

INFORMATION SYSTEMS AUDIT AND CONTINUOUS AUDITING IN TURKISH CAPITAL MARKETS

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ABSTRACT: *Sustainability has become the focal concern for today's organization. For banks, surviving in the ever-changing innovation based economy is crucial due to fast growing and highly sophisticated technology and products that take up important part in the banking system. In turn, this has made it harder to track discrepancies in the accounting system or other tools used by banks. Internal audit is an important aspect that ensures sustainability and future of internal audit relies on Continuous Auditing (CA) and Continuous Monitoring (CM) concepts. Today's trendy social media and technology has become addictive for users and these tools are especially important for finance sector, which in turn increases technological risks. In this manner, having these risks covered in applicable legislation is paramount. Within this context, this research aims to explain the CA practices in Turkish Banking sector, how specific tools are used and pros and cons of current controls over certain processes in addition to signifying Information Systems (IS) audit and its place in Turkish legislation.*

KEYWORDS: Continuous Auditing, Information Systems Audit, Banking Sector, Corporate Sustainability.

INTRODUCTION

Current economic system is faced with many detrimental challenges. Businesses are seeking to achieve sustainable lifespans in order to stay in the game. Concurrently, financial system that runs on real time is crafted with complex instruments and various markets that are inter-correlated in a global scale. With the increase in the amount of processed data, control of such abundant data has become impediment for auditors. Thus, continuous auditing has emerged as a supportive tool to manage such proliferation of data (Rezaee, 2002).

Capital markets are undeniably important for the general outlook of economies. They have become foremost indicator for economic strength and security. In a nutshell, as it is possible to evaluate one's personal investments and obligations in micro-base, it is probable to evaluate a country's economic state in macro-base. Especially, the market risk that has become more signified recently is the central point of all sorts of investors. If risks are over a defined limit for finance sector that is built on mutual trust, causes the investors to lose trust in the sector according to behavioral finance theory, which in turn affects the capital markets negatively.

Recent financial scandals and fraud schemes are a result of the above. To lose all retirement savings for investors in a day is devastating and brings about both material and moral results. Consequently, companies are becoming more aware of the importance of internal control. Obvious reasons lead corporate managers to allocate adequate funds to establish internal audit functions (Carcello et al., 2005; Wallace and Kreutzfeldt, 2010). Findings of internal

audit aid decision makers invaluablely (Burton et al., 2012). More responsibility has been assigned to internal and external auditors to detect fraud timely, so that such scandals can be prevented. Furthermore, a sound internal audit system will nourish external audit (Schneider, 1985). In order to properly assess economic situation and corporate governance compliance levels, internal auditors have to act in an independent manner and external auditors have to stop looking at clients as just *clients* and incorporate the sense of responsibility and inject the corporate sustainability point of view in their work. This can only be achieved by securing objectivity in the work of auditors.

Even though it is not possible to eliminate all risks that affect a firm, it is vital to correctly identify all risks and act as to protect the interest of shareholders. The way to secure objectivity in auditors' work is to mention these risks to board of directors.

On the audit front, CA, which plays an imperative role for auditors to more visibly evaluate the adequacy of management's monitoring function and assess risk areas, has been discussed for some time with the developments in Information Technology (De Aquino et al., 2008). Impartially, with the significant increase in data processing in operational areas, advancements in audit and control areas have become more prominent. Especially for Turkish banking sector, which has grown 12,6 % in total assets (BRSA, 2013) in the previous calendar year and has become one of the key sectors for Turkish economy, control environment was in need for tighter regulations.

Deregulation in financial markets result in increased opportunities in fraud and lack of ethics create a loose control environment in these firms. This is where CA becomes important because departments that are not as strict as they are supposed to be need to be watched more closely. CA simply provides the tools for close follow up of organizations with big data and critical processes where security, ethics and sustainability are important.

