

Risk Based Internal Audit – An Empirical Model For Implementation

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Internal auditing plays an important role in the efficiency and effectiveness of internal control system in organizations. Internal auditing should provide correct information to management about effectiveness of risk management and internal controls including compliance with organizational laws and regulations. At this time, there are different types of internal auditing, which primarily accept and apply procedures such as testing transactions, testing accuracy and reliability of accounting books and financial reports, the accuracy, reliability and timeliness of control reports and testing compliance with legal and regulatory requirements. However, none of these offer an opinion about qualitative aspects of organizational management, especially risk management. Therefore, it is necessary to redefine internal auditing and to determine the new scopes for it in order to ensure from adoption of modern risk management tools, adequacy and effectiveness of these tools and also helping organizational units to reduce risks. These changes in focus and attention of internal auditing are possible by revision in attitudes to audit and changing it to risk-based internal auditing. Regarding this matter, the main purpose of this study is to provide a comprehensive and practical model for implementing and using risk-based internal auditing in companies and organizations. This model is designed based on theoretical principles presented in the literature and relevant research as well as professional experience of the authors. Also, the designed model has been implemented in one of the large Iranian organizations, which increases the value and applicability of the model.

Keywords: Internal audit, risk based internal auditing, risk assessment, risk management

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Audyt wewnętrzny oparty na ryzyku

Audyt wewnętrzny odