

ACHIEVEMENT OF ASSURANCE, MONITORING AND RISK ASSESSMENT THROUGH CONTINUOUS AUDITING FOR EFFECTIVE AND EFFICIENT MANAGEMENT

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ABSTRACT

This study attempted to investigate achievement of assurance, monitoring and risk assessment through continuous auditing for effective and efficient management. As a result of corporate scandals and business failures events have overtaken the traditional approach to financial reporting and auditing as it only affords internal auditors a narrow scope of evaluation and is often too late to be of real value to business performance or regulatory compliance. Relying on review of literature approach, the study revealed that assessing the combined results of the continuous monitoring and auditing processes, auditors are able to provide continuous assurance regarding the effectiveness of internal controls. Implementation of a combined strategy of continuous auditing and continuous monitoring is ideal for effective and efficient management as such a strategy addresses concerns regarding the burden of compliance issues, the scarcity of resources, and the need to maintain audit independence. By creating the right environment, Continuous Auditing can reach its full potential and add value to management effectiveness and efficiency. The return of implementation of continuous auditing will be realized through improvements to an organization's bottom-line results, based on the timely identification of errors, fraud and the creation of a stronger internal control environment across the enterprise. This in effect helps to provide management with faster, timely and more reliable information for decision making for effective and efficient performance of her functions.

INTRODUCTION

Traditionally, financial reports were only produced on a periodic basis often months after the occurrence of the actual events they represent (Rezaee, Sharbatoghlie & Elam, 2002). Auditing in this setting is mostly a backward looking exercise (Kuhn & Sutton, 2006) testing the accuracy of the reported numbers. Furthermore, it is often too late to be of real value for business performance or regulatory compliance (Coderre, 2008). Also, traditional testing of controls of internal auditing has been performed on a historical and cyclical basis, long after business activities have taken place (Warren, 2004). The audit testing procedures were often based on a sampling approach which includes activities such as reviews of policies, procedures, approvals, and reconciliations. Today, however, it is recognized that this approach only affords internal auditors a narrow scope of evaluation and is often too late to be of real value to business performance or regulatory compliance.

Organizations are continually exposed to significant errors, frauds or inefficiencies that can lead to financial loss and increased levels of risk. Globalization of businesses, market pressure to improve operations, rapidly changing business conditions, an evolving regulatory environment to mention a few are creating the need for more timely and ongoing assurance that controls are working effectively and risk is being mitigated (Lindow & Race, 2002). Continuous Auditing (CA) has become an inevitable trend in current business environment. The need for timely and ongoing assurance over the effectiveness of risk management and control systems cannot be over emphasized. Continuous auditing is a methodology that enables independent auditors to provide written assurance on a subject matter using a series of auditors' reports issued simultaneously with, or a short period of time after, the occurrence of events underlying the subject matter. Regulatory pressures, cost and efficiency considerations and the emergence of new business risks have helped to change the scope of risk and performance management. In the shifted scope, continuous auditing ('CA') and continuous monitoring ('CM') play an increasing role. Continuous auditing is a method used to perform control and risk assessments automatically on a more frequent basis. Continuous auditing (CA) is the collection of audit evidence and indicators by either the external auditor or the internal auditor in information technology (IT) systems, processes, transactions and controls on a frequent or continuous basis throughout a period. It is broadly defined as the transformation of internal and external auditing through the application of modern information technology (Alles, Tostes, Vasarhelyi & Riccio, 2006b).

Corporate scandals and business failures such as Royal Ahold, En-ron, WorldCom and Tyco left investors wary and lacking faith in the integrity of published financial reports. It became necessary to reinstall confidence and trust in the management and the auditors of organizations. Restoring trust is not an easy task, since risk and trust appear to be contradictory variables (Flowerday & von Solms, 2005). It has been observed that one may not manage risks, but one can manage for risks (Shaw, 2003). This need accentuates the importance of an organization's Enterprise-wide Risk Management (ERM) to mitigate risks, and help ensure the accuracy of the information in the financial reports. In response to the numerous corporate failures arising from corporate mismanagement and fraud, new legislations are created such as the Sarbanes-Oxley (SOX) act of 2002 (Vasarhelyi, Kuenkaikaew, Littley, & Williams, 2008).

