banking, for example, tellers use a core banking system to process transactions. The system is connected to a data warehouse which is necessary to manage and process the large amounts of data created from the number of transactions they process. ATM machines are also a form of technology that needs management because they are connected to the bank's transaction warehouse. The compliance department uses the data warehouse to identify its US taxpayer clients who should be automatically reported to the IRS. Additionally, loan departments use technology to automate loan decisions.

These components, among others, when combined with regulatory standards and capable human actors, form a complete and efficient financial institute. However, technologists, practitioners, and even regulators are unable to fully recognize all the bank's components, their interactions, and their environment. For the recognitions to be complete and sustainable, it requires continuous communication, feedback, and regeneration. Therefore, banks and other involved organizations must routinely self-organize into more complex forms as they continuously learn and give self-reflective feedback about innovative possibilities (Kash, 1989 as cited in McQuade, 2001).

McQuade (2001) provides a definition of technological complexity from the point of view of organizational learning. Complexity is defined as the inability of an expert or a team of experts to fully explain the technological system across time and distance in an

organization (p. 17). McQuade (2001, p. 30) lists several factors that affect the level of understanding that it is possible to attain, which are:

- The number of inter-relationships and activities of suspects
- Volume and speed of asset acquisition
- The varieties of regulations, standards, and protocols.

Clarke (2004), speaking to the variation in regulations, argues that globalization is partially a product of technology, and its use in greatly differing cultures has opened vast opportunities for globally operating organized criminal activity. An example is tax evasion, which is eased by the technology. Online banking makes it easier to move funds to offshore accounts without the intermediation of any entity that can enforce the laws. To counter tax evasion through offshore accounts and investments, the IRS created a global reporting system that if implemented could enhance the transparency of financial flows. The law behind the reporting system is called the Foreign Account Tax Compliance Act (FATCA) and is discussed in the following section.

2.4. Foreign Account Tax Compliance Act (FATCA)

Despite continuous efforts to identify US taxpayers' hidden income, the Internal Revenue Service (IRS) is still not able to find an effective preventive solution. The primary reasons for this are that taxpayers can open offshore accounts and receive foreign income which they do not report. As result of this, the IRS faces challenges in

confirming the reported taxable income of taxpayers, especially since financial institutions in the past were not obliged to report their clients to the IRS.

The IRS began several initiatives to identify the non-disclosed income of taxpayers. From 2000 to 2002, the IRS obtained John Doe credit card information via a summons on American Express and Master Card. These companies were asked to compile a database of all transactions by credit cards that were issued in Antigua and Barbuda, the Bahamas, and the Cayman Islands (Internal Revenue Service, 2012a).

Later, in 2003, the Offshore Voluntary Compliance Initiative (OVCI) emerged to allow taxpayers to disclose their offshore accounts voluntarily to avoid civil fraud or information return penalties and prosecutions (IRS, 2013). The idea behind this program was to gather information from those who volunteered to comply about (1) the individuals who encouraged or sought offshore arrangements and (2) the schemes that were used to avoid paying taxes. In 2003, the IRS stated that the OVCI prompted 1,300 taxpayers to identify themselves, which resulted in \$75 million collected by July 2003 (Harvey, 2012). Afterwards, in 2009, the IRS created the Offshore Voluntary Disclosure Program (OVDP), which compliments the OVCI. According to the IRS, 33,000 voluntary disclosures were received and \$4.4 billion were collected between 2009 and 2011 (IRS, 2012b). Therefore, a third voluntary program was started in 2012 which encouraged taxpayers to disclose their foreign accounts, even though it had higher penalties than the two previous initiatives. The problems with such voluntary disclosure

programs are that they constitute a “one-size-fits-all” approach to both the criminals and the law-abiding citizens who accidentally violate the rules (Byrnes et al., p. 9). The good citizens are treated the same as the criminals, and they have to pay penalties even if the mistakes resulted from the complexity of the IRS system. Consequently, good citizens, fearing penalties or sanctions, may be discouraged from voluntarily disclosing their accounts.

Another initiative by the IRS in response to issues with the voluntary disclosure programs is the FATCA law. It was enacted in 2010 as section 501 (a) of the Hiring Incentives to Restore Employment Act (HIRE) (Brodzka, 2014, p. 11). The law not only depends on citizens to disclose their offshore accounts or the income they did not pay tax on, but it is also intended to “force foreign financial institutions to disclose their U.S. account holders or pay a steep penalty for nondisclosure” (Senator Levin, 2010 as cited in Byrnes et al., p. 5). FATCA was enacted on the basis of the claim that each year the IRS is losing \$100 billion in revenue because of the avoidance of taxes through offshore accounts and unreported income.

FATCA requires “U.S. persons” to report financial accounts opened outside the US. It also requires the Foreign Financial Institutions (FFIs) to report their US clients’ information to the IRS. “U.S. persons” in this context refers to “a citizen or resident of the United States; a partnership created or organized in the United States or under the law of the United States or of any state, or the District of Columbia; a corporation created or

organized in the United States or under the law of the United States or of any state, or the District of Columbia; any estate or trust other than a foreign estate or foreign trust; a person that meets the substantial presence test, any other person that is not a foreign person” (IRS, 2015a). FFIs report the information through electronic means, Form 8966, with the social security numbers or the tax identification numbers of the taxpayers as identifiers.

To comply with FATCA, the FFI has to sign an agreement with the IRS called the “FFI Agreement.” According to that agreement, 1) the FFI should identify the “U.S. persons” accounts; 2) the FFI should report those accounts; and 3) the FFI should withhold 30% when required by the IRS. In 2011, the IRS provided a timeline by which the FFI should prepare to start reporting and withholding what is required. In 2012, the IRS provided a proposal of the information required to be reported and the payments on which withholding would be done. In January 2013, there were some changes to the regulations, such as an extension of the reporting starting date that had preliminarily been set at January 1, 2014. In July 2013, a revised timeline was issued along with additional clarifications and guidance to the FFI (see Table 1 for the detailed milestones of FATCA dates) (Byrnes et al., 2014, p. 45).

Table 1: Milestones of FATCA regulation (summarizing Byrnes et al., 2014, p. 45)

Year	Milestones in FATCA progress
2010	<ul style="list-style-type: none"> - March 18: US Congress passes the FATCA legislation - August 27: Preliminary guidance provided about FATCA. <i>Notice 2010-60</i>
2011	<ul style="list-style-type: none"> - April 8: IRS issued <i>notice 2011-34</i>. This is a supplemental notice to the 2010-60 one. It provides further guidance on the reporting requirements, the withholding processes documents, and the documentation process. - July 26: <i>notice 2011-53</i> provides the intended timeline for implementing FATCA. Information to be reported is identified (name, address, tax identification number, account number, and balance or value).
2012	<ul style="list-style-type: none"> - February 8: draft for IGA agreements. - July 26: draft IGA Model 1 - September 12: the US signs the IGA agreement with the UK - October 24: IRS announces the due diligence requirements and further clarifications on the withholding process - November 15: draft IGA Model 2

Year	Milestones in FATCA progress
2013	<ul style="list-style-type: none"> - January 1: FATCA comes into force - January 17: final FATCA regulations - July 12: IRS announces a new timeline and regulations for FFIs that operate in the countries that signed the IGA agreement - August 19: FATCA registration portal opened for FFI
2014	<ul style="list-style-type: none"> - April 24: last day for an FFI to register on the FATCA portal - June 30: Deadline for FFIs to enter an agreement; begin reporting new customers, onboarding, and remediation for existing customers who reflect any US persons' indicia. Accounts opened before July 1, 2014 will be considered pre-existing - July 1: Withholding 30% of the US source of income begins - September 30: Initial deadline for reporting accounts for the 2013 calendar year - December 31: The FFI documents pre-existing accounts. If the FFI entered an agreement after July 1, 2014, the deadline is six months from the effective date of the FFI agreement
2015	<ul style="list-style-type: none"> - March 31: postponed reporting date of the US accounts (form 8966), for the calendar years 2013-2014

Year	Milestones in FATCA progress
	<ul style="list-style-type: none"> - June 30: FFI must document pre-existing high value individual accounts - December 31: Due diligence must be completed for all remaining accounts
2016	<ul style="list-style-type: none"> - June 30: Because of the implementation difficulties, reporting is delayed to 2016 for the income of US persons for the calendar year 2015
2017	<ul style="list-style-type: none"> - Report deadline for gross proceeds of 2016

Implementation of FATCA globally involved many legal difficulties. In the early stages, it was illegal for an FFI to disclose information about their clients in the jurisdiction in which they operated. The IRS, along with the Treasury Department, issued a joint statement regarding an intergovernmental agreement (IGA). France, Germany, Italy, Spain, and the UK signed the agreement to cooperate with the US and modify their laws to implement FATCA in their financial institutions; afterwards, Switzerland, Japan, and South Africa signed the agreement. As of November 2014, 98 countries had signed the agreement. They require their local financial institutions to report to them first. Then the foreign government will report specific data about the US persons' accounts directly

to the IRS on an automatic basis. This model of intergovernmental agreement is called the IGA Model 1 (U.S. Department of Treasury, 2015).

On the other hand, in what is referred to as IGA Model 2, the partner jurisdictions have agreed to enable their FFIs to report the specified information directly to the IRS without having to intervene. In November 2014, there were 14 countries that had partnered with the US in this particular agreement (U.S. Department of Treasury, 2015).

Foreign banks showed reservations regarding FATCA. The cost of complying with FATCA was considerably high. In January 2014, a Thomson Reuters Cost of Compliance Survey revealed that the cost of compliance with FATCA ranged from \$100,000 to \$1 million for a single institution. This cost covered hiring new employees, training, technology, and processes (English & Hammond, 2014). Banks also expressed their concerns about the complexity of investigating all their accounts to identify US persons, mainly when the accounts can amount to millions. Jurisdictions cited technical security and privacy concerns. FATCA needs to share extensive amounts of private data electronically, and the data is vulnerable to being accessed by unauthorized criminals, which could lead to identity theft as well as privacy issues.

From a local perspective, the tax code is claimed to be complex, which makes taxpayers prone to accidental violations. The concern in this case is then how these unintended violations are to be treated. According to the Taxpayer Advocate Service (2012), Nina Oslen said that:

An analysis of IRS data by the Office of the Taxpayer Advocate shows it takes U.S. taxpayers (both individual and businesses) more than 6.1 billion hours to complete filings required by a tax code that contains almost four million words.... To inspire confidence and trust, the tax law should be comprehensible and the computations of tax should be transparent and relatively simple, yet few taxpayers today can confidently say they understand the tax code or even that they have correctly computed their tax liabilities. In this report, we identify tax complexity as the #1 most serious problem facing taxpayers, and we recommend (as we have in prior reports) that Congress vastly simplify that tax code to make tax compliance easier.

Another local concern was voiced by the General Accountability Office (GAO) in its 2012 assessment of the IRS technology program (Byrnes et al., 2014). The assessment pointed out internal control deficiencies in the unpaid tax assessments. This kind of deficiency leads to errors in data entry since it relies on statistical estimates rather than the actual amounts of account balances to determine the amount receivable. There was seen to be a need to replace the software applications that are used to maintain taxpayers' information required for unpaid tax assessment amounts. Furthermore, some technical security controls (confidentiality, integrity, and availability) were flawed; there were problems with the access controls, audit trails and logging system, and physical security,

among others. If such was the case inside the IRS, how could the FFIs feel confident in reporting their private data (Byrnes et al., 2014)?

Due to lack of clarity surrounding FATCA instructions, FATCA has been given the nickname “Fear and Total Confusion Act” (*The Economist*, 2013). Banks were confused about what to report exactly and how their reporting could still comply with the local confidentiality of clients’ information acts of the country in which the bank operates (Hunter, 2013). In conclusion, FATCA is regarded as more than a law to fight tax evasion. FATCA created a new, financially transparent global system requiring all international banks to report information about their client accounts. Tax evasion is a predicate crime of money laundering. i.e., a crime that generates proceeds that when laundered lead to the crime of ML (Schott, 2006, p. 10). Because of this relation, this dissertation argues that the dynamicity of ML, the role of technology in increasing the complexity of AML or emerging new criminal activity schemes, and the problems in the AML domain are all related to FATCA compliance and efficiency. Therefore, the next section provides an overview of the dynamicity of ML/AML definitions; it also summarizes the major issues of the AML domain as discussed in the literature.

2.5. ANTI-MONEY LAUNDERING RESEARCH

It is important to mention that this section serves to provide an overview of the ML/AML domain to the reader. It elaborates the dynamicity of ML/AML, gives a

summary of the issues in the AML domain, and presents the main efforts involved in AML.

There are inherent problems with defining and analyzing ML because it is a complex and systematic crime that is constantly evolving, taking on many forms, and is present in many areas of crime and social strata. Therefore, by extension AML is also affected by these issues. According to Durrieu (2013), when we refer to the phenomenon of ML, we need to include discussions and analyses from a variety of disciplines. A range of disciplinary paradigm shifts, policy changes, economic factors, new emergent technologies, and world political events have combined to shift the phenomenon of ML. Furthermore, Demetis (2010) argues that money and its functionality vary. New developments in technology and the socio-economic structures that take advantage of such technology are affecting the way in which money is defined and, consequently, the definition of ML. Defining and studying money laundering when the basic definition of “money” itself is shifting makes a comprehensive understanding difficult to attain.

Next, the problems involved in estimating the size and scope of ML markets will be illustrated. It is asserted that the ML market has increased, but anything approximating an accurate figure remains problematic, partly because of the factors mentioned above concerning the difficulty of finding a clear interpretation of the phenomenon itself.

2.5.1. Definitions of Money Laundering

Before attempting to define money laundering, it is important to recall and explore the definition of money itself. This is necessary because of the continuous development of new technologies and the socio-economic structures that are using them, whose interactions alter the definition of money and, consequently, of ML (Demetis, 2010). Here money is defined as anything that has real or perceived value and can therefore be used in exchange for goods and services (Demetis, 2010). Demetis adds that the dynamic nature of ML is attributed to the dynamic nature of the money being laundered.

Money is a socially constructed reality, an “institutional fact.” Originally, cultural intentions shaped its functionality as a medium of exchange, a means of payment, and a store of value. Those functions are still used to define the main characteristics of money. The cultural intentions also assign new statuses to any substance that begins illustrating new functions based on its changing cultural meaning. Those new functions are not performed just by the physical features of the phenomenon to be studied, but also by their perceived value (Demetis, 2010). As industrialism and consumerism developed, money began to change. It assumed the following five shapes:

1. Commodity Money: Physical and marketable commodities picked to act as a medium of exchange.

The emergence of money occurs through a gradual process that is valid because a society agrees that something has value. The named commodity is contentiously approved to be used as a medium of exchange between the market participants. The selection of materials like gold, silver, and copper resulted from spontaneous convergence of many individual choices prompted through the physical characteristics of these precious metals (Hulsmann, 2008, p. 23).

Hulsmann adds, once a commodity is used it starts to be accepted as a medium of exchange. As the commodity's perceived marketability increases, the gap between the value of that medium and previously used commodities widens until the new commodity is considered the primary medium of exchange (p. 27).

2. Money substitutes (contract money): These are banknotes that represent actual physical money stored in a bank. Money substitutes are documents that are used to pay a bearer a specific value in commodities. They can be taken as a promise to pay if the transaction requires a finite end to the exchange (Hulsmann, 2008, p. 39).
3. Credit money: This is more than a promise to pay from existing funds; it is rather a future monetary claim against someone that can be used to buy goods and services in the present. Hulsmann says, "Credit money receives its value from an expected future redemption into some commodity" (p. 29). Examples include IOUs, bonds, and money market accounts.

4. Fiat money: These money certificates are declared to be legal tender by the fiat of a government. They are not backed by any commodity; they merely act as a promise by the government to pay the bearer the value at any time. Hence, they depend solely on trust bestowed on the issuer (Hulsmann, 2008, p. 107).
5. The final type, electronic money, is within easier reach of cyber-crime because it exists within the confines of technology. Electronic money is a type of commodity with no physical properties; it is only referenced to its functionality as a medium of exchange. It is neither created nor controlled by any central authority, and it is not permanently connected with any specific currency. The Financial Conduct Authority of the United Kingdom (FCA, 2014) defines electronic money as follows:

Electronic money (e-money) is electronically (including magnetically) stored monetary value, represented by a claim on the issuer, which is issued on receipt of funds for the purpose of making payment transactions, and which is accepted by a person other than the electronic money issuer. Types of e-money include pre-paid cards and electronic pre-paid accounts for use online.

An emerging type of electronic or virtual money is Bitcoin. It can be transferred to anyone, anywhere in the world with no fees or provisions, and without going through any financial institution. Bitcoins and virtual money, generally, are becoming more widely accepted to the extent that one can buy anything with them. On the geopolitical front, the

use of Bitcoins affected the international sanction laws that had cut off Iran from the European and US currency systems. In November 2013, those sanctions reduced the value of the Iranian Rial from 20,160 Rials / 1 \$US to 25,000 Rials / \$1 US (Raskin, 2012). However, through the use of Bitcoins, Iranians were able to move their money abroad and conduct international commerce. In response to this governmental undermining, Jeremias Kangas (founder of localbitcoins.com) emailed Bloomberg Businessweek saying, “I believe that Bitcoin is, or will be in the future, a very effective tool for individuals who want to avoid sanctions, currency restrictions, and high inflation in countries such as Iran” (Raskin, 2012).

However, criminals quickly took advantage of Bitcoins and created anonymous online markets such as Silk Road. The website started in February 2011 (Christin, 2013, p. 215) and was closed by the American government in October 2013 (Leger, 2014) when criminal charges were brought against its founder. Silk Road provided an infrastructure for sellers and buyers to conduct anonymous online transactions. Products sold through the website included drugs, fake IDs, and guns, among other illicit products and services (Christin, 2013).

Definitions of ML are ambiguous because they are dependent on use of the term and the field in which the term is under study. According to the FATF (2009), ML is the processing of criminal proceeds to hide their illegal origin. In economic research, ML is defined as the activity in which a money launderer transforms liquidity of illicit origin

into actual purchasing power usable for reinvestment or consumption (Masciandaro et al., 2007). For the purposes of this dissertation, ML will be combined into these two definitions in order to create a more holistic analysis. Money laundering is defined in this research as the process of transforming the money gained from illicit markets and activities in order to conceal its origins, to attempt to legalize this gained money, or to invest the money in other markets, whether legal or illegal.

The process of the actual laundering of the money occurs in three main stages:

1. The Placement Stage: “Dirty” money, gained initially from crime, enters another financial transaction system.
2. The Layering Stage: Illicit money is separated from its source to remove culpability. This separation happens through sophisticated transactions to shadow the audit trail and destroy the link with the original crime.
3. The Integration Stage: Money is returned to the criminal as it is recirculated through legitimate sources. After being layered, the money is integrated into a legal (or illegal) financial system and can be used for any purpose.

With the evolution of technology, cyber-money laundering emerged. This is ML that exclusively uses technology to operate, and it has become a complex international problem. Electronic money has made it easier for criminals to move their money with lower risk of being detected. It also has increased the complexity of the audit trail, which further reduces the likelihood of detection.

2.5.2. Estimating the money laundering markets

Estimating the amounts of money that are laundered is problematic because the money moves through many concealed phases. Despite this difficulty, some researchers have attempted to quantify money laundering. Schneider (2010) estimates that ML turnover on a global scale was \$595 billion in 2001 and rose to \$790 billion in 2006. Agarawal and Agarawal (2006) state that the amount of global money laundering in 2005 was more than \$2.0 to \$2.5 trillion annually, which is about 5-6% of the world's GDP, a figure that increased dramatically by 33% from 2005 to 2009 (Schneider, 2013). As shown, there are huge discrepancies in the estimates of ML activities due to different reasons, including (1) the constant changes in ML domain. ML was connected to drug trafficking. Now the criminal activities scope in ML has broadened to incorporate other crimes like tax evasion and fake software, among others (Demetis, 2010, p. 13). (2) Underground markets are interconnected with the legitimate ones. Consequently, the instruments used to measure underground markets are distorted. Also, the definition of ML includes investing the illicit funds in legal businesses as the investment of creating Stanford University and Vanderbilt University (Duyne, 1998). Due to the lack of defined borders between legitimate markets and underground markets, ML and AML form a structurally coupled system that is beyond the dichotomy of good and evil (Demetis, 2010, p. 14).

A conclusion we may reach from the research on money laundering is that though it is difficult to track and quantify, it is safe to claim that money laundering is increasing, both in occurrence and amount of currency, and that it is enabled by the opportunities provided by technological advancement. Furthermore, studies examining the changes in global economic structures provide good indicators for increases in money laundering activities. Some countries have liberalized their markets and built trading relations with foreigners to increase their growth. Unfortunately, this creates complexity as differently governed systems interconnect to perform transactions and increase capital flow; making them more susceptible to ML; and at the same time, it increases the difficulty of defining potentially criminal activity.

In the next section, we will discuss the actor-network theory (ANT) that is used in this dissertation. AML is a broad domain that is interdisciplinary by nature and attracts researchers from many different fields. However, communication between these researchers is difficult because they independently use different approaches and methodologies. To study the entire process and outcomes, there needs to be an overarching framework that acts as an interconnecting communication platform for researchers of AML. Demetis (2010) points out that research in the AML field is descriptive; it is a continuous examination of the typologies of money laundering (p. 36). However, this is the kind of academic research that is individually incapable of being transferred to practical applications. The AML domain lacks theoretically grounded

research that can be applied in an interdisciplinary manner to find comprehensive applications for practitioners.

According to Hedstrom et al. (2010), there has been limited guidance in terms of identifying and articulating socio-technical information systems, and ANT is an appropriate solution to this issue. ANT proposes that a coordinated study of information systems and business strategies can be achieved if the heterogeneous actors are aligned. In other words, there is an open-ended array of things such as work routines, incentive structures, training, information systems modules, and organizational roles that first need to be regulated for consistency. ANT contradicts the current conception of an existing top-down structure whose decisions accomplish successful alignment (Monteiro, 2000; Latour, 1996). Demetis (2010) asserts (independently of ANT) that technology should not be seen as subordinate to other systems, and that technology as a system creates a destabilizing phenomenon that counteracts the top-down processes through other systems (such as the legal system in the case of AML) working independently of it. Therefore, by equating the effects of all actors, ANT may offer the language that can describe how, where, and to what extent technology affects human behavior.

In the next section, we will further describe the key theoretical ideas around actor-network theory and its usefulness in AML research, beginning with defining the essence and listing the primary concepts of ANT. After defining ANT, this dissertation

provides an illustration of the use of ANT in information systems research. Finally, there is a discussion of the research methodology used in this dissertation.

2.6. Actor-Network Theory

Actor-Network Theory (ANT) is a social theory and rests on the body of research that was developed within the tradition of science and technology studies (STS). ANT or the “sociology of translation” (Callon 1986), is concerned with studying the emergence and evolution of the heterogeneous networks made up of human and non-human actors. It explores the way networks emerge, how they are composed and maintained, how they compete with other networks, and how they sustain stable frameworks (Tantall and Gilding, 1999).

According to Law (1992), ANT perceives the world as consisting of a series of heterogeneous networks of actors, and all phenomena are the product of these networks. To understand the evidence of these networks, actors need to be studied without a priori definitions or expectations arising from perceived distinctions between technical and social conclusions. ANT does not accept any form of reductionism, including labeling it solely a technological or social viewpoint (Monteiro, 2000). Hence, ANT supports analyses that treat human and non-human actors equally.

Monteiro (2000) uses an analogy to illustrate this way of thinking by comparing ANT to driving a car to work. During the process of driving, both human and non-human actors come simultaneously into play, for example, traffic regulations (created by

humans), the driver's experience (based on experience with a specific technology), the car's engine (again, designed by humans for humans), road conditions (environmental factors which produce different effects on individuals and on technologies), other drivers, and so on. Hence, in order to understand the complete event of driving a car, all these factors must be considered as intertwined and shifting; they cannot be clustered separately into stable technological or social factors.

ANT holds three methodological principles: first, agnosticism, which relieves a researcher from a priori assumptions about the nature of networks or any causal conditions; secondly, generalized symmetry, which assumes one explanatory frame encompassing the study of human and non-human actors; and thirdly, free association or the abandonment of any distinction between a natural and a social phenomenon. These distinctions are seen as the effects of networked activities, and they cannot provide any explanations by themselves (Law, 1999).

Next, we will discuss the central concepts within ANT that have been used in the research.

2.6.1. ANT Concepts:

2.6.1.1. *Definition of "Actor"*

An actor is any element that bends space around itself, makes other elements dependent upon it, and translates their will into a language of its own (Callon and Latour, 1981). An actor is anything that is conceded to be the source of action.

Law (1992) argues that actors can be single entities, a cohesive network, or at the same time part of a group. He defines an actor as “an effect generated by a network of heterogeneous, interacting, materials” (p. 3). Latour (1999, p. 19) states that actors and networks are two faces of the same phenomenon—a social phenomenon called an “actor-network.” An actor can consist of network of actors, whose interests and roles are aligned. This is called black-boxing. Black-boxing allows the observer to decide on the level of analysis he or she wants to carry out. According to Sarker et al. (2006), “ANT allows a perceptive analyst to ‘unpack complexity by zooming in—or collapse complexity by zooming out’ depending on the objectives” (p. 54). Luhmann’s systems theory agrees that defining the system under study is done by the observer (Demetis, 2010, p. 37). According to Demetis (2010):

Every theoretical formulation, every theoretical construct and application, becomes inextricably bound up with an observer (say a researcher) that is employing the concepts of the theory for her/his own purposes. Hence, theory construction, deconstruction, reconstruction, and application, become severely dependent on the observers who employ these operations and conceptual schemas for observing within particular circumstances and contexts. (p. 37)

2.6.1.2. *Network and Actor-Network*

An actor-network is formed when all the actors are stable and purposefully aligned with each other. This alignment is a product of the negotiation of an actor's interest in enrolling in the network, which involves several processes, such as translation, which are defined below. Once an actor is enrolled in a network, new viewpoints, opinions, values, and rhetoric may be imported into the network's devices or materials, such as reports, documents, scientific papers, and computer codes and applications (Callon, 1986).

Once stability is achieved, the network is seen as a whole (black-boxed) and its individual parts are discounted. In ANT, a working bank is a product of networked negotiations between the different parts, departments, regulations, economic environments, and technologies whose actions are not taken individually, but only understood by their combined work. The bank will be viewed as a whole until something happens that alerts it to question its working stability. Only then will an observer be required to open the black-box and review the parts. According to Law (1992), what is need is:

A concern with how actors and organizations mobilize, juxtapose, and hold together the bits and pieces out of which they are composed; how they are sometimes able to prevent those bits and pieces from following their own inclinations and making off; and how they manage, as a result, to conceal for a time the process of translation

itself and so turn a network from a heterogeneous set of bits and pieces each with its own inclinations, into something that passes as a punctualized actor. (p. 386)

For a successful actor-network to remain functional, it recursively generates and reproduces itself. Therefore it is not a static structure. It is dynamically evolving by including new actors, removing actors, or examining the black-boxing of an actor, whether individual or collective.

2.6.1.3. *Translation*

According to Callon (1986), translation includes three essential moments: problematization, interessement, and enrollment. Problematization is the moment during which a focal actor defines the problem that identifies other actors with interests consistent with its own. It also establishes itself as an obligatory passage point (OPP). An OPP occurs when the focal actor becomes indispensable to the other actors or network in achieving their goals.

Interessement is the moment in which attempts are made to convince other actors to accept the definitions and the needs defined by the focal actor; that is, an attempt is made to lock other actors within the roles assigned to them, creating a need-based opening. Enrollment occurs when the network is re-formed and the existing actors have adjusted and accepted their roles and interests as defined by the focal actor. Finally, mobilization is the moment in which the solution gains network-wide acceptance and is black-boxed with the new actor incorporated (Callon, 1986, p. 8). Monteiro (2000)

points out the importance of translation in the stability of the network (p. 77). Translation is a consequence of an ongoing negotiation and settlement between actors who have diverse sets of interests.

2.6.2. ANT in Information Systems Research

ANT has been used in various information systems research studies to investigate phenomena from a socio-technical perspective. Below are some notable examples.

Cresswell et al. (2011) used ANT to study the complexity of organizations, focusing on the complexity and the various information systems in health service organizations and their technological role in shaping complex social processes. The authors admit that implementing IT can result in unexpected consequences. Therefore, ANT allows appreciation of the socio-technical issues in order to enhance dealing with the complex systems in health care.

Holmstrom and Robey (2002) conducted a case study on the successive enrollment of actors within a municipal organization in a project to advance the online analytical processing (OLAP) tools available. Using ANT, the authors present how the different actors translated their interests in improved decision making to a wider actor-network, thus illustrating the mutually coupling relation between technology and social elements. The authors say, “We use actor network theory (ANT) because it regards organizational change as an emergent process and focuses explicitly on the properties of technical artifacts” (p. 3).

Heeks and Stanforth (2014) drew upon ANT to explain the political interaction of stakeholders that had been ignored in studies of e-Government projects. Through understanding the local/global actor networks that surround an e-Government project, ANT provides insights into leadership as a process of network formation and maintenance and into the tensions between them in network stabilization.

Sarker et al. (2006) used the concepts of ANT to interpret the sequence of events that led to business process change (BPC) failures in an organization. They stress the usefulness of ANT in studying phenomena in which communications, politics, leadership issues, and technology interact.

Hedstrom et al. (2010) applied ANT concepts to study computer security management. They illustrated the importance of ANT to understand the complex inter-relationships between different technical and non-technical actors.

2.7. CONCLUSION

There is an intertwining relationship between technologies and organizational structures. Technology is designed, developed, and implemented by its users. Yet the technology itself shapes the humans' interactions with it as well as among themselves. Therefore, if the technology is not appropriated, it will introduce structural changes. The continuous reliance on the technology and the expansion of organizations' services and roles has given rise to a complexity that can be exploited by criminals to perform their activities.

FATCA is a law that has been enacted to reduce tax evasion activities. The law brought forth a complex reporting system that if implemented effectively, will lead to increasing the transparency of global financial flows. Its implementation has been accompanied with various problems, including understanding the law itself, its high cost and the low returns from its implementation (i.e., lack of incentives to comply effectively), technical issues emerging from the requirements of the law for reporting, and structural issues that have arisen from the law's requirement to modify the complying entity's processes and procedures.

Some illicit funds that are generated through tax evasion may also involve ML. FATCA is a law that has been enacted to combat tax evasion funds derived from opening offshore bank accounts or offshore businesses. However, for this money to be legalized and invested, tax evaders need to go through ML schemes to conceal its trail. Therefore, this dissertation argues that it is important to take a general overview ML and how it is evolving, the role of technology in both the ML and the AML domains, and the issues that are suggested in the literature about complying with AML. The overview given asserts that ML is a socio-technical phenomenon that needs to be studied from the perspective that it is not merely a consequence of technical problems or managerial issues in AML.

