Print ISSN: 2233-4165 / Online ISSN: 2233-5382
doi: http://dx.doi.org/10.13106/ijidb.2015.vol6.no3.5.

[Field Research]

Continuous Audits Using Decision Support Systems

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Received: March 30, 2015. Revised: June 02, 2015. Accepted: September 15, 2015.

Abstract

Purpose - This article's aim is to examine how the utilization of existing and future decision-support systems will lead to a change in the auditing process.

Research design, data, and methodology - An information system is a special decision-support system that combines information obtained from various sources and communicates among them to help in assessing appropriate complex financial decisions. This paper analyzes techniques such as data and text mining as components of decision-support systems to be used in the auditing process.

Results - We present views about how existing decision-support systems will lead to a change in audits. Auditors, who currently collect significant data manually, will in the future move towards management through complex decision-support systems.

Conclusions - Although some internal audit functions are integrated into systems of continuous monitoring, the use of such systems remains limited. Thus, instead of multiple decision-support systems, a unified decision-support system can be deployed for this that includes sensors integrated within a company in different contexts (e.g., production, sales, and accounting) that continually monitors violations of controls, unusual patterns, and unusual transactions.

Keywords: Continuous Auditing, Decision Support Systems, Internal Controls, Text Mining.

JEL Classifications: G02, G11, G12, G32.

1. Introduction

Audit future challenges: There are many predictions about the future of the audit profession. Globalization and the development of complex financial instruments, as well as complex economic risks by evaluating the conditions that may be created using the skill and ability of auditors to assess the extent of current technologies, are not enough. on the other hand, the Supervisory board accounting corporations 2 also has two goals for auditors is considered, in contrast to the prevention and detection of fraud fiscal responsibility, while changes in economic conditions, increasing the distortions in financial instruments, the development of global markets and changing practices audit, the auditor's a lot of pressure for continuous assessment of risks involved in numerous aspects of the business unit is created. Increase demand for further study interaction risk assessment requires a greater volume of data from numerous sources in the future (Hunton & Rose, 2010).

Thus, the use of decision support systems more is expected. Internal auditors focus on internal controls and procedures of the company's control that may lead to further evaluate internal controls, fraud risk management assessment of the business unit responsible for their future. as a result, auditors using massive amounts of data from multiple sources into a complex interaction techniques for analysis, economics, politics, culture, industry and company level risks need (Abdolmohammadi,1978). The sechanges suggest that continuous auditing and complex set of data will be compressed. Topic by describing ways to gather important information about the mining of large databases, text mining and continuous monitoring will start(Arnold, Collier, Leech, and Sutton (2004).

2. Literature Review

Data mining requires a considerable increase in audit mode. It is, decision support systems for mining activities that accelerate the audit process, support (Wang & Yang, 2009). Contains different data mining techniques (such as neural networks, genetic algorithms, Bayesian belief networks 6) to explore patterns in large data sets. Mining companies over the years to perform tasks such as analysis, customer-buying patterns to achieve the objectives of marketing and product management used. Auditors, most of the methods of analysis, a figure that is a subset of the data mining software such as (ACL) is used. For example, one as the first multi-digit numbers occurs in about 31% of cases, while nine of about 5 percent for the first time. Studies

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have shown that Benford's law with certain financial data, such as receipts and payments accounts correspond. When people make false transactions or correct their records, the resulting numbers may deviate from expectations Benford's Law.

Analysis of a number of digit patterns will prevent promiscuity. The objective of this audit procedures more efficient use of scarce resources, making it easier to audit. Is. while there are benefits to the digit analysis, and its use is increasing, but this method has defects. Many forms of transactions are consistent with the distribution described so they can be used to discover promiscuity. overall, the analysis, the figure should be used in more transactions in order to determine whether further audit data from digital distribution are predicted and are expected to follow or not? Even if the distribution is very clear, yet comprehensive analysis, the figure is not possible, because many companies, auditors should also evaluate the data. Perhaps the greatest potential for new approaches to analysis, text mining is included in the audit procedures.