SOX act addresses many areas that affect the accuracy and transparency of financial reporting (Vasarhelyi et al., 2008) most importantly the certification of financial statements in which CEOs and CFOs are required to personally sign and certify the correctness of financial reports. Non-compliance with the SOX act results in significant penalties for CEOs and CFOs, including monetary fines and/or imprisonment (Datar & Alles, 2006). This regulation and others triggered the accounting professionals to reconsider what an audit means and how it is carried out. As a result several auditors proposed taking advantage of modern technology to bring auditing up to date to match the complexity of today's technology enabled global organizations (Alles *et al.*, 2006b). Chief Audit Executives (CAEs) found that their departments have become more and more consumed with the monitoring and testing of controls to meet demands of compliance in today's regulatory environment. The increased amount of monitoring and testing drove the organization's costs of meeting regulatory compliance (Coderre, 2008).

New approaches (CA & CM) capable of providing a sustainable, productive, and cost-efficient means of addressing the issues evidently became essential. The purpose of CA and CM is to provide greater transparency, effectively manage risk, and provide continuous

assurance (KPMG, 2009). Although the continuous concept is almost two decades old, the rapid advancements in technology has made it feasible to update the traditional audit and monitor approach to the CA & CM approach (Flowerday & Von Solms, 2005, CICA/AICPA, 1999). The need to change the traditional mode of financial reporting and auditing combined with corporate scandals (i.e., Ahold, WorldCom, Enron, and Tyco) has increased the demand for stronger corporate governance, risk management (RM), improved internal control and more transparent corporate reporting (Datar & Alles, 2006; Alles et al., 2006b; Kuhn & Sutton, 2006). CA, CM and RM have received substantially greater attention as it is being viewed by auditors and management as approaches to fulfil this demand (Kuhn & Sutton, 2006). These approaches identify unexpected situations as they continuously monitor and manage an organization's transactions by comparing their generic characteristics to expected benchmarks (Alles et al., 2006b).

The "continuous" aspect of continuous auditing and reporting refers to the real-time or near real-time capability for financial information to be checked and shared. Not only does it indicate that the integrity of information can be evaluated at any given point of time, it also means that the information can be verified constantly for errors, fraud, and inefficiencies. It is the most detailed audit. When unexpected situations occur, alarms are triggered and are routed to the responsible stakeholders. The use of these techniques enables organizations to improve the ability to mitigate fraud. The focus of RM, CA and CM is not simply on compliance with controls and regulations, but also on the improved efficiency of operations in the organization. These approaches contribute to the overall improvement of the organization by identifying and assessing risk and providing information to management in order to better respond to changing business conditions (Coderre, 2008).

Continuous auditing changes the audit paradigm from periodic reviews of a sample of transactions to ongoing audit testing of entire transactions. It becomes an integral part of modern auditing at many levels. It also should be closely tied to management activities such as performance monitoring, balanced scorecard, and enterprise risk management (ERM). A continuous audit approach allows internal auditors to fully understand critical control points, rules and exceptions. With automated, frequent analyses of data, they are able to perform control and risk assessments in real time or near real time. They can analyze key business systems for both anomalies at the transaction level and for data-driven indicators of control deficiencies and emerging risk. Finally, with continuous auditing, the analysis results are integrated into all aspects of the audit process, from the development and maintenance of the enterprise audit plan to the conduct and follow-up of specific audits (Alles, Brennam, Kogan & Vasarhelyi., 2006a).

CONCEPTS OF CONTINUOUS AUDITING

This section discussed the concepts of continuous auditing crucial to a better understanding and operation of continuous auditing approach.

Continuous Assurance

Assurance is an opinion to a third party regarding the state of affairs (subject transaction, business process, risk, or overall financial performance of a business operation). It involves three parties: the person or group that prepares the information; the person or group that uses the information to make decisions and the objective third party. Audit assurance is a statement about the adequacy and effectiveness of controls and the integrity of information.

Continuous data assurance verifies the integrity of data flowing through the information systems. The continuous monitoring of controls by management is crucial to effective assurance strategies; however, the audit activity must also ensure that management activities are adequate and effective. Continuous assurance is a methodology used to analytically monitor corporate business processes and that takes advantage of the automation and integration of business processes provided by information technologies (Vasarhelyi, Kuenkaikaw, Littlely & Williams 2006). The continuous assurance framework is the combination of activities performed by internal audit activity for independent evaluation. It allows for corrective action to be taken more quickly than in current scenarios (Bierstaker, Burnaby & Thibodeau, 2001). Also, it requires that the assurance report be made available in real-time and contains all relevant information. When significant discrepancies occur, alarms are triggered and routed to appropriate stakeholders and auditors.