ML/AML are socio-technical in nature. Thus, in order to understand or investigate these domains, there is a need for a socio-technical theory that allows for the

interpretation of the human behaviors in the context of politics, lack of communication, and lack of leadership, especially when technology plays a crucial role and interacts with humans. Hence, in this dissertation we are relying on ANT to serve our argument and to advance us toward the goal of our research.

CHAPTER 3 Research Approach and Research Methods (Interpretivism and a Case Study)

3.1. INTRODUCTION

This chapter discusses the philosophical and theoretical issues concerning the nature of the method used to develop an interpretive case study. The chapter starts with an introduction to the dominant research philosophies in the IS domain (Section 2). This introduction will lead to an explicit presentation of the philosophical research assumptions that this dissertation is built upon. According to Orlikowski and Baroudi (1991), all research is based on learned assumptions about the questions that guide a “valid” research approach; namely, what is the underlying nature of the phenomena, and which research method is appropriate?

This chapter acknowledges the intertwined relationship between the social, technical, and information components in the FATCA compliance initiative. Section 3 discusses the theoretical IS approach to be used in the research and justifies the selection of ANT. Since FATCA is a law to reduce ML activities, it is in line with the AML domain. Therefore, the section will focus on the AML research approach by arguing that it reflects the same problems encountered in FATCA compliance research. Section 4 presents the research design, the structure of the analysis, and the data collection plan. It

is important to highlight that this dissertation seeks to investigate the issues in FATCA compliance in the JLB bank. As a case study, this can yield lessons for the ML/AML domains; however, these lessons cannot be presented as final theoretical propositions without validation. Therefore, Section 5 discusses the measures of interpretive validity that can be used in future research to resolve any inconsistencies in the interpreted human actions involved this case study (Sarker et al., 2006). Section 6 describes the case selection criteria. Finally, section 7 concludes with the main ideas presented in this chapter concerning our prospective research approach and method.

3.2. ONTOLOGY, EPISTEMOLOGY, AND METHOD: IN GENERAL AND IN THIS STUDY

3.2.1. Ontology, Epistemology, and Method: In General

In this section, we discuss the general philosophical principles upon which this research was built. The three philosophical perspectives considered are, according to Blaikie (2007):

1. Ontology: That which is based on the question of what is the nature of “reality” and what is “being”;
2. Epistemology: That which is based on the questions about what kinds of knowledge can be obtained and how we know what we know;
3. Methodology: That which is based on questions concerning the means by which we discover knowledge.

Ontology focuses on the discussion of whether reality exists independently of our own perceptions (objective) or whether it is purely a social construct (subjective). Simply put, is reality an autonomous phenomenon, or is it a product of human consciousness (Orlikowski & Baroudi, 1991)? Epistemology rests its tenets on the origin, nature, and limits of human knowledge. In other words, it focuses on how knowledge can be obtained or evaluated, and not on its “existence.”

The positivist research perspective is dominant in Western science, including information systems research. It assumes that knowledge exists, can explain the objective world, and is based on causal laws and relations. Hence, positivist research is built on evidence from formal propositions, quantifiable measurements of variables, hypothesis testing; and it proposes conclusions based on representative samples of a specified population (Orlikowski & Baroudi, 1991). However, this school of thought has been criticized by Lee and Liebenau, (1997), who state that positivist research alone is inadequate to explain the social and human matters that surround the use of information systems.

The other common research approach in information systems is the interpretive approach. Interpretive research is based on the belief that knowledge is created through human interactions with the world and social discourse. People in a society think and act according to the effects of accepted roles and consequently create an evolving social reality (Orlikowski & Baroudi, 1991).

Information systems researchers have pointed out several differences between the positivist and interpretive research approaches. Guba and Lincoln (1989) contrast positivist (conventional) and interpretive (constructivist) paradigms from the ontological and epistemological perspectives. From the ontological perspective, positivist researchers emphasize the existence of reality regardless of an observer's interests. Hence, a researcher's job is to discover the causal laws, statistical models, and general laws that explain a phenomenon. Interpretive researchers generally assert that reality is socially constructed. So rather than relying on predictable cause-and-effect relations when understanding a phenomenon, interpretive researchers rely on understanding and interpreting how people understand the ways in which they deliberately perform their actions, as well as understanding the ways in which they possess their interactions (Lee & Hovorka, 2015). People have subjective meanings behind their actions; the actions are also understood by other people within the same social context through the mutual objective social knowledge that exists. According to Lee and Hovorka (2015), this mutual understanding shapes a person's role in a social hierarchy. An example of this can be seen in Gearing's book entitled *Face of the Fox*, a work about the North American Fox Indians. Gearing explains that according to the Fox kinship social structure, a person may call two or more men by the same term, which we translate as "father": the biological father and the father's brother. The importance of this mutual understanding is its shaping of social roles. In the kinship social structure, the Fox Indian will interact with

those two fathers according to a set of obligations assigned and mutually understood in the social structure (Lee & Hovorka, 2015, p. 4922).

From an epistemological point of view, positivist researchers see the natural world as objective. This means the researcher has little or no controlled interaction with the phenomena under study. Conversely, interpretive research views reality as being generated by the researcher's individual observations and understanding of actions. The researcher needs to interact with the phenomena under study in order to understand the social structural factors and the mutual meanings that people possess in performing their actions (Guba & Lincoln, 1989).

The theorizing process is also different in each approach. While positivist researchers seek to discover explanations since they believe that the world is objective, an interpretive researcher's theorizing aims to interpret a specific phenomenon. Interpretivism in this sense encompasses "*Verstehen*," or an understanding of the social context. Lee and Hovorka provide four important considerations about understanding that should be taken into account to strengthen interpretive theorizing. 1) There is a subjective "meaning with which an author writes his text or the meaning with which a person deliberately performs an action" (Lee & Hovorka, 2015, p. 4918). An interpretive researcher needs to understand the subject's inherent meanings with which his or her own action is deliberately performed. 2) When this action escapes the originator, it can be attached to meanings that are different from the originator's intended meanings. Those

meanings also need to be considered by the interpretive researcher. 3) When the action is detached from the performer and the time at which this action took place, a third meaning can be generated; this meaning is crucial for understanding, as it is the meaning given to the action in the future. 4) Finally, interpretive researchers should take into account the immediate context (ostensive) along with the indirect mediate context (non-ostensive) of the action. The former is the context that is visible to people in a social interaction, and the latter is the context beyond this initial setting but without which the action would be meaningless (Lee & Hovorka, 2015, pp. 4921-4922). An example provided by the authors is a text written in a peer-reviewed scientific journal. The ostensive reference is the empirical phenomenon that the authors observed. The non-ostensive reference is the larger body of scientific literature forming the research stream and ramifications following upon the text. Therefore, an interpretive theory should tie together the subjective meaning, the social interaction, and the affected social structure and culture (non-ostensive reference).

Lee (1991) provides a comparison between interpretive and positivist research. According to Lee (1991), the positivist approach encompasses procedures associated with inferential statistics, hypothesis testing, mathematical analysis, and experimental and quasi-experimental designs. The positivist approach has been recognized as the “natural-science model” of social-science research. It relies on manipulating theoretical propositions using the “rules of formal logic” and the “rules of hypothetico-deductive

logic” (p. 343). The rules of formal logic stipulate that insofar as propositions are related, new ones can be deduced from them. The rules of hypothetico-deductive logic rely on applying mathematics to relate propositions to one another. The interpretive approach, however, refers to the procedures associated with ethnography, hermeneutics, phenomenology, and case studies. Researchers using this approach maintain that the methods of natural science are inadequate to study a social reality. This school of thought takes the position that people, and the material and social artifacts they create, are fundamentally different from the physical reality examined by natural science. “People create and attach their own subjective meanings to the world around them and to the behavior that they manifest in that world” (Lee, 1991, p. 347). According to Schutz (1973 as cited in Lee, 1991), an important difference that this subjective meaning creates is its non-existence in the subject matter investigated by natural-science research. Schutz thought that atoms, molecules, electrons, and even rocks do not understand other atoms, molecules, electrons, and rocks. However, humans understand and act according to their understanding of other humans. A human action can have different meanings for different subjects and for different observers. This adds a complication to interpretive research; it is even argued that it is more difficult to conduct than positivist research.

Finally, from a methodological perspective, whichever research method is chosen, the researcher needs to be aware of his or her particular methodology’s limitations and validity because these factors relate to his or her research goals

(Orlikowski & Baroudi, 1991). Methodology consists of the techniques, ways, and approaches of gathering valid empirical evidence; it deals with the system, rules, and conduct of inquiry (Guba & Lincoln, 1989). A researcher should use a method that suits her or his research interest and is the most appropriate to the ultimate research goals.

Obviously, when the ontological position is assumed, the ways in which epistemological questions can be answered are constrained. For example, the ontological assumption that an objective world exists constrains the researcher to assume a distance from the phenomenon under study in order to limit bias. Conversely, under the assumption that reality consists of a series of mental constructions, the researcher is constrained to interact with the phenomenon and its context. According to Walsham (1993), "Interpretivism is an epistemological position, concerned with approaches to the understanding of reality and asserting that all such knowledge is necessarily a social construction and thus subjective" (p. 5). Once the ontological position is assumed and the epistemological position has been determined, the answers to the methodological questions can be provided.

Common research methods in information systems are laboratory experiments, field experiments, case studies, and simulations, among others. There is no single choice in regard to these ontological, epistemological, and methodological choices. No matter which method is chosen, the researcher should always be aware of its limitations and how they will affect the goals and conclusions of the research.

3.2.2. Ontology, Epistemology, and Methodology in This Study

In this dissertation's research, the ontology is that the phenomenon under study (FATCA compliance) is inherently subjective and exists only through the actions of human. Money is a social reality that changes over time. Tax evasion as well as ML definitions and schemes also change as a result of the change in the definition of money. Therefore, the effort against tax evasion (FATCA) is a socially created phenomenon. Further, efficient FATCA compliance requires a cross-functional effort and spans the whole structural hierarchy. In order to understand the social interaction in a phenomenon, there is a need first to understand the subjective meaning behind people's actions and the greater meaning these actions have for the society around them. Therefore, the epistemological stance of this dissertation is the interpretive perspective.

From the methodological perspective, this dissertation conducts an interpretive case study that allows us to interpret a financial institution's social interaction with technology and information when complying with FATCA rules, while considering the role of communications, politics, training, and awareness. As shown by the literature, financial institutions are complex entities that encompass intertwined social and technical structures.

Case study research in IS has been used in both of the two aforementioned approaches (positivist and interpretive) (Orlikowski & Baroudi, 1991), and some researchers have even combined both approaches (e.g. Lee, 1991). Some researchers,

such as Benbasat et al. (1987) and Yin (2002), approached case studies from a positivist perspective. However, the positivist methodology has been criticized in organization research inasmuch as it is difficult to capture social reality through formal propositions, to quantify it, and to subject it to experimental controls. This is because the social sciences have not yet reached the same level of maturity under the positivist understanding that characterizes the natural sciences (Lee, 1991, p. 343).

Acknowledging both the social and the technical character of the research and the phenomenon under study, the next section discusses the current theoretical approaches to AML research in order to explain our choice of ANT.

3.3. THEORETICAL APPROACH TO FATCA COMPLIANCE AND THE CHOICE OF ANT

Because of the incorporation of both the social and the technical aspects, it is crucial to discuss the relationship between the two in order to pinpoint the most exact research approach. From an IS perspective, different positions lead to different theoretical streams. In this section, we will discuss these relationships to better establish our research methodology and the theory in use.

IS research is generally classified as either technical or socio-behavioral. While the former emphasizes the way sophisticated devices and algorithms are designed to protect and manipulate information resources and data, the latter stresses an understanding of managerial and employees' issues and interactions with IS. While both

types have made contributions to the extant body of knowledge, there are some fundamental limitations to both (Hedstrom et al., 2010).

Technical-oriented research has a narrow focus on design science. While technical discoveries are important, they are limited by under-recognizing the effects of a contextual environment: the human interaction factor. As a reaction to the focus on “IT artifacts” in design science research and their influence on IS research, a new trend emerged that emphasizes the importance of the human element within the sphere of technology, “social artifacts.” Yet both trends need to shift the focus to the “IS artifact” owing to the basic tenet of systems theory that the system as a whole is more than the sum of its parts (Lee et al., 2015, p. 6).

This applies to the AML domain. AML has been studied within two distinct categories, each with its own agenda. On the one hand, there is the technical research that studies the computational modeling of ML activities, creates algorithms to analyze ML processes, and develops software that can spot those movements and generate suspicious activity reports (SARs). However, money laundering behavior is dynamic and intuitive and thus finds ways around algorithm controls. Furthermore, technological solutions do not guarantee efficiency. Hence, technological development and research will not provide solutions indefinitely. On the other hand, there is social AML research that focuses on human factors, working to understand the managerial and complying

behaviors that contribute to AML. However, efficient administrative procedures alone will not sustain AML solutions indefinitely (Demetis, 2010).

ML is neither a result of technical deficiencies in AML nor a result of bad management decisions in AML; it is a socio-technical problem. Therefore, in studying AML, there is a need for a socio-technical theory that allows observation of both the technical and the social (behavioral) side.

The discussion about AML/ML domains here is due to their relation to FATCA compliance/tax evasion. Since tax evasion always leads to ML activities, FATCA as a rule to fight tax evasion and compliance with FATCA are also related to the AML domain. Both FATCA compliance and AML compliance involve an interaction among technology, social structures, and information that needs to be studied from a socio-technical theoretical perspective.

In discussing the need for a socio-technical theory, we argue that a bank that complies with FATCA is an instantiation of an information system. According to Lee et al. (2015), an information system is an instantiation of an “information artifact” (such as messages), a “technical artifact” (such as hardware and software), and a “social artifact” (such as an organization’s structures). Each of these artifacts imposes necessary requirements upon the others. In FATCA compliance initiatives, there are the technology artifacts (the different technologies for reporting or identifying the US clients), the social artifacts (such as the organizational structure), and the information artifact (such as the

collected databases of the people who need to be reported). As an information system, FATCA compliance also needs to be researched from a socio-technical perspective.

Sarker and Lee (2002) illustrated the importance of studying IS from a socio-technical perspective. They conducted a study on business process redesign. In their work, they relied on evidence to refute the techno-centric theories that focus on IT as being central to achieving effectiveness in business process redesign. The authors also refuted the purely socio-centric theories that focus on the social aspects of effective business process redesign. They demonstrated the importance of socio-technical theories when studying the effectiveness of every domain that involves mutually coupled technologies and social structures.

Responding to the call of Sarker and Lee (2002) that IS needs to be studied from a socio-technical perspective and of Demetis (2010) that the ML/AML domains need to be studied from a socio-technical perspective, this dissertation adheres to a socio-technical study of FATCA compliance (as a case of a law that combats tax evasion, which is a predicate crime of ML) by using actor-network theory. ANT has been proven to be a useful socio-technical theory for studying the inter-relationships between human and non-human actors. The theory's concepts allow us to interpret politics, communications, awareness, leadership, and other social issues, especially when technology plays a crucial role.

3.4. RESEARCH DESIGN

The role of theory gives rise to an important concern in interpretive case study research. Walsham (1997) discusses three uses of theory: (1) an initial guide to the research data collection and design (e.g. Walsham, 1993); (2) a part of an iterative process of data collection and analysis (e.g. Orlikowski, 1993 as cited in Walsham, 1997); (3) a final product of the research (e.g. Orlikowski & Robey, 1991 as cited in Walsham, 1997). Our interest here concerns the third use of theory: that it is a final product of the research. In this thesis we aim to create an ANT understanding of FATCA compliance at the bank under study. We seek to highlight the major issues within the initiative the bank implemented to comply with FATCA. Those issues will be pinpointed from an ANT perspective. Hence, we will use ANT concepts as initial guides to follow the sequence of events in the initiative. We also aim to add a theoretical contribution and create propositions that can enhance the chance of the success of the compliance initiative.

The work of Sarker et al. focuses on the complexities of structural changes at the organizational level, especially when technology plays an integral role in the process. For our dissertation, we focus on the interaction between technology, organizational structure, and information in compliance initiatives such as FATCA at financial institutions. Like Sarker et al., our level of analysis is financial institutions themselves (organizational level) because of their importance as a first line of defense against money

laundering. Most of the regulations, being national or international, are implemented directly in the financial institutions. They are the first line of contact with people, where the monitoring of transactions and behaviors occurs.

In order to explain our research design, it is important to illustrate how Sarker et al. (2006) use ANT in their paper, since this dissertation will follow their structure. The justification of following this structure is that we share the same level of analysis and the same goal: to create an understanding of the domain so practitioners may better anticipate the complexities that emerge from the intertwined relationship among technology, human actions, information, intentions, and internalizations so that they can better use this technology and the information. In the following section, we will show how the authors use ANT in their study and provide a summary of their propositions and conclusion.

3.4.1. The Structure of Analysis

In their paper, Sarker et al. (2006) claim that the promises of business process change (BPC) have not been recognized. Practitioners approach it in a “technocentric” fashion that ignores the critical roles of communication, politics, and leadership. Grover and Kettinger (2000 as cited in Sarker et al., 2006) called for an interpretive approach to contribute to the body of knowledge on BPC. Sarker et al. responded by introducing ANT as a socio-technical approach to study the interaction between technology and human processes. They applied ANT concepts to an interpretive case study of a telecommunications company in the U.S. (TELECO).

In their application of the theory, the authors followed the sequence of events before, during, and after the BPC initiative at TELECO and viewed the process as a creation, expansion, and collapse of actor-networks. From an ANT perspective, this describes the process of translation in which different actors align their interests with the interests of the focal actor.

In their paper, Sarker et al. briefly present the case of BPC at TELECO. They then draw upon the concepts of translation, problematization, obligatory passage point (OPP), intersement, enrollment, inscription, and irreversibility to interpret the sequence of events of the implementation of the initiative.

- First, they describe the old TELECO network. They name its major actors and give an idea of how they were aligned.
- Second, the authors describe the problematization process in which they identified the OPP and the main actors for the new “post-BPC” network.
- Third, the authors detail the intersement process. They illustrate the negotiations between the focal actor and each potential actor. The authors also illustrate the unplanned negotiations occurring between the actors that had not been recognized during the problematization phase, such as reactions to the BPC tools.
- Fourth, they describe the enrollment process and discuss how the initiative failed.

In the discussion section, Sarker et al. highlight errors during problematization, the limitations of the intersement strategy, the complexities of enrollment, the post-

enrollment pitfalls, and the irreversibility points at which problem solving became difficult. During each of these phases, the authors provide propositions (which they call “abstractions”), such as statements codifying specific ANT-based knowledge on the BPC. This dissertation seeks to come up with its own propositions in the area of AML. In other words, this research will be using Sarker et al.’s study as a research exemplar with respect to research form. Of course, the substantive findings and general propositions in the research will pertain to AML in our case study.

In this dissertation, we will follow the same structure using a compliance initiative with the FATCA rule. We will describe the old network, the problematization process, the interessement process, and the enrollment process. Then using ANT concepts, we will identify the problems in each of the phases. Our contribution will be ANT-based propositions that will improve FATCA compliance, taking into account the socio-political nature and the crucial role of technology within the domain. Furthermore, we introduce information as an actor by itself that interacts with the technology and the social structure of the bank. This interaction may cause issues in the compliance initiative if it is not considered.

3.4.2. Data Collection

Data was collected through semi-structured face-to-face interviews with the bank’s employees. Later, informal interviews were conducted by phone for clarification purposes when needed. The formal face-to-face interviews averaged ninety minutes in an

endeavor to capture both facts and emotional responses from the interviewees. Questions were asked about the employees' roles, the changes needed to comply with rules and regulations, the technical issues they face, and the social issues and interactions they are involved in. To check the validity of the data collected, we reviewed the transcribed written data with the informants.

The selection of the informants was determined by their level of involvement in the areas of compliance, risk assessment, policy-making, and in their participation in the Foreign Accounts Tax Compliance Act (FATCA) compliance initiative. We followed a heuristic approach to determine the number of interviewees, that is, we continued conducting interviews until the saturation level at which no new information was being gained.

Because of the importance of the validation process in interpretive research, a section is included in this chapter that discusses the details of interpretive validation, which will illustrate how we conclude that the propositions are valid, true, or correct.

3.5. VALIDITY OF INTERPRETIVE RESEARCH

According to Orlikowski and Baroudi (1991), whichever research method is chosen, the researcher needs to be aware of his or her particular methodology's limitations and validity in relation to the research goals. In this section, we discuss the methods used to confirm the validity of our findings and propositions. Since we are

conducting an interpretive case study, our focus here is on the validity of the interpretive approach.

In his work, Lee (1991, p. 348) discusses the interpretive approach through the examples of hermeneutics and ethnography. Hermeneutics has been used to understand literary and religious texts. Its motivating question is: How might the reader of a text interpret the meaning implanted by its writer when other portions of the text itself are the primary, or sometimes the only, cross-referencing tools available?

Interpretive researchers have extended this reasoning to interpreting human actions by replacing the term “text” with “text analogue.” For example, if a researcher’s interpretation of the body of shared rules for allowable behavior in a particular organization is valid, then the researcher’s observation of any action by an organizational member will be consistent with this interpretation. Here, the text analogues are “the body of shared rules for allowable behavior” in this organization, including “any action by an organizational member” (Lee & Hubona, 2009, p. 243).

Thomas Kuhn (1977 as cited in Lee, 1991) describes how hermeneutical analysis can be conducted:

When reading the works of an important thinker, look first for the apparent absurdities in the text and ask yourself how a sensible person could have written them. When you find an answer ... when those passages make sense, then you may find that more central passages, ones

you previously thought you understood, have changed their meaning.

(Lee, 1991, p. 348)

Additionally, Taylor (1979, p. 27 cited in Lee, 1991, p. 349) introduced the concept of the

Hermeneutical circle, in which the meaning of a particular passage in a text (or a particular human behavior in a social setting), as interpreted by the reader (or observer), is related inextricably to the meaning of all the other passages in the same text (or the meanings of all the other human behaviors in the same social setting). Because of this, any clarification or other changes in the interpretation of a passage (or a behavior) has the effect of rippling through the circle and changing the framework supporting the previous interpretations of the other passages in the text (or the other behaviors in the social setting). (Lee, 1991, pp. 348-349)

Interpretive researchers provide different but related tests for the validity of interpretations. Kuhn explains that the interpretation process clears up the “apparent absurdities” that emerged during the initial interpretation of the actions in a social setting. Therefore, the behaviors of others will appear rational when they are observed within the same social setting (Taylor, 1979 as cited in Lee, 1991, p. 350). This also applies to ethnographic research, the subjects’ behaviors need to be viewed rationally by the ethnographer instead of as being absurd, peculiar, pointless, or confusing. In the latter

case, the interpreter was not successful in understanding the subjective meanings behind the subjects' actions. "The ethnographer must identify such meanings and accept the rationality behind the actions of the observed subjects" (Geertz, 1983 as cited in Lee, 1991).

Another way to test the validity of ethnography, provided by Sanday (1979, p. 529 as cited in Lee 1991, p. 350), is: "If after having completed the ethnography, the observer can communicate the rules for proper and predictable conduct as judged by the people studied, he or she has produced a successful product. The ethnographer is like the linguist who has studied and recorded a foreign language so that others can learn the rules for producing intelligible speech in that language."

Lee and Hubona (2009) introduced an assessment for validity in interpretive research through a framework that applies the deductive logic of syllogisms, which is fundamental to formal logic. The forms of hypothetical syllogism used are modus ponens and modus tollens. Thus, the authors' framework is called the MPMT framework:

Modus ponens is the form of syllogism in which the major premise takes the form: "if p is true, then q is true"; the minor premise, "p is true"; and the conclusion, "therefore q is true." Modus tollens takes a different form. The major premise is the same as modus ponens, but the minor premise is: "q is not true" and the conclusion: "therefore p is not true."

Here, p is the theory, and q consists of facts or data that the researcher expects. (Lee & Hubona, 2009, p. 237).

Table 2 shows the details of how modus tollens take form in interpretive research. The table mentions hermeneutic interpretation, which originated as the study of the interpretation of texts but now extends to interpretivism in general, with “text” being replaced by “text analogue.”

Table 2: Modus Tollens: Interpretive Research, Borrowed from Lee and Hubona (2009, p. 241)

$p \supset q$	If a reader's interpretation I_k of a text is a valid hermeneutic interpretation, then the reader's interpretation of any passage P_i or set of passages (e.g., P_2, P_3, P_5) in the text will not give rise to a contradiction, inconsistency, or other anomaly with regard to the reader's interpretation of any other passage or set of passages in the text.
$\sim q$	A reader's interpretation of a new passage in the text (a passage she did not read previously) gives rise to a contradiction, inconsistency, or other anomaly with regard to the interpretation she made of another passage or set of passages she previously read.
$\therefore \sim p$	Therefore, the reader's interpretation I_k of the text is not a valid hermeneutic interpretation.

This framework may readily incorporate the hermeneutic circle mentioned above as an instance of the logic of modus tollens. This incorporation is as follows (Lee & Hubona, 2009, p. 244):

- If p then q: “If a reader’s interpretation of a text is a valid hermeneutic interpretation, then the reader’s interpretation of a particular passage or set of passages in the text does not give rise to any contradiction, inconsistency, or other anomaly with regard to the reader’s interpretation of any or all of the other passages in the text.”
- Not q: “For a particular passage or set of passages in a given text, the reader’s interpretation gives rise to a contradiction, inconsistency, or other anomaly with

regard to the reader's interpretation of another particular passage or set of other passages in the same text.”

- Then not p: “Therefore, the reader's interpretation of the given text is not a valid hermeneutic interpretation (thereby suggesting that a revised or completely new interpretation needs to be developed and then also tested).”

Lee and Hubona (2009, p. 246) argue that this logic of testing the validity of research is, at best, applied in only a few examples of published IS research. The authors differentiate two types of validity: formative validity and summative validity. The former is defined as “an attribute of the process by which a theory is formed or built ... achieved by following one or another accepted procedure in the process of its being formed.” The latter is defined as “an attribute of the sum result or product of the process, namely, the theory... achieved by surviving an empirical test that uses the logic of modus tollens.” An example of a paper that applied modus tollens is, from Lee and Hubona's perspective, Trauth and Jessup (2000, pp. 66-70 as cited in Lee & Hubona, 2009, p. 253).

3.6. CASE SELECTION

For the case study, we conducted the research in a bank in Jordan. We are not allowed to disclose the identity of the bank or the employees. For this reason, the bank is referred to as the Jordanian Local Bank (JLB). The selection of the bank was due to its on-going efforts to employ technologies to comply with an international regulation, FATCA. Jordan's banks, like most of those in developing countries, are operating in an

environment in which information and communication technologies (ICT) are still growing. We believe that this lack of a mature infrastructure will give us an in-depth view of the ways banks are adopting brand new technologies and how employees interact with those technologies. This will give better insights into the role of technology when applied in the domain. Another criterion for selection was the importance of Jordan's location. Jordan is one of the few stable countries in the Middle East. Although Jordan's stability is good in terms of national security, this same stability can make it an attractive destination for criminals to legitimize money gained from criminal activities committed in the surrounding less secure countries. According to the 2013 International Narcotic Control Strategy Report (INCSR), "Jordan's long and remote desert borders and proximity to Iraq, Syria, Saudi Arabia, and Israel and the West Bank make it susceptible to the smuggling of bulk cash, gold, fuel, narcotics, cigarettes, counterfeit goods, and other contraband."

3.7. CONCLUSION

Our research is about understanding the role of technology, information, and the social structures in complying with the FATCA regulation. FATCA compliance is a socio-technical domain that affects and is affected by other external fields such as the legal, economic, and social domains.

In order to study the role of technology in compliance initiatives, it is important to appreciate the politics, intentions, training, and awareness of the actors and their relation

with the particular technology. To do that, we conducted an interpretive case study involving ANT that followed the sequence of events in the initiative. We identified, from an ANT perspective, the events that occurred because of a failure to recognize the socio-technical nature of the compliance process. The data for the case were collected from formal interviews with the bank's employees on the subject of FATCA. Informal interviews were conducted also for clarification purposes and through documents collected from the interviewees. The goal of the research was to create a usable ANT-based theory that can be applied by practitioners to better anticipate the emerging complexities that can come to light during compliance projects. It also seeks to develop lessons from which the ML/AML domains can benefit.

CHAPTER 4 DATA ABOUT THE CONTEXT OF FATCA AND THE ISSUES THAT THE JORDANIAN LOCAL BANK FACED IN IMPLEMENTING THE COMPLIANCE INITIATIVE

4.1. INTRODUCTION

This chapter is called “Data about the context of FATCA and the issues that the Jordanian local bank faced in implementing the compliance initiative” because it merely presents the data collected in the case study conducted in this research. The chapter does not include the theory that is built on or illustrated with the data. The presentation of the data in this chapter will be provided deliberately in “lay language”—that is, in a way that the people at the field site, the Jordanian Local Bank (JLB), themselves would understand. This is related to what Schutz (1962, pp. 62-63) calls “first level constructs.” In chapter 5, the presentation of the theory, illustrated by the data, will be discussed in theoretical/scientific language, which is what Schutz (1962, pp. 62-63) calls “second level constructs.” This separation of chapters by different construct levels is done intentionally because the purpose of this research is not only to aid in developing the body of literature on FATCA compliance but also to develop propositions that will aid practitioners in their compliance with FATCA.

Jordan is considered one of the advanced and stable economic countries in the Middle East. It maintains an open economy for international investments and international markets. The economy incorporates a spectrum of financial services in which banking represents the largest component. Total banking assets at the end of 2009 were \$45.1 billion, which is 196.5% of the GDP (AMLU, 2010a, p. 31).

This chapter starts with the background concerning our interviews (Section 2). Section 3 discusses the sequence of events of compliance with FATCA in the JLB. Section 4 presents background information on Jordan's current AML status. Finally, section 5 is a summary.

4.2. INTERVIEWEES OF THE JORDANIAN LOCAL BANK

The author would like to express his acknowledgement to all the JLB bank employees for their assistance and helpful explanations. A non-disclosure agreement does not permit naming the bank or the employees who were interviewed. Thus, the bank is named the Jordanian Local Bank (JLB) and the interviewees are labeled with their position titles. The interviewees were:

- 1 The Anti-Money Laundering and Compliance Department manager;
- 2 The Anti-Money Laundering and Compliance Department assistant manager;
- 3 The Database Administrator (DBA);
- 4 The vendor company of core banking and the FATCA KYC software that the bank uses;

- 5 The employee from a FATCA consulting company who was responsible for helping the bank to assess their readiness for FATCA compliance.