LITERATURE REVIEW

Corporate sustainability (CS) is defined as “the capacity of a firm to continue operating over a long period of time, depends on the sustainability of its stakeholder relationships” according to Perrini and Tencati (2006:296). CS takes up important space in literature because it is one of the key ingredients in sustaining a continuous cash flow, which is required for shareholders' wealth maximization. In addition to this, corporate sustainability is seen as an indicator of prestige in a sector. The longer a company has served in a sector the more reliable it becomes in the eye of public due to increased experience in the field. It has been noted, “companies involved in CSR are regarded as doing good” (Dubink and van Liedekerke, 2009:134).

According to Schwartz and Carroll (2003), economic responsibilities of a firm comes first, companies need to be profitable before anything else and then comes obeying the law process and legal responsibilities. Only after this stage come the ethical responsibilities of a firm. Ethical responsibilities can only be established by a charter approved by Board of Directors and that has disciplinary actions for noncompliance according to IIA's Ethical Principles.



Figure 1. Carroll's pyramid of corporate social responsibility (Schwartz and Carroll 2003: 504)

CS can only be achieved by adopting ethical values and corporate governance principles. Having ethical values in a corporation enables integrity and confidentiality, which secure being in line with regulations and laws, and prevention of fraud such as insider trading. Lack of corporate governance increases the chance of failure in business, thus corporate sustainability is endangered under conditions that are not strictly following ethical and corporate governance principles. Additionally, developments in corporate governance reporting requirements offer opportunities for the appropriation of risk and its management (Spira and Page, 2003).

This is incorporated into the company's culture by a strict control environment, which is secured by internal audit according to COSO internal audit framework (www.coso.org).

Traditionally, internal audit plans include audit missions that take place for a limited time and these missions take past data into consideration. "However, the task of providing the required assurances has become difficult with the fading of the traditional audit trail. Evidence of this is found in the lapses in corporate governance and the recent corporate scandals. A possible solution to this dilemma is Continuous Auditing, which assists in verifying information integrity" (Flowerday and von Solms, 2005).

Thus, a more sophisticated method is needed for better analyzing data for audit purposes. According to Moeller (2009) CA is presented as an alternative to automated auditing systems, which aim to process big data stored in the databases of companies. Continuous audit is defined as "a methodology that enables independent auditors to provide written assurance on a subject matter using a series of auditor's reports issued simultaneously with, or a short period of time after, the occurrence of events underlying the subject matter" (CICA, 1999). While continuous auditing is performed by internal audit departments, continuous monitoring is used by management for reviewing purposes.

Several banks and financial institutions have gone bankrupt in the crisis of 2007 and were bailed out by governments in USA and Europe; others were bought by bigger institutions. Banks are very important for financial stability and sustainability. ACCA states that the main reason behind the crisis was caused by manipulations and cover-ups in financial statements (ACCA, 2011). "Given the complexity of auditing banks and given that high-reputation auditors have strong incentives to provide high-quality audits to avoid jeopardizing their reputation capital, audit quality likely plays an even more important role in assuring the quality of banks' financial information" (Jin, et al., 2011:2813). Thus, audit quality in banks is vital for assurance and consulting services. Audit quality is considered to be relevant with competency, objectivity and performance of auditors (Al Matarneh, 2011).

CA is an important tool in increasing the performance of internal auditors by increasing sample size. According to Davidson, et al., (2013), external auditors' reliance on internal auditors' work depends on the use of CA. This is another important indicator of audit quality, in other words it is possible to say that CA increases audit quality by increasing the performance of internal audit function.

IS AUDIT AND TURKISH CAPITAL MARKETS

Technology advances as if it is moving in the speed of light which causes legislation to be behind these advances. For instance, in Turkish Capital Markets Law No. 6362 (CML) and related regulation (www.cmb.gov.tr) there is limited mentioning of internet based order transmission concerning brokerage houses, however there is no mentioning of social media in any of the articles at all. This situation has another risk because social media sites are incredibly important for marketing policies of these institutions. CMB associates state that most common fraud type is found to be in order transmission stage in capital markets by brokerage houses (www.tspakb.org.tr).