Continuous assurance provides three levels of assurance, each of which has varying degrees of significance and types of actions required by the auditor: first, assurance regarding the reliability of the client's system and the security of data transmission, much like SysTrust (AICPA, 1999); next is an opinion regarding the fairness of the real-time financial statements provided by the client, based upon the continuous audit; and thirdly, assurance of a specific analysis between the client and third party, as outlined in the continuous audit agreement (e.g., debt covenant compliance). Continuous assurance can be provided when auditors perform continuous control and risk assessment (i.e. continuous auditing) and evaluate the adequacy of management's continuous monitoring activities. Auditors examine the activities performed by management, verify that controls are working, recommend changes, and ensure that risk is being managed. The organization will have a higher level of assurance that controls are working, risks are being managed and the information used for decision-making has integrity if auditors do their job (checking and verifying controls and risk and ensuring management is doing its job of monitoring). Management plays a role in assurance by developing, designing, and monitoring controls and by managing risks. The essential components of assurance consist of the continuous recording of business transactions, transaction monitoring, assurance, and reporting. Continuously guaranteed, real-time confirmation is a practical goal of assurance (Alles, Kogan & Varsrhelyi, 2002).

Continuous Monitoring

Continuous monitoring refers to the processes that management puts in place to ensure that the policies, procedures and business processes are operating effectively. It is a feedback mechanism used to ensure that controls operate as designed and that transactions are processed as described. This monitoring method is the responsibility of management and can form an important component of the internal control structure. It therefore addresses management's responsibility to assess the adequacy and effectiveness of controls. Many of the techniques management use in CM are similar to those performed in CA by internal auditors (KPMG, 2009). Continuous monitoring includes: definition of the control points within a given business process, possibly according to the COSO ERM framework; identification of the control objectives and assurance assertions for each control point; establishment of a series of automated tests that will indicate whether a specific transaction appears to have failed to comply with all relevant control objectives and assurance assertions; subsection of all transactions to the suite of tests at a point in time close to that at which the transactions occur; investigation of any transactions that appear to have failed a control test; if appropriate, correction of the transaction and correction of the control weakness.

The key to continuous monitoring is that the process should be owned and performed by management, as part of its responsibility to implement and maintain effective control systems. Since management is responsible for internal controls, it should have a means to determine, on an ongoing basis, whether the controls are operating as designed. By being able to identify and correct control problems on a timely basis, the overall control system can be improved. CM also helps to: significantly reduce instances of error and fraud, enhance operational efficiency and improve bottom-line results through a combination of cost savings and a reduction in overpayments and revenue leakage. CM enables management to continually review indicators in processes to ensure that controls operate as designed and transactions are processed as prescribed by detecting associated risk issues (Tank, 2011).

Risk Management (RM)

Risk is a fact of life which is inevitably involved no matter what plan is being executed (Broady & Roland, 2008). Effective Risk Management (RM) can allow organizations to protect the value that has been built (“risk awareness” and “risk tolerance”), but it also allows organizations to create value by identifying opportunities, also described as “risk appetite” (Ernst & Young, 2010). Risk is defined as the potential for loss caused by an event that can adversely affect the achievement of an organization’s objectives. It is a chance of danger, damage, loss, injury or any other undesired consequences (Harland, Brenchley & walker, 2003). Risk awareness can inform strategy, helping organizations select and pursue the opportunities that are most likely to succeed and offer the most rewarding result (Broady & Roland, 2008). Thus risk can both help organizations protect their value (protect what they have got) and create value (help organizations figure out the best way for their business to go in the future). Risk appetite is the amount and type of risk an organization is willing to accept in pursuit of its business objectives (Ernst & Young, 2010). Defining risk appetite is usually a task for the management because it is linked to defining the overall objectives of an organization. Risk appetite of an organization’s strategic objectives should first be translated into ‘risk tolerance’. Risk tolerance is the specific maximum risk that an organization is willing to take regarding each relevant risk (Ernst & Young, 2010). Risk tolerance can be set for specific categories of risk.