The author collected the data through formal face-to-face interviews averaging ninety minutes in an endeavor to capture the facts about the compliance process. Questions were asked about the FATCA initiative, the changes needed to comply with it, the technical issues our interviewees faced, and the social issues and interactions they were involved in. We conducted informal interviews for clarification purposes when needed. Table 3 presents the list of interviewees and the statistics about the interviews.

Table 3: Interviewees' Information

Interviewee	The number and the type of interview	Total number of interviews
The head of the AML and compliance department	1 Formal with appointment.	1
The assistant manager of the AML and compliance department	1 Formal with appointment and 3 informal interviews	4
Database Administrator (DBA)	1 Formal with appointment and 2 informal interviews	3
IT/technical support team	1 Formal with appointment	1
Employee of vendor company	Formal with appointment	1
A FATCA Consultant	Formal with appointment	1

We were allowed to access the Know Your Customer forms, the policy of KYC and Customer Relationship, the compliance plan created for FATCA, online information about the bank and its annual report, the presentation about FATCA by the FATCA consulting firm, and the detailed report to FATCA provided to the Board of Directors. The following is a description of the FATCA initiative at the JLB.

On March 2, 2014, the Governor of the Central Bank of Jordan (CBJ) launched the forum “The Final Legislation and Developments: The Last Reminder” in regard to FATCA. Preliminarily, FATCA reporting was supposed to come into force in March 2015. Therefore, it was stressed that the banks start their implementation immediately (The Association of Banks in Jordan, 2014).

The CBJ emphasized its keenness for the Jordanian banks’ compliance with the rules. Jordan had not signed an intergovernmental agreement (IGA) on any model with the IRS or the Treasury. The financial institutions should participate individually with the FATCA rules to report the required information directly and should communicate with the IRS on their own initiative. The CBJ would oversee only the banks’ compliance by 1) sending a survey to banks with questions assessing the procedures planned to ensure the banks’ readiness, and 2) then dispatching a joint team from the CBJ and a consultant company, Ernst & Young, to visit the bank to ensure that its answers to the survey on the compliance procedures were in line with FATCA (The Association of Banks in Jordan, 2014).

According to Dr. Adli Kandah, the Director General of the Association of Banks in Jordan, Jordanian banks will face legal as well as operational challenges when complying with FATCA. Specifically, he mentions the confidentiality of bank accounts; closing bank accounts of recalcitrant clients; deductions and tax deductions on recalcitrant clients; the lack of clarifications of various terms, such as “U.S. source of income”; and the issue of clients’ awareness of the act. From a legal perspective, it is illegal to deduct money from a client’s account and transfer it to the IRS; and it is also illegal to close a client’s account for any reason, including the lack of updates on customer documentation, especially when the client holds a balance (The Association of Banks in Jordan, 2014).

In this case we discuss a Jordanian local financial institution that started a project to comply with the FATCA law. We will evaluate the initiative’s progress and outcomes in the later chapters. This chapter merely aims to highlight the observed issues, concerns, and obstacles that the bank faced when attempting to comply with the law. In order to do so, Section 3 describes the FATCA initiative at the JLB. Section 4 presents the Jordanian AML status quo. This section has been added to present, on a national level (Jordan), the issues in AML efficiency and the progress that Jordan is taking to increase the efficiency of AML and reduce ML and its associated crimes, including tax evasion. Finally, Section 5 presents our concluding remarks.

4.3. THE JORDANIAN LOCAL BANK'S FATCA COMPLIANCE INITIATIVE

This section presents the data collected from a Jordanian local bank in the case study conducted for this dissertation. The data represents the steps that were taken to comply with FATCA. It is important to mention that the IRS and the CBJ did not specify a particular way of complying with FATCA, especially in terms of the technical and operational changes. Each bank acted independently with its specific implementation plan; therefore, some variations can be found in the banks' initiatives and implementations. This can be observed qualitatively in that the survey sent out by the CBJ to the different banks and the follow-up assessment never provided a bespoke method of compliance; it was merely an assessment of readiness.

The JLB started an initiative to comply with the law in December 2013. It sought to hire an external company that offers consulting and training services to help the bank understand the law, identify the exact requirements of FATCA, and assess the bank's readiness to comply with FATCA. This consulting firm is a well-known local firm that is based in the capital of Jordan Amman. Among the different services that the consulting and training company offers are trainings in the banking operations compliance, modes of finance & Islamic banking services, and credit analysis.

The bank assembled a team of employees and called them the FATCA steering committee. The team was responsible for conducting a gap analysis to assess the risks of complying or not complying with FATCA. In the case of deciding to comply, the

FATCA team is responsible for managing the compliance project. The team included from the manager of the departments of compliance, information technology, operations, retail (including the head of retail and customer service managers in the major branches), the corporate division (that manages the business accounts), and financial institutions (that work with corresponding banks). It is important to mention that the team members were not offered any financial incentives for working on the project. However, our interviewees showed they were ambitious to work on the FATCA project for the following reasons: 1) It reflected management's recognition of the employees; those who were chosen to be part of the FATCA team were given more attention, access, roles, and power. 2) The team members also expressed the views that they got the chance learn new skills that could enhance their expertise, and this was internalized by the team as a reward for their current knowledge and success at the JLB. Learning FATCA has been a major development in the team members' career paths, it is a new rule, and it is becoming an important bank procedure globally. Expertise in FATCA can open paths for external consulting opportunities as well as a job security in the bank.

The risk assessment report recommended complying with the rule to retain the bank's reputation and relations with its investors. The JLB has investments in the US, and withholding 30% of those investments' return could harm the bank's stock value, reputation, and relations with the investors. The committee also required the bank to hire a Responsible Officer (RO) and an assistant RO for FATCA to take charge of managing

and fulfilling the agreement between the bank and the IRS and for the reporting of the financial institution's information. The team voted for two candidates internally as an alternative to hiring new employees because of the lack of the time to advertise the job and to interview and hire candidates. The RO is the AML department head and the assistant RO is the AML department assistant manager. Hereafter, we will call the FATCA initiative team members, including the RO and the assistant RO, the "FATCA team."

The FATCA team began working on identifying the policies and procedures that needed to be changed to meet the requirements for complying with FATCA. Because of the immaturity of the FATCA requirements, the process was complex and full of uncertainties. Nevertheless, it included the need for immediate decisions in an uncertain environment. For example, our interviewees raised the following matters:

- The main and most important challenge the bank faced is the contradiction between the law's requirement and the Banking Confidentiality articles (72, 73, 74, and 75) in the Jordan Banking Law (no. 28/2000). The articles, which are published on the CBJ website, state that:

Article 72

A bank shall observe full confidentiality regarding all accounts, deposits, trusts, and safe-deposit boxes of its customers. It shall be prohibited from providing directly or indirectly any information thereon except

upon a written consent of the owner of such account, deposit, trust or the safe-deposit box, or an heir of his, upon a decision issued by a competent judicial authority in a current litigation, or due to one of the permissible situations pursuant to the provisions of this law. This prohibition shall remain in effect even if the relationship between the bank and the client has terminated for any reason whatsoever. (Central Bank of Jordan, n.d.)

Article 73

All present and former administrators of the bank shall be prohibited from providing any information or data on the clients or their accounts, deposits, trusts, safe-deposit boxes, or any of their transactions, or disclosing or enabling others to have access to such information and data in situations other than those permitted under this law. Such prohibition shall apply to anyone who by virtue of his profession, position or work, directly or indirectly, may have access to such information and data, including employees of the Central Bank and auditors. (Central Bank of Jordan, n.d.)

Article 74

The provisions of Articles 72 and 73 of this law shall not apply to the following:

- a. The duties provided in law to be performed by the auditors appointed by the general assembly of a bank or by the Central Bank pursuant to the provisions of this law;
- b. The acts and measures undertaken by the Central Bank pursuant to this law or the Central Bank Law;
- c. The issuance of a certificate or statement on the reasons for the refusal to cash any check upon request of an entitled person;
- d. The exchange of information pertaining to clients on their debit balances in order to provide necessary data to ensure safety of credit granting, checks retained unpaid or any other act deemed necessary by the Central Bank due to its relevance to the safety of banking; it is provided that the exchange of information is between banks, the Central Bank or any other companies or entities approved by the Central Bank for the purpose of facilitating the exchange of such information;
- e. Disclosure by a bank, in full or in part, of statements on transactions of a client necessary to substantiate a claim of the bank in a judicial dispute between the bank and the client in respect of such transactions.

(Central Bank of Jordan, n.d.)

Article 75

A person who has violated the provisions of Article 72 or Article 73 of this law shall be punished with imprisonment for a period not less than six months, a fine not less than ten thousand Dinars and not more than fifty thousand Dinars, or with both penalties. (Central Bank of Jordan, n.d.)

The Responsible Officer commented on these articles as follows:

The Jordanian law clearly prohibits any client's information exchange with an external entity. The Jordanian government has not signed any agreement of an IGA kind. The CBJ was very uncertain even in the forum about FATCA. Therefore, we did not have any lead on what to do in certain cases. The banks decided to require the US person clients to sign a consent to allow us to report their information to the IRS.

- The second issue is the decision regarding the relation with the pre-existing non-cooperative clients. The Jordanian banking law prohibits closing bank accounts, especially if the accounts hold a positive balance. The team decided to manually search the original documents that were provided at the time of the opening of an account. If any US person's indicia were recognized, the bank would then report the account as recalcitrant. If no indicia were identified, the bank would retain the account's dormant status. The RO notes:

For onboarding customers who are uncooperative, the decision is simple, we can refuse to maintain any relationship with the customer. A bank account has to be approved by the head of tellers, and they have the right to reject opening any account under suspicious or non-cooperative conditions. The problem is for existing customers whose accounts were opened before June 30, 2014. The bank does not have the right to close their accounts if the accounts hold a balance. The bank can only change the account status to dormant so that the client can deposit but cannot withdraw money from the account. If the account remains dormant for 15 years, the Jordanian law requires the bank to transfer the money to the Ministry of Finance.

- The bank is required to record and store client and account information that is different from their current practices or that is hard to maintain. Hence, challenges will arise regarding the data repositories and their quality.

The team started by identifying the policies that would be affected by the law. The first policy is the “know your customer (KYC)” policy, which requires the bank to collect enough information and documents about its customers. The policy explains the importance of identifying the bank’s customers, assessing their relation to the bank, assessing their level of risk, and finally obtaining the trends of their normal transactions and identifying any suspicious ones. The customer service department employees, who

are responsible for opening customer accounts, recognized the information needed about the clients through the software's fields of information required. Henceforth, the original KYC will be called the AML KYC, and the new FATCA KYC will be called the FATCA KYC.

Upon the introduction of FATCA, new information became required, such as the Tax Identification Number (TIN), the name of the client as it is registered on the US ID; the address of the client in the US, the client's account number, account balance, income paid, and gross proceeds. The new information corresponded to the W-9 and W-8BEN forms. After identifying the required information the team recommended the need to update the current software with new fields.

The second policy identified was the customer relationship policy. The old practice of opening a bank account would remain the same. The customer service employee needed to fill out the KYC forms and digitally register all the supporting documents. Then the branch manager reviewed the documents and the KYC corresponding data and decided on whether or not to open the account. Yet, FATCA requires the added steps of collecting the additional W-9 and W-8 forms' data, and of gaining consent from the client for his or her information to be reported to the IRS. The team also updated the procedure of withholding 30% from the customer's account in case of recalcitrant pre-existing accounts.

Thirdly, the bank updated the procedure for documenting and monitoring client transactions. The bank should monitor recalcitrant accounts or non-participating financial entities. Under FATCA the bank should withhold 30% of any payment that is incoming from any US source. This is a difficult process because of the complexity of recognizing the amounts that are needed to be withheld on each transaction and for each customer. For example, a “passthru” payment is any payment that is directed to a recalcitrant client as interest on a deposit but is backed by the deposit itself. In this case, the bank should correctly identify the amount of the interest and withhold 30% on the interest but not on the deposit.

Finally, on March 25, 2014, the team decided that the project would be carried out in three phases. The first two phases were related to on-boarding account processes. They also were considered the initiation of an improvement in the bank’s management of pre-existing account data. The phases were 1) modifying the KYC interface to allow entering the clients’ information in English and Arabic as well as to incorporate the information required by FATCA, and 2) modifying the database to be able to add the FATCA-related documents and information. The database would have to contain all the information that needed to be extracted in an XML file that matched the template provided by the IRS. The third phase, however, was related to reporting pre-existing accounts; thus, 3) the bank would conduct due diligence on the pre-existing accounts. During this phase, the poor quality data would be rectified, and the documents would be

updated as needed. The first two phases were estimated to be completed in three months, and the third phase was estimated to take six months.

4.3.1. Implementation Phase I:

In this phase, the FATCA KYC interface was built. It was created for on-boarding and the existing customers who update their documents and meet any of the criteria involved with being a US person. The management initially suggested that the IT department build the interface in-house. However, the department expressed preference of buying the software from an external vendor due to the lack of a full understanding about the exact information to be reported (FATCA was not yet fully formed and the IRS was still updating it) and the need for the team to focus on the data of the pre-existing customers.

The bank bought the software from a local recognized software company, the bank also required the software vendor to integrate the FATCA KYC interface with the existing core banking system. This also had the advantage of using the vendor's expertise on FATCA compliance technological requirements while the law kept being updated. According to the IT department,

We have a core banking system that we bought, supposedly, customized from an external vendor. The core system is inflexible; every time we want to change something, we have to ask a vendor to perform the change. We do not want the same to happen with the

FATCA KYC. We need the vendor to implement them and integrate the FATCA KYC with our existing software.

One of the main technical concerns of the IT department from the integration perspective was that the core banking system is in the Arabic language, but FATCA KYC needs to collect the information in English. How could the information in both languages be integrated for monitoring purposes? A second concern was that the core banking system automatically issued IDs to each client when they opened a new account; the employees would only notice the connections between the newly opened account and the client's existing accounts if they personally remembered the customer. For example, if Omar, an American citizen, requested to open an account while he had a pre-existing account, the bank employee would not link the new account to the old one unless he or she remembered Omar. Otherwise, the employee would proceed with opening the account, and Omar would be issued two different IDs. According to the DBA, "the original primary key in the database was the computer issued ID to the client upon opening an account. Every time you open an account, the system will issue a unique ID for you and the account will be treated separately. We changed the key to be the client's full name (client's name, father's name, grandfather's name, and family name). Yet this is prone to falsification by criminals."

When the bank approached the vendor to build the KYC software and to integrate it with the core banking system, the vendor was committed with other banks that has the

same requirements because of FATCA. The vendor agreed to finish the FATCA KYC and to integrate it with the existing core banking system in three months.

4.3.2. Implementation Phase II:

In the second phase, the bank added the required fields in English language to the existing database, which emerged some technical issues among them is that the database will have empty fields for each record. For example, if a client is only Jordanian but not America, the fields that are related to FATCA will not be applicable, and therefore, will be empty. Allowing such empty fields (null records) will make them prone to be compromised when their information is required to be entered. So if a client is American and the customer service employee missed a field by mistake when entering the data into the KYC form, the system will not alert the employee and the record will have empty required fields. This results in issues in the quality of the data as well as issues in consolidating records about the clients. Furthermore, it will be hard to combine the data from each language into one report. Searching for information about the clients need different dictionaries each for a specified language (English or Arabic).

A second issue mentioned by the DBA is that some data are entered in fields in which they are not applicable, especially addresses. Addresses in Jordan do not correspond to the same format as US addresses. Jordanians use the province and the city as enough information for an address; and the main means a bank uses to reach its clients are the telephone or physical, face-to-face communication. With the automatic reporting,

addresses have to contain the following fields: street line 1, street line 2, city, state, and zip code. These fields do not apply to the American clients who live exclusively in Jordan. The RO assistant said, “I don’t even know the street I am living in, and I have never needed to know it to open a bank account. Jordan has just started an initiative to number the buildings and name the streets in the capital Amman.” According to the DBA, “In the current database, we found a plethora of missing or compromised fields. Given this, we expect the same with the inapplicable address fields. We expect the employees to leave them empty.”

Thirdly, matching clients’ accounts if their names have changed is challenging. In the FATCA KYC, the name of the client must match the name on the US issued ID. The bank expects to have cases in which a client’s English name does not directly translate his or her Arabic one. For example, a person’s name may be يوسف in Arabic, which is directly translated as Yousef. However, that person changed his name to Mike on his US passport.

The bank required the vendor to change the citizenship field in the KYC to allow more than one entry. The KYC software needs to allow multi-nationality choices. The bank required the citizenship field to be a multi-answer that allows registering all the citizenships applicable to a customer, even those other than US.

The two phases were accomplished in July 2014. The bank expressed clear dissatisfaction with some of the vendor’s finalized solutions. Among the different

problems mentioned is the problem of names. The Jordanian names can be long and of different words (e.g., Abdul Salam, Abdul Ghani), when the names were entered in the KYC, the software was registering each part of the name in a separate field instead of them being joined. For instance, the name “Abdul Ghani Muhammad Ali Omar,” should be divided as follows: Abdul Ghani is the first name, Muhammad is the second name (the father’s name), Ali is the third name (the grandfather name), and Omar is the fourth name (the family name). However, the software was registering “Abdul” as the first name, “Ghani” as the second name, “Muhammad” as the third name, and “Ali” as the fourth name. This added a level of complexity of cleansing and rectifying the database.

4.3.3. Implementation Phase III

The third and ongoing phase of FATCA compliance is dedicated to pre-existing customers. FATCA regulations require the bank to monitor personal accounts with a balance above \$50,000, or business accounts with a balance above \$250,000. If the accounts detected have a balance of less than \$1 million, the bank can do an automatic search for US indicia. Once any indicator is found, the account holder is asked to provide the W-9 and W-8 forms, and the FATCA KYC is filed. If the account has a balance that exceeds \$1 million, however, the bank must conduct a manual due diligence search for US indicia and collect the W-9 and W-8 forms and data when an indicator is found. It is important to mention here that meeting the indicia does not mean that the account is

owned by a US client; it merely means that the account must be scrutinized further (Raj et al., 2013).

Scrutinizing an account is complicated, as the bank does not have a centralized database of its clients; each branch has to search manually within its local accounts. The process is clearly prone to mistakes in the reporting process. For example, if the client's total balance is higher than \$1 million but distributed over different branches, the bank can hardly tell. Each branch will conduct the automatic search for the US indicia instead of the thorough manual review process that is recommended for large balance accounts. Furthermore, FATCA compliance for pre-existing accounts incorporates the uncertainty of the process of dealing with multiple joint accounts. For example, if David (a US person) has a joint account with Sarah (a non-US person), and the same David (a US person) has a joint account with John (another non-US person), it is obviously hard to decide how to deal with such accounts, especially if David is non-cooperative and the bank needs to withhold 30% of his account.

According to the RO:

We expect human mistakes in the data entry. For on-boarding accounts, we ask the branch managers to pay close attention when reviewing the entered information. However, for the pre-existing accounts, we have a long way of revision, elimination of mistakes, and updates of clients' information. I have doubts that we can finish cleaning existing data on

time and starting the automatic reporting by January 2016. We all hope that the deadline will be extended to June 2016.

In the RO's opinion, a bank should regularly update the KYC forms and documents every three years. To accomplish the process of reviewing existing customers for FATCA, the JLB will manually change the expiration date for the existing KYC updates to force the customers to provide their information within the next year and to identify the existing customers with US indicia in order to report them. In the case of an account that is not updated, the bank will first send an SMS to the phone numbers provided for the account holder; secondly, it will provide a message on the ATM machines that requests the customer to visit a local branch to update his or her documents; thirdly, a letter will be sent by registered mail to the account holder; and fourthly, the name of the client who needs to visit his or her local branch will be advertised in the local gazette. If the account holder does not reply to any of these communications, the bank will change the status of the account to dormant.

JLB registered with the IRS to become a Participant Foreign Financial Institution (PFFI) in April 2014. The registration process is on a web system that financial institutions use. It does not require any paperwork, forms, or mail to take place. Once registered and approved, the financial institution receives a Global Intermediary Identification Number (GIIN) (Internal Revenue Service, 2015b).

On July 1, 2014, the bank started applying the FATCA procedures for onboarding clients and faced huge challenges in communications with the customers; the trust relationship with the bank was clearly broken. The existence of banks that are not complying or that did not implement the rule opened up a way to lose customers who do not want to be reported. The bank's annual report shows a minimal loss of customers, for which we might conjecture FATCA was a factor; however, we were not able to substantiate empirically this hypothesis.

On a global scale, customers were not happy about the rule. Yan (2015) reports that the number of Americans who renounced their citizenship because of FATCA increased from 933 in 2012 to 3,415 in 2014. Not every US person who meets the FATCA indicia has ties to the US; for example a person who was born in the US but lives in another country will be a US citizen and required to comply with FATCA although that person does not have any ties with the US. It is persons of that kind who are likely to renounce their US citizenship (Weinberg, 2014).

The next section provides an overview of Jordan's current situation in the global AML domain. The section serves as a setting for looking at Jordan's deficiencies identified in the last mutual assessment, conducted in 2009 by the Middle East and North Africa Financial Action Task Force (MENAFATF). A summary of the processes implemented by Jordan to respond to these deficiencies and the current issues reported follows.

4.4. JORDANIAN AML STATUS QUO: THE GLOBAL VISION OF JORDAN'S AML

The role of the Financial Action Task Force (FATF) is to set global standards to combat money laundering. The organization first established 40 recommendations that have become the world's standards for AML. The recommendations were built upon the currently recognized money laundering typologies and mechanisms (we mention currently recognized to stress the dynamicity and continual change in the typologies of money laundering). Later, the FATF emended nine special recommendations to combat terrorist financing (Johnson, 2008).

As a means to ensure the effective implementation of these standards by all jurisdictions, the FATF and FATF-Style Regional Bodies (FSRBs) conduct mutual evaluations that test how the jurisdictions' strategies have been implemented to fight against ML/TF. According to the Financial Action Task Force (2015), The FSRBs are:

- Asia Pacific Group on Money Laundering (APG) based in Sydney, Australia;
- Caribbean Financial Action Task Force (CFATF) based in Port of Spain, Trinidad and Tobago;
- Eurasian Group (EAG) based in Moscow, Russia;
- Eastern & Southern Africa Anti-Money Laundering Group (ESAAMLG) based in Dar es Salaam, Tanzania;

- Latin America Anti-Money Laundering Group (GAFILAT) [formerly South America Anti-Money Laundering Group (GAFISUD)] based in Bueno Aires, Argentina;
- West Africa Money Laundering Group (GIABA) based in Dakar, Senegal;
- Middle East and North Africa Financial Action Task Force (MENAFATF) based in Manama, Bahrain;
- Council of Europe Anti-Money Laundering Group (MONEYVAL) based in Strasbourg, France (Council of Europe).

Jordan was assessed in July 2009 by MENAFATF. The assessment revealed that the kingdom is “partially compliant” or “non-compliant” in 14 out of the 16 core and key Recommendations (Anti-Money Laundering and Counter Terrorist Financing Unit (AMLU), 2010). The report focused on the partial compliance in criminalizing money laundering under the AML law (law No. 46 of 2007) (AMLU, 2010b). Among the various deficiencies cited were the following:

1. Under the AML law, predicate offenses were restricted to felonies and those offenses covered in the international agreements to which Jordan is a party and that are illegal under the Jordanian law. Some significant offences required under the standard recommendations were not covered in the Jordanian law, precisely: “blackmail, human trafficking, sexual exploitation (including children), illicit trade in stolen goods, environment offences, piracy of products, smuggling, fraud, piracy, market manipulation and terrorist financing (in part)” (p. 13).

2. There is an ambiguity in the Jordanian law regarding the properties that are directly or indirectly obtained from an illegal offence. The Jordanian law was not explicit about the conviction for a predicate offense that is required before ML is proven (p. 13).
3. The Jordanian Terrorist Prevention Law of 2006 did not cover the collection of funds by terrorist organizations or individual terrorists if the funds cannot be proven to be directed to the commission of a terrorist act (p. 13). For example, the funds did not include the money directed to a terrorist act, if the act did not occur.
4. The term “funds” was defined according to the definition of the Terrorist Financing Convention. Penalties have been increased for the TF offense. Finally, the TF offense has been expanded to include funds directed to a terrorist act (whether or not the act actually occurred). This solved deficiencies nos. 3, 4, and 5
5. The Jordanian Terrorist Prevention Law of 2006 was vague about what constitutes funds or assets of terrorists or those who finance terrorism. The term used in the Jordanian legislation is too restrictive.
6. The sanctions for committing a TF act were not deterrents and did not extend to the confiscation of funds.
7. Under the AML, the role of the financial intelligence unit (FIU) was restricted to ML and did not cover receiving suspicious transaction reports related to terrorist financing.

8. There is a lack of financial, technical, and human resources in the Jordanian FIU.

In 2010, these issues were mostly resolved by issuing two Royal Decrees in which (1) the offenses incorporated in the Jordanian AML law were extended to include those reported in the mutual evaluation review—this addressed deficiency no.1; (2) the predicate offenses included crimes committed by Jordanians even outside Jordan—this also addressed deficiency no.1; 3) the Royal Decrees were explicit that a predicate offense is not a pre-condition for establishing an ML offense—this addressed deficiency no.2 (AMLU, 2010b, p. 14).

The role of the Jordanian FIU, called the Anti-Money Laundering Unit (AMLU), was expanded to include responsibilities of receiving, analyzing, and disseminating STRs regarding TF. The AMLU was allocated an independent financial budget from the national budget. The staffing of the AMLU has been increased from three people at the time of the evaluation to twelve currently—this addresses deficiencies no. 6 and no. 7 (AMLU, 2010b, p.14).

The Kingdom submitted a follow-up report to the MENAFATF in 2011 that included the corrective actions to address the deficiencies. It was asked to provide a second follow-up report in 2012, which was done. A third follow-up report was provided in 2013 with the latest corrective actions, and a request was made to exit the on-going follow-up process and instead to update Jordan's progress every two years (AMLU, n.d.).

The deficiencies mentioned were attributed to a lack of political will, lack of capacity, insufficient AML/CTF legislation, and lack of proper implementation of the AML/CTF legislations (AMLU, 2010a, p. 37). For example, an indicator that is used to reflect Jordan's internal political will is Jordan's ratings in the Transparency International Corruption Index. In 2013, Jordan was ranked 66 out of 177 with 49/100 points compared to the US with 74/100 points (100 is very clean and 0 is highly corrupt) (Transparency International, 2014). The relatively weak transparency can cause corruption and lack of awareness, which are crucial concerns that hold Jordan back from implementing effective AML/CTF procedures.

Importantly, according to the FATF's last evaluation (2013), "the above report and action plan address the strategic deficiencies identified by International Co-operation Review Group (ICRG). This does not mean that there are not other AML/CTF deficiencies. It is expected that the jurisdictions will continue to work to address the broader range of deficiencies" (AMLU, 2010b, p. 16); Examples are inadequate communication with insurance companies and real estate agents, and the lack of their involvement in the AML/CTF program (AMLU, 2010b, p. 13).

Abuqudairi (2014) reported in Al-Jazeera news about this new Jordanian anti-terrorism law, enacted by Royal Decree, as it was believed that it would spark some concerns. The report elaborates both the opponents' views as well as views favoring the law's amendment.

From reading the report, the emergence of conflicting views can be seen as due to the vague definition of “terrorism” (Abuqudairi, 2014); the lack of understanding of the counter-terrorist financing initiative (Abuqudairi, 2014); the lack of awareness of the importance of compliance with the global regulations of AML/CTF (Abuqudairi, 2014); the importance of being categorized as a compliant and low-risk jurisdiction; and more importantly from a security perspective, the report reflects a lack of awareness of the ML and TF risks and the possibility of their being exploited. This will be echoed in our case in the public’s (e.g. the bank’s clients’) perception of the AMLU or even of the local (financial institutions’) dynamic changes to correspond to global AML standards.

4.5. CONCLUDING REMARKS

From the description of the FATCA initiative at the JLB, the data clearly show the interest of the bank in complying effectively and targeting the complex and dynamic issue of tax evasion. The JLB initiative was in itself complex; it was influenced by external factors such as problems at the IRS, issues with the CBJ and the national banking laws, difficulties with the vendor and its capability to serve the bank’s requirements in a timely manner, and the lack of consulting and training programs in Jordan. From an internal perspective, the initiative was influenced by a lack of understanding of the law and its immaturity; a lack of the technical infrastructure to serve the requirements; a lack of training for the employees, which led to tasks being performed inaccurately; and the pressure of the work, which reduced the efficiency of the

employees. An interesting point to add here is the lack of higher management's involvement. The whole initiative was assigned to the FATCA team, and management's role was only to receive reports on the progress of the requirement.

From an information technology perspective, the different software systems and, in some cases, their lack of interoperability created a complexity layer that later surfaced in a series of problems, such as maintaining consistency in the disparate databases. This reflects issues at the user level. For example, updating or entering accounts' information takes considerable time away from the critical responsibilities of the employee; consequently, the problems of data accuracy and consistency can spread to an uncontrollable level.

Another layer of complexity emerged from the ongoing updates on the rule requirements, along with the lack of communication between regulators and the bank. Various confusing situations needed answers that were not provided at the early stages of the initiative. These situations disturbed the progress of the project or relationships with the customers. They included 1) dealing with multiple accounts owned by the same holder. Should each branch contact the client on its own, or should the bank aggregate the accounts and contact the client once—which was hard to achieve? 2) The contradiction between the banking law of privacy and the FATCA rule resulted in requesting consent from the customers or refusing to open their accounts, which resulted in losing customers.

Obviously, the technology discussed in this chapter created a complex influence on the FATCA initiative and operations. On the broader scale, it affected the AML operations. There is a relationship of mutual influences among the AML process, the software it utilizes, and the information that feeds the software and processes. They affect each other's efficiency and complexity. Studying each of these components of the relationship alone is not helpful. As stressed in the previous chapters, in accord with systems theory, the whole is more than the sum of its parts.

Therefore, in the next chapter (Chapter 5), we will bring together the insights presented in this chapter (Chapter 4) with actor-network theory. This will serve as a rhetorical maneuver for Chapter 6, in which we will draw upon the ANT concepts and interpret the sequence of events before and during the FATCA initiative at the JLB as a process of creating actor-networks. This interpretation is intended to lead further to providing ANT-based propositions that will elucidate practitioners' worries about the uncertainties that emerge in FATCA initiatives or AML operations in general.