For investment institutions or in other words, for banks and brokerage houses according to CML, protecting classified information such as order transmission from clients, keeping of legal documents in electronic environment, keeping of executed order information, keeping of classified information on clients, information that can be subject to investigations, unpublished research reports and company strategies can be sustained by advanced IS audit. That is how top management can be informed about the technological risks a company is facing and act in favor of the company.

BRSA legislation includes a part concerning banks; however it is not possible to say the same for brokerage houses. There are question marks about the internal control deficiencies in IS audit in brokerage houses. In addition to this, the majority of fines awarded by Capital Markets Board of Turkey are concerned about IS deficiencies.

When Turkish legislation is investigated, it is clear that only BRSA regulations include IS in contents. CMB regulation does not mention IS audit at all, the single reference is about establishing necessary technological infrastructure. CMB does audit institutions in their new applications to perform capital market activities; however there isn't any framework for the remainder audits. This also adds IS audit to the responsibilities of internal auditors, however the outline of this responsibility is not cleared in the aforesaid regulation.

If a brokerage house is an affiliated firm of a bank, then external auditors perform IS audit in such institutions and CobiT is an important source for these audit missions. CobiT helps a proper IS source planning in an effective and efficient manner as well as aiding function of corporate governance. On the other hand, if a brokerage house is not affiliated to a bank, then it is not audited in this context. Only CMB associates can detect deficiencies in irregular audit missions, which mean high amounting fines for these institutions and a great void in protecting assets and classified information.

APPLICATION OF CA IN TURKISH BANKING SECTOR

Internal auditing systems of banks established under Turkish legislation are regulated by BRSA (Banking Regulation and Supervision Agency). Accordingly, banks are obliged to establish an internal control system that includes financial reporting system, information

system, operations and compliance controls. CA is required as a part of internal control systems of banks due to the massive amount of data involved in daily transactions of banks. Every day there are thousands and thousands of transactions performed such as EFTs, cash transfers, account openings and credit linings, etc. Each of these transactions is regulated by BRSA and also MASAK (The Financial Crimes Investigation Board). MASAK regulations require banks to implement transaction limits and embargoes for prohibited clients. Money laundering and financing of terrorism are also important problems of financial markets that are investigated under the concept of investment fraud.

MASAK regulations state that suspicious transactions in the banking system takes place most frequently by hiding one's identity and opening accounts under false names. Investment fraud and financing of terrorism can take place by securing anonymity. Thus, MASAK requires identification of true benefiter's identity and people who are involved in any kind of terrorist activities or deemed as suspicious should be immediately reported to MASAK within 10 days of detecting of the suspicious transaction. Also performing the requests of suspicious clients is punishable by Law, thus it is important to stop these transactions before they take place is paramount. CA is used by banks via a turnkey built into the system, which makes it possible to identify suspicious clients from their names or citizen ID numbers.

In order to provide compliance with MASAK regulations banks use CA tools for other reasons than account openings such as EFTs. Continuous auditing is a dynamic tool, which can be adjusted according to the audit schedule (De Aquino et al., 2008). A dynamic tool is quite necessary for systems that are run by real time data such as account opening or EFT processes in banks. Such a specific tool is indeed built into the IT system of a bank and acts as a turnkey in the system as shown by the figure below.

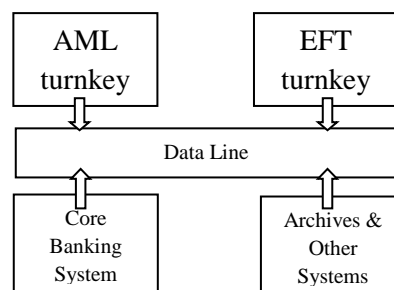


Figure 2. CA Process in Banks

Also, data mining is considered as an important technique in detection of fraud, especially when it comes to fraud committed in financial sector. Thus, it is vital to build control mechanisms to overcome fraud risk.