History of Continuous Auditing

Automated control testing originated since the 1960s with the installation and implementation of embedded audit modules (EAMs) used in relatively few organizations because the modules were difficult to build and maintain. By the late 1970s, auditors started moving away from this approach. In the 1980s, early adopters within the audit profession began using computer-assisted audit tools and techniques (CAATs) for ad hoc investigation and analyses. Continuous monitoring was first introduced to auditors in a largely academic context. The basic premise was that use of ongoing automated data analysis would help auditors identify the areas of greatest risk, as a precursor to determining their audit plans. However, auditors were not ready for this type of approach. They lacked easy access to appropriate software tools, the technical resources and expertise to overcome data access challenges and most importantly, the organizational will to embrace this new commitment to a significantly different audit approach and methodology (Warren, 2004). The first application of continuous auditing was developed at AT&T Bell Laboratories in 1989 (Vasarhelyi & Halper, 1991). Known as a continuous process auditing system (CPAS), the system developed by Vasarhelyi and Halper provided measurement, monitoring and analysis

of the company's billing information. Key concepts such as metrics, analytics, and alarms pertaining to financial information were also introduced.

During the 1990s, within the global audit profession there was increasing widespread adoption of data analytics solutions. These were viewed as a critical tool to support the testing of the effectiveness of internal controls. The technology was used to examine transactions for indications of events that occurred because a control did not exist or failed to perform properly. It also identified transactions that did not meet control standards. In addition, data analysis supported the testing of controls not directly evidenced by transactional data (Verver, 2005). However, even with this technology underpinning, traditional audit processes often relied on representative samples, rather than assessing the entire population, with analyses continuing to take place sometime after the completion of the business activity. As a result, risk and control problems had a greater opportunity to escalate and impact business performance negatively.

LITERATURE REVIEW

Review of literature reveals existence of dynamic studies on continuous auditing a wide range of topics. Some studies [(Kogan, Empraim, & Vasarhelyi.,1996); (Vasarhelyi & Greenstein, 2003); (Rezaee Ahmad & Rick., 2001);(Rezaee *et al*2002); (Woodroof & Searchy, 2001); and (Coderre, 2006)]focused on the role that advances in information technologies played in the development of continuous auditing approach. The researchers submitted that information technologies greatly impact on business processes. In effect they observed that computerization of business processes accelerated and ensured the efficiency of obtaining, presenting and managing financial data. Especially the development of reporting languages that provide online presentation of financial data such as Extensible Business Reporting Language (XBRL), Extensible Business Language (XBL) have enabled real-time access to financial data by users. Despite the improvements in information technology, inefficiency of traditional audit approach in handling company scandals such as Enron, Worldcom, Xerox allowed continuous audit approach that is more technology implemented, to come into prominence and develop (Tum, 2013).

In a related study Vasarhelyi,Alles & Kogan., (2004) relate the adoption of continuous auditing to enabling technologies including statistical methodologies such as belief functions; neural networks as well as technologies from the computer sciences such as database expert systems, intelligent agent and especially technologies for tagging data to facilitate transmission and comparison, most notably XBRL and XBRL-GL.

Some studies associated the prevalence of continuous auditing to demand factors such as: the increasing complexity and data-intensiveness of the business environment, the existence of more electronic transactions (EDI etc), the ever increasing usage of outsourcing, value chain integration, web based reporting and the users desire that reliable information be disclosed more frequently, more timely and in more detail, XBRL based reporting, and the fact that Sarbanes-Oxley prescribes a progressive movement towards “real time reporting.”

In another study (Alles,*Kogan &Vasarhelyi* ,2002) investigated impediments to adoption of continuous auditing. The author discussed independence issues such as who will pay for the large start up costs and who owns work product. The article concluded that stagnant legislation and the negative entropy of socio-economic systems slow the adoption of continuous auditing.

Case studies also exist on continuous auditing implementation. For instance the pilot implementation of the monitoring and control layers for continuous monitoring of business process controls (Alles *et al.*, 2006a), the formerly mentioned Continuous Process Auditing System (CPAS) developed at AT&T Bell Laboratories (Vasarhelyi & Halper, 1991), the FRAANK – Financial Reporting and Auditing Agent with Net Knowledge agent for finding text on EDGAR filings, and advanced analytics at HCA (Alles *et al.*, 2006a).