Text mining: a special form of data mining is to extract patterns from text rather than numbers. Text mining methods in the mail, newspapers, magazines and the Internet generally applicable. Exploratory data mining, text-mining production also helps in commercial applications. Data mining exploration almost rhetorical use of data mining, which is used by the collection system. Using this system may be defined as any previous hypothesis to test is not available, the data models created. Experimental systems including (ATHENS) showed that information could be easily and discover new web space discovered keywords. Other systems analysis and outline news publications available online, relevant financial relationships can be discovered between them. The research is very interesting and Keila (Keila & Skillicorn, 2005)text mining applied in the Enron emails. They concluded that changes the words used by management may be an important predictor of organizational changes such as loss of employee loyalty to the company, the role of directors and the corporate response to the threats.

Other research also showed that text-mining algorithms might prevent fraud and deceit. Similarly, auditors using text mining and group sessions can manage the behavioral characteristics, the company's rules of conduct. In general, text-mining systems have brought significant benefits. Email is the primary source of communication management and text-mining techniques can all emails as quickly, cheaply and effectively examine. New text mining decision support systems to analyze the risks the company is the main disadvantage of today, there. The questions also arise.

For example, the ability of auditors to audit access to emails and communications firm legal basis is not limited. Social networks if a network is analyzed to understand the relationship, how it will be affected? Are there limitations in text mining ethical? Data mining, text mining, decision support systems for auditors, despite the difficulty in use, it is useful and should be used on a continuing basis. It is suggested that as well as decision support systems and are designed to continuously monitor the myriad databases.

This will be explained further in the following discussion. Subsystems embedded software and ongoing monitoring many accounting firms and researchers, historically continuous audit of the use of embedded software subsystems 8 for analysis, operational controls and monitoring customer transactions and report any unusual or unauthorized transactions and activities designed stratosphere.

Embedded software subsystems kind of decision support systems that should be attached to the client system. continuous auditing accountants (both internal and external) enables a written assurance about the subject using a set of audit reports at the same time or shortly after the event with a time interval to be released, get one. Continuous auditing is a picture instead of accounting, auditing accounting movie deals (Ghanbarian, 2011).

In addition, regular audits by reducing the time and costs, increase flexibility, reduce errors, increase the focus on reducing costs and increasing the effectiveness of internal controls audit leads (Majdalawieh et al., 2012).

3. Subsystems embedded software and ongoing monitoring

The use of continuous monitoring subsystems, software applications, suggesting a move towards continuous auditing. the investigators of it is known that about 50% of audit managers studied the system in (the) internal audit which continued on performance criteria and risks of fraud monitoring, they have been fooled, but continuous auditing as by independent auditors of the internal audit activity moves and is delayed. The main obstacle is that technology is the only technology software subsystems can search whatever it was planned and built. Asa result, unlike rule of only to discover that the auditor expects promiscuity monitoring and extensive, requiring a large number of sub-systems. Thus saving a new type of monitoring is needed.

For this purpose, some companies have begun to incorporate artificial intelligence and embedded subsystems monitors planned to expand capacity, reduce the number of subsystems required to have a larger surface irregularities to search. few investigators who conducted the practical application of software subsystems, shows that this model is effective in preventing irregular, but a very large volume of data, there is a positive exception and error reporting(Bell & Carcello,2000).

It may be used for continuous monitoring of data mining and data text mining quickly adjusted. In these circumstances, the use of decision support systems more efficient and more effective than human decision will be.

4. Decision support systems for integrating information

Integrated decision support systems, internal information from multiple software subsystems, internal data, external data is identified and extracted from the database continuously monitor

and collect them in a meaningful way, in order to assess audit risk, together.

The integrated decision support systems may actually be leading audit. The continuous monitoring, expertly done at a high level, the nature of the audit could aim to provide timely information, the sooner achieve. Research has shown that investors, accountants and internal auditors, all of whom believe that the ongoing reporting with confidence, quality is likely to increase profits, lower stock price fluctuations and management of voluntary commitments to manage the interest of the cut (ChangChit & Holsapple, 2004).

The assurance at all levels is associated with the risk litigation. Thus, organizations and auditors should be entered as a deliberate and cautious in this area. In this research was to determine whether the value for the confidence of investors unbelievably, is essential. if investors can be no assurance reliability of the outputs of decision support systems to recognize third party, in which case it may be a sign of evolution confidence.

The combination of these two technologies, the aircraft automatically to adjust to the unexpected events. Information systems auditors and investigators may transfer these technologies to the audit. In future audits, ongoing monitoring tools include software subsystems, systems; data mining and text mining systems for continuous data may be transferred to such dynamic systems audit process.