CHAPTER 5 Theory in the Case Study: An ANT Investigation of the FATCA initiative

5.1 INTRODUCTION

The structure of this chapter on the case study that uses ANT to investigate a FATCA initiative is modeled on the structure of analysis by Sarker et al. (2006) in which they conducted an interpretive case study to understand Business Process Change (BPC) failures from an ANT perspective. The contribution of this chapter is not directly to ANT methodology. The chapter does involve applying ANT (as done by Sarker) in a new domain which yields new findings. This chapter investigates the implementation of and compliance with FATCA in the Jordanian local bank. FATCA is a law that was enacted to limit tax evasion. FATCA compliance requires changes in operations, roles, and technologies. Therefore, from an ANT perspective, the FATCA compliance process is viewed as a process of creation and mutation from an actor-network that is non-compliant with FATCA to an actor-network that is compliant with FATCA.

FATCA compliance, which is being examined in this dissertation, and BPC, which is examined in the study by Sarker et al. (2006), are different in scope and complexity. From the perspective of scope, BPC is confined within the boundaries of an organization. However, FATCA compliance is requested by an external stakeholder, which is the IRS. The bank is required to report to the IRS. Moreover, FATCA compliance has effects

beyond the banks, compliance with FATCA should limit tax evasion activities which have a global economic effect. Therefore, FATCA compliance is beyond the bank's micro-level. From the complexity perspective, FATCA compliance is a dynamic domain that incorporates uncertainties and various schemes, known and unknown. A successful FATCA compliance requires different departments to cooperate (e.g. IT and operations, compliance and AML). It also requires external actors, such as the US IRS, to be cooperated with (Byrnes et al., 2014).

FATCA combats tax evasion, which is a predicate crime of ML (van Erp et al., 2015), i.e. a crime that generates proceeds that when laundered lead to the crime of ML (Schott, 2006, p. 10). According to Schott (2006, p. 11), "The offense of money laundering cannot be committed without the prior commitment of a predicate offense (or underlying crime). It is useful to designate many crimes as predicate offenses for money laundering, so that the crime of money laundering can be used to fight the underlying crimes." Accordingly, this dissertation argues that FATCA is directly related to AML because it limits tax evasion, which is a predicate crime of AML. Also, the analysis conducted on FATCA compliance and the issues resulting from the analyses in this case study can provide lessons for the ML/AML domains.

This chapter begins with introductory information and the different views in IS research. This introduction will assist in elaborating on the importance of viewing information as an actor that has interests and roles in an actor-network such as the JLB.

Afterwards, Section 3 describes the “old” (pre-FATCA) actor-network in terms of its actors and their aligned roles. Section 4 provides a description of the process of translation. It includes a discussion of each phase of the translation process (problematization, interessement, and enrollment). As part of the enrollment phase, once an actor agrees to its roles and aligns its interests accordingly, the agreement will be infixed through inscription. According to Sarker et al. (2006, p. 55), “Strategies for inscription in the context of computing include creation of texts (e.g., software manual) or technical artifacts (e.g., security systems).” The inscriptions of each actor’s agreement are also presented in Section 4. Section 5 reviews the ANT translation process of each actor phase-by-phase. This chapter functions as the theoretical basis through which the findings and propositions will be provided in the next chapter (Chapter 6).

5.2 INFORMATION: ITS TYPES AND LEVELS

In our later analysis involving ANT, we will consider information to be an actor. For that reason, we now provide a discussion of what information is.

McKinney and Yoos (2010) introduced four views of what information means as a remedy for the lack of explicit identification of information and the underlying assumptions about information in the IS literature. The four views of information are: token view, syntax view, representation view, and adaptation view.

Information within the token view, referred to as “data,” is the input and output or the processes that reside in minds, machines, or organizations (McKinney & Yoos, 2010,

p. 331). Token information is manipulated by processes. For example, recording a client's information in a bank's database manipulates token information—both the input and the output.

Information within the syntax view is used to measure the relationship among the tokens in order to reduce entropy. For example, the different measures that are used to identify ML schemes will reduce the probability of criminals' ability to launder money. The measures that are used to compare a business account to other business accounts that are within the same criteria are considered syntax information, and it is used to reduce money laundering activities. This agrees with Ashby and Goldstein's law of requisite variety, which states that the more information a system knows, the more flexible it will become in responding to its external environment (Ashby & Goldstein, 2011). That is, the more syntax information understood by the individuals in an organization, the more the organization becomes flexible in dealing with environment uncertainties.

Information within the representation view is incorporated in signs that represent objects to an observer. These signs are used to model an object to an observer. For example, when a customer service employee (observer) collects the different documents (signs) that represent US indicia (objects), the observer is using the representations (the data collected/signs) to identify the objective reality (US indicia). The most useful information in this case is that which most accurately represents the specified object. Moreover, this information can be either external objects independent from the observer

or internal information built by the observer about an objective reality and therefore dependent on the observer (McKinney & Yoos, 2010, p. 334).

The information within an adaptation view is the information that is used to achieve viability. It reflects the individual's or a system's (organization's) perception by which it took an adaptive action and effected a change, for example, the information that indicates a bank's need to comply with FATCA results in deciding to comply with the FATCA initiative.

According to McKinney and Yoos (2010, p. 339), "Each view addresses different problems and practical issues within its own domain." However, we argue that the four views can be related and interact in processes such as decision making. Information as token is what employees use to process and manipulate in order to accomplish their tasks. Employees will rely on their experience and cognition levels not just to process the token information, but to make a meaning out of it. In an organization, the different employees communicate the syntaxes that they learned individually to reduce uncertainties and realize how to better utilize the tokens to accomplish their tasks, and this communication can lead to learning new experiences or teaching the learned experiences to other individuals. But the communication also can generate shared representations of the environment, especially if any destabilization to the organization occurs. These representations can be presented to the decisions makers as alternative solutions from among which the best fit can be chosen.

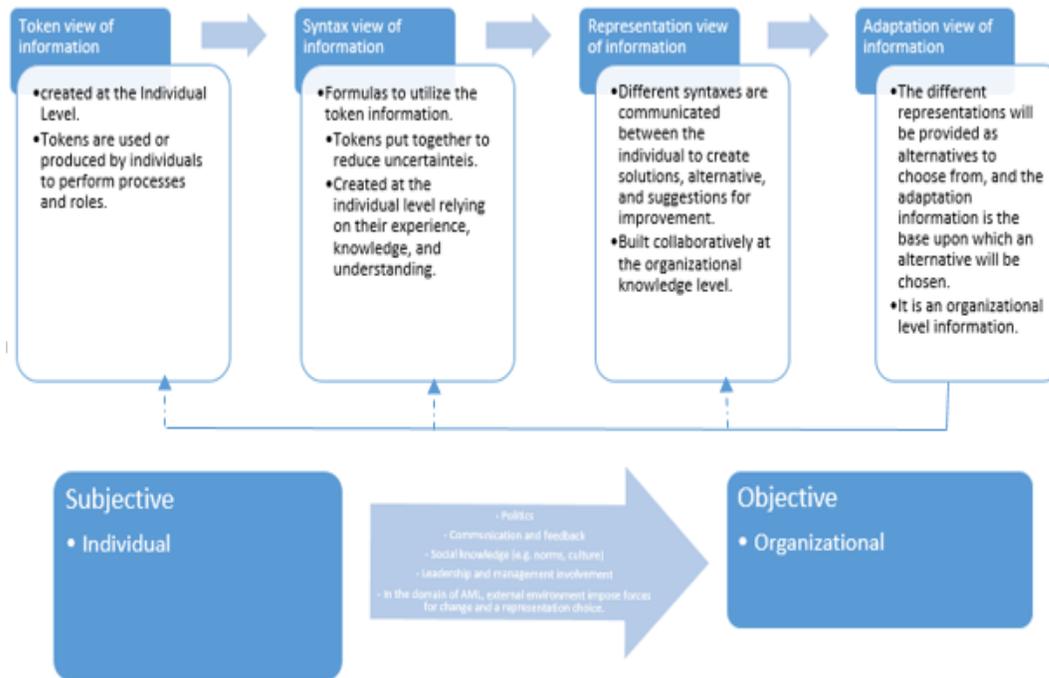


Figure 2: The transition from subjective individual knowledge to objective organizational knowledge

As shown in Figure 2, both token and syntax information are used subjectively on an individual level. Individuals use the tokens or create a meaning out of these tokens to create syntax information to reduce uncertainties. The different syntaxes created by the individuals are communicated among the different actors so that they can be shaped, reshaped, or collectively accepted or institutionalized. They are treated as representations of solutions, ways of improvement, and proposals of policies or best practices. Representation information is presented objectively as agreed among the different employees of the organization. In the case of a need for a decision, an alternative will be chosen among the various representations. This choice is affected by different factors,

such as politics, management and leadership, communication and feedback. For example, employees may choose an alternative because management wants it and not because it is the best alternative. The relation between the different types of information is not sequential: syntax information can create new token information; representations can create new syntax or token information; and adaptation information can create new representations, syntaxes, and tokens.

Therefore, we argue that there is a structural coupling relationship between the subjectively created information and the objectively presented information; they both emerge and develop from each other. It is important to understand and manage this relationship since it is the driver of any decision to be taken in a business. The more accurate the subjective knowledge used, the better will be the quality of the decisions made (Al-Abdullah and Weistroffer, 2011).

5.3 THE “OLD” JLB NETWORK

5.3.1 Introduction and List of Actors

Before complying with FATCA and from the ANT perspective, the bank could be viewed as an actor-network that was temporarily stable and consisted of, among others, the board of directors, management, employees, information technology, customers, and information. Each actor had its own roles and interests; and the bank would perform in a stable manner and successfully achieve the common goals of financial profits, sustainable continuation, and development (see Figure 3). It is important to mention that the choice of

those specific actors is a subjective decision that was taken by the researchers according to the definition of an actor in Sarker et al. (2006). Table 4 provides the details of how each actor that we as researchers chose fits the ANT definition of “actor” in the old JLB actor-network. The following is a discussion of the mentioned actors.

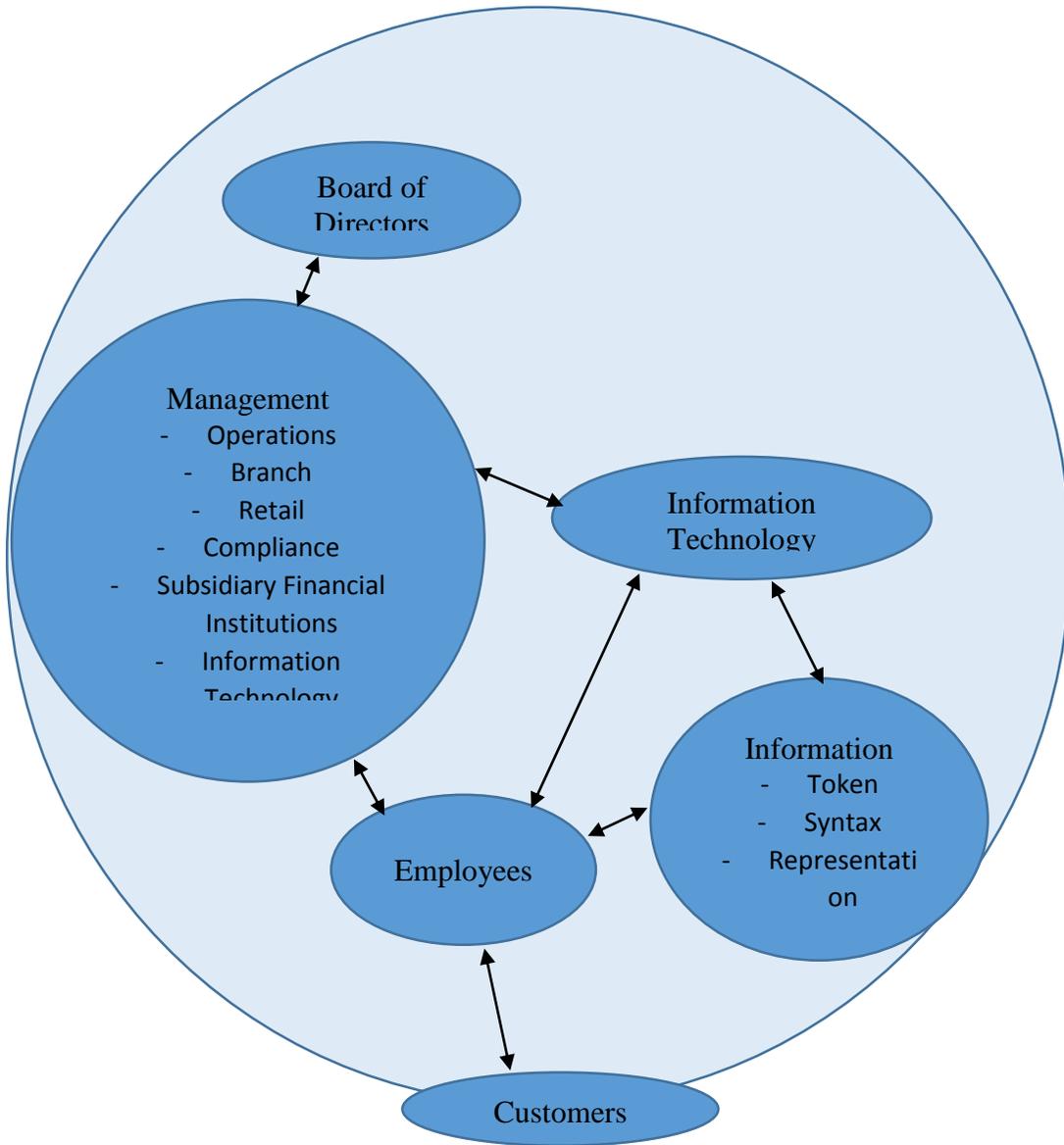


Figure 3: The old pre-FATCA actor-network

Table 4: The “Old” Jordanian Local Bank Actor-Network (The Pre-FATCA Actor-Network)

<p>“Actor, which may be human or nonhuman, may be defined as ‘any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own’.” (Callon & Latour, 1986, p. 286 as cited in Sarker et al., 2006)</p>			
	<p>This actor “bends space around itself” in the following way.</p>	<p>This actor makes other elements dependent upon itself in the following way.</p>	<p>This actor translates the other elements’ will into the language of its (the actor’s) own in the following way.</p>
<p>Board of Directors</p>	<p>The Board of Directors is the entity that makes the final decisions and that bears the final responsibilities for the bank’s development initiatives and projects, and long-term success.</p>	<p>Without the Board of Director’s making the final decisions and bearing the final responsibilities, the bank would fail; it would not achieve sustainable development or adapt to the external business environment threats.</p>	<p>The other elements of the bank accept that the Board of Directors performs the critical function of approving any project or initiative that is meant to enhance the bank’s performance or respond to and external environment threat.</p>
<p>Management</p>	<p>Management is the entity whose members are responsible for overseeing the</p>	<p>Without management’s oversight and coordination with</p>	<p>The other elements of the bank accept that the management</p>

<p>“Actor, which may be human or nonhuman, may be defined as ‘any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own’.” (Callon & Latour, 1986, p. 286 as cited in Sarker et al., 2006)</p>			
	<p>This actor “bends space around itself” in the following way.</p>	<p>This actor makes other elements dependent upon itself in the following way.</p>	<p>This actor translates the other elements’ will into the language of its (the actor’s) own in the following way.</p>
	<p>department employees and their utilization of the resources available to accomplish their tasks. Management members are also responsible for coordinating with the other departments to provide them with the resources/services that they need to accomplish their tasks.</p>	<p>the other departments, the employees would not receive the resources they require to accomplish their tasks, and the other departments would not receive the resource/services that they need from a different department to accomplish their tasks.</p>	<p>is critical to coordinate between the different departments and to provide the employees with the required resources to accomplish their tasks.</p>
Employees	<p>The employees are those who “manufacture the services” of the bank for its customers.</p>	<p>Without the employees’ “manufacturing the services” of the bank, the bank would lose its interface with its customers.</p>	<p>The other elements of the bank accept that the employees perform the critical function of “manufacturing</p>

<p>“Actor, which may be human or nonhuman, may be defined as ‘any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own’.” (Callon & Latour, 1986, p. 286 as cited in Sarker et al., 2006)</p>			
	<p>This actor “bends space around itself” in the following way.</p>	<p>This actor makes other elements dependent upon itself in the following way.</p>	<p>This actor translates the other elements’ will into the language of its (the actor’s) own in the following way.</p>
			<p>the services” to the customers.</p>
<p>Customers</p>	<p>The customers are the ones who receive and assess the bank’s services. Their acceptance of the level of service allows the bank to sustain its competitive advantage.</p>	<p>Without the customers’ acceptance of the level of service provided by the bank, the bank would fail to sustain its competitive advantage and consequently lose profit.</p>	<p>The other elements of the bank accept that customers’ evaluation of the services provided by the bank is the ultimate measure of the bank’s performance and success.</p>
<p>Technology</p>	<p>Technology is the element that provides the bank with the information required so that it can function and achieve its goals.</p>	<p>Without the technology, the bank will not be able to gain the information required so that it can function and achieve its goals.</p>	<p>The other elements of the bank accept that the technology is crucial for them to function, gain or process the information required so that</p>

<p>“Actor, which may be human or nonhuman, may be defined as ‘any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own’.” (Callon & Latour, 1986, p. 286 as cited in Sarker et al., 2006)</p>			
	<p>This actor “bends space around itself” in the following way.</p>	<p>This actor makes other elements dependent upon itself in the following way.</p>	<p>This actor translates the other elements’ will into the language of its (the actor’s) own in the following way.</p>
			<p>they can achieve their goals.</p>
Information	<p>Information is the element that needs to be processed by other elements to give a meaning to a phenomenon, to sense a threat to the bank’s stability, to shape the employees’ interactions and sense making, and to reduce uncertainties.</p>	<p>Without information, the bank will fail to function and will fail to successfully adapt to the external changes that may threaten the bank’s stability.</p>	<p>The other elements of the bank accept that information is important for them to function, build experience, reduce uncertainties, and adapt to external changes that affect the bank’s performance and stability.</p>

5.3.2 Board of Directors

The board of directors at the JLB consists of eight members and forms five committees; each supervises a specific division in the bank. For example, the audit committee is responsible for compliance and the internal audit processes. The board of directors' roles and interests were aligned; they focused on making final decisions and bearing responsibilities for the bank's development and long-term success. Their goals are to provide high quality services and products to the clients; maximize the benefits to the investors; ensure a friendly work environment to all personnel; and from a broader perspective, increase profitability and sustain the bank's competitive advantage. The bank's success in development and adaptation to external business environment threats are the targets of the board of directors' members through which they retain their prestigious job and the large amounts of compensations they receive.

5.3.3 Management

The management actor embodies several actors, including branch managers, operations managers, financial institution managers, retail managers, compliance managers, and information technology managers. They all had their own roles and interests aligned within the JLB network. The roles of the management member are to oversee the department's employees and their utilization of the resources available to accomplish their tasks and to coordinate with the other departments to provide them with the resources/services that they need to accomplish their tasks. The interests of

management are aligned since all the other elements of the bank accept that management is critical to coordinate the different departments and create a friendly work environment in the bank.

5.3.4 Employees

Employees are crucial actors in the old JLB network since they are the ones who “manufacture the services” of the bank for its customers. The employees’ interests are specified according to their position in the company and their interaction with the other actors in the actor-network. For example, the bank tellers have the interest of meeting the customers’ needs by providing a quality service. They work within the policies, procedures, and rules of the bank. They also use the technology that is maintained by the IT department to process the information required or provided by the audit and AML compliance department. The interests of the bank’s employees are aligned with each other. This alignment is achieved via compensation schemes that include salaries, benefits, recognition, and retirement plans.

5.3.5 Technology

Technology, including software and hardware, plays an integral role in the JLB network. In spite of its inflexibility and incompatibility, technology is still heavily relied on. It even defines the users’ procedures and processing activities. For example, the information to be collected in the KYC procedure was identified by the software, not by the bank or its policies. Askena and Westelius (2003) posit five roles of technology in an

organization. These roles are defined according to the fit between the structure of the organization, the technology's functionality, and the users' perceived influence of the technology on their work (see Figure 4). The five roles are Bureaucrat, Manipulator, Administrative Assistant, Consultant, and Dismissed. Dismissed represents the case in which the technology is not used and is kept aside. The bureaucrat role of technology means that the structure of the organization is maintained, but the technology enforces the processes that are accepted by the users. The manipulator role, however, forces the users to act in a certain way that affects the organizational structure. Consultant technology fits with the organizational structure and gives the users alternatives to choose from (e.g. decision support systems). Finally, the administrative assistant technologies are those that are controlled and that will perform the requirement role of data storing, processing, and presentation without affecting the processes and structure of the organization. According to the specifications of each role of technology, as in our case, technology is an actor in its own right and has the role of manipulator. In sum, technology is a crucial actor that is accepted by the other elements as necessity for them to function, gain or process the information required for them to achieve their goals.

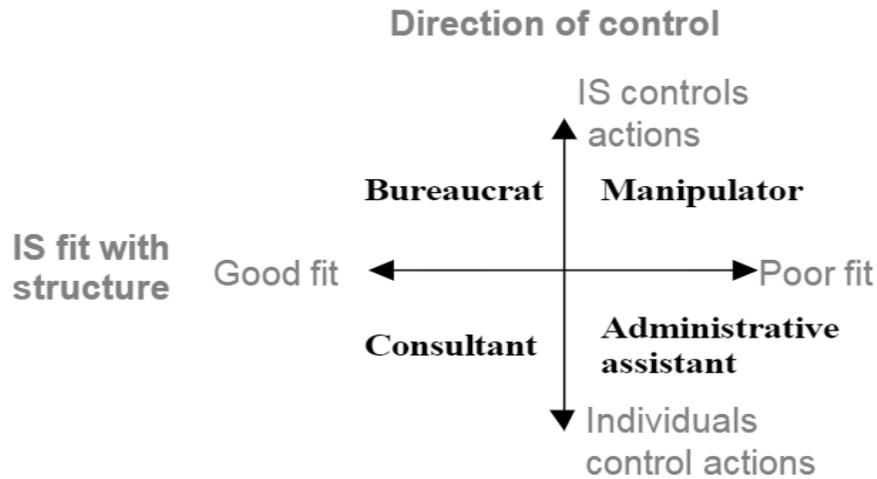


Figure 4: The five roles of technology (borrowed from Askena and Westelius, 2003)

5.3.6 Information

Information is an actor in the JLB bank. Information contributes to the improvement of organizations and their activities and their ability to achieve their competitive advantage (Easterby-Smith et al., 1998). Since there are different types of information, each information type will be viewed as an actor with specific roles. So token information is an actor that has the role of providing assistance to its users to achieve their roles. Token information is a docile actor ready to accept being controlled and processed by its user. Syntax information has the role of reducing uncertainties and providing the users with measures of performance. Representation information has the role of providing accurate representations of situations to management and decision makers so that they can

make better decisions. Information interests are aligned since the other elements of the bank accept that information is important for them to function, build experience, reduce uncertainties, and adapt to external changes that may affect the bank's performance and stability.

5.3.7 Customers

Customers are listed as important because they are viewed by us, the researchers, as crucial actors for the bank. We argue that any initiative, operation, or plan in the bank has a direct or an indirect relationship to customer satisfaction. Therefore, the customers' perception and appreciation of the bank's efforts is crucial. Otherwise, losing the customers would mean collapsing as a bank. The alignment of their interests is critical for the bank to maintain its competitive edge. Yet the customer has the role of complying with the rules and the policies of the bank when conducting any transaction. The customer is not directly related to the bank's internal processes and initiatives, but the other elements of the bank accept that customers' evaluations of the services provided by the bank are the ultimate measure of the bank's performance and success. Therefore, we present the customers as actors who exist partially in the bank's actor-network, as shown in Figure 3.

5.4 CREATING THE NEW NETWORK

This section discusses the three translation phases (problematization, interessement, and enrollment). As may be recalled from the previous discussions, problematization is

the phase in which the focal actor (i.e., the key actor that drives the initiative and enrolls the other potential actors to comply with FATCA) identifies the potential actors. Interessement is the process whereby the focal actor defines and negotiates the interests and roles of the potential actors. Enrollment is the process whereby the actors accept their roles and interests and become part of the new actor-network.

5.4.1 Problematization Phase

The problematization phase consists of two steps: (1) the step at which the focal actor selects the potential actors and identifies their roles and interests, and (2) the step at which the focal actor defines the problem by highlighting how the problem affects the other actors. Then the focal actor lays out a strategy to deal with the problem and identifies the process by which the strategy can be achieved. This process is called the obligatory passage point (OPP).

The enactment of FATCA necessitates that a bank comply for the following reasons: (1) the bank has investments in the US; if the bank does not comply, 30% of the bank's US sources of income will be withheld by the IRS or its corresponding authorized withholding agencies. (2) If the bank does not comply with FATCA, it will be ranked as a high risk bank by the IRS, which will affect the bank's relationship with other banks. Hence, a reputation issue can emerge from cases of non-compliance.

The bank's compliance will pose technical (software and hardware), operational (procedures and ways of doing things), and structural changes. For example, from a

technical perspective, a new software was required to collect the information that needed to report to the IRS; from an operational perspective, the compliance with FATCA required changing the procedures for opening a bank account; and finally, from a structural perspective, FATCA compliance required shifts in the employees jobs and responsibilities, FATCA compliance resulted in emerging the FATCA team. Therefore, we claim that the introduction of FATCA and the decision of the bank to comply with it destabilized the old (pre-FATCA) network. Non-compliance with FATCA would have created a serious threat to the stability of the JLB actor-network. It would have affected the coherence of the bank's interaction with its external environment, such as funds and investments from US sources.

By recognizing the importance of complying with FATCA, the department of AML and compliance provided the board of directors with a study that included explanations about their current understanding of FATCA and an explanation of the requirements to comply with the rule. According to the provided study, the board of directors acknowledged the bank's keenness to comply with FATCA. From an ANT perspective, the decision of the board of directors destabilized the old, pre-FATCA actor-network. They created the FATCA team as a responsible actor to manage the initiative of FATCA implementation. From our perspective, the FATCA team is the focal actor (the driver of the FATCA compliance initiative). The FATCA initiative is the OPP, or the indispensable point through which the potential actors specified by the focal actor have to

pass to achieve a successful FATCA compliance actor-network. This is “obligatory” in the following way. The FATCA initiative needs to be successfully enacted for the bank to comply with the FATCA law. FATCA compliance is required to avoid any reputation harms, withholding of the bank’s income, or harms to the bank’s interactions with other financial institutions in the external business environment. In sum, for the actors to achieve their interests, the bank must succeed in avoiding any threats and adapt to the new requirement (the FATCA law). This is a “passage point” in the following way: for all the relevant actors to achieve a shared goal (the bank’s compliance with FATCA), they need to negotiate their interests with the focal actor within the FATCA initiative. Having any potential actor not passing through the OPP, not enrolled in the resulting network, or not stabilized in the resulting network would imply a failure to comply with the FATCA initiative.

Below is a presentation of the potential actors identified by the focal actor along with their roles that the focal actor identified as needing to pass through the OPP. For details on how each actor fits the ANT definition of “actor” in the post-FATCA actor-network, see Table 5.

Table 5: The new post-FATCA actor-network

<p>“Actor, which may be human or nonhuman, may be defined as ‘any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own’. ” (Callon & Latour, 1986, p. 286 as cited in Sarker et al., 2006)</p>			
	<p>This actor “bends space around itself” in the following way.</p>	<p>This actor makes other elements dependent upon itself in the following way.</p>	<p>This actor translates the other elements’ will into the language of its (the actor’s) own in the following way.</p>
<p>AML and Compliance Department (2 people), that later became part of the FATCA team</p>	<p>The AML and Compliance Department, which later became part of the FATCA team, is the important entity that informed the Board of Directors about FATCA and the need to comply with it.</p>	<p>Without the AML and Compliance Department’s informing the Board of Directors about FATCA and the need to comply with it, the Board of Directors would not act successfully in FATCA compliance.</p>	<p>The AML and Compliance Department translated the Board of Directors’ will into the AML and Compliance Department’s own language by informing the Board of Directors about FATCA and the need to comply with it.</p>
<p>Board of Directors</p>	<p>The Board of Directors is the entity that makes the final decisions and that bears the final responsibilities for FATCA compliance.</p>	<p>Without the Board of Directors’ acting successfully in FATCA compliance, the bank’s reputation would be harmed, the bank’s relations with the other financial entities in the external business environment would be affected, and 30% of the bank’s US source income would be withheld. The other elements realize that they are</p>	<p>The other elements of the bank accept that the Board of Directors performs the critical function of approving the FATCA initiative that is meant to respond to an external environment threat (the FATCA law which can affect the bank’s relations with other financial entities, harm the bank’s reputation, and result in withholding of 30% of US sources of income).</p>

		dependent on the Board of Directors to act successfully in FATCA compliance.	The Board of Directors translated Management's will into the Board of Directors' own understanding and interests by a plain directive
The FATCA Team	The FATCA team members are the ones who manages the FATCA compliance initiative which is intended to protect the JLB from potential reputational and monetary harms.	Without the FATCA team members, the bank will not successfully comply with the FATCA law.	The FATCA team translated the employees' will into the FATCA team's own understanding by viewing it as the actor that will bring about successful FATCA compliance that will help to keep the bank successful. The success of the bank means that the employees will retain their jobs, salaries, and benefits.
Employees	The employees are the ones who directly interact with customers and enter their documentation into the bank's database.	Without the employees, the bank will not successfully comply with FATCA in collecting the required information about the US clients to report that information to the IRS.	The employees translated the other actors' will into the employees' own understanding and interests by recognizing their potential value in collecting and processing the information and documents to be reported to the IRS.
Customers	The customers are the ones who receive and assess the bank's manufactured services. Their acceptance of the level of services will allow the bank to sustain its competitive	Without the customers' acceptance to cooperate in the FATCA compliance process. The bank could lose those un-cooperative	The other elements of the bank did not recognize the customers as crucial actors in the bank. Therefore, no communication was held with the customers to increase their awareness

	<p>advantage. Therefore, communication with the customers to raise awareness about the necessity of FATCA compliance is crucial to the success of the initiative.</p>	<p>customers, which might lead to a threat to the bank's profits and competitive advantage.</p>	<p>about the importance of complying with FATCA. This resulted in the JLB losing some customers.</p>
Technology	<p>Technology is the element that provides the bank with the required information so that it can function and achieve its goals. One goal is collecting, processing, and reporting the information about the US clients that is required by the IRS.</p>	<p>Without the technology, the bank would not be able to gain the required information so that it can function and achieve its goals. Among these goals is complying with the FATCA rule.</p>	<p>During the problematization phase technology was not recognized as an actor. This did not occur until later, in the interesement phase. During the interesement phase, technology translated the other actors' will into technology's own understanding and interest by proving that technology is critical in collecting, processing, and reporting the information required by the IRS.</p>
Information	<p>Information is the group of elements that assist other elements in accomplishing their tasks, reduce uncertainty, and respond to external environment factors, such as the FATCA law, that may threaten the JLB's stability and performance.</p>	<p>Without information, the other elements will not be able to accomplish their tasks, reduce uncertainty, and respond to FATCA as a threat to the bank's performance and stability.</p>	<p>Information was not recognized by the other elements during the FATCA initiative. Therefore, pitfalls emerged in the data and inconveniences arose for the other actors.</p>
The IT	<p>The IT vendor is the</p>	<p>Without the IT</p>	<p>The other elements of the</p>

Vendor	entity that will develop the software required for the bank to be able to collect, process, and report the information required by the IRS.	vendor, the bank would not be capable of building the software and database in-house that allows the bank to collect, process, and report the information required by the IRS.	bank accept that the IT vendor is critical to develop, implement, and integrate the new software that is required to collect, process, and report the information required by the IRS.
The Consulting Firm	The consulting firm is the entity that will help the FATCA team to understand the FATCA law as well as assess the JLB's readiness to comply with FATCA.	Without the consulting firm, the FATCA team might not fully understand the FATCA requirements and might miss some measures that are required in assessing the JLB's readiness to comply with FATCA.	The consulting firm translated the FATCA team's will into the consulting firm's own understanding and interests by helping the FATCA team to understand the FATCA law and to assess the JLB's readiness to comply with FATCA.