There is also an emerging study on product descriptions in the area of application such as AuSoftware (that checks controls and audit issues at the most distributed levels in very large enterprises, tracks the effects of consolidation and reconciliations on data anomalies), SQL Remote Guard (continuous monitoring and auditing of remote database access activity), and Audit Command Language (ACL) (used for file interrogation, which enables direct access to computerized client data (Alles *et al.*, 2006a).

Studies on cost benefit issues dealt with possible paths along which continuous assurance will evolve, long run operating cost of running database audit, benefits of timely discovery of errors, omissions, and defalcations, cost-effectiveness of automated, software-driven audit procedures, discussion of economic feasibility of continuous audit, an experimental market and laboratory experiment for Continuous Online Audit (COA), and nine benefits of continuous business assurance analytics (Alles *et al.*, 2006a). From above dynamic literature is found to exist in continuous auditing having enjoyed a wide range of discussion among scholars and professionals.

Relationship of Continuous Auditing to Continuous Assurance and Continuous Monitoring

It is noteworthy that neither CA, nor CM needs to be present for the other to be implemented. Some organizations have successfully implemented CA without a CM tool in place (KPMG, 2009). However, there is an inverse relationship between the sufficiency and adequacy of management's monitoring and risk management activities and the extent to which auditors must perform detailed testing of controls and assessments of risks. The audit activity's approach to and amount of, continuous auditing depends on the extent to which management has implemented continuous monitoring (Coderre, 2008). In areas where management has not implemented continuous monitoring, auditors should apply detailed testing by employing continuous auditing techniques. Where management performs CM on a comprehensive basis across end-to-end business process areas, the internal audit activity no longer needs to perform the same. In some cases, auditors may perform a proactive role in assisting the organization by establishing risk management and control assessment processes, but care should be taken so that the auditors do not assume an ownership role over these processes, which may compromise their independence or objectivity.

A strong CM function can give management a vision into their operations, requiring auditors to focus on different aspects or combinations of the risks being monitored. Such aspects include: review of anomalies detected and management's response; review and test of controls over the continuous monitoring process itself, like processing logs/audit trails; control total reconciliations; changes to system test parameters. In general, these procedures are similar to those quality control tests performed during the traditional audit process to ensure that computer assisted audit techniques (CAATs) have been applied correctly. By assessing the combined results of the continuous monitoring and auditing processes, auditors are able to provide continuous assurance regarding the effectiveness of internal controls. If

auditors do their job, then the organization will have a higher level of assurance that controls are working, risk are being managed and the information used for decision making has integrity, while the management plays a role in assurance equation by developing, designing, and monitoring controls (Bierstaker et al., 2001).

Integrating Continuous Auditing and Continuous Monitoring

For effective and efficient management, it would be ideal to implement a combined strategy of continuous auditing and continuous monitoring. Such a strategy will address concerns regarding the burden of compliance efforts, the scarcity of resources and the need to maintain audit independence. Many of the techniques of continuous monitoring of controls by management are similar to those that may be performed in continuous auditing by internal auditors. The use of continuous monitoring procedures by management and performance of continuous auditing by internal auditors will satisfy the demands for assurance that control procedures are effective and that the information produced for decision-making is both relevant and reliable. Additional benefit of the approach to the organization is that instances of error and fraud are significantly reduced, operational efficiency is increased and bottom-line results are improved through a combination of cost savings and a reduction in overpayments and revenue leakage. Introduction of a continuous auditing and controls monitoring approach helps organizations to achieve a rapid return on investment. Auditors and management have been driven by business and regulatory environment and current audit standards to make more effective use of information and data analysis technologies as a fundamental enabler of continuous auditing and continuous monitoring.

Drivers of Continuous Auditing

Auditing has been slow to adapt to environmental changes even though the “electronization” of business processes has been actively pursued for several decades and the implementation of modern ERP systems for over a decade (Vasarhelyi and Greenstein, 2003). The electronization of business processes was simply ignored with “auditing around the computer”: whatever information was needed was extracted on paper, an approach in use to a surprising extent. Subsequently, the auditors started utilizing the new information technology with “auditing through the computer”. The process automates standard audit processes and procedures, by using computer productivity tools (e.g., MS Office), and computer-assisted audit techniques (CAAT) that are basically data analysis software. This approach is limited because on the one hand, it does not take advantage of the new technological possibility to automate and integrate various audit processes and procedures and on the other hand, it does not provide sufficient response to the new challenges of auditing a modern digitized corporation (Alles, *et al.*, 2006b).