It is assumed that the initial planning to completion of the audit process of decision support systems to manage risks and changes in the business unit to monitor the real-time. The system continuously monitors the result of continuous audit cycle is proportional to the risk environment, creates. In general, dynamic systems, audit procedures audit also suggests moving the system is flexible and adaptation.

At the top of the pyramid continuous audit, integrated audit, which will be discussed in the next section? Traditional financial audit focused on whether the financial statements present the financial position indicates whether or not the customer. Integrated audit also includes the auditor's opinion on internal control over financial reporting as well. once the audit company uses dynamic processing systems, decision support systems to support high level of audit will be created (Baldwin-Morgan & Stone. 1995).

This system of continuous evaluation of decision support systems infrastructure that exists in the hierarchy, internal controls and financial statements formulated claims related transactions, the entity's financial statements fairly reflect the purpose of the measure, and the accuracy and reliability of information, non-commercial units evaluation, and consequently, the continuous auditing shape. while many of the systems described above, the capacity to change the audit process, and develop the ability to provide continuous assurance auditors in assessing the risks are complex, operating systems, designed to be used by auditors. as mentioned in the introduction, research has shown the results of reliability and valuable decision support systems auditors routinely ignore or someone with expertise, refuse the use of these systems. research also suggests that the new system must have several important features to use them develop. first, interactive systems that are more likely to be used, but the problem is, how much interaction is useful(Dillard & Youths, 2001).

Second, as far as possible in the new decision support systems used graphics, so that users have more confidence in graphics than text data and charts to express the results of this analysis, more effective and more efficient than. However, the problem is how to design these graphs (Ashton, 1990).

Finally, training auditors how these systems are very important. Decision support systems development process is very important to educate the users of the system. Audit professionals to develop expertise rely more experimental (Abdolmohammadi & Usoff, 2001).

The more powerful decision support systems used by audit firms, which could be indicative of a significant part of professional experience and is considered one of the key sources of business expertise. One way to progress in the field of decision support systems, taking advantage of the system is simulated. These systems allow the auditors the results of the new decision support systems before, in a simulated view (Eining, Jones and Loebbecke, 1997). Simulation-based approach in the auditing profession because it is very complex judgments invaluable. Simulation systems to increase their knowledge and expertise through indirect experience will help.

5. Results and Discussion

In this paper, we present views about how the existing decision support systems will lead to a change in the audit, was expressed. Auditors are likely to collect much data manually move towards management of complex decision support systems. The ultimate objective decision support systems, supporting the concept of continuous auditing. Where are we now? Overall, we were at the bottom of the pyramid. audit firms with limited use of embedded subsystems, and some versions of data mining for analysis, unusual patterns of transactions on the database clients and their use is limited to digital data and the known distribution. The investigators further as more investigators text mining field is required.

6. Conclusion

Although some of the internal audit functions are integrated into the system of continuous monitoring of computer systems, the use of these systems remains limited. Thus, instead of having multiple decision support systems, unified decision support system for this purpose, such as sensors integrated company suggested that in different contexts (such as production, sales, accounting, etc.) and continued violation of careful controls, unusual patterns and unusual transactions. the output of decision support systems, or more likely a decision support system of in-

terrelated other way, where the results of the analysis, decision support systems and determine whether signs of previous pay more valuable to be taken into account summary and evaluation of the users (auditors) report and the output will go towards the dynamic decision support systems audit.

The high levels of decision support systems aimed at merging all the outputs from the bottom of the pyramid is the pyramid and support integrated audit. This type of decision support systems can be financial and non financial information, control and risk in a comprehensive picture of the integrated customer display. On the other hand, new forms of image to display a brief summary of the information that the auditors are able to grasp and understand them, is required. When the pyramid is completed, the concept of continuous auditing is attained. Finally, auditors should use decision support systems and trust in the system that will certainly take time, accept.

However, the decision support system alone can lead to severe changes in audit processes, but may add expertise to novice using simulation exercises and different patterns of cognitive mapping to help. In the future, with the appearance of new technologies become more sophisticated, international relations, the emergence of new forms of private and public property, investor demand for information Pressure regulators, audit procedures will be subject to frequent changes. Decision support systems can help increase the efficiency and effectiveness of the audit. Auditing profession moves towards the twenty-first century requires solidarity and empathy among researchers, participants, investors and regulators are.

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