5.4.1.1. Board of Directors

The board of directors accepted that the bank comply with FATCA upon the explanation provided by the AML and compliance department as well as the recommendations of the Central Bank of Jordan. Therefore, to us, the researchers, the board of directors, which is a crucial actor in the bank, accepted to align its roles and interests to the new post-FATCA actor network. In Sarker et al.'s (2006) words, the board of directors detached their interest from the old pre-FATCA network and aligned them with the new post-FATCA network by accepting the change.

The reason for considering the board of directors as a crucial actor in both networks is that their decisions are the ultimate decisions that direct the bank on the route that they specify. Therefore, if the board of directors had decided not to comply with FATCA, the bank would not have initiated the compliance project from the beginning. Consequently, their decision as an actor was crucial in both networks.

The interests of the board of directors were to keep the bank successful to continue holding their prestigious jobs and gaining the compensations they are offered by the JLB. Their roles are summarized as providing the support and approval needed for the FATCA team to accomplish their task of managing and controlling the project and the processes of complying with FATCA.

Although the focal actor was the FATCA team, there was no need for the FATCA team to problematize the situation for the board of directors, because it was the board of directors that first recognized the problem.

5.4.1.2. *FATCA team*

The FATCA team consists of the managers of the different departments who answered the survey that the Central Bank of Jordan sent to assess the readiness of the bank to comply with FATCA. Since all the team members are working towards the same goal, that is FATCA compliance with all their interests aligned, we (the researchers) are going to consider them as one actor (the FATCA team); this act of simplification is called punctualization. From an ANT perspective, punctualization is allowed because the actions

of the individual actors will be “‘taken for granted’ and thus be unproblematically encapsulated within a ‘network package’” (Sarker et al., 2006, p. 54).

The interests of the FATCA team members were that the board of directors recognize their importance and acknowledge within the bank that is why they were made members of the team, and that their work on the FATCA project would provide them new experience in the FATCA field, which will always be required by any bank in the future. Hence, the team members looked at the FATCA initiative work as a self-development opportunity. From another perspective, the FATCA team members would face inconveniences from working on the project, such as spending extra hours learning a new and dynamic law.

As the focal actor, there was no need for the FATCA team to problematize the situation for itself.

5.4.1.3. Employees

The FATCA team sought the importance of enrolling the employees of the bank since they are the first line of application of the requirements of FATCA that the bank needs to be compliant. The employees referred to in this study are any employees of the bank who are affected by or affect the FATCA compliance and reporting process.

Employees have the interests of securing their jobs and avoiding any legal liabilities that could result from mistakes in doing their job. Yet, in order to do so, the

employees will need to adapt to the new procedures and job routines that will be changed when the bank becomes compliant.

5.4.1.4. IT Vendor

Another crucial actor that the focal actor identified was the IT vendor. The gap analysis and assessment of compliance that the FATCA team conducted illustrated that FATCA would require technological changes, especially on the current KYC interface and the database. Consequently, the FATCA team put effort into enrolling the IT vendor to accomplish this task.

The IT vendor has the interests of sustaining its competitive advantage by providing good customer service; the IT vendor wants to retain its business with the bank with the ultimate goal of gaining profit. To achieve those interests, the IT vendor had to provide the bank with the required solutions on time and by accomplishing all the required features.

5.4.1.5. The external consulting company

The FATCA team, although it had a general understanding of the FATCA law, was not able to fully recognize all the requirements of FATCA. Part of the issue is the constant changes and updates to the law and the new tax system that the bank needs to understand. The team, along with the board of directors, pursued hiring an external company that would offer consulting services to help the bank understand the law, identify the exact requirements of FATCA, and assess the bank's readiness to comply

with FATCA. This consulting firm is a well-known local firm based in the capital of Jordan, Amman. Among the different services that the consulting company offers are training in the banking operations compliance, modes of finance and Islamic banking services, and credit analysis.

The external consulting firm has the interests of helping the bank to comply successfully with FATCA as well as making its own profit. In order to do so, the consulting company had to understand the bank's culture and operations to provide tailored training to the bank.

5.4.1.6. *Unrecognized non-human actors*

This subsection discusses the actors that not provided by our interviewees as recognized actors, but that we, the researchers, identified as important actors because of their role in affecting the translation process outcomes. These actors are technology, information, and the customers.

5.4.1.6.1. Technology as an actor

From the focal actor's perspective, technology was viewed as a tool (passive element) that can be manipulated and changed by the other actors (e.g., employees or the IT vendor) to accomplish their tasks. Sarker et al. (2006), in their case study, also found that technology was not recognized as an actor with its own roles and interests. Sarker et al. (2006, p. 74) said that this is not uncommon, and they provided two explanations from the literature; "(1) organizational members in managerial roles, often informed by

‘oversocialized’ theoretical frameworks granting agency to humans alone [e.g., Munir and Jones, 2004, p. 571], tend to overlook nonhuman actors, including IT, and (2) organizational members in managerial roles tend to view humans as the least reliable elements in any network, and as having potential to develop interests contradictory to those of the focal actor; thus, most attention needs to be directed toward the human actors.”

5.4.1.6.2. Information as an actor

Another actor that we, the researchers, identify as having roles that can affect the translation process is information. Information in this context is a punctualized actor that includes all its types (token, syntax, representation, and adaptation).

5.4.1.6.3. Customers as actors

Customers were not recognized by the focal actor as actors because customers do not directly affect the FATCA initiative. However, we, the researchers, argue that customers have a considerable influence on the FATCA initiative and its decisions. Raising awareness among the customers about FATCA and its importance could help the bank to successfully switch to FATCA compliance without a loss of customers.

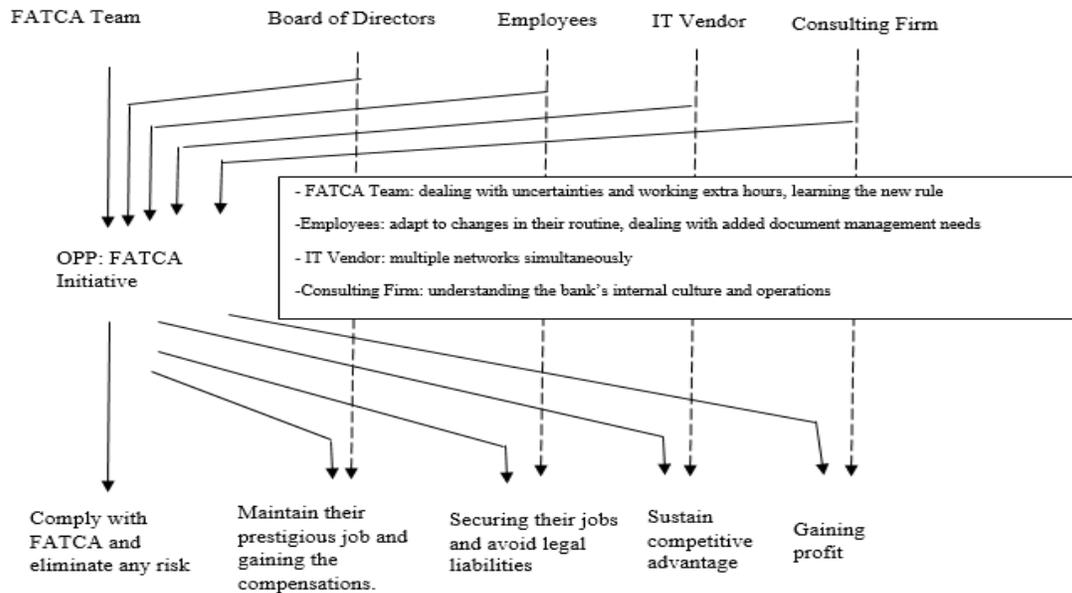


Figure 5: Actors' interests and inconveniences when passing through the OPP

Figure 5 lists the actors that were specified by the focal actor, their interests, and the inconveniences that they will face when passing through the OPP. Since technology, customers, and information were not recognized by the focal actor, they are not shown in the figure.

Figure 6 presents the anticipated post-FATCA actor-network. The actors in red are the ones that were not recognized by the focal actor, namely, technology, knowledge, or dismissed customers. The arrows between the actors reflect the interactions in the initiative.

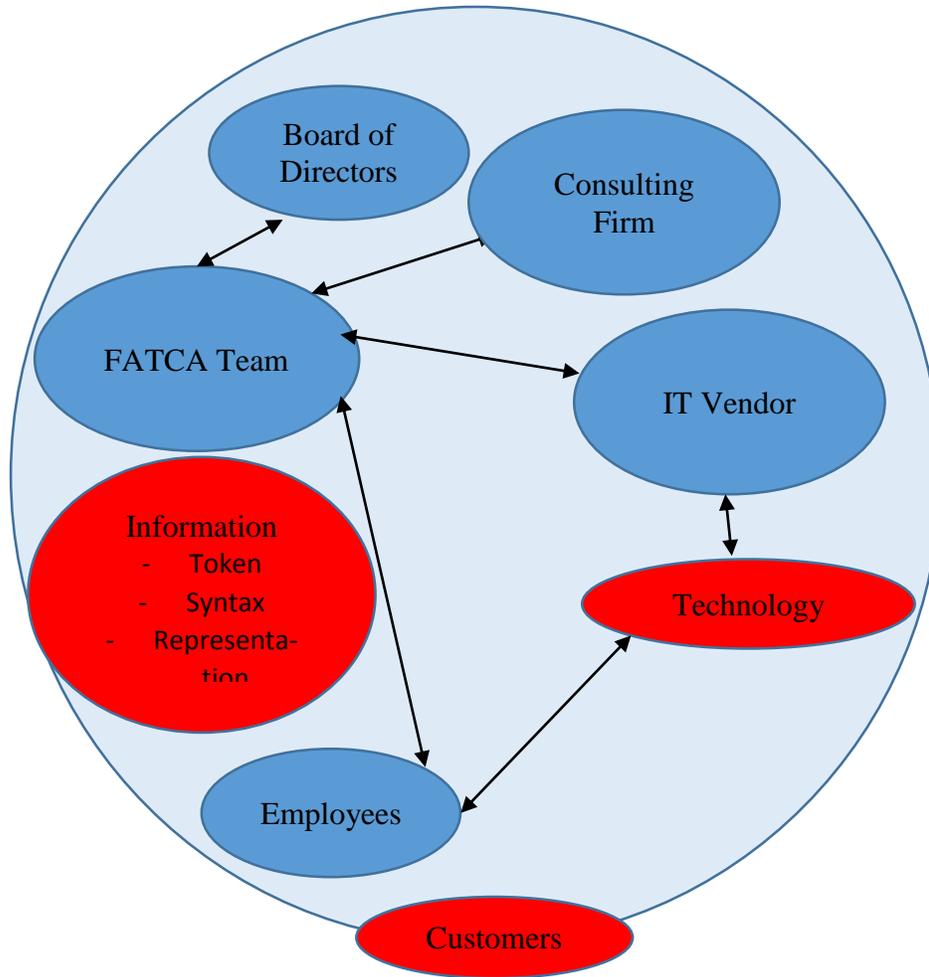


Figure 6: The anticipated post-FATCA actor-network

5.4.2 Interesement phase

In the interesement phase, the focal actor negotiates the interests and roles that it identifies with the different potential actors, seeking to convince them to accept these new roles and align their interests accordingly. This section presents the negotiation strategy that the focal actor used with each actor.

5.4.2.1. *Board of Directors*

The FATCA team (as the focal actor) had no need to negotiate the interests and roles that it identified for the board of directors because the board of directors itself initiated the FATCA initiative.

5.4.2.2. *FATCA team*

Since the FATCA team is the focal actor, we argue that they also accept the role of (1) detaching their interests from the pre-FATCA network in order to manage the FATCA initiative. (2) The FATCA team accepts the role of spokesperson of the initiative and to be its focal actor responsible for identifying the potential actors of the post-FATCA actor-network as well as negotiating the roles and interests with those potential actors to successfully enroll them. The implicit negotiations within the FATCA team were based on the belief that the board of directors recognized the team members' roles in the bank, and that the team members would develop their knowledge and skills in the area of FATCA, which was a new area that would open the door for future career opportunities.

5.4.2.3. *The FATCA consulting firm*

Negotiations between the FATCA team and the consulting firm were almost effortless. The consulting firm was identified as a crucial actor by the FATCA team because of its important role in clarifying the FATCA reporting requirements. This was a crucial factor to the success of the FATCA initiative. The roles of the FATCA consulting company were to prepare a presentation to the FATCA team to clarify FATCA and its

requirements. The consulting company was also asked to help in reviewing the study that would assess the readiness of the JLB to comply with FATCA in which the major changes required by the bank were highlighted. Negotiations with the consulting firm by the focal actor were conditional upon offering a financial profit to the consulting firm.

5.4.2.4. Employees

The FATCA team identified the employees as actors and convinced the employees to accept their new roles and align their interests with the initiative. In this dissertation, and since no employee was treated differently from another employee during the translation process, we, the authors, punctualize the employees as one actor in the actor-network.

The FATCA team (as the focal actor) negotiated the interests and roles that it identified for the employees, seeking to convince the employees to accept these new roles and align their interests accordingly. The FATCA team did this in the following way. If the employees wanted to avoid any legal liabilities that might result from mistakes on their part and to retain their jobs, they needed to accomplish their jobs precisely and to comply with the requirements of the new rules that included the FATCA requirements.

5.4.2.5. The IT vendor

The FATCA team identified the IT vendor as an actor and convinced the IT vendor to accept its new role. Negotiations with the IT vendor were based on the financial profits offered it by the JLB.

5.4.2.6. *Unexpected negotiations with technology*

The FATCA team identified technology as an actor later, in the interessement phase, when the team found that technology is not simply a passive facilitator actor. Technology was viewed as a passive assistant that could be easily controlled and perform the required role of data storing, processing, and presentation without affecting the processes and structure of the organization. As a result, negotiations with technology were neglected. The IT vendor was considered the representative of technology and the actor that would manage the enrollment of technology. In reality, during the interessement phase, technology acted in the role of manipulator, i.e., the actor that forces changes in the processes or structure, the one that forces its users to perform their processes in a certain way. For example, because of the impracticality of having a database with fields of two languages (Arabic and English), the database was forced to have another interface and database in English that is specifically used for FATCA requirements.

5.4.2.7. *Missed negotiations with information and customers*

Customers were not recognized as actors with their own interests. Therefore, negotiations with them were dismissed from the problematization phase. Although their enrollment in the new post-FATCA actor-network is necessary. Negotiations with the customers as actors could be based on increasing their awareness of the importance of FATCA compliance to combat tax evasion, which could affect social and economic

stability. Neglecting negotiations with the customers can lead to losing them, which conflicts with the bank's vision and strategy.

Nor was information recognized as an actor with interests. Negotiations with information were dismissed. This resulted in a lack of monitoring and management of the interaction and transition from subjective-based built information (the meanings from the tokens and the syntaxes that were introduced to reduce uncertainty) to objective-based built information (the representation of the situation built on collective accepted information).

5.4.3 Enrollment phase

In this phase of the translation process, the actors accepted the interests assigned to them in the new network and became part of the post-FATCA network. As part of the enrollment phase, inscription is the moment at which the agreed roles and interests are inscribed into an artifact. In this section we will assess the enrollment of the actors discussed above, and we will show how each actor's agreed role was inscribed.

The enrollment of the board of directors was successful since they detached their interests from the old actor-network when accepting that the FATCA initiative was necessary. When the board of directors decided to implement FATCA at the JLB, they formed the FATCA team. For the board of directors, inscription occurred in the following way: a social artifact was introduced (the FATCA team) to manage and accomplish the FATCA compliance project.

The enrollment of the FATCA team was successful since they accepted to manage the FATCA initiative with the interest of the team members being recognized by management and to learn from new experiences that could open up future career opportunities for them. However, later in the project, the FATCA team members stated that their job had become sophisticated, intense, and time consuming. Much of this dissatisfaction was due to the members being simultaneously enrolled in both the old network and the post-FATCA network. With regard to the FATCA team, inscription occurred in the following way: the team detached themselves from the old bank (pre-FATCA) actor-network and created new plans, policies, and technological changes to comply with FATCA.

The enrollment of the employees was successful since they wanted to avoid liabilities; however, some employees experienced dissatisfaction during to the project. They felt there was inequality when the board of directors chose the FATCA team just from department managers (i.e., based on hierarchy). The employees were in fact more knowledgeable than the management since they were the ones who were performing the process. Consequently, they had a better capacity for dealing with uncertainties (Weber, 1968 as cited in Spender, 1996). Employees' feelings of inequality can reduce their morale and lower productivity (Baker et al., 1988). Consequently, they can become potential threats and produce resistance or noncompliance with policies and rules. By obeying the interests of the FATCA team, the employees inscribed their acceptance to

follow the new rules and modify their processes accordingly, in spite of the dissatisfaction that they felt. For the employees, inscription occurred in the following way: the employees accepted to follow the new rules and change their way of performing their jobs with no resistance.

The enrollment of the FATCA consulting firm was successful. The consulting firm helped to clarify the requirements of FATCA that were provided up to that time by the IRS. With regard to the FATCA consulting firm, inscription occurred in the following way: the FATCA consulting company understood the bank's culture and accordingly created training materials (e.g., the screenshot in Figure 7 of a slide from one of the presentations provided by the consulting firm).

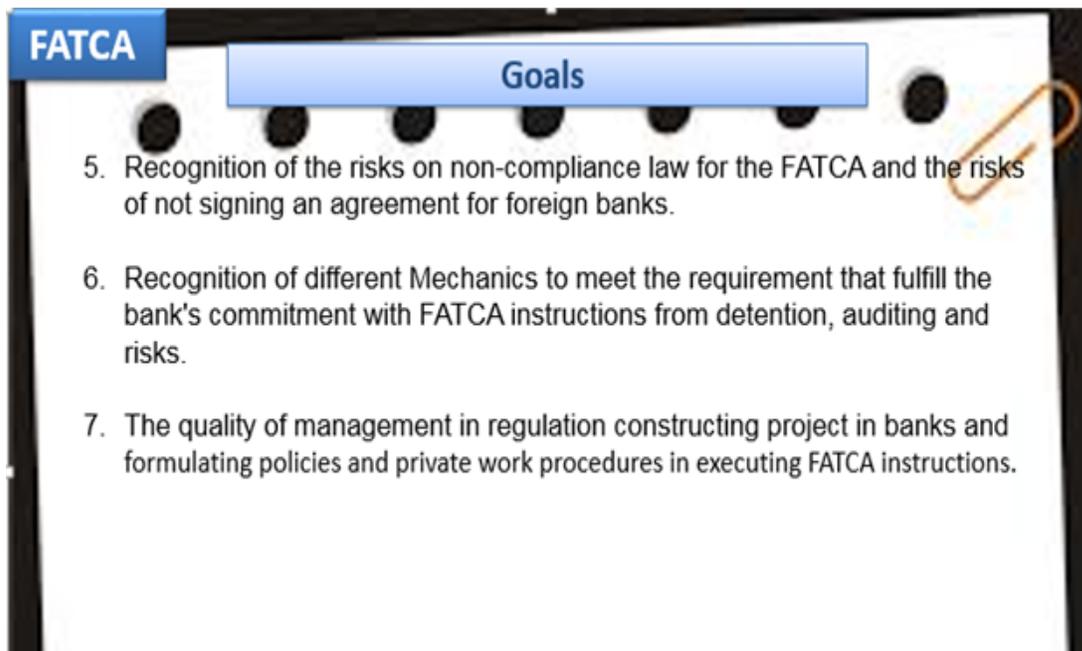


Figure 7: A sample slide from the presentation provided by the consulting firm

The IT vendor's enrollment was partially successful. The vendor provided the software required; however, no attention was given to accurately meeting the requirements of the bank. For the IT vendor, inscription occurred in the following way: the IT vendor enrolled in the new post-FATCA actor-network by developing the software required.

Technology was enrolled, but it was not meeting the requirements. The unanticipated consequences of utilizing technology on the assumption that it is a passive element led to disorder in the translation process. The post-FATCA actor-network was prone to betrayal, or not creating a software appropriate to the needs. With regard to technology, inscription occurred in the following way: the technological artifacts (the new FATCA KYC interface and database) were installed.

Information and customers were not considered as actors by the FATCA team. Therefore, there were no negotiation efforts made to enroll them in the new post-FATCA actor-network.

Figure 8 represents the final actor-network with the enrolled actors. The arrows in red mean that the enrollment was either not successful or only partially successful. The actors shown in red were not recognized even after interestment as actors with their own interests. Therefore, they were not enrolled.

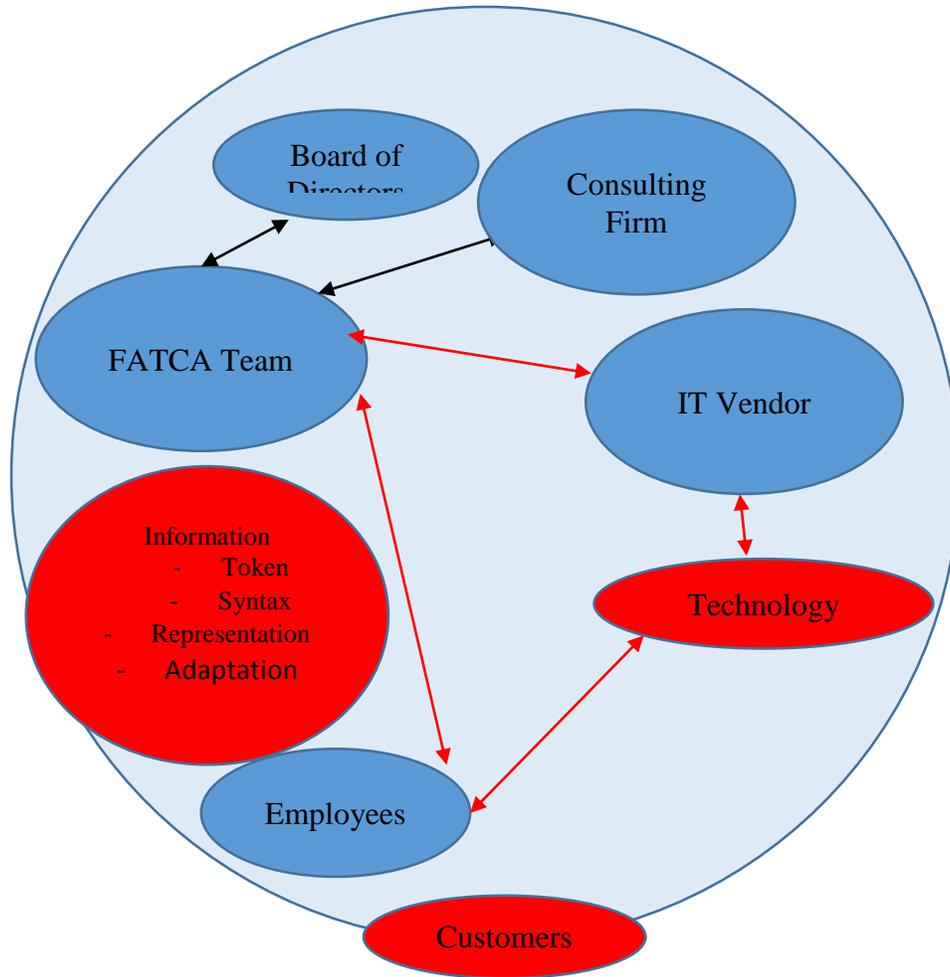


Figure 8: The post-FATCA actor-network

5.5 ANT STAGE-BY-STAGE SUMMARY OF EACH ACTOR

This section summarizes the translation process phase-by-phase for each potential actor that it was anticipated would be enrolled in the post-FATCA actor network. This section also includes a presentation of the final artifact in which the interests of the actors were inscribed.

Board of Directors

Problematization

Although the focal actor was the FATCA team, there was no need for the FATCA team to problematize the situation of the board of directors because it the board of directors first recognized the problem.

Interessement

The FATCA team (as the focal actor) had no need to negotiate the interest and roles it identified for the board of directors because the board of directors itself began the FATCA initiative.

Enrollment:

The enrollment of the board of directors was successful since the board of directors detached their interests from the old actor-network when accepting the FATCA initiative was necessary.

Inscription

The board of directors inscribed their interests in a social artifact, which is the FATCA team.

FATCA TEAM

Problematization

As the focal actors, there was no need for the FATCA team to problematize the situation for itself.

Interessement

The implicit negotiations within the FATCA team were based on the belief that the board of directors recognized the team members' roles in the bank, and that the team members would develop their knowledge and skills in the area of FATCA, which was a new area that would open the door for future career opportunities.

Enrollment

The enrollment of the FATCA team was successful since they accepted to manage the FATCA initiative with the interests of the team members being recognized by the board of directors to learn from new experiences that could open up future career opportunities.

Inscription

The FATCA team inscribed their interests in the plans they created, the policy changes they performed, and the highlighted changes identified in the software

FATCA CONSULTING FIRM

Problematization

In terms of problematization, the FATCA team (as the focal actor) selected the external consulting company as a potential actor and identified the external consulting company's roles and interests in the following way: FATCA requires that the bank comply with a tax system that is new. The current bank employees need assistance in fully understanding the requirements and in accordingly designing an accurate plan of

compliance. Therefore, an external company that has experts in FATCA and the US tax system is required. The FATCA team defined the problem by highlighting to the external consulting company what the problem is and how the problems affected the external consulting company. The FATCA team did this in the following way, the bank employees need assistance to fully understand the FATCA requirements. Therefore, the bank is willing to offer the consulting company financial profits if the consulting company can help with FATCA team understand the law and assess the bank's readiness to comply with FATCA.

Interessement

The FATCA team (as the focal actor) negotiated the interests and roles that it identified for the FATCA consulting firm, seeking to convince the FATCA consulting firm to accept these new roles and align their interests accordingly. The FATCA team did this in the following way, for the FATCA consulting company to maintain its competitive advantage and to gain profits, the consulting company needs to train the FATCA team on the FATCA requirements and the company needs to help the bank in assessing its readiness to comply with FATCA.

Enrollment

The enrollment of the FATCA consulting firm was successful. The consulting firm helped to clarify the requirements of FATCA that were provided up to that time by the IRS.

Inscription

The FATCA consulting firm inscribed their interests in the training materials and the documents provided to the bank about FATCA.

IT VENDOR

Problematization

For the bank to comply with FATCA, the bank needed to change the existing technologies and database. Since the IT department could not accomplish this in-house, an IT vendor was needed to perform the task. To define the problem and define how it could affect the IT vendor, the FATCA team showed that the bank needed the technical changes to be done. If the IT vendor wanted to keep its competitive advantage and maintain the JLB as its client, the IT vendor would have to develop the new software and integrate it with the current technologies in place.

Interessement

The FATCA team identified the IT vendor as an actor and convinced the IT vendor to accept the new role. The FATCA team (as the focal actor) negotiated the interests and roles that it identified for the IT vendor, seeking to convince the IT vendor to accept these new roles and align its interests accordingly. The FATCA team did this in the following way. For the IT vendor to sustain its competitive advantage and to gain the financial profit promised by the bank, the IT vendor company had to build the software required by the bank.

Enrollment

The IT vendor's enrollment was partially successful. The vendor provided the software required, however, the software was not scrupulously designed to meet the requirements of the bank.

Inscription

The IT vendor inscribed its interests in the end result software and database that were created.

TECHNOLOGY

Problematization

Technology was not yet explicitly recognized at this stage. Therefore, the FATCA team did not problematize the situation with technology.

Interessement

The FATCA team (as the focal actor) negotiated the interests and the roles that it identified for technology, seeking to convince technology to accept these new roles and align their interests accordingly. The FATCA team did this in the following way. The FATCA team recognized and required a new FATCA KYV interface and a database in English. The team also changes the organization's operations correspondingly. For example, customer service employees were now required to enter data about US persons in two database.

Enrollment

Technology was enrolled, but it did not meet the requirements.

Inscription

With regard to technology, inscription occurred in the following way. The technological artifacts (the new FATCA KYC interface and database) were installed.

INFORMATION

Problematization

Information, of all types, was considered a passive element in the bank and by the people. Therefore, the FATCA team did not problematize the situation with information.

Interessement

Information was not recognized as an actor with interests. Negotiations with information were dismissed. This resulted in a lack of monitoring and management of the interactions and transition from subjective-based built information (the meanings from the tokens and the syntaxes that were introduced to reduce uncertainty) to objective-based built information (the representation of the situation built on collective accepted information).

Enrollment

Information was not enrolled since it was not considered an actor.

Inscription

Not considering information as actors resulted in no negotiations or inscriptions.

EMPLOYEES

Problematization

The FATCA team had no need to define the problem to the employees or how the problem affected the employees because the employees were simply instructed to follow the rules and policies.

Interessement

The FATCA team (as the focal actor) negotiated the interests and roles that it identified for the employees, seeking to convince the employees to accept these new roles and align their interests accordingly. The FATCA team did this in the following way. It the employees wanted to avoid legal liabilities that could result from any mistakes they made and to retain their jobs, they needed to accomplish their jobs precisely and to comply with the requirements of the new rules that included the FATCA requirements.

Enrollment

The enrollment of the employees was successful since they wanted to avoid liabilities; however, some showed dissatisfaction during to the project.

Inscription

The employees' interests were inscribed by their compliance with the new rules and policies without resistance.

CUSTOMERS

Problematization

Customers were not considered as actors; therefore, the FATCA team did not problematize the situation with the customers.

Interessement

Customers' were not recognized as actors with their own interests. Therefore, negotiations with the customers were dismissed from the problematization phase. Although their enrollment in the new post-FATCA actor-network was necessary. Negotiations with the customers as actors could be based on increasing their awareness on the importance of FATCA compliance to combat tax evasion that could affect social and economic stability. Neglecting negotiations with the customers could lead to losing their business, which would conflict with the bank's vision and strategy.

