

## The Efficiency of Novel Technologies in the Government's Fiscal Discipline

*Younes Abasi<sup>1</sup>, Younes Mohammadi<sup>2</sup>, and Younes Parvareh<sup>3</sup>*

<sup>1</sup>Department of Accounting,  
Payam-e-Noor University,  
Kermanshah, Kermanshah, Iran

<sup>2</sup>Department of Accounting,  
Economic Affairs and Finance Organization,  
Kermanshah, Kermanshah, Iran

<sup>3</sup>Department of Accounting,  
Islamic Azad University, Gilan-e-Gharb branch,  
Gilan-e- Gharb, Iran

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**ABSTRACT:** Monitoring and control over budgeting is inevitable in the management process of the country. An efficient control system, especially an intra-organization system can remarkably contribute to the implementation of social justice and economic development of the country. On the other hand, since budget is the vital channel and center of planning for every government and because all activities will not be carried out without financial resources, monitoring how the resources are spent and adjusting the costs with regulations are major factors in this control system. The Supreme Audit Court has taken an important measure in the development of the monitoring system and immediate audit of the state's financial information by launching an Electronic Monitoring System (EMC). This information system provides such conditions as creating unified procedures, using the capabilities of computer technology, increasing speed and accuracy, immediate access to comprehensive data, providing smart counseling, reducing the bulk of documents and appendixes, etc. in six domains of infrastructure, software databases, information security, formulation of working regulations, training and culture building, and provides the auditors with the ability to collect and analyze the required key data for strategic and operational decisions. This electronic monitoring system creates less ambiguity in the input data and can play an active role in continuous monitoring.

**KEYWORDS:** fiscal discipline, electronic monitoring, government auditing, electronic monitoring system (EMC).

### INTRODUCTION

Professor Yuji Ijiri believes that in the decision-based theoretical framework, auditing is aimed to provide useful information for economic decisions. More information is favorable in case it is cost-effective, and confidential information is desired if it is efficient. In accountability-based theoretical framework, the objective of accounting is creating an appropriate system of information flow between the accountant and accountee, which is based on a mutual relationship.

In recent years, much evidence has been found about the increasing knowledge among the governmental agencies in terms of the need for higher fiscal discipline (economic discipline). Moreover, it has been accepted that the managerial structure of public resources along with its trends, including the accounting system used in the public sector is not appropriate for implementation of the government's programs to make more efficient use of public resources.

The common governmental accounting system in Iran is compatible with the framework of conventional governmental accounting which is designed to account for the administrative control of the approved credits. In this system, the governmental agencies responsible for the costs have presented reports about their communication responsibilities to show whether the funds have been spent according to the authorization issued by the legislature. It has currently been documented that the information presented by this accounting and financial management system is not sufficient for the planning purposes and managerial decisions and does not provide the managers with accountability of their performance and system, although it may remove the concerns of conventional accountability. The current budgeting and accounting system is not able to effectively monitor and evaluate the governmental programs. The information presented by governmental accounting system is basic and insufficient and cannot be analyzed to achieve the objectives of efficiency (Khashandeh Ro, 1995). Thus, the current accounting system is not capable to provide the required information to the managers in order to measure and calculate the final cost of the services and commodities of public sector, in addition to other requirements.

Information technology is a key element in elimination of temporal and spatial constraints, having better and quicker access to information, being updated, etc. On the other hand, information technology has changed the method of doing things and has converted the paper-based system to electronic system, which is termed electronic exchange of information (Elahi, 1999). Information technology is the use of computer and remote communications to gather, process, save and publish the audio, visual, textual and numerical information (Tansey, 2003). The most important features of information technology include high speed in data processing, remarkable accuracy, rapid access to data, being up-to-date, possible exchange of electronic data, high quality and low cost (Etemadi, 2006).