There is a direct analogy between the automation and integration of business processes and the deployment of ERP systems on the one hand and the automation and integration of audit processes and the deployment of continuous auditing systems on the other hand. The relationship between ERP and CA extends to lessons on their implementation. ERP has been dogged by the cost and complexity of its implementation, which is a reflection of the fact that it is much more than a technology. Integration of information flows can only proceed when the underlying business processes are also automated and integrated and have achieved a consistency in purpose and operational practices. The full benefit of technology only comes about when it is used to completely rethink processes, rather than simply being used to automate what was previously done manually (Hammer, 1990). But ERP goes one step

further, by forcing businesses to adapt their processes to the needs of the ERP system, rather than following a “clean sheet” approach where business processes are first reengineered and then the enabling technology is obtained. It turned out to be simply too costly to develop fully customized integrated information systems for different firms and so ERP essentially became “one-size fits most” (Alles, *et al.*, 2006a).

Such issues arise with CA systems, both with regard to the need for customization and more importantly, about how it will force auditors to analyze and reengineer their audit processes. This has profound implications for the way in which auditing is carried out and the scope of the impact that CA will have on audit practice. CA will first be used to reduce the cost of current audit procedures or to assure processes that cannot easily be assured by traditional methods. But the ERP analogy suggests that it will take time before the investment in the implementation of CA will start paying off. However, once CA reaches a critical mass the technology will itself begin to drive audit methodologies, leading to a true reengineering of audit processes. This will have a transformational effect, especially given that much audit practice remains rather idiosyncratic, and has not been subject to formalization and process analysis, let alone reengineering (Alles *et al.*, 2006a).

Benefits of Continuous Auditing and Monitoring

Continuous auditing helps auditors to evaluate the adequacy of management’s monitoring function. This allows the Chief Audit Executive (CAE) to provide the audit committee and senior management with independent assurance that control systems are working effectively and that audit processes are in place to identify and address any violations. Also it helps to identify and assess areas of risk, and provides information to auditors that can be communicated to management to support its efforts to mitigate the risk. It can also be used when developing the annual audit plan by focusing audit attention and resources on areas of higher risk. One of the greatest advantages of continuous auditing is its independence from both the underlying operational and financial systems and the monitoring performed by management. This improves the organization’s management and control frameworks and provides mechanisms that auditors can use to support their own independent review and assessment activities. Continuous auditing is not without its challenges. The technology needs to be understood and controlled. Internal auditors must have access to the data, software tools, and techniques, and have the knowledge necessary to make intelligent use of the vast amounts of corporate financial and nonfinancial information at their fingertips. The opportunities afforded by continuous auditing also place certain demands on auditors and the CAE.

Application of Continuous Auditing

Continuous auditing can be applied in areas requiring provision of timely assurance on the effectiveness of internal controls, identification and assessment of levels of risk, and highlighting noncompliance with regulations and policies quickly. Continuous auditing is conducted under the supervision of real-time accounting information systems. Thus, as the practising areas of real-time accounting systems extend, continuous auditing becomes widespread. For instance in the manufacturing industries, just-in-time (JIT) inventory management has generated real-time reporting of inventories and work-in-process items on companies' balance sheets. Therefore, continuous auditing has become an ideal area for the manufacturing companies. Also, the real-time practising of accounting systems is becoming popular in retail sector because individual consumer purchases directly affect the inventory

management and the process of reordering the product from the supplier. The financial part of such a retail sale is managed through computer software tools on a real-time basis (Zhao, Yen, Chang & Chang, 2004). The widespread use of real-time accounting systems and the extension of areas for the application of continuous auditing is probable in the future.