Enrollment

The customers were not viewed as actors with a direct influence on the FATCA initiative; therefore, they were not enrolled.

Inscription

Not considering the customers as actors resulted in no negotiations or inscriptions.

5.6 PUTTING THE PIECES TOGETHER: HOW THE PARTIAL FAILURE OF THE FATCA INITIATIVE UNFOLDED FROM AN ANT PERSPECTIVE

When FATCA was enacted as a law, it destabilized the existing actor-network (the pre-FATCA JLB bank). The bank (as seen by its AML and compliance department and

later by the board of directors) was threatened with losing their relations with the external business environment, a loss of 30% of their US source income, and consequently a loss of the trust of their customers and investors (shareholders). Therefore, the board of director accepted that the bank needed to comply with FATCA. In order for compliance to take place, the bank requested the managers of the different departments along with the employees of the AML and compliance department (later called the FATCA team) to manage the initiative of FATCA implementation at the JLB. From an ANT perspective, the process of transferring the bank from a network of actors that was not complying with FATCA to a network of actors that would be complying with FATCA is called a translation process. The actor that needs to manage this translation process is called the focal actor. The focal actor's role is to identify the potential actors that need to be enrolled in the new actor-network, identify the roles and interests of each potential actor, and conduct negotiations with the potential actors to align their roles and interests to those that the focal actor has identified. Therefore, from an actor-network perspective, the translation process includes the following three phases:

Phase 1 is called problematization, in which the focal actor identifies potential actors and their anticipated roles and interests in the new actor-network. In our case, the focal actor (FATCA team) identified the employees, the IT vendor, and the external consulting company as the potential actors that would have roles in the successful compliance of the JLB with the FATCA rule. The IT vendor's role was to create the

technology required for compliance, the external consulting's roles was to assist the FATCA team to understand FATCA and to assess the bank's readiness to comply with FATCA, and the employees' role was to implement the FATCA law. The employees are the individuals who interact with the customers; they are the ones who collect the required information and documentation about customers that have to be reported to the IRS. The board of directors is an important actor that makes the ultimate decision to accepting or to refuse to comply with FATCA. The FATCA team has no need to problematize the situation to the board of directors since the latter first recognized the problem.

During the problematization phase, the FATCA team did not recognize the customers, technology, or information as actors. The FATCA team failed to recognize the customers because they did not have a direct role in the FATCA initiative. The FATCA team thought of the customers as the end entity that would comply with the plain directive; otherwise, the bank would end its relationship with non-complying customers. The focal actor did not recognize technology as an actor. The focal actor viewed technology as a passive element that can be modified and changed anytime. However, when technology is implemented or changed, it requires certain changes in the social structure, the processes, or the other actors' behaviors in order for the technology to be utilized. Finally, information was viewed by the FATCA team as only the data that is collected, stored, and modified in the database. However, information incorporates the syntax, representation, and adaptation types that have roles. Syntax information is the

information that individuals build through their experiences to understand a situation or to reduce uncertainties. Representation information is the information that represents the bank's situation in the external business environment. The most accurate representation information is built through communications between the employees who share the syntaxes they have built to understand a phenomenon or to reduce uncertainties. Finally, adaptation information is the information that starts with the feeling of a need of change to adapt to threats posed by the external environment on the organization. It is created through the representations that the employees have built. Effective adaptation decisions need representation information and adaptation information to be accurate and of a good quality. In order to achieve this kind of good quality information, factors like communication, involvement, and avoiding having employees experience feelings of inequality need to be managed. Thus, we argue that information is an actor with its own roles and one that needs to be managed.

Phase 2 is the phase in which the FATCA team as a focal actor negotiated the roles and interests of the potential actors identified. The FATCA team negotiated the interests of the employees by elaborating on avoidance of any legal liabilities that could result from employee mistakes. The FATCA team's negotiation with the IT vendor and the external consulting firm were based on financial incentives. The FATCA team did not need to negotiate the interests of the board of directors since the latter initiated the FATCA compliance project. Finally, the FATCA team did not negotiate the interests of

information and customers since the team did not recognize them as actors. However, during the intersement phase, technology emerged as an actor with its own interests, and the FATCA team negotiated the interests of technology by aligning the processes of the bank and the tasks of the employees so that the technology could be utilized in an appropriate way. However, this alignment affected the interests and roles of the other actors that had already been aligned. For example, the negotiations with technology added more responsibilities to the database administrator. Yet no effort was given by the FATCA team to aligning this new role of technology with that of the database administrator. This created inconvenience for the database administrator that might have resulted in making the database administrator a potential threat to the FATCA initiative.

Phase 3 is enrollment, in which the actors accept their roles and interests. We assessed the enrollment phase of the JLB as a partial failure. Although the employees were enrolled to avoid loss of their jobs, they were not trained or communicated with to clarify the details of FATCA. The FATCA team members were assigned to manage the FATCA initiative, and at the same time the FATCA team members were assigned their original job tasks. So, basically, the FATCA initiative doubled their workload. From the IT vendor's perspective, although the software was developed, it did not match the requirements anticipated by the bank from the software. Finally, the customers were not recognized as actors, and therefore the FATCA team made no efforts to communicate with the customers and convince them of the importance of FATCA. This resulted in a

loss of customers for the JLB. Furthermore, the FATCA team did not consider information as an actor; hence, no efforts were made to facilitate communications and feedback among the employees, to increase the awareness of the employees about the FATCA rule, or to foster the effectiveness of the FATCA compliance.

In sum, ANT allows us to follow the sequence of events of the FATCA compliance initiative at the JLB. It also shows us how the focal actor did not recognize technology, customers, and information as actors, which resulted in loss of customers, employees' feelings of inequality, added pressures on some of the actors, and a lack of awareness about the full meaning of compliance with the law.

5.7 CONCLUSION

In summary, the goal of complying with FATCA while maintaining good relations with the customers was not achieved. The key actors in the new network were not fully successfully enrolled. Their resistance and the inconveniences created for them could make them potential threats to the reporting process. The FATCA team and the employees were given extra work loads, and they were working under pressure. Their dissatisfaction could thus easily cause them to become threats. Technology enrollment was unsuccessful, for it did not meet the bank's requirements and consequently posed an extra threat to the bank's reporting and operations systems. Knowledge was not considered an actor in the actor-network; therefore, it can be argued that the focal actor as well as the top management were not able to consider the environmental factors that might affect the

decision-making process. Decisions were based on the poor quality of the data that could attributed to the immaturity of the law as well as to ignorance of how the employees' level of understanding of customers' wants and needs far exceeded management's understanding. All these factors resulted in the bank's registering with the IRS without being ready to report accurate customer information.

More broadly, we argue that FATCA had not been efficiently achieving its goals. The foreign financial institutions were operating with ill-suited technologies or operational systems that did not allow them to fulfill the FATCA requirements efficiently or promptly. The law was enacted in 2010, and five years later it is still not being implemented effectively. We believe that criminals have already found loopholes that allow them to hide their funds without being easily detected.

CHAPTER 6 DISCUSSION AND RESULTS

6.1 INTRODUCTION

This chapter recaps and evaluates the issues that affect the successful implementation of the FATCA initiative. The FATCA case is an example of a regulation in the dynamic AML domain that requires financial institutions' compliance; it triggers changes in a bank's current technology and the organizational structure it has in place.

The aim in this dissertation is to go beyond a description or a presentation of simplistic propositions. The goal is to conduct research that is grounded on a theoretical basis and can act as a communication platform among the different research streams on FATCA compliance. It also seeks to provide lessons that can be considered in the ML/AML domains. Hence, besides producing solutions for practitioners, the dissertation seeks to provide a theoretical contribution to the domain of FATCA compliance and ML/AML from an ANT perspective.

The chapter starts with the issues in the process of translation that may have influenced the enrollment of the important actors in the new post-FATCA actor-network. These issues are extracted on the basis of the ANT interpretation of the initiative and will be used in articulating propositions that can enhance anticipation of the complexities that can emerge when complying (Section 2). Section 3 provides the lessons that can be

learned from this particular case that apply to the ML/AML domains. Section 4, concludes with a summary of the propositions and lessons.

6.2 ISSUES IN PROBLEMATIZATION

In the problematization phase, the focal actor identifies the actors that are critical for inclusion in the translation process. Each of these actors has its own interests and goals. However, the focal actor is responsible for understanding the interests and negotiating these interests to successfully enroll the other actors so that an aligned actor network can be achieved with the actors' interests directed toward the final goal of the initiative. The problematization phase of the FATCA implementation in the Jordanian local bank (JLB) was incomplete. Information, customers, and technology were not recognized as actors with their own interests. This was the result of the complex nature of FATCA compliance, the lack of recognition of information as an actor, the lack of recognition of technology as an actor, and the consideration of customers as external entities that do not influence the FATCA initiative.

Although FATCA is a law that has been enacted to combat tax evasion. Its implementation is a business issue that encompasses departments other than the compliance and AML departments (e.g. the IT department and the legal department). The departments need to cooperate to achieve a successful FATCA compliance (Bergthold & Lenz, 2013). Furthermore, FATCA's implementation affects the technologies in place, the information that needs to be collected, and even the social structures of the bank. From

another perspective, FATCA implementation is still in progress while the law itself is immature, different areas are still confusing, and the IRS is still issuing notices and amendments to clarify those areas. For example, as of 2015, the Internal Revenue Service (IRS) is still putting efforts into updating some forms and instructions (e.g. Form 8966: FATCA Report, and Correction to Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities, among others) to clarify FATCA and its requirements (IRS, 2015a). Therefore, we argue that FATCA compliance is complex and dynamic, and that this complexity can result in missing important actors that could influence the nature and outcome of the translation process.

Since FATCA implementation requires changes and developments in technology, we argue that this kind of technological change and development will impact the organizational structures as well as the employees' behaviors. Technological implementation or changes will introduce uncertainties and risks, which means that technological changes or development will introduce new levels of complexity that are added onto the current complexities (Hemingway, 1997). The complexity of the bank as an organization, the increased number of rules and regulations to comply with, and the implementation of new and complex technologies spike complexity levels at the JLB.

The focal actor (the FATCA team) did not recognize technology as an actor with its own interests. Technology was thought of as a passive element that can be changed and controlled. This resulted in trusting fully the IT vendor (the representative of the new

technology needed) and ignoring the possibility that the technology might betray its representative (the IT vendor). The bank relying on profit as an incentive, made the IT vendor develop the software as it was needed. However, the IT vendor had other interests, such as serving other banks, at the same time. The omission of technology as an actor, led to a failure to recognize that it can play the role of manipulator (i.e., it can force users to act in a certain way and affect the social structure). According to Sarker et al., omitting IT as an actor with its own interests and roles is not uncommon. The literature provides two explanations for not considering IT as an actor: “(1) organizational members in managerial roles, often informed by ‘oversocialized’ theoretical frameworks granting agency to humans alone (e.g., [Munir and Jones, 2004, p. 571]), tend to overlook nonhuman actors, including IT, and (2) organizational members in managerial roles tend to view humans as the least reliable elements in any network, and as having the potential to develop interests contradictory to those of the focal actor; thus, most attention needs to be directed towards the human actors” (Sarker et al., 2006 , pp. 74-75). Sarker et al. (2006) add that the lack of recognition of IT as an actor will result in the focal actor overlooking the need for specifying the detailed requirements of the technology, the acceptable behavior of the technology, or the need to consistently monitor the software and its behavior. Consequently, the translation process will be prone to betrayals by the technology of the roles and interests that were agreed upon with its representative (the IT vendor). It can also result in mediating and affecting the agreed upon relations between

actors. In our case, the software starting missing the records of clients with long names because of the length of each name field.

Another nonhuman actor that the focal actor missed is information in all its types and roles. The focal actor viewed information as just token information (data) that can be stored, altered, processed and changed by the database administrator; that is., the focal actor viewed information as a docile element that can be easily fixed by the database administrator. Syntax information, representation information or adaptation information with their interactions were completely missed by the focal actor. Syntax information is an important actor that relies on the employees' experience of making meaning out of the tokens they process and reducing uncertainties. Representation information relies on the different employees to communicate the syntaxes they have built so that they can learn from each other and make accurate and comprehensive representations of a phenomenon. Finally, adaptation information is important to recognize how external factors can give rise to threats to the bank's stability. Adaptation information relies on representation information to recognize the need to change and to collectively assess how to adapt to it. The failure to recognize a total information model that takes into account how each type of information is important and how the types of information interact can influence the translation process.

The lack of employee awareness and training in FATCA can result in missing indicators that a client is a US tax payer and, consequently, failure to report that client to

the IRS. If the IRS finds out that this missing client is evading taxes or laundering money, the bank can be sanctioned. Further, employees' lack of training and awareness of FATCA could result in the employees compromising important data in the FATCA KYC fields. As mentioned before by the Database administrator (DBA) "in the current database, we found a plethora of missing or compromised fields." Further, the omission of representation information can result in a lack of communication and feedback between the employees of the bank. This could produce developing representations of a current situation that are not accurate. For example, in our case, the FATCA team relied on their knowledge to make the decisions about how the bank would comply with data. However, their knowledge might not contain an accurate representation of the bank's internal operations and processes and how changes in policies would affect those internal processes and operations. Therefore, throughout the initiative, the FATCA team were asked questions by employees that they had not considered during the planning of the FATCA initiative. For example, how does the bank deal with joint accounts if those accounts are jointly held between a US taxpayer and a non-US taxpayer if the taxpayer does not want to cooperate with FATCA. Such questions can generate new requirements, new roles, new interests and new negotiations that need to be taken into account. Several researchers in IS have stressed the importance of viewing information as more than data that can be collected and processed (Al-Abdullah & Weistroffer, 2011; Davenport, 1997; Redman, 1998). Davenport (1997) argued that the information collected and processed by

computers is less valuable to decision makers in organizations than the overall information that includes the employees' experiences, the communication and feedback, and the measures created by employees to reduce uncertainties. Davenport also added that this overall information is influenced by factors such as politics, intentions, and jealousy that need to be monitored and managed.

Finally, the focal actor did not consider customers as actors that have their own roles or interests, because the FATCA team was focused only on specifying the actors who fell within the boundaries of the FATCA compliance project, although other actors could have an effect on the FATCA initiative. Our subjective interpretation is that in the eyes of the FATCA team, the customers are external actors who will give all the information that is required about them to the bank if they need to retain their business with the JLB. That is why the FATCA team decided to ask an onboarding customer to sign a consent form that allows the bank to report his/her data; otherwise, the bank will not open the account for the customer. However, from the customer's perspective, it is the bank that needs to provide the promised customer service and the promised privacy on its customers' information; therefore, if the bank wants to retain its customers, it should perform those promised and agreed-upon roles. That is why some clients decided to not cooperate with the bank and closed their accounts (we do not have specific numbers of how many customers closed their accounts or did not open account, in the case of onboarding customers).

According to the preceding exposition, we suggest three propositions for problematization that could potentially reduce the issues that might influence the outcomes of the translation process.

P1: During the translation process, if any change is required in technology, technology should be considered as an actor that has roles and interests which can influence the existing and aligned roles and interests of the other actors. Therefore, there should be adaptation plans about how to implement this technological change, which actors will be affected, and how to align the affected actors' interests to the new actor-network that is incorporating the new or changed technology.

P2: During problematization, information should be recognized as an important actor that has its own interests and plays roles. Information can help the organization to adapt to changes in a correct and accurate manner; or it can influence the organization's adaptation to changes if it is not managed well. To create accurate information, different factors, such as politics, intentions, and communication and feedback, need to be monitored.

P3: In a service organization like a bank when it is adapting to changes, customers should be considered as actors with interests and roles. Therefore, when changes that influence the customers occur, there should be plans for communications with the customers to retain their business.

6.3 ISSUES IN INTERESSEMENT

Interessement is the phase in which the focal actor negotiates the interests of the identified actors in problematization to pass through the obligatory passage point and to align these interests to the end goal of the translation process, which is achieving an actor-network that is compliant with FATCA. This negotiations are conducted by means of the rationale and incentives that can help to convince the other actors to accept the roles and interests assigned to them by the focal actor (the FATCA team in our case) (Sarker et al., 2006). Hence, it answers the question of *how the allies are locked into place* (Callon, 1986, p. 72).

In our case, the negotiations with the FATCA consulting firm and the IT vendor were conducted by using financial incentives. Although this worked well with the FATCA consulting firm, financial incentives were not enough to make the IT vendor align all its interests with the JLB. The IT vendor had parallel financial incentives offered by other banks. This resulted in the IT vendor providing a software without paying attention to how it would meet the bank's requirements or be integrated with the bank's existing technologies. According to Jenkins et al. (1998), financial incentives alone are not correlated with performance. From the point of view of the IT vendor's interest, the IT vendor wants to expand and serve as many banks as possible to retain its competitive advantage. Therefore, the bank's negotiations with the IT vendor should have considered this interest and planned accordingly.

During the intersement phase, technology emerged as an actor. Negotiations with technology were held by the bank insofar as the bank wanted to change their structure or operations to fit this technology. (Here, from our perspective as researchers, “negotiation” refers to efforts to adapt the bank’s operations and processes to the new technology requirement.) This created some further issues such as the need of the database administrator to rectify the data in the reports to the IRS because of having empty fields the reporting that were not applicable to the bank’s customers. Hence, we argue that the introduction of technology also introduces new responsibilities for the database administrator. Adding new roles and responsibilities to the database administrator can lead to inconveniences and loss of interest and commitment to the roles assigned to him/her by the FATCA team. According to the database administrator, “Currently we have [a specified number] of employees in the IT department; and believe it or not, I am the only one who is responsible for the FATCA compliance database and the data preparation needed.”

Failure to recognize the customers as actors led to an absence of negotiations with the customers to align their interests with FATCA. We argue that rational communication with customers in a way that will raise their awareness of the consequences of tax evasion and money laundering can help the bank to avoid customer loss. This communication can be phrased as follows: the FATCA rule was enacted to combat tax evasion and the wider scope of money laundering. Both are crimes, and they have social and economic effects

that harm the community. Tax evasion is a predicate crime of ML which has a negative social impact in that it makes crimes that generate such illegal proceeds worthwhile (Mcdowell & Novis, 2001). From an economic standpoint, ML can result in “(1) undermining the legitimate private sector; (2) undermining the integrity of financial markets; (3) loss of control of economic policy; (4) economic distortion and instability; (5) loss of revenue; (6) risks of privatization efforts; and (7) reputation risk” (Mcdowell & Novice, 2001, p. 6). In sum, from the interesement perspective, the FATCA team failed to consider the interests of the customers as actors, and this affected the roles and interests of the other actors that were aligned.

Failure to recognize information as an actor can result in making the translation process prone to the effects of the factors that mediate collaborative building of accurate representations of the situation and, accordingly, making decisions of compliance. For example, when forming the FATCA team, the Board of Directors translated the team members’ will into the Board of Directors’ own understanding and interests by a plain directive. The FATCA team members translated the employees’ will into the team’s own understanding and interests by ordering them to adapt to the new policies and procedures that were foreseen by the FATCA team through the power and privileges bestowed on the FATCA team members by the Board of Directors. Since their interests were aligned (gaining experience and being recognized by the Board of Directors), the incentives of power and privilege were enough for the team members to accept their added roles.

However, this raised the potential issue of inequality among the employees. Furthermore, negotiations with the employees were based on their fear of legal sanctions that could result from non-compliance. Although important, the fear of sanctions is not sufficient to ensure effective controls of compliance. According to a consultant,

Employees can be a potential internal threat. For example, an employee can follow the policies and procedures of the bank to accomplish their tasks. But outside the bank, an employee can help his US taxpayer friend find ways to get around the law. For example, real estate is not reported to the IRS. So an employee can advise a US taxpayer friend to buy real estate instead of having the money in cash so as to not be reported to the IRS.

To sum up, lack of consideration of a total information management model will affect the relations between the actors. For example, actors can feel inequality because of the lack of awareness, communications, or involvement; this can reduce their effectiveness and morale, which can constitute sensitive potential internal threat to a bank's compliance (Bandiera et al., 2010). Not that this happened at the JLB, but it is something that could happen in the future. Therefore, from the interessement perspective, the FATCA team missed negotiating the interests of information as an actor, and that can impose potential influences on the translation process.

According to the previous overview, we suggest some propositions for the interessement phase that could potentially reduce the issues that might influence the outcomes of the translation process.

P4: Strategies used for intersement of actors, which are crucial to the success of translation and to the forming of the new actor network, can benefit from incentives of the following specific kinds: financial; knowledge learning and sharing; and, in the case of external actors, designing contracts in such a way that they are based on building relationships and anticipate cooperation on future issues.

P5: During the intersement phase, because actors may emerge that were not considered in the problematization phase, it is therefore important not just to negotiate the interests with these actors, but also to assess the influence of these actors' enrollment on the other aligned actors. If an aligned actor is affected, it is important to renegotiate his or her new roles and interests using other incentives (if necessary) to retain the alignment of the new actor-network.

P6: Even in service organizations, actors (including the focal actor) in a messy and political implementation process can lose sight of the customers that they need. This can happen when the focal actor focuses on the success of the adaptation initiative (i.e., enrolling the recognized potential actors) without aligning this initiative's outcomes with the organization's goal (which is the customer satisfaction) in order to retain the organization's competitive advantage. Customers should be considered as actors who need to have their

awareness of the reasons behind an initiative and how it can reflect on them raised.

P7: Information, as a critical actor in organizations, can benefit the organization if it is explicitly recognized as existing and if it is considered to be more than merely the data to be collected, stored, and processed in the database. Information includes an individuals' experiences, knowledge, and awareness through which he or she creates a meaning out of the data in place. Information also includes the representations that the individual creates about the organization's situation or performance, through communications and feedback. Finally, information includes the inputs through which the threats that the external environment can pose on the organization are felt and adapted to. This input is also built through the shared representations that individuals build through their interaction. Recognizing information as more than the data to be processed in the database means that the focal actor has to manage the factors that can influence building accurate representations, such as politics, jealousy, or feelings of inequality. This management can be achieved through involving the employees of the various levels in adaptation projects, training employees on the requirements needed from them instead of laying down those requirements in plain directives, and fostering the environment of communication and feedback in the organization.

6.4 ISSUES IN ENROLLMENT

Enrollment is the moment at which actors accept their interests and roles as defined by the focal actor. According to Hedstrom et al. (2010, p. 52), “A key process by which the interest and integrity of actor networks are maintained is enrollment.” In our case, although most of the actors were enrolled successfully, some actors expressed what they perceived as drawbacks in the FATCA initiative.

The focal actors (the FATCA team) accepted their role in managing the FATCA initiative. The FATCA team members expressed the inconvenience being enrolled in the old pre-FATCA actor-network while simultaneously practicing their new roles in the FATCA compliance initiative. This meant that their workload was doubled. It is noteworthy that this is not an issue that the team members expressed explicitly; however, we, the researchers, would argue on the basis of previous research that the resulting higher level of stress could easily influence the effectiveness of the team members’ performance (Krueger, 1989).

From the employees’ perspective, we argue that using the incentives of fear of sanctions and job loss would not guarantee the employees’ efficient enrollment and compliance with the rules; that is, an employee could merely follow the rules without paying attention to efficiency. For example, Demetis (2010) illustrates this with the high number of false positive suspicious activity reports (SARs) forwarded by the bank to the financial intelligence units (FIUs) out of fear of sanctions.

P8: The success of enrollment is not achieved by simply asking the potential actors to accept their roles and interests that were identified by the focal actor. A successful enrollment of actors is achieved when the actors accept the interests and roles assigned to them and follow them effectively without resistance or inconveniences. This can be achieved through assessing how the new assigned interests and roles can add to the pressures on the potential actors and how to reduce these pressures.

Lessons for the ML/AML domains

AML is a complex domain that embodies high levels of mutability. It is dynamic in nature and inherits numerous and complex uncertainties (Cohonto & Backhouse, 2007).

Demetis (2010) suggests two main reasons for why AML is complex and dynamic:

- 1- AML is a collection of elements from the political, legal, and economic systems. Demetis says, “all function-subsystems, the political, the legal, and the economic, constitute within themselves subsystems that refer to the projected function that a potential constitution of an AML system could attempt (target ML). By the communication and interactions between these subsystems, what emerges can be described as the perceived single entity that we may call the AML system” (p. 105). Each of these systems (legal, economic, and political) triggers changes in AML that may interrupt its stability and result in emerging phenomena.

2- AML is structurally coupled with ML. The justification of the emergence of AML is to combat ML. The increased complexity of AML develops vulnerabilities that criminals can exploit to successfully legitimize their illicit funds derived from crimes. “For money laundering (*not* anti-money laundering here), complexity is absolutely fundamental, as it is a generated prerequisite for concealing transactions and blurring the money trail. Therefore, in ML we stumble upon a different type of complexity that is propelling and exploiting the intrinsic patterns of systemic complexity. In such a scenario, complexity becomes an absolutely critical mode of functioning for the money laundering system itself, instead of something that needs to be avoided or reduced” (Demetris, 2010, pp. 51-52). Thus, criminals intentionally force types of complexity on AML; one example is the fast changes and the unpredictable ML schemes generated.

For the abovementioned reasons, it is difficult, if not impossible, to identify all the stakeholders who are crucial in any compliance initiative, including FATCA. The complexity of the bank as an organization along with the increased number of rules and regulations, the implementation of complex technologies, and the efforts involved in AML spike complexity levels to such an extent that it is impossible to understand and recognize all the actors in the AML domain.

Furthermore, technology is a crucial actor in AML compliance initiatives. The interests of technology as an actor should be negotiated by accurately specifying the

requirements needed from this technology, monitoring the technological behaviors and making plans to adapt to changes in technological interests by considering the other actors that will be affected by these changes and planning negotiations with them accordingly.

Compliance with AML can be viewed as a conflict of interest within the bank. Compliance can affect the relations between financial institutions and their customers (Alford, 1993). Alford argued that compliance places high responsibilities and risks on banks. A bank can over-engineer the compliance measure, out of fear of sanctions, which can lead to dissatisfied clients. Other banks, especially those with a less favorable competitive advantage, will reduce the complexity and compliance measures to accept those exiting customers. Therefore, there is a cost benefit conflict for financial institutions in complying with AML. Hence, instead of losing customers through compliance with AML rules, it is important to consider customers' interests and plan a strategy to convince the customers to cooperate with the bank in effectively complying with AML rules.

Information is another important actor in AML compliance. A lack of communication and feedback in compliance initiatives can result in making decisions based on an inaccurate representation of the bank's situation. Consequently, the decision can be harmful to the bank's strategic assets and its competitive advantage. Also, ignoring information as an actor can result in omitting to manage factors such as, among others, jealousy, politics, and information hoarding. These factors can give rise potential internal threats and harm the efficiency of the compliance procedures.

CHAPTER 7 CONCLUSION

7.1 INTRODUCTION

This dissertation is a case study that uses actor-network theory (ANT) to investigate the implementation of and compliance with the Foreign Account Tax Compliance Act (FATCA) in a Jordanian local bank (JLB). The Internal Revenue Service (IRS) enacted FATCA in 2010 as section 501(a) of the Hiring Incentives to Restore Employment Act (HIRE). HIRE itself was introduced as a reaction to the financial crisis of 2008-2010 that resulted in increasing unemployment rates as well as a growth in the US public debt, which was partially affected by tax evasion (Brodzka, 2014, p. 11). As an initiative intended to reduce tax evasion by US taxpayers through offshore accounts, FATCA required foreign financial institutions (FFIs) to collect and report information on the US accounts to the IRS. Under FATCA, a failure to comply results in 30% of any US source of income being withheld from the FFI (Brodzka, 2014).

The effects of FATCA reach beyond reducing the US debt. Tax evasion is a predicate crime of money laundering (ML), i.e., a crime that generates proceeds that when laundered lead to the crime of ML (Schott, 2006, p. 3). ML is a critical security issue because much criminal activity, such as drug trafficking, smuggling, terrorism financing, and other syndicate-based activities, are typically transacted using cash, or they are meant to produce cash flow. Thus, ML becomes necessary to legitimize the funds that are gained

through such illegal activities (Schneider, 2010). Research on ML/AML provides that although efforts to fight ML have been intensified, the results are still disappointing in terms of reducing ML activities and increasing the number of convictions in ML cases (Demetis, 2010; Sharman & Chaikin, 2009). This failure can be attributed to the complexities of compliance with the rules that the international efforts create. These complexities include operational difficulties that emerge from the rise of legislative efforts, the techno-centric approach to complying with the new rules, lack of concordance in the enactment of laws, and a lack of communication and feedback between the regulator and the complier (Demetis, 2010).

Both, FATCA and AML compliance to combat ML need to be studied using theoretically based research and from a socio-technical perspective. FATCA implementation is a business issue that encompasses departments other than the compliance and AML department (e.g. the IT department and legal departments). The departments need to cooperate to achieve a successful FATCA compliance (Bergthold & Lenz, 2013). Furthermore, FATCA's implementation affects the technologies in place, the information that needs to be collected, and even the social structures of the bank. While FATCA itself has piqued the interest of scholars from various disciplines, those scholars tend to approach FATCA from a practical standpoint for solutions rather than a more theoretically grounded academic approach. This applies to the AML domain. AML has been studied within two distinct categories, each with its own agenda. On the one hand,

there is the technical research that studies the computational modeling of ML activities, creates algorithms to analyze ML processes, and develops software that can spot those movements and generate suspicious activity reports (SARs). However, money laundering behavior is dynamic and intuitive and can thus find ways around algorithm controls. Furthermore, technological solutions do not guarantee efficiency. Hence, technological development and research will not provide solutions indefinitely. On the other hand, there is social AML research that focuses on human factors, working to understand the managerial and compliance behaviors that contribute to AML. However, efficient administrative procedures alone will not sustain AML solutions indefinitely. Therefore, in studying AML, there is a need for a socio-technical theory that allows observation of both the technical and the social (behavioral) sides (Demetis, 2010).

Accordingly, this dissertation argues that in order to enhance compliance with FATCA, it is important to understand the phenomenon as a socio-technical issue. By doing so, we are able to appreciate the inherent complexities in the management of the problem. To promote such an approach, this dissertation utilizes actor-network theory (ANT) to investigate the FATCA compliance in a Jordanian local bank. Such lessons can also be generalized to the ML/AML domain.

The choice of ANT is because ANT has been proven to be a useful socio-technical theory for studying the inter-relationships between human and non-human actors. The theory's concepts allow us to interpret politics, communications, awareness, leadership,

and other social issues, especially when technology plays a crucial role (Hedstrom et al., 2010; Sarker et al., 2006).