The expansion of operations, complexities of transactions and electronic transactions have made electronic documents a better replacement for paper documents. Consequently, the auditing procedures have also changed dramatically. Thus, it is necessary for auditors to get familiar with information technology and the impact it has on the accounting systems and electronic accounting processes, because information technology is the optimum tool to promote the quality of auditing files and auditors' performance. On the other hand, this technology assists auditors to acquire better auditing evidence about financial statements to support their views (Rahimian, 1998).

Moreover, since most of the current texts have concentrated on the automation of auditing, less attention has been given to one of the major advantages of technology in auditing, reducing the amount of auditing in the workplace and delivering the work to the team members via electronic monitoring system, while continuous auditing has expanded the auditing by adopting continuous and demand-based methods. Electronic monitoring system eliminates the requirement of place for auditors and allows them to share the responsibilities among the members of the on-site and off-site auditing group.

The view that the auditors must be objectively present to perform auditing is not accepted anymore. To solve this problem, many responsibilities of the auditing delegates can be fulfilled by virtual groups via electronic monitoring system. Therefore, the Supreme Audit Court has put implementation of electronic monitoring system as its agenda for better fiscal discipline in the country, so that the electronic monitoring system can be a new paradigm in novel investigations and analytical auditing of the Supreme Audit Court.

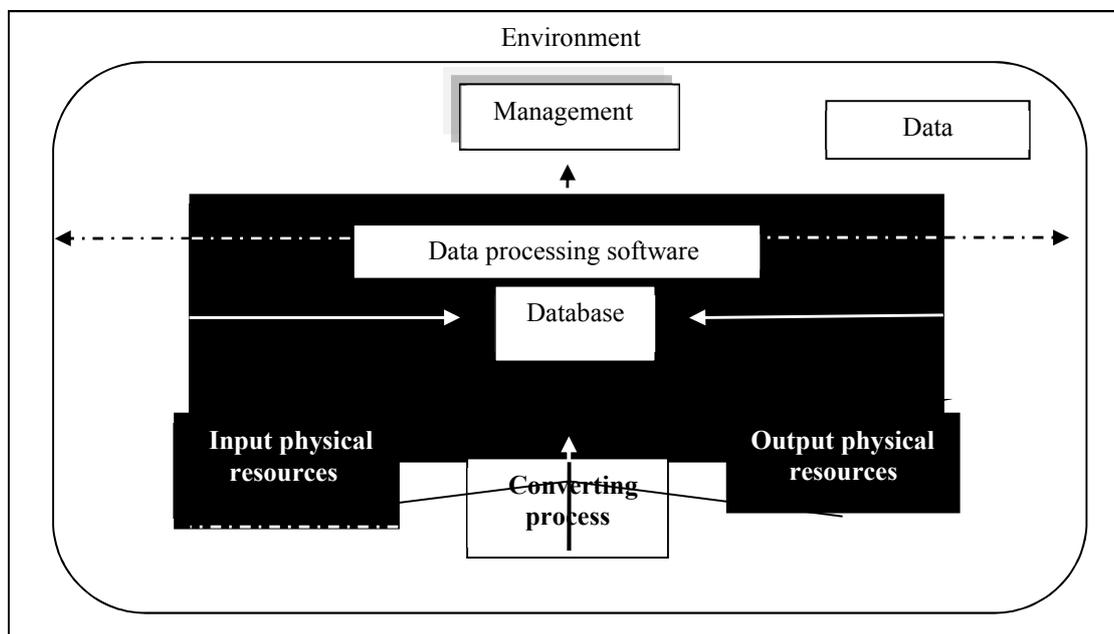
### **THE ROLE OF ELECTRONIC MONITORING SYSTEM (EMS) IN AUDITING AND PREPARATION OF ANALYTICAL REPORTS**

The first information systems created in 1950s were mostly operational and included simple automated bookkeeping activities. Later in 1970s, management classification systems were created and in 1980s, strategic and senior management information systems appeared (RezaeiNejad, 1999). The aim of automation of administrative affairs is to increase efficiency. Also, managers can have more communication with each other and solve organizational problems, because better communication leads to better and quicker decisions (Raymond, 1994). The automation of administrative affairs is intended for the mechanization of all formal and informal systems which basically leads to exchange of information among the personnel of the organization and formation of oral and written communications.