“IT plays a key role in continuous audit activities by automating the identification of exceptions, analyzing numeric patterns, reviewing trends, and testing controls” (De Aquino et al., 2008). “Internal auditing units began to perform assurance and consulting services that emerged by effects of information technology, and adopted continuous auditing approach and implemented in their business. However, it is observed that there were some deficiencies in the implementation of some types of assurance and consulting services and using of XBRL in the process of continuous auditing. But it is observed that studies about these issues were maintained and training activities were performed” (Önce and İşgüden, 2012: 129).

COMPETENCY OF INTERNAL AUDITORS

Since IS are perceived as a special area of expertise, firms that have embraced corporate governance employ IS auditors. Unfortunately, this is true for big firms that have a private budget for internal audit. These big institutions that incorporate preemptive actions are banks which act according to the BRSA regulation and small scope firms are brokerage houses that employ auditors with little or no knowledge of IS. Other brokerage houses with smaller scopes employ only one internal auditor/compliance officer due to budget restrictions. Also capital markets legislation allows employment of only one internal auditor per firm. Work overload and incompetency creates a weak control environment, which increases technological and fraud risks.

CMB Communiqué Serial V, No. 68 regulates internal audit in investment institutions, mentions IS with just one sentence, in which related personnel is advised to receive training on IS if s/he is to perform IS audit. Although, it is mandatory to abide CobiT for banks in BRSA regulation, there is nothing that is binding brokerage houses concerning IS. As a result it is not possible to perform proper risk assessment and take actions against risks.

IS can be seen as the weakest aspect of internal auditors employed in brokerage houses. Receiving training for 2 or 3 days on IS will not cure the deficiencies concerning IS, because IS is a different area of expertise and requires a great deal of information on the subject. Related legislation should be updated to feature personal qualifications, thus it will be possible for brokerage houses to eliminate technological risks and provide management with correct information.

DISCUSSION AND CONCLUSION

Lately, there has been an increase in the usage of social media in public, and finance sector's interest in this area has increased the risks concerning IS. The risks mentioned above are spread out on a very large scale and crimes committed by using deficiencies in IS are met quite often. This situation only emphasizes the importance of IS audit, which enables defining, detecting, eliminating of risks and controlling of residuals. Under these circumstances internal auditors are required to prepare risk based internal audit plans that include technological risks as well as reputational risks. Especially with the increased importance of social media and its preference by clients should be taken into consideration.

IS is not only used in firms for communication, but used for almost every step of the organization's operations such as cloud technologies, data rescue and business continuity and back-up systems rely on well functioning IS. According to Moeller (2009) the most important asset of today's firm is knowledge and supporting IS processes.

Although CA is presented as a *wonderful* solution to all the problems of internal audit, there are some disadvantages to this system, which should be fully considered before implementation. First of all, CA tools provide real time data which is massive in amount, so there has to be a specifically employed internal auditor to process all of that information. Otherwise internal auditors will not have enough time to pursue their tasks generated from annual audit plan. Thus, BRSA regulations ask for employment of "internal controllers" that only perform internal controls mentioned above.

Secondly, using CA does not necessarily mean that there is no need for traditional internal auditing anymore; because CA system needs to be audited as well. As all systems do, CA system may have problems regarding its security, segregation of duties, system access, or simply positive or negative false alarms in the system. For instance in the account opening system used by banks, some CA systems give false alarms because of differences in Turkish alphabet (in the clients' names), which is not recognized by the system, thus the system gives a false alarm. Thus, CA tool has to be updated frequently to avoid unwanted system failures, especially considering fraudsters that are constantly trying to figure out how to sabotage such tools and barriers.

Even though, CA requires employment of high quality employees, advantages of using CA are evident. First of all, CA allows performing controls on real-time basis thus increases the overall effectiveness of internal control system (Moeller, 2009). Without CA it would not be possible process massive amount of data created by the numerous transactions that take place in a bank. CA provides transaction integrity by checking all transactions one by one as they occur. It is arguable that CA will be able function more enhanced if it was implemented as an online system (Kogan, 1999). This allows banks to check each money transfer and account opening by using tools that are built into the IT system. In turn, banks can proactively evaluate risks with early warnings by not allowing suspicious transactions taking place.

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