This current chapter is structured as follows: Section 2 provides the dissertation's findings and contributions to the practitioners of the field, contributions to the research domains of FATCA implementation as well as ML/AML, and contributions in the form of propositions to theory on FATCA compliance from an ANT perspective. Section 3 lists the answers to the research questions that are listed in chapter 1. Finally, Section 4 provides the conclusion.

7.2 THE DISSERTATION'S FINDINGS AND CONTRIBUTIONS

In this dissertation we used ANT concepts to follow the sequence of events of implementing FATCA at the JLB. Through ANT, and before the FATCA enactment, the bank could be considered a stable "pre-FATCA" actor-network consisting of the board of directors, employees, management, technology, information, and customers. Each of these actors had its agreed-upon and aligned roles and interests.

The introduction of FATCA required the bank to adapt its processes, procedures, technology, and information to comply with the law. The board of directors made the decision that the bank would comply and assigned the FATCA team (the managers of the departments as well as the AML and compliance department) to manage the initiative of compliance. From an ANT perspective, the FATCA team is called the focal actor, and the process of changing the bank from the old pre-FATCA actor-network to the new post-

FATCA actor network that is compliant with the rule is called the translation process. The translation process consists of three components (problematization, interessement, and enrollment).

During problematization, we found that the FATCA team did not recognize the customers, technology, and information as actors. During the interessement phase, three issues arose that can be summarized as follows: (1) the FATCA team omitted the negotiations with the customers and information since they were not recognized as actors that could influence the translation process. (2) The FATCA team recognized technology as an actor in the interessement phase, and the team put forth efforts to negotiate the roles and interests of the technology to be enrolled. However, the introduction of technology influenced the interests and roles of the other actors that had already been aligned. Finally, (3) the FATCA team negotiated the roles and interests of the external IT vendor solely by means of financial incentives. Unfortunately, the IT vendor had other banks to deal with, and the financial incentives were not enough to gain a high commitment from the IT vendor to provide a software that was scrupulously designed to meet the bank's requirements and that could be integrated with the technologies in place.

During the enrollment phase, four issues emerged: (1) the focal actor did not enroll the customers and information since the focal actor did not recognize them as actors. (2) Furthermore, some actors who had been enrolled were attached to both actor-networks (the pre-FATCA and the post-FATCA) simultaneously. For example, the FATCA team

members were working on the FATCA initiative as well as the doing their old job of managing their departments. This means that the FATCA team members' workload was doubled because of the FATCA initiative. (3) Other actors, like the employees, were enrolled by the FATCA team by appealing to the incentive of retaining their jobs, compensations, and the avoidance of any legal risks that could emerge from mistakes in accomplishing their tasks. Using the fear of sanctions has been criticized by Demetis and Angell (2006) inasmuch as it affects the efficiency of compliance. On the other hand, overlooking the customers as actors led to the loss of the customers by the bank because their interests were not aligned. We argue that the loss of customers could have been avoided if the FATCA team had established plans to communicate with the customers and raised their awareness of the importance of compliance with FATCA to combat tax evasion and ML. Finally, (4) the failure to identify information as an actor created problems of jealousy, lack of involvement and training, and potential internal threats to the effectiveness of compliance.

In sum, ANT allowed us to follow the sequence of events, monitor the negotiations and changes in the roles and interests of the actors, and identify the issues that drove the FATCA compliance initiative to become a partial failure. In the following section, we will present the dissertation's contributions.

7.2.1 Contributions to the practitioners

From a practical perspective, this dissertation helps practitioners in financial institutions who are responsible for complying with rules like FATCA to address the fundamental issues that influence the success of compliance projects. The dissertation highlights the importance of considering the bank as an instance of an information system in which information, technology, and social structures are interacting constituents. The interactions need to be monitored and managed in order to adapt to any threats that are posed to the bank by the external environment. This said, technology is an important constituent that needs to be constantly developed, changed, or updated to provide the organization with the information required for it to function and achieve its goals. However, technological change or development requires changes in the bank's social structure, processes, and social behaviors. Therefore, it is important to monitor the other actors who will be affected by this technological change or development and to create plans to adapt these affected actors to the technologically triggered change. Once the social structures and behaviors have been changed to adapt to the technological requirements, the social structures may cause new requirements to surface from the technology to provide the information processing and requirements of the new social structures. In this case, technology is not simply a passive administrative element that can be easily changed or modified. Technology is an actor that has interests that may be different from the interests of its manipulators. Hence, specifying accurate requirements

expected from technology and identifying the accepted behaviors in relation to particular technologies are important criteria. But more important and even crucial is to monitor this technological change and the associated behaviors to assess if it is achieving the specified requirements.

In sum, technology and social structures are structurally coupled. They constitute a dynamic interaction that needs to be monitored and managed. In a translation process, technology is an actor that interacts with the social structures. The actors influenced by the technology should be constantly aligned.

From the information perspective, this dissertation explicitly identifies information as the third constituent of any instance of an information system. Practitioners should no longer think of information as the data that is collected, processed, and reported through databases. Information includes syntax information, that is, the information that the employees build to reduce uncertainties by using their own knowledge and experiences to create meanings out of the data. Another type of information is representation information, which is the information that represents the situations that give an organization the ability to understand and sustain its performance and competitive advantage. The more accurate the representation of a situation, the better the representation information that can help in the organization's success. This accuracy can be enhanced through information sharing, exchange of the different syntaxes that were built by the different employees through communication and feedback, and involvement

of the different employees from different levels in the organization to provide inputs in the representations made. The final type of information is adaptation information, from which the organization senses external posed triggers of threats that could affect the organization, and upon which decisions to adapt and how to adapt to those triggers are made. It is important to stress here that the adaptation decisions rely on the accuracy of the representations made. In sum, information can be affected by information sharing, communications and feedback, jealousy, and feelings of inequality; and thus, the organization needs to create an environment to foster information exchange and to eliminate those factors that might affect the quality of adaptation decisions. Information is an actor that has interests and roles that need to be explicitly and constantly considered and managed throughout translation processes as well as in the organization's daily routines.

To conclude, information and technology are actors that have their own interests and roles. In order to utilize these actors well, not only do their interests always need to be aligned, but also these actors' types of influence on the social structures and the human actors need to be aligned.

Accordingly, the dissertation's contributions to practice are:

1. Practitioners need to view the bank from a socio-technical perspective, i.e., from the perspective that a bank has three main constituent components (technology, social

structures, and information). The components' interaction creates a phenomenon with properties that are more than the sum of the properties of the constituent components.

2. Practitioners of compliance need to avoid viewing the technology as a passive element that can be changed whenever needed. Technology can be changed; however, the technology itself can require structural or procedural changes in order to be fulfilled by it. Therefore, this dissertation stresses the importance of monitoring the actors that will be affected by the technology and taking actions to realign the interests and roles of those affected actors to keep them enrolled. Furthermore, in order to successfully enroll technology, it is important to specify the detailed requirements for the technology and its acceptable behavior. This will help in monitoring the technology to ensure that it is acting according to the specified accepted behavior.
3. Practitioners need to expand their understanding of information as more than the data in the database that can be stored, altered, reported, or modified. Information involves syntax information, representation, and adaptation. To achieve successful adaptable decisions, the input to the decision-making process has to be the accurate representation of a situation. The representation is built through interaction and communication among the stakeholders, which fosters the stakeholders' sharing of information and knowledge expertise. Communication and involvement increase employees' satisfaction through feeling incentivized by acquiring new knowledge and expertise. Finally, the syntaxes are based on the employees' using this experience and

knowledge to create a meaning from the token information (data) that s/he is processing. Therefore, this dissertation emphasizes the awareness of practitioners that information is more than token data, and that in order to successfully adapt to external threats to the organization, a total information management model needs to be built that fosters information sharing, constant learning and development, and the flexibility of the organization to respond to the changes of the current information age.

7.2.2 Contributions to FATCA and ML/AML compliance as research domains

From a FATCA and AML compliance standpoint, the dissertation is a theory-based study that examines compliance from a socio-technical perspective. The use of ANT enabled us to follow the actors' interests and roles and those of the potential actors that can have influence on the actor-network's stability. The importance of ANT is its agnosticism and generalized symmetry features. The former relieved us from a priori assumptions about the nature of the network or any causal conditions; and the latter relieved us from a differentiation between the human and non-human actors. Therefore, ANT allowed us to study the technology and its influences on the translation process and to study information, in all its types, and its influence on the translation process.

Accordingly, we were able to identify the need of a total information management perspective in organizations to eliminate the role of politics, jealousy, and lack of awareness that can negatively affect any translation process or any FATCA compliance. Furthermore, we were able go beyond identifying technology as an actor to study how it

can influence other actors' interests and roles that were aligned previously. We were also able to establish that technology is not a passive element that can be easily modified. Technology can betray its representative (the actor in charge of its development, modification, or upgrading) by acting in a manner that is different from the agreed-upon behavior.

In sum, by using ANT, we identified the interaction between the social structures, information, and technology, and how this interaction can be monitored and stabilized. It is noteworthy at this point that we agreed that technological change or implementation could surface uncertainties; but we also found that through healthy communications and feedback that involve employees in the adaptation of projects and enhance the development of employees' expertise, the organization can achieve more accurate representations of the situations in which it is functioning and can identify any adaptation that may be required before a threat to the organization materializes. That is to say, monitoring the interactions among technology, information, and social structures will make the organization flexible enough to adapt to external changes and take advantage of the situations in which it finds itself, especially in dynamic domains like ML/AML.

Accordingly, the contributions to FATCA and ML/AML compliance as research domains are:

1. This is one of the few socio-technical studies on FATCA and AML compliance.

Research on FATCA as well as AML is for the most part descriptive of ML schemes.

However, the domain lacks the scientific research that involves investigating theoretically the phenomena of AML and FATCA compliance (Demetis, 2010). Therefore, this dissertation is a theory-based research study that examines compliance with FATCA and AML. Furthermore, Demetis (2010) argues that the AML domain lacks a research approach that studies it from a socio-technical perspective. Accordingly, we chose to investigate FATCA and AML compliance using the actor-network theory, which has been proven by IS research to be a socio-technical theory that allows the researchers to interpret politics, communications, and awareness, among other social issues, especially when technology plays a crucial role.

2. ANT allowed us to identify technology as a crucial actor in the domain of FATCA and AML compliance initiatives. To the best of our knowledge this has not been shown in the body of research on FATCA compliance. ANT demonstrated how technology has its roles and interests that can impact the roles and interests of other actors. If the impact is not managed, it can result in inconveniences that may affect an actor's interests in being enrolled in the network, or it can change the actor to become an internal threat.
3. ANT allowed us to identify information as an actor that has roles and interests. To the best of our knowledge, information has not been explicitly recognized as an actor in ANT research. This neglect of information can result in a lack of knowledge sharing, jealousy between employees, the emergence of non-cooperative intentions on the part

of some employees; and it can also open bridges for politics to influence the employees' behaviors and decisions. This has a broader negative effect on the ability of the organization to adapt to external threats that can destabilize it.

7.2.3 Contributions in the form of propositions to theory on FATCA compliance from an ANT perspective

The theoretical contribution of this dissertation involves the unique application of ANT in the domain of FATCA compliance to identify the issues that emerged during the translation process and, accordingly, to create ANT-based propositions that codify our ANT-based knowledge on FATCA compliance. These propositions have already been presented in Chapter 6.

The propositions are:

P1: During the translation process, if any change is required in technology, technology should be considered as an actor that has roles and interests which can influence the existing and aligned roles and interests of the other actors. Therefore, there should be adaptation plans of how to implement this technological change, which actors will be affected, and how to align the affected actors' interests to the new actor-network that incorporates the new or changed technology.

P2: During problematization, information should be recognized as an important actor that has its own interests and roles. Information can help the organization to adapt to changes in a correct and accurate manner; or it can influence the organization's

adaptation to change if it is not managed well. To create accurate information, different factors, such as politics, intentions, and communication and feedback, need to be monitored.

P3: In a service organization like a bank when it is adapting to changes, customers should be considered as actors with interests and roles. Therefore, when changes that influence the customers occur, there should be plans for communications with the customers to retain their business.

P4: Strategies used for intersement of actors, which are crucial to the success of translation and to the forming of the new actor network, can benefit from incentives of the following specific kinds: financial; knowledge learning and sharing; and, in the case of external actors, designing contracts in such a way that they are based on building relationships and anticipate cooperation on future issues.

P5: During the intersement phase, because actors may emerge that were not considered in the problematization phase, it is therefore important not just to negotiate the interests with these actors, but also to assess the influence of these actors' enrollment on the other aligned actors. If an aligned actor is affected, it is important to renegotiate his or her new roles and interests using other incentives (if necessary) to retain the alignment of the new actor-network.

P6: Even in service organizations, actors (including the focal actor) in a messy and political implementation process can lose sight of the customers that they need. This

can happen when the focal actor focuses on the success of the adaptation initiative (i.e., enrolling the recognized potential actors) without aligning this initiative's outcomes with the organization's goal (which is the customer satisfaction) in order to retain the organization's competitive advantage. Customers should be considered as actors who need to have their awareness of the reasons behind an initiative and how it can reflect on them raised.

P7: Information, as a critical actor in organizations, can benefit the organization if it is explicitly recognized as existing and if it is considered to be more than merely the data to be collected, stored, and processed in the database. Information includes an individuals' experiences, knowledge, and awareness through which he or she creates a meaning out of the data in place. Information also includes the representations that the individual creates about the organization's situation or performance, through communications and feedback. Finally, information includes the inputs through which the threats that the external environment can pose on the organization are felt and adapted to. This input is also built through the shared representations that individuals build through their interaction. Recognizing information as more than the data to be processed in the database means that the focal actor has to manage the factors that can influence building accurate representations, such as politics, jealousy, or feelings of inequality. This management can be achieved through involving the employees of the various levels in adaptation projects, training employees on the requirements needed

from them instead of laying down those requirements in plain directives, and fostering the environment of communication and feedback in the organization.

P8: The success of enrollment is not achieved by simply asking the potential actors to accept their roles and interests that were identified by the focal actor. A successful enrollment of actors is achieved when the actors accept the interests and roles assigned to them and follow them effectively without resistance or inconveniences. This can be achieved through assessing how the new assigned interests and roles can add to the pressures on the potential actors and how to reduce these pressures.

In this dissertation, we followed the structure of Sarker et al.'s (2006) model in which the authors used ANT as a socio-technical approach to study the interaction between technology and human processes in a telecommunications company (TELECO). In their application of the theory, Sarker et al., followed the sequence of events before, during, and after the BPC initiative at TELECO and viewed the process as a creation, expansion, and collapse of actor-networks. From an ANT perspective, this describes the process of translation in which different actors align their interests with the interests of the focal actor. As part of our theoretical contribution, we reviewed each of Sarker et al.'s propositions to assess its applicability to our FATCA compliance case.

In this way, we use the summative-validity approach provided by Lee and Hubona (2009) to empirically test the theoretical findings of Sarker et al. (2006). This will also

indicate how, in the future, the theoretical findings of this study can be empirically tested. The assessment is provided as shown below in Table 6.

According to Lee and Hubona (2009), for summative validity, a researcher can use the modus tollens approach. Modus tollens states that if the theory that needs to be empirically tested is true, then the facts or the data that the theory should predict are true; if the expected prediction by the theory is not true, then the theory is not true. (The major premise is: “if p then q.” The minor premise is: “not q.” The conclusion is: “not p.”). We provide two examples of applying this logic, where the examples are taken from the table below.

For the first example, according to Sarker et al., proposition 1 states that: “It is quite possible that hidden actors of potential significance (e.g., emergent ‘opponents’ of the BPC project) exist within seemingly atomic punctualized actor-networks during, say, the initiation of the project. Thus, whenever possible, tactics for (a) identification of punctualized networks, (b) prevention of disintegration of the punctualized networks, (c) monitoring for signs of disintegration, and (d) developing contingency plans to deal with implications of the disintegration on the surrounding actor-networks should be formulated as part of project initiation” (p. 74). By applying this proposition type to our FATCA case, the prediction will be: “It is quite possible that hidden actors of potential significance (e.g., emergent ‘opponents’ of the [FATCA initiative]) exist within seemingly atomic punctualized actor-networks during, say, the initiation of the project. Thus, whenever

possible, tactics for (a) identification of punctualized networks, (b) prevention of disintegration of the punctualized networks, (c) monitoring for signs of disintegration, and (d) developing contingency plans to deal with implications of the disintegration on the surrounding actor-networks should be formulated as part of project initiation.” According to modus tollens, if the prediction is not true, then Sarker et al.’s proposition is not true. However, from our case analysis, the prediction was correct but incomplete. It was incomplete in the following way: Sarker et al.’s proposition recommends identifying the punctualized networks, preventing disintegration of the punctualized networks, monitoring for signs of disintegration, and developing contingency plans to deal with implications of the disintegration on the surrounding actor-networks. Sarker et al.’s assumption is that the identifying is done by the focal actor. However, Sarker et al.’s propositions did not recognize that monitoring and reviewing of the constituent actors of a punctualized actor require a kind of expertise that exceeds that of the focal actor.

For the second example, according to Sarker et al., proposition 2 states that: “Problematization is not a one-time activity to be undertaken only during the initiation phase of a BPC project; it should be treated as an ongoing process throughout the initiative as previously unanticipated actors come into view and need to be enrolled as allies of the initiative” (p. 74). By applying this to our FATCA case, the prediction will be: “Problematization is not a one-time activity to be undertaken only during the initiation phase of a [FATCA initiative]; it should be treated as an ongoing process throughout the

initiative as previously unanticipated actors come into view and need to be enrolled as allies of the initiative.” According to modus tollens, if the prediction is not true, then Sarker et al.’s proposition is not true. However, from our case analysis, the prediction was correct but incomplete. It was incomplete in the following way: Sarker et al.’s assumption is that the focal actor is not a representative of the true interests at the heart of the translation. In the FATCA case, the FATCA team was only a representative of the board of directors; and, consequently, the FATCA team did not have a heart-felt interest in the true interests of the success of the translation. As such, the FATCA team should have been incentivized by the board of director so that the focal actor would remain committed to treating problematization as an on-going activity.

Table 6: The empirical test of Sarker et al.'s propositions

	Proposition from Sarker et al. (2006)	Notes from our FATCA initiative case
1 (p.74)	“It is quite possible that hidden actors of potential significance (e.g., emergent ‘opponents’ of the BPC project) exist within seemingly atomic punctualized actor-networks during, say, the initiation of the project. Thus, whenever possible, tactics for (a) identification of punctualized networks, (b) prevention of disintegration of the punctualized networks, (c) monitoring for signs of disintegration, and (d) developing contingency plans to deal with implications of the disintegration on	Sarker et al.’s proposition still applies; but in addition, there is this: During the problematization phase, as a proactive plan, a punctualized actor’s components need to be reviewed to identify the potential constituent actors that can influence the translation process as well as to create plans on how to enroll those constituent actors. To do this review,

	Proposition from Sarker et al. (2006)	Notes from our FATCA initiative case
	the surrounding actor-networks should be formulated as part of project initiation.”	the expertise of the focal actor alone would be insufficient.
2 (p.74)	“Problematization is not a one-time activity to be undertaken only during the initiation phase of a BPC project; it should be treated as an ongoing process throughout the initiative as previously unanticipated actors come into view and need to be enrolled as allies of the initiative.”	Sarker et al.’s proposition still applies; but in addition, there is this: In the case of JLB, the focal actor (the FATCA team) reported to the board of directors. The board of directors can incentivize the focal actor to treat problematization not as a one-time activity, but as ongoing, in ways such as the following: 1. Instead of the FATCA team’s role being an ad hoc role, it can be changed to a permanent role with compensation. 2. The FATCA team is offered a reward for a successful initiative.
3 (p.75)	“Problematization should be undertaken not only for human actors but also for nonhuman artifacts, especially for IT, which often plays a key role in BPC initiatives.”	Sarker et al.’s proposition still applies; but in addition, if the focal actors identify technology as a non-human actor, then the focal team would need to identify other actors whose interests and roles will be influenced by technology and to create a contingency plan of how to renegotiate these other actors’ roles and interests.

	Proposition from Sarker et al. (2006)	Notes from our FATCA initiative case
4 (p.76)	“It is necessary to recognize the fact that BPC-related actors' interests are multidimensional (e.g., economic as well as social), even though one may be more salient. The intersement strategy must encompass all the relevant dimensions of the interests, not just the most salient.”	Sarker et al.'s proposition still applies; but in addition, the multidimensional interests of external actors are different from the multidimensional interests of the internal actors. For instance, the interests of the IT vendor should have received attention in a different way, such as creating a structure, perhaps through the contract, that would embed opportunities for the future.
5 (p.76)	“In a BPC initiative, an intersement strategy directed solely toward representatives of relevant actors or actor-networks is inherently risky, because representatives do not necessarily represent all aspects of the interests of their constituents. Moreover, the relationships between the representatives and their constituents are always subject to change and renegotiation, and thus, agreements made by representatives may not necessarily be adhered to by the constituents at a later point in time.”	Sarker et al.'s proposition still applies; but in addition, it is fundamental to isolate the representatives from the constituent actors, and to study each one as a separate actor that has its own interests and roles. This will assist the researcher's ability to reduce the complexity of the actor's interactions in order to monitor the actor's behavior.
6 (p.77)	“It is more than likely that different network elements in an actor-network involved in BPC are pursuing strategies for enrolling actors into an alliance that serves interests that may not be consistent with those of the focal actor. Thus,	In our analysis, we did not have an instance of parallel translation. It is possible that in the future we will have observations where parallel translation could occur.

	Proposition from Sarker et al. (2006)	Notes from our FATCA initiative case
	the focal actor needs to be aware of parallel enrollment attempts at different levels in the network, devise strategies to block or counter their effects, and mobilize the support of as many significant actors/actor-networks as possible.”	
7 (p.79)	“Any alignment of interests achieved through enrollment during a BPC initiative should be considered temporary. Thus, the focal actor building an alliance should be vigilant about shifting interests of actors that have already been enrolled, possibly as a result of disintegration of punctualized actors. Further, wherever possible, agreements made by the enrolled actors should be inscribed in detail on durable material to provide greater stability to the network of allies being assembled.”	Sarker et al.’s proposition still applies, but it is only valid for internal actors. Detailed inscription is hard to achieve with external actors.
8 (p.80)	“Interests inscribed in human and nonhuman actors as part of the enrollment process in the BPC initiative tend to have properties of irreversibility. The consequence is that the enrolled individuals, social bodies, documents, technologies, and so on continue to serve the interests inscribed in them even after the interests have ceased to be relevant to the initiative or to the enrolling actor.”	In our analysis, we did not have an instance of irreversibility issues. It is possible that we will make observations in the future in which irreversibility will occur.
9 (p.80)	“For a BPC initiative to be successful, it is necessary to ensure that actors enrolled in a post-BPC	Sarker et al.’s proposition still applies; but in addition, a reason to avoid

	Proposition from Sarker et al. (2006)	Notes from our FATCA initiative case
	network are not simultaneously attached to the pre-BPC network, because the competing interests of the two networks tend to reduce the stability of both networks.”	simultaneous enrollment of the actors in both networks is the increased workload that is assigned to the actors, which can result in the actors’ loss of interest in enrollment and their emergence as an internal threat.

This dissertation formulated our own eight propositions in an effort to continue building theory (initiated by others, such as Sarker et al.). This research has engaged in theory building, not theory testing. However, our own eight propositions can eventually be tested in the same way that we just tested Sarker et al.’s nine propositions, using modus tollens. This would await a new case, just as our research posed a new case in regard Sarker et al.’s propositions.

7.3 ANSWERING THE QUESTIONS IN CHAPTER 1

We now return to the motivating research questions originally posed in Chapter 1. The answers to some of these questions have already appeared above but are restated, as necessary, below so as to ensure complete answers to all of them.

The general research question is:

- ***What theoretical explanations can ANT provide as a socio-technical theory about the role of technology and information in complying with FATCA rules in financial institutions?***

ANT provides insights on the actual role of the technology and information in an actor-network. The characteristic of generalized symmetry of ANT means that the observer must avoid any priori differentiations between human and nonhuman actors. This gives the observer the ability to see the nonhuman elements, such as technology and information, as actors with their own roles and interests. The observer can in this way trace the negotiation process with technology and information and gain an insight on their enrollment. Further, the observer will have a closer look at the issues that emerge from the errors in the enrollment of information and technology.

From the point of view of compliance with FATCA perspective, technology is viewed as a passive element that can be manipulated and changed easily. However, through ANT, we were able to view technology as an important actor with its own roles and interests. We were able to see how the enrollment of technology affects the roles and interests of the other actors who had already been aligned. Accordingly, we suggest the need to monitor technology; the need to consider it as an actor, and hence to specify its exact and detailed requirements and accepted behaviors. Otherwise, technology's interests cannot be aligned.

From an information perspective, viewing information as an actor enabled us to recognize the role of information in creating accurate representations of the organization's situation. Information also allowed making more accurate adapting decisions in response to the external environment. Lastly, viewing information as an actor permitted us to identify what factors can mediate the generation of accurate representations. It also allowed us to recognize that a poor information environment not only results in poor decisions, but also has negative impacts on other actors in the actor-network.

The first of four specific research questions is:

- ***How does the interaction between information, technology, and social structures illustrate the “I.S. artifact” concept discussed by Lee, Thomas, and Baskerville (2015)?***

An IS artifact consists of three components (the IT artifact, the information artifact, and the social artifact). The technology artifact in our case consists of the new “know your customers” (KYC) interface in which the employee enters the customers' data. The technology artifact also includes the database in which the clients' information will be stored, edited, and compiled. The information artifact consists of the US indicia that the bank will use to identify its US clients whose accounts need to be reported to the IRS. It also includes the employees' expertise and the knowledge through which they will create a meaning from the clients' records to identify and report the US clients' data. Finally, the social artifact is the collection of people and relations by whom the US clients' information will be successfully collected, processed, and reported to the IRS. The

social artifact includes the responsible officer (RO), the assistant responsible officer, the database administrators, and the bank customer relations employees; each has roles and tasks to accomplish as well as relations and dependencies on other social artifact members in order to function. The IS artifact in our case is not the translation process, but the post-FATCA actor-network (the compliant bank). This system consists of the interactions of the three constituent artifacts (technology, information, social) that come together and interact to form a system that successfully and efficiently reports the US clients' information required by the IRS.

The technology artifact (the KYC interface and the database) interacted with the social artifact (the collection of employees who cooperated to identify the US clients) by imposing the requirement of added responsibilities for the social artifact members. The FATCA KYC required the customer relations employee to fill out more forms and to collect more documents about the customers. The KYC interface required the RO and the assistant RO to ensure that the bank was functioning according to the agreement of FATCA with the IRS. They were also responsible for using the new technology to structure the US clients' data to match the templates of the reports that were specified by the IRS. The new FATCA KYC required the database administrator to ensure that all the FATCA related data were collected and stored correctly in the database. In sum, the FATCA compliance required changes to the technology in the bank as well as the employees' job responsibilities and relations. The new responsibilities of the social

artifact members could pose new requirements from technology, such as when the database administrator created a new dictionary in the database that allowed searching for clients' information in English.

The social and the technology artifacts are mediated by the information artifact, which is the core constituent of the bank as an IS. For example, adaptive information initiated the bank's need to change to become compliant with FATCA. Representation information revealed the US indicia according to which the bank measured its readiness to comply; it also identified the changes needed in the technology artifact as well as the employees' responsibilities, relations, and procedures. Therefore, the information artifact (including the US indicia, the employees' expertise on how to collect the customers' information to be reported, and the bank's recognition of the need to change) posed new requirements for the social artifact and the technology artifact. Both already had an intertwining relationship, and change to one posed new requirements and changes on the other. Furthermore, the information artifact allowed the social artifact to assess the efficiency of the technology artifact to identify any necessary changes. The information artifact also allowed technology to impose new requirements on the social artifact, such as adaptation to the ways in which the social artifact members conducted their tasks.

Accordingly, the determinant of the bank's compliance with FATCA was the information artifact (the US indicia and the reporting requirements) that shaped the interaction between the social artifact members and the technology artifact. Yet without

the social artifact the information artifact would not have come into existence; and without the technology artifact, the US clients' information to be reported would not have been processed. So each constituent had its own share of importance, but the heart of the IS (the compliance bank) was not the technology used for reporting. The heart of the IS artifact was the information artifact that identified how the social artifact members needed to shape their responsibilities and relations. The information artifact also identified what was needed from the technology artifact.

The IS artifact is a whole which is greater than the sum of its parts (the technology artifact, the social artifact, and the information artifact). The IS artifact is a whole FATCA reporting system that involves the interaction of the three constituent artifacts. Studying FATCA reporting solely from a technology perspective is not sufficient since the information artifact shapes the requirements from technology and measures how technology is meeting its requirements. Studying the social artifact members' interaction alone is not sufficient since FATCA compliance requires more than managerial and procedural solutions. The relations and efficiency of the social artifact members require knowledge about the US indicia and the technologies that are used in collecting, processing, and identifying the US clients' information that needs to be reported to the IRS. Finally, studying the information artifact (US indicia and reports) alone is not sufficient for compliance since this information has to be processed through the technologies by the social artifact members.

The idea of the “IS artifact,” in contrast to the “IT artifact,” is important to the theory and practice of FACTA compliance and ML/AML. FATCA and AML compliance incorporate more than just technology (the software through which the data is collected, processed, and reported). Compliance requires information about what needs to be complied with, as well as how the effectiveness of compliance can be measured and monitored. Compliance also requires the employees to form a cooperative relationship among themselves to effectively apply the information about complying by using the technologies to effectively meet the requirements of what needs to be complied with.

. The second of four specific research questions is:

- *From an actor-network perspective, how do information, technology, and social structures interact as actors in the JLB bank when complying with FATCA?*

When complying with FATCA, information is the actor that first gives rise to the need for compliance (adaptation information). Information as an actor identifies the way in which the compliance should be implemented (i.e., what social changes and what technological changes are required and how to pursue the changes in both areas) in accordance with the representation of the situation (representation information). Finally, information as an actor represents the data that need to be processed by technology and how the employees can process this data and create a meaning out of it based on their experience. At this point the data need to be of a specific type and accompanied with a specific employee’s expertise for them to be utilized by technology in a correct manner. Technology, on the

other hand, needs to be modified to act according to specific requirements in order to be able to process this information and create a meaning out of it. Technological change may pose new requirements from information or the employees' specific information and vice versa. In our JLB bank, the change in the technology changed the information that needed to be collected (at least in regard to the language). The changes in language required new technological capabilities to handle both languages in the same database and to rectify the empty fields subsequently created.

From a social structure perspective, technology affects social relations and processes. Conversely, a social structure, may require changes in technology. Technological changes impacted the role of the database administrator, and consequently the database administrator experienced inconveniences during FATCA. Further, a change in technology changed the processes, documents, and relations between the bank and its non-cooperative customers (as viewed by the bank employees). The change in information and documentation required from the employees also changed the procedures of data collection as well as the procedures of data reporting.