Many accounting and economic theoreticians believe that information is a key element in the efficiency of resources' allocation and economic development of countries. Accounting information affects the economic performance of various businesses as follows:

1. It provides the investors and executives with the possibility of identifying the appropriate investment opportunities.
2. The dominating role of the financial information appears through the behavioral discipline of the executives in the efficient implementation of assets, promotion of selecting the projects and decreasing the possibility of misusing the investors' wealth.
3. It reduces the risk of making a wrong choice and being criticized.

Therefore, the dominating role of accounting information is using the reported information for monitoring purposes that provides conditions to improve and enhance the firm governance (Yeganeh, Ghomi&Vali, 2006). Hence, a model of information system is required to collect and process the data and provide them to the managers. The data processing software converts the data to information for the management of the business, and for individuals and organizations.



Accordingly, the Supreme Audit Court created an electronic monitoring system, one of the biggest information technology-based revolutions in the country, as the monitoring arm of the parliament to monitor the affairs and to take care of the national treasury as well as to have rapid, correct and on-time access to the required information for the users and updating the auditing. Thereby, over 3700 active financial points in all organizations under the control of the Supreme Audit Court, including national and provincial organizations are connected to this system in order to provide the opportunity for faster and precise monitoring in the country through creating a comprehensive financial database and facilitating the preparation of analytical reports. This system can deliver a large volume of information about the performance of executive agencies from various internal or external resources of the institution under investigation to the audit court, which is eventually classified, organized, processed and analyzed.

By acquiring clear and reliable descriptive-analytical information about the performance of the executive institutions, the auditors of the Supreme Audit Court can make well-founded and fair judgments with high validity and reliability by implementation of evaluation and performance analysis models. The timely, comprehensive and effective investigations will be implemented regarding the activities, transactions and financial decisions of the executive organizations, and the degree of safety and reliability of financial and executive measures will be enhanced in the country and the possibility of error, misuse, fraud, corruption and crime will be declined in the processes related to the cost of public resources.

Moreover, through this system one of the largest databases in the public sector will be created in the domain of spending the liquidity resources, and the possibility of immediate investigations of the performance and financial activities of the executive agencies as well as various monitoring and auditing will be provided for the first time. It will also be given to the beneficiaries of the plan as a utility to accelerate all ongoing operations of the organizations.

## OBJECTIVES

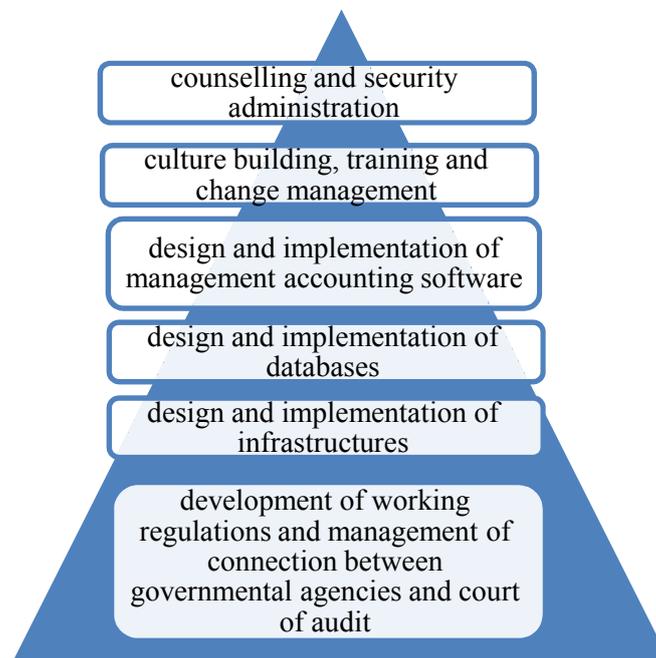
The most important objectives of electronic monitoring system are as follows:

1. Creating uniform procedures, preventing personal tastes and clarifying monitoring
2. Increasing speed, accuracy, precision and comprehensibility in audit monitoring.
3. Accelerating the investigations of financial budgetary crimes.
4. Acquiring a favorable state in transactions and auditing connections between governmental organizations and firms and Supreme Audit Court, as well as development and integrity of databases and basic information.