REQUIREMENTS FOR APPLICATION OF CONTINUOUS AUDIT

The application of continuous audit is based on some requirements. These are classified into technological, economic and other requirements and have been discussed as follows

Technological Requirements

Application of CA requires existence of some technological conditions (Web Server and Reliable System). Interrelated and authorized to access Web Servers for a communication among continuous auditing partners (client, auditor and third parties) are required. This gives the auditor authorization for access to its own data base as a result of which the auditor has direct access to required data while the server of the auditor acts as a moderator by providing the third parties that are engaged in continuous auditing process, with restricted access to business information (Woodroof & Searchy, 2001). Reliable System is also required because continuous auditing is conducted under the supervision of real-time accounting systems. The benefit expected from continuous audit depends on the reliability of real-time accounting systems. A reliable system must fulfil some characteristics such as accuracy (the system must obtain, record and report the information to be audited accurately, completely, and on a timely basis); security (there must be controls to prevent unauthorized access to business data and processes. When violations are detected or suspected, the system must warn the auditor and there must be temporary restriction); integrity (the system processing must be complete, accurate, timely and in accordance with the entity's transaction approval and output distribution policy); maintainability (the system must be updated in order to provide continuous accuracy, security, and integrity) and Automated Auditing Programmes (the auditor needs readily made auditing programmes or the ones auditor develops since continuous auditing is applied through computing systems) (AICPA, 1999). The audit tools need to be capable of identifying risks, investigating internal audit, conducting electronic audit procedures, picking up the related samples via financial verification tests, detecting abnormalities, calculating the records automatically (Rezaee, *et al.*, 2002)

Economic Requirements of Continuous Auditing

Another requirement for the application of continuous audit is economic considerations. Continuous audit has a reducing effect on audit costs (fees paid to the auditors, travel and accommodation expenses and so on), however, such a financial benefit requires high structural expenses (Agca, 2006). The high structural expenses increase the cost of product that is maintained through continuous auditing. Identification of who will need the product, its frequency and the amount they will pay for it is important, i.e. whether the demand is sufficient or not (Kurnaz & Çetinoğlu, 2010).

Conduction of continuous audit is also affected by cost. Cost involves more than 'price' during the conducting period, it is the amount that is perceived by all parties. The decision to conduct a new technology is based on the perception of 'cost' by all parties and it will start at the moment when the perceived benefit exceeds the perceived cost (Hall & Khan, 2003). Continuous auditing is economically applicable if the benefits exceed the cost. For this

reason, it can be assumed that there will be demand of business management for continuous audit as an internal auditing mechanism since an internal audit carried out for continuous control has great contributions to informing both business owners about whether their investments are preserved and protected and managers about whether their business transactions are carried out as planned, more timely (Ağca, 2006).

Other Requirements

In addition to the above requirements, other factors affecting the applicability of continuous audit include:

Management support: Management support is important for an effective application of continuous auditing requiring a high cost affecting all processes (Vasarhelyi, , *et.al.*, 2006).

Technological Knowledge of the Auditors: Applicability of continuous audit in business is not limited to information technologies. Cost, management support, the qualifications of the staff and the knowledge and ability of auditors in the field affect the applicability just as information technologies. Auditors are required to have knowledge of information technology that is conducted on auditing practises such as watching internal controls and reporting any deviation (Vasarhelyi, *et.al.* 2006).

Reliable Data Exchange: In continuous audit parties must have authorized access to the data to achieve a fast and accurate exchange however; some limitations must be set to prevent the manipulation of accessing authority between the parties. Access to data can be restricted through security wall, codes and biometrical tools. In addition, digital signatures and codes must be used with an aim to verify the source of data shared between the parties (Handscombe, 2007; Woodroof and Searchy, 2001; Zhao et al.2004)

CONCLUSION

The strength of continuous auditing lies in the intelligent and efficient continuous testing of controls and risks that results in timely notification of gaps and weaknesses to allow immediate feedback and correction. Continuous auditing and continuous monitoring have the benefit of providing the management with accurate data and timely reporting of the organization's key risks. This benefit can be of added value for effective and efficient management of the firm. Management has the primary responsibility for assessing risk and for the design, implementation, and ongoing maintenance of controls within an organization. The integrated approach of continuous auditing and continuous monitoring, enabled by technology, is the key to a sustainable, cost-effective, and resource-efficient solution. The return of implementation of continuous auditing will be realized through improvements to an organization's bottom-line results, based on the timely identification of errors, fraud and the creation of a stronger internal control environment across the enterprise. This in effect helps to provide management with faster, timely and more reliable information for decision making for effective and efficient performance of her functions.

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