The third of four specific research questions is:

- ***What lessons about ML/AML are suggested from the FATCA compliance in this case study of the JLB?***

- AML is a complex domain and therefore in a compliance initiative it is hard, if not impossible to identify all the potential actors at once in the problematization phase.
- Technology is a crucial actor in AML compliance initiatives. The interests of technology as an actor should be negotiated by accurately specifying the requirements from this technology, monitoring the technological behaviors, and making plans to adapt to changes in technological interests by considering the other actors that will be affected by these changes and planning appropriate negotiations with them.
- The use of “fear of sanctions” as a way to intensify an actor’s enrollment is necessary but not sufficient to result in his or her efficient enrollment.
- Information is an essential actor that can influence the other actors’ aligned interests and roles. Information recognition can reduce the influence of politics, lack awareness, lack of training, and lack of communications and feedback on the efficiency of the compliance project.

The fourth of four specific research questions is:

- ***What value can this study add to the research on FATCA compliance, specifically, and ML/AML, generally?***

From a FATCA compliance research perspective, this study used ANT to investigate in a scholarly way FATCA compliance. FATCA compliance was examined from a socio-technical perspective that appreciates the roles of human actors as well as

nonhuman actors in the efficiency and success of the compliance project. Accordingly, the study identified technology and information as important actors that needed to be managed in the FATCA compliance initiative.

From an ML/AML perspective, the study used ANT to understand ML/AML within a socio-technical trajectory. As such, the study allows us to identify the role of technology and information as nonhuman actors in ML/AML and how both can add to the complexity of these domains.

7.4 CONCLUSION

This dissertation focuses on using ANT in a new complex domain (FATCA implementation) to investigate the issues that influenced the success of a translation process. As a socio-technical theory, ANT enabled us to study the interaction between information, technology, and social structures whereby we could illustrate how both information and technology are actors with roles and interests, as well as how the focal actor can manage to negotiate the roles and interests of information and technology even though they are nonhuman actors. This permitted us to use the case study of the FATCA implementation in the JLB to provide lessons for the domains of ML/AML.

Our case study showed that the bank as an actor-network could be viewed as an instantiation of an “information system artifact” that has the interacting components of a “technology artifact,” “a social artifact,” and “an information artifact.” The technology artifact consists of the software, hardware, and any other technique or tool that the bank’s

employees use to accomplish their tasks. The information artifact consists of the token information (data), the syntax information (the information that the employees create, through their knowledge and experience, from the token information), the representation information (the shared syntaxes that the employees build, through communicating their own understandings, to assess the bank's situation), and finally the adaptation information (the information that uses the different representations provided to recognize external triggers of threats posed to the bank that require an adaptive action). Finally, the social artifact includes the social structure of the bank (i.e., the relationships among the employees and their roles and interests).

In sum, ANT provided an insight on the interactions among the constituents of the IS artifact. Therefore, ANT enabled us to study FATCA compliance from a socio-technical perspective without any differentiations between the technical and social the artifacts. Accordingly, this research is a theoretically grounded study that can be used as a communication base by the various research streams that study FATCA compliance or the ML/AML domains.

References

- Abu Shanab, E. & Pearson, M. (2009). Internet banking in Jordan: An Arabic instrument validation process. *International Arab Journal of Information Technology*, 6 (3), 235-244.
- Abuqudairi, A. (2014, April 3). Jordan anti-terrorism law sparks concern. *Aljazeera News*. Retrieved from <http://www.aljazeera.com/news/middleeast/2014/04/jordan-anti-terrorism-law-sparks-concern-201442510452221775.html>
- Agrawal, J.D. & Agrawal A. (2006). Money laundering: New forms of crime victimization. Presented at the National Workshop on New Forms of Crime, Victimization, Department of Criminology, University of Madras, India.
- Al-Abdullah, M., & Weistroffer, H.R. (2011). A framework to enhance decision outcomes: Data quality perspective. In *Proceedings of the Southern Association for Information Systems Conference SAIS, Georgia, USA*
- Alford, D. E. (1993). Anti-Money laundering regulations: A burden on financial institutions. *North Carolina Journal of International Law & Commerce Regulation*, 19, 437-442.
- Anderson, R., Barton, C., Böhme, R. Clayton, R, Van Eeten, M. J. G., Levi, M., Moore, T., & Savage, S. (2012). Measuring the cost of cybercrime. Presented at the Workshop on the Economics of Information Security, Berlin, Germany.
- Angell, I. & Ilharco, F. (2009). Dispositioning IT all: A Theory for Thriving without Models. *Bricolage, Care and Information: Claudio Ciborra's Legacy in Information Systems Research* (pp, 401-422). Palgrave Macmillan, Available from <http://www.ucp.pt/site/resources/documents/FCH/F%20Ilharco/Dispositioning%20IT%20All.pdf>

- Angell, I. & Demetis, D. (2007). The Risk-based Approach to AML: Representation, Paradox, and 3rd Directive, *Journal of Money Laundering Control*, 10 (4), 412-428.
- Anti-Money Laundering & Counter Terrorist Financing Unite (AMLU). (n.d.). *Mutual Evaluation Report*. Retrieved from <http://www.amlu.gov.jo/ar-jo/mutualevaluationofthekingdom.aspx>
- Anti-Money Laundering & Counter Terrorist Financing Unite (AMLU). (2010a). *Annual Report 2010*. Retrieved from <http://www.amlu.gov.jo/Portals/0/English/AnnualReports/Annual%20Report%202010.pdf>
- Anti-Money Laundering & Counter Terrorist Financing Unite (AMLU). (2010b). *Targeted Review Report*. Retrieved from <http://www.amlu.gov.jo/ar-jo/reviewprocessoftheregime.aspx>
- Ashby, W. R., & Goldstein, J. (2011). Variety, constraint, and the law of requisite variety. *Emergency: Complexity and Organization*, 13(1/2), 190-207.
- Askena, L., & Westelius, A. (2003). Five roles of an information system: A social constructionist approach to analysing the use of ERP systems, *Informing Science*, 6, 209-219.
- Baker, G.P., Jensen, M.C., & Murphy, K.J. (1988). Compensation and incentives: Practice vs. theory. *The Journal of Finance*, 43(3), 593-616.
- Bandiera, O., Barankay, I., and Rasul. I. (2010). Social incentives in the workplace. *Review of Economic Studies*, 77(2), 417-458.
- Barely, S. (1990). The alignment of technology and structure through roles and networks," *Administrative Science Quarterly*, 35 (1), 61-103.
- Benbasat, I., Goldstein, D.K., & Mead, M. (1987). The Case Research Strategy in Studies of Information Systems, *MIS Quarterly*, 11(3), 369-386.
- Berger, P. L., & Luckmann, T. (1966), *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, London, UK: Penguin Books.

- Bergthold, J. J., & Lenz, T. C. (2013). Private Equity & Hedge Fund Corner. *Journal of Passthrough Entities*, 17(5), 19-24
- Blaikie, N. (2007). *Approaches to Social Enquiry: Advancing Knowledge*. Cambridge: Polity Press.
- Blau, P., Mchugh-Falbe, W., Mckinley, W., & Phelps, T. (1976). Technology and organization in manufacturing, *Administrative Science Quarterly*, 21, 20-40.
- Brodzka, A. (2014). The deadweight cost of implementation of Foreign Account Tax Compliance Act (FATCA). *Nauki o Finansach*, 4(21), 11-22.
- Burrell, G. & Morgan, G. (1979). *Sociological paradigms and organizational analysis*. London: Heinemann.
- Byrnes, W., Kleinfeld, D., & Gil Soriano, A. (2014). LexisNexis Guide to FATCA Compliance (Chapter 1, Background and Current Status of FATCA). *LEXISNEXIS GUIDE TO FATCA COMPLIANCE*, LexisNexis.
- Callon, M. (1986). Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St Briec Bay. In J. Law (Ed.), *Power, Action, and Belief*, Sociological Reviews Monographs, No. 32 (pp.196-233) Keele: Keele University Press.
- Callon, M. & Latour, B. (1981). Unscrewing the Big Leviathan: How actors macro-structure reality and how sociologists help them to do so. In K. Knorr-Cetina & A.V. Cicorel (Eds.). *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies* (pp. 277 – 303). London: Routledge & Kegan Paul.
- Central Bank of Jordan (n.d.). Banking Law. Retrieved from http://www.cbj.gov.jo/pages.php?%20menu_id=123&local_
- Chiva, R., & Alegre, J. (2005). Organizational learning and organizational knowledge, *Management Learning*, 36(1), 49-68.

- Christin, N. (2013) "Traveling the Silk Road: A measurement analysis of a large anonymous online marketplace," *Proceedings of the 13th International Conference of World Wide Web*, Rio de Janeiro, Brazil, 213-223.
- Clarke, R. (2004). Technology, Criminology, and Crime Science, *European Journal on Criminal Policy and Research*, 10(1), 55-63.
- Cohoto, A. & Backhouse, J. (2007). Profiling under conditions of ambiguity- an Application in the financial services industry, *Journal of Retail and Consumer Services*, 14(6), 408-419.
- Cresswell, K., Worth, A. and Sheikh, A. (2011). Implementing and adopting electronic health record system, *Clinical Governance: An International Journal*, 16(4), 320-336.
- Curtis, C.E. (2010). Electronic Investment Tax Preparation Takes Form. *Securities Industry News*, 22(3), 18-19.
- Davenport, T. H., & Prusak, L. (1997). *Information ecology: Mastering the information and knowledge environment*. Ney York: Oxford University Press.
- Demetis, D. (2010), *Technology and Anti-money Laundering: A Systems Theory and Risk-based Approach*. Edward Elgar Publishing Limited
- Demetis, D. & Angell, I. (2006). AML-related technologies: a systematic risk. *Journal of Money Laundering Controls*, 92(2), 157-172.
- Dow Jones & Company. (2012). 2012 Anti-Money Laundering Survey. *Dow Jones Risk & Compliance and ACAMS*. Retrieved from: <http://www.dowjones.com/riskandcompliance/AML-survey-2012.pdf>
- Downer, J. (2007). When the Chick Hits the Fan: Representativeness and Reproducibility in Technology Testing. *Social Studies of Science*, 31 (1), 7-26.
- Durrieu, R. (2013) *Rethinking Money Laundering & Financing of Terrorism in International Law: Towards a New Global Legal Order*, Leiden: Martinus Nijhoff Publishers.

- Duyne, P.V. (1998). Money-laundering: Pavlov's dog and beyond, *The Howard Journal*, 37(4), 359-374.
- Easterby-Smith, M., Snell, R., & Gherardi, S. (1998). Organizational learning: Diverging communities of practice?, *Management Learning*, 29(3), 259-272.
- English, S., & Hammond, S. (2014). Cost of compliance 2014 – Thomson and Reuters Accelus (online survey). Retrieved from <https://risk.thomsonreuters.com/sites/default/files/GRC00814.pdf>.
- Faure, A.P. (2013), Money creation: Genesis 2: Goldsmith-bankers and bank notes, Retrieved from: https://www.academia.edu/5097471/Money_Creation_Genesis_2_Goldsmith-Bankers_and_Bank_Notes
- Financial Action Task Force (2009). *Money Laundering and Terrorist Financing in the Securities Sector*. Retrieved from <http://www.fatf-gafi.org/media/fatf/documents/reports/ML%20and%20TF%20in%20the%20Securities%20Sector.pdf>
- Financial Action Task Force (2015). *Countries*. Retrieved from <http://www.fatf-gafi.org/countries/>
- Gherardi, S. (2000). Practice-based theorizing on learning and knowing in organizations, *Organizations*, 7(2), 211-223.
- Gherardi, S., Nicolini, D., & Odella, F. (1998). Toward a social understanding of how people learn in organizations, *Management Learning*, 29(3), 273-297.
- Giddens, A. (1984), *The Constitution of Society: Outline of the Theory of Structure*, CA: University of California Press. In Orlikowski, W. (1992). The duality of technology: Rethinking the concept of technology in organizations', *organization science*, 3 (3), 398-427.
- Gobette, H., & Pulle, B. (2011). The US Foreign Accounts Tax Compliance Act (FATCA) and interaction with G20 initiatives: a quick guide. *Fordham LawReview*, 79(6), 2967-2994.

- Gordon, R. (2011). Losing the war against dirty money: Rethinking global standards on preventing money laundering and terrorism financing, *Duke Journal of Comparative & International Law*, 21(3), 503-565.
- Grant, R. (1996). Toward a knowledge-based theory of the firm, *Strategic Management Journal*, 17, 109-122
- Granville, J. (2003). Dot.con: The dangers of cybercrime and a call for proactive solutions, *Australian Journal of Politics and History*, 49 (1), 102-109.
- Grover, V. & Kettinger, W.J. (2000). Business process change: A reflective view of theory, practice, and implications. In R.W., Zmud (ed.), *Framing the Domains of IT Management*, Cincinnati: Pinnaflex Educational Resources. 147-172.
- Guba, E. G. & Lincoln, Y. S. (1989), *Fourth generation evaluation*, Newbury Park, CA: Sage.
- Harvey, J. R. (2012). Offshore accounts: Insider's summary of FATCA and its potential future. *Villanova Law Review*, 57(3), 471-498.
- Hedstrom, K. Dhillon, G. & Karlsson, F. (2010). Using actor network theory to understand information security management, *Proceedings of the 25th annual IFIP TC, Brisbane, Australia*, 20-23.
- Heeks, R., and Stanforth, C. (2014). Understanding development project implementation: an actor-network perspective, *Public Administration and Development*, 34(1), 14-31.
- Hemingway, C.J. (1997). *Nonsense on Crutches: Popular Misconceptions in Information Systems Evaluation*, Research Report 97.14, School of Computer Studies, University of Leeds.
- Holmström, J., and Robey, D. (2002). Inscribing organizational change with information technology, In B. Czarniawska and T. Hernes (Ed.), *Actor-Network Theory and Organizing*, Liber AB, Malmö, 165-187.
- Hulsmann, J. (2008), *The Ethics of Money Production*, Alabama: Ludwig Von Mises Institute. From: <http://mises.org/books/moneyproduction.pdf>.

Internal Revenue Service (IRS). (2012 a). *Offshore Credit Card Program (OCCP)*. Retrieved from [http://www.irs.gov/uac/Offshore-Credit-Card-Program-\(OCCP\)](http://www.irs.gov/uac/Offshore-Credit-Card-Program-(OCCP))

Internal Revenue Service (IRS). (2012 b). *IRS offshore programs produce \$4.4 billion to date for nation's taxpayers; offshore voluntary disclosure program reopens*. Retrieved from [http://www.irs.gov/uac/IRS-Offshore-Programs-Produce-\\$4.4-Billion-To-Date-for-Nation%E2%80%99s-Taxpayers;-Offshore-Voluntary-Disclosure-Program-Reopens](http://www.irs.gov/uac/IRS-Offshore-Programs-Produce-$4.4-Billion-To-Date-for-Nation%E2%80%99s-Taxpayers;-Offshore-Voluntary-Disclosure-Program-Reopens).

Internal Revenue Service (IRS). (2013). *IRS unveils voluntary compliance initiative; Chance for 'Credit Card Abusers' to clear up their tax liabilities*. Retrieved from <http://www.irs.gov/uac/IRS-Unveils-Offshore-Voluntary-Compliance-Initiative;-Chance-for-%E2%80%98Credit-Card-Abusers%E2%80%99-to-Clear-Up-Their-Tax-Liabilities>

Internal Revenue Service (IRS). (2015 a). *Foreign persons*. Retrieved from <http://www.irs.gov/Individuals/International-Taxpayers/Foreign-Persons>.

Internal Revenue Service (IRS). (2015b). *FATCA online registration system overview*. Retrieved from http://www.irs.gov/PUP/businesses/corporations/fatca_registration_overview.pdf

Jenkins, G. D., Mitra, A., Gupta, N., & Shaw, J.D. (1998). Are financial incentives related to performance? A meta-analytic review of empirical research, *Journal of Applied Psychology*, 83(5), 777-787.

Johnson, J. (2008). Third round FATF mutual evaluations indicate declining compliance. *Journal of Money Laundering Control*. 11(1), 47-66.

Kash, D.E. (1989), *Perpetual Innovation: The New World of Competition*, New York: Basic. In McQuade S. (2001), *Cops versus crooks: Technological competition and complexity in the co-evolution of information technologies and money laundering (Doctoral Dissertation)*, George Mason University, Fairfax, Virginia.

- KPMG (2012). *Surveying the market: Are you ready for FATCA?*, KPMG International, December. Retrieved from <https://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/are-you-ready-for-FATCA-v3.pdf>
- KPMG (2014). *Global Anti-Money Laundering Survey*. KPMG International. Retrieved from <https://www.kpmg.com/KY/en/IssuesAndInsights/ArticlesPublications/PublishingImages/global-anti-money-laundering-survey-v3.pdf>
- Krueger, G. P. (1989). Sustained work, fatigue, sleep loss and performance: A review of the issues. *Work & Stress*, 3(2), 129-141.
- Latour, B. (1991). Technology is society made durable. In Law, J. *A sociology of monsters: Essays on power, technology and domination* (pp. 103-131). London, Routledge.
- Latour, B. (1996). On Actor-Network Theory: A few clarifications, *Soziale Welt*, 47 (4), 369-381.
- Latour, B. (1999). On recalling ANT, In Law J. and Hassard, J. *Actor network theory and after*, Blackwell Publishers: 15-25
- Law, J. (1992). Notes on the theory of the actor-network: Ordering, strategy and heterogeneity, *Systems Practice*, 5(4), 379-393.
- Law, J. (1999). After ANT: Complexity, naming and topology, In Law, J. and Hassard, J. *Actor network Theory and after*, Blackwell Publishers:1– 14
- Lee, A. S. (1989). A scientific methodology for MIS case studies, *MIS Quarterly*, 13 (1), 33 – 50.
- Lee, A. S. (1991). Integrating positivist and interpretive approaches to organizational research, *Organization Science*, 2(4), 342 – 365.
- Lee, A. S. (2004), Thinking about social theory and philosophy for information systems,” in J., Mingers, and L., Willcocks (Eds.), *Social Theory and Philosophy for Information Systems*, John Willey & Sons, Chichester, UK, 1-26.

- Lee, A. S., Thomas, M. and Baskerville, R. (2015). Going back to basics in design science: from the information technology artifact to the information systems artifact, *Information Systems Journal*, 25(1), 5-21.
- Lee, A. S., and Hovorka, D. (2015). Crafting theory to satisfy the Requirements of Interpretation, *Proceedings of the 48th Hawaii International Conference on Systems Sciences*, Kauai, HI, 4918-4927.
- Lee, A. S., and Hubona, G. S. (2009), "A Scientific Basis for Rigor in Information Systems Research," *MIS Quarterly*, 3, 2, 237-262.
- Lee, A. S., & Liebenau, J. (1997), "Information systems and qualitative research", In Lee, A.S. Liebenau, J. & DeGross (eds.), *Qualitative Method in Information Systems*, (pp. 1-8), London: Chapman & Hall.
- Leger, D. L. (2014, November 6). Feds shut down Silk Road 2.0, arrest San Francisco man, *USA Today*. Retrieved from: <http://www.usatoday.com/story/news/nation/2014/11/06/feds-shut-down-silk-road-copycat/18591155/>
- Liew, A. (2007). Understanding data, information, knowledge and their inter-relationship, *Journal of Knowledge Management Practice*, 8(2), 1-16
- Masciandaro, D. Takats, E. & Unger, B. (2007), *Black Finance. The Economics of Money Laundering*, Cheltenham: Edward Elgar
- McDowell, J., & Novis, G. (2001). The consequences of money laundering and financial crime. *Economic Perspectives*, 6(2), 6-10.
- Mckinney, E. H., & Yoos, C. (2010). Information about information: A taxonomy of views. *MIS Quarterly*, 34(2), 329-344.
- McQuade S. (2001), *Cops versus crooks: Technological competition and complexity in the co-evolution of information technologies and money laundering (Doctoral Dissertation)*, George Mason University, Fairfax, Virginia.

- McQuade, S. (2006), *Understanding and Managing Cybercrime*, Boston, MA: Pearson/Allyn & Bacon
- Mintzberg, H. (1979), *The Structuring of Organizations*, Englewood Cliffs, N.J.: Prentice-Hall
- Monteiro, E. (2000). Actor-Network Theory and information infrastructure, In Ciborra, C.U. *Control to Drift: The Dynamics of Corporate Information Infrastructures*, Oxford University Press, 71-83.
- Orlikowski, W. (1992). The duality of technology: Rethinking the concept of technology in organizations, *Organization Science*, 3(3), 398-427.
- Orlikowski, W. (2000). Using technology and constituting structures: A practical lens for studying technology in organizations,” *Organization Science*, 11 (4), 404-428
- Orlikowski, W. & Baroudi, J. (1991). Studying information technology in organizations: Research approaches and assumptions, *Information Systems Research*, 2(1), 1-28.
- Orlikowski, W. & Scott, S.V. (2008), ‘Sociomateriality: Challenging the Separation of Technology, Work, and Organization’, *Annals of Academy of Management*, 2(1), 433-474.
- Orchowski, M. & Solomon, A. (2014). FATCA: Where are we now, and what next?. *Journal of Taxation & Regulation of Financial Institutions*, 28(1), 17-25.
- Perrow, C. (1967), A framework for the comparative analysis of organizations,” *American Sociological Review*, 32 (2), 194-208.
- Quinn, S. (1997). Goldsmith-Banking: Mutual acceptance and interbank clearing in restoration London, *Explorations in Economic History*, 34 (4), 411-432
- Quirk, P. J. (1997). Macroeconomic implications of money laundering. *Trends in Organized Crime*, 2(3), 10-14.

- Radulescu, D. (2010). The concern to regulate the phenomena of underground economy internationally, *Petroleum-Gas University of Ploiesti Bulletin, Law and Sciences Series*, 62(2), 73-76.
- Raj, B., Gargava, S., Fondekar, A., & Pitchandi, P. (2013). *An approach to ensuring compliance with FATCA* [White paper]. Retrieved from TATA Consultancy Services: http://www.tcs.com/resources/white_papers/Pages/Approach_FATCA_compliance.aspx.
- Raskin, M. (2012, November 29). Dollar-Less Iranians Discover Virtual Currency, *Bloomberg Business Week*, Retrieved From: <http://www.businessweek.com/articles/2012-11-29/dollar-less-iranians-discover-virtual-currency>
- Redman, T. C. (1998). The impact of poor data quality on the typical enterprise. *Communications of the ACM*, 41(2), 79-82.
- Reuters, P., & Truman, E. (2004). *Chasing Dirty Money: The Fight Against Money Laundering*. Washington, DC: Peterson Institute
- Richards, R.D. (1929), *Early History of Banking in England*, New York: Augustus M. Kelley. In Quinn, S. (1997), Goldsmith-Banking: Mutual acceptance and interbanker clearing in restoration London, *Explorations in Economic History*, 34(4), 411-432
- Ryecroft, R. W. & Kash, D.E. (1999), *The Complexity Challenge: Technological Innovation for the 21st Century*, (Science, Technology, and the International Political Economy Series), London: Pinter. In McQuade S. (2001), *Cops versus crooks: Technological competition and complexity in the co-evolution of information technologies and money laundering (Doctoral Dissertation)*, George Mason University, Fairfax, Virginia.
- Sarker, S. and Lee, A. S. (2002). Using a positivist case research Methodology to test three competing theories-in-use of business process redesign," *Journal of the Association for Information Systems*, 2(1), article 7.

- Sarker, S., Sarker, S., & Sidorova, A. (2006). Understanding business process change failure: An actor-network perspective. *Journal of Management Information Systems*, 32(1), 51-86.
- Schneider, F. (2010). Turnover of organized crime and money laundering: Some preliminary empirical findings," *Public Choice*, 144(3), 473-486.
- Schneider, F. (2013). The financial flows of transnational crime and tax fraud in OECD countries: What do we (not) know?. *Public Finance Review/special Issue: The Shadow economy, Tax Evasion and Money Laundering*, 41(5), 677-707.
- Schott, P. A. (2006). *Reference guide to anti-money laundering and combating the financing of terrorism*. World Bank Publications.
- Schutz, A. (1962). Concept and theory formation in the social sciences, In A. Schutz, *Collected Papers: The Problem of Social Reality*, The Hague: M. Nijhoff, pp. 48-66.
- Sharman, J. C., & Chaikin, D. (2009). Corruption and anti-money-laundering systems: Putting a luxury good to work, *Governance: An International Journal of Policy, Administration, and Institutions*, 7(3), 254-260.
- Simon, D. (2006), *Elite Deviance (8th Ed.)*, Boston, MA: Allyn & Bacon.
- Simpson, S.S. (2011), "Making Sense of White Collar Crime: Theory and Research," *The Ohio State Journal of Criminal Law*, 8 (2), 481-502
- Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm, *Strategic Management Journal*, 17, 45-62.
- Squires, S. (1988, December 5). Science / Medicine: Peril for Pilots: Psychologists call it the "glass cockpit" syndrome, a computer information overload in which the floods of technical information, faulty communication and outside stress lead to judgment errors. *Los Angeles Times*. Retrieved from: http://articles.latimes.com/1988-12-05/local/me-712_1_information-overload.
- Storm, A. (2013). Establishing the link between money laundering and tax evasion, *International Business & Economic Research Journal (IBER)*, 12(1), 1437-1450.

Swift, R. S. (2002). Executive response: CRM is changing our eras, the information we require, and our processes, *MIS Quarterly Exexutive*, 1(2), 95-96

Tantall, A. & Gilding, A. (1999). Actor-Network Theory and Information Systems Research. *Proceedings of the 10th Australian Conference on Information Systems*, School of Communications and Information Management, Te Kura Whakaipurangi Kōrero, Victoria University of Wellington, New Zealand, 955-966.

Taxpayer Advocate Service (2012). 2012 Annual Report to Congress. Retrieved from <http://www.taxpayeradvocate.irs.gov/2012-annual-report/downloads/2012-Annual-Report-to-Congress-Executive-Summary.pdf>

The Association of Banks in Jordan. (2014, December 3). Arab Banking Forum discusses FATCA applications. Retrieved from http://www.abj.org.jo/AllNews/ViewNews/tabid/103/articleid/69/language/en-US/Default.aspx?dnnprintmode=true&mid=524&SkinSrc=%5BG%5DSkins%2F_default%2FNo+Skin&ContainerSrc=%5BG%5DContainers%2F_default%2FNo+Container.

The Economist (February, 2013). The way to make exchange of tax information work. Retrieved from <http://www.economist.com/news/special-report/21571561-way-make-exchange-tax-information-work-automatic-response>

Thomas, J. and Mengel, T. (2008). Preparing project managers to deal with complexity –advanced project management education, *International Journal of Project Management*, 26(3), 304-315.

Transparency International (2014). *Jordan, South Africa and Tunisia Join the Movement*. Retrieved from http://www.transparency.org/news/feature/jordan_south_africa_and_tunisia_join_the_movement

- U.S. Department of Treasury. (2015). *Jurisdictions that have signed the agreements*. Retrieved from: <http://www.treasury.gov/resource-center/tax-policy/treaties/Pages/FATCA-Archive.aspx>
- Van Erp, J., Huisman, W., and Walle, G. V. , (Eds.). (2015). *The Routledge Handbook of White-Collar and Corporate Crime in Europe*. Routledge, Oxon, UK.
- Van Kommer, V. (2013). Cash economy, measuring the tax gap from the tax administrative perspective. In B. Unger & D. van der Linde (Ed.), *Research Handbook on Money Laundering* (pp. 283-292). Cheltenham, UK: Edward Elgar Publishing.
- Walker, J. (1999). How big is global money laundering?, *Journal of Money Laundering Control*, 3(1), 25-37
- Wallace, L. Keil, M., and Rai, A. (2004). Understanding software project risk: a cluster analysis, *Information & Management*, 42(1), 115-125.
- Walsham, G. (1993), *Interpreting Information Systems in Organizations*, Wiley, Chichester.
- Walsham, G. (1997), Actor-network theory and IS research: current status and future prospects, In A. S., Lee, J., Leibenau and J. I., DeGross, *Information systems and qualitative research*, DeGross. London, Chapman and Hall: 466-480
- Weinberg, A. (2014, October 28). Record number of Americans renouncing citizenship because of overseas tax burdens. *ABC News*. Retrieved from <http://abcnews.go.com/International/record-number-americans-renouncing-citizenship-overseas-tax-burdens/story?id=26496154>.
- Yan, S. (2015, February 17). A record 3,415 Americans ditch their passports. *CNN Money*. Retrieved from <http://money.cnn.com/2015/02/12/pf/americans-expat-citizenship-passports/>
- Yin, R. K. (2002), *Case Study Research, Design and Methods* (3rd ed.), Newbury Park, Sage Publications.

Zuboff, S. (1988), *In the Age of Smart Machine*, New York: Basic Books. In Orlikowski, W. (1992). The duality of technology: Rethinking the concept of technology in organizations', *organization science*, 3 (3), 398-427.

VITA

Muhammad Al-Abdullah was born on October 14, 1982, in Irbid, Jordan. He received his Bachelor of Science in Computer Information Systems from Yarmouk University, Irbid, Jordan. He also received a Master of Science in Managing Information Technology from Salford University, Manchester, UK in 2007.

In 2009, Muhammad joined the Ph.D. of Business in Information Systems at Virginia Commonwealth University (VCU), Richmond, Virginia. Muhammad completed his Ph.D. studies under the supervision of Professor Allen S. Lee as chair of the committee; and Professor Suprateek Sarker, Professor Heinz Roland Weistroffer, and Dr. Jeffry Babb as committee members.

Through his academic career, Muhammad taught several undergraduate and graduate information systems courses in various areas that include, but not limited to, Networking, Security, Information Engineering, Cloud Computing, Project Management, Systems Analysis and Design, and Process Improvement.

From a research perspective, Muhammad is interested in applying lessons from the philosophy of science and the philosophy of social science in theorizing about the interaction between the knowledge, social, and technical constituents of an information system; and how this interaction should be monitored to better anticipate the emerging complexities and uncertainties in an organization. Muhammad's research is focused on the important phenomenon of anti-money laundering and is set out to understand the

important issues that influence the efficiency of AML regulation's compliance from a socio-technical perspective. Muhammad's research agenda mostly focuses on exploring the techniques used by criminals in different internet-based schemes. He is also interested in studying the technological advances that stimulate the emergence of new forms of currency and digital payment ecosystems that can be used in money laundering as well as the new meanings of value that are geared towards being digitized. Muhammad has authored/co-authored several research papers which were presented at regional, national, and international conferences such as the Cambridge International Symposium on Economic Crime in the University of Cambridge, UK.