5. Applying strong monitoring techniques along with adapting to the political and social changes.
6. Creating an appropriate and safe ground to exchange information with minimum error and to prevent disclosure of information.
7. Facilitating the analysis and inference of the financial performance of the ministries and publicenterprises.
8. Giving the required smart counseling to the organizations to prevent infringement of funds.
9. Updating the regulations and instructions to monitor the financial and budgeting performance of ministries and public enterprises.
10. Providing the possibility of reducing the change in the exchange of information.
11. Developing a comprehensive and systematic monitoring system.
12. Reducing the size of documents and the attached reports.

**CONCEPTUAL MODEL OF ELECTRONIC MONITORING SYSTEM (EMS)**

This plan is executed in six major domains, including infrastructural domains;software;databases; information security; formulation of rules,management; culture building,trainingand change management.



*Table 1. Conceptual model of electronic monitoring system*

**AUDITING THE ELECTRONIC MONITORING**

Electronic monitoring system can be defined as a process through which the auditors of the supreme audit court evaluate the validity of the financial data and internal controls using the information and communication technology together with data analysis.The auditors can present their reports, collect electronic evidence and communicate with the audited entity without physical presence. On the other hand, electronic monitoring system is a systematic and regular process that makes the auditors of the Supreme Audit Court able to, using a chain of auditing reports, simultaneously and virtually investigate the issue that is under the responsibility of the managers of the unit under investigation shortly after the incidence related to the given issue. It can also be defined as a systematic process that is identified and reported regularly by the transactions’ auditing (by smart software) based on the prescribed tested standards, breaking the norms and deviations (exceptions) from these standards.

This kind of auditing makes the auditors able to collect and analyze the key data better than the past for strategic and operational decisions. It also provides the auditors with a more efficient tool to monitor, audit and announce the reports of transactions or unusual models. Application of an automatic tool is an efficient method to extract and analyze data from the systems of audited entities in order to test the internal controls, transactions and content. That is why one of the main

motives of the Supreme Audit Court to enter electronic monitoring system is promoting the quality of auditing, managing the time, increasing the auditing coverage and reducing the final cost (Arab Mazar, 2005). However, the proposal of electronic monitoring system by the Supreme Audit Court brings about the incidence of several issues as well, the issues that are usually the consequence of possible misuses and the efficiency of this auditing technique.

The questions that may be raised include: how much can auditing be expanded by information and communication technology? How do auditors form the virtual groups?, and Are the personnel prevented from perpetrating fraud if they know auditing is carried out through electronic monitoring system? Extreme preventive effects are expected to occur by implementation of remote auditing along with continuous assurance. Auditing through electronic monitoring system provides the auditors of the Supreme Audit Court with the possibility to monitor the transactions and to communicate regularly with the entrepreneurs to follow official auditing activities and provide reports. Hence, when continuous auditing systems report the control weak points, fraud or potential mistake to auditors, the auditors can remotely assist the management solve these problems.

The efficiency of auditing can be increased by reducing the latency (delay). Latency occurs in all working processes; work provision, audit planning, internal controls' evaluation, internal controls' tests and content test undergo the latency within and between processes during auditing. Moreover, it occurs when the auditors work with the managers to raise and solve the problems. Latency and delay in these processes can waste the resources, especially the human resources of auditors that could be used in other place (Waren, 2005).

### **ADVANTAGES OF ELECTRONIC MONITORING SYSTEM**

By implementation of electronic monitoring system, the financial systems of ministries and public agencies will be directly available to the auditors of the Supreme Audit Court via optic fiber, and they will be able to have instant access to the financial systems and observe and analyze the financial statements and reports with the latest changes and present their analytic auditing and reports in a very short time. Thus, electronic monitoring system will be used to perform various auditing processes, especially running content tests and analytical investigation, detailed tests conducted on a representative sample and detailed tests of balances and basic operations. Also, this project can play an important role in preparation of audit plan, formulation of internal controls, preparation and presentation of reports and statements, and management of auditing affairs.

Certainly, implementation of electronic monitoring system in analyses and investigations will have the following advantages:

- Registration of the information of different operational programs to prepare annual audit report and budget preparation.
- Modulation of various audit reports of groups in the form of a general report.
- Possible registration of audit worksheets and investigation instructions.
- Possible presentation of audit reports for firms and ministries separately.
- Possible presentation of combined reports of the information recorded in the audit process.
- Possible presentation of various reports.
- Facilitation and acceleration of investigations and assessments.
- Facilitation of access to financial documents.

### **AUDITING ACTIVITIES OF SUPREME COURT OF AUDIT VIA ELECTRONIC MONITORING SYSTEM**

Table 2 shows how different activities of auditors of Supreme Audit Court can be carried out on-site or through electronic monitoring system. However, the auditors of Supreme Audit Court need to determine which method is appropriate given their conditions. Since auditing through electronic monitoring system requires virtual groups, evaluation and formulation of audit procedures help auditors to submit the responsibilities to the members of virtual audit group and determine the technology and procedure of the required auditing for them, so that the auditors of Supreme Audit Court can play an active role in the regular monitoring via electronic monitoring system in order to inform the auditors of a deficiency and negligence (Muhammadi, 2012).

**Table 2. Comparison of auditing activities of Supreme Court of Audit via on-site auditing and electronic monitoring system**

Auditing activities	On-site auditing techniques	Auditing via electronic monitoring system
Auditing logistics	The auditors of the supreme audit court hold on-site sessions and have formal meetings with managers and auditors.	The auditors of the supreme audit court use email and telephone for auditing and meet the managers and auditors via online conferences and follow their emails.
Auditing planning	The auditing delegates hold physical meetings to determine auditing objectives and to share responsibilities.	The virtual auditing delegates attend online conferences and discuss the auditing details. The responsibilities are automatically specified in electronic worksheet system.
Internal controls	The auditors of the supreme audit court evaluate the evidence and paper and digital documents through interview and assess the internal controls.	The auditors of the supreme audit court communicate with the system of the unit under investigation via videoconference interview and perform the analytical tests through the terminal. They also analyze the audit reports.
Content testing	The auditors of the supreme audit court test the model transactions on-site and try to find the irregularities and violations.	The auditors of the supreme audit court include the model transactions through electronic monitoring system and examine them to find irregularities and violations. The automated systems continuously test all the samples and prepare a list of exceptions for auditor to follow.
Auditing and reporting decisions	The auditors hold meetings with the moderators of the process to follow the issues.	It is similar, but via online conferences.

## CONCLUSION

Since monitoring plays a pivotal role in changing the structure and reforming the government, existence of an efficient financial and audit system is indicative of an organized structure. Thus, the governments carry out their monitoring via different procedures.

The findings of this study indicate that electronic monitoring system (EMS) causes less ambiguity in the input data, increases the impact of information on decision-making, adjusts the time of information presentation with the information needs of the managers, keeps the value of information over the time and in general, enhances the promptness of information. Furthermore, the results show that the financial reports and auditing are performed much faster by electronic monitoring system than the conventional method.

The implementation of this system can play a major role in the continuous control and a large volume of the performance data of the executive agencies are collected, summarized, classified, organized, processed, analyzed and interpreted in a shortest time possible, which consequently contributes to the economic development of the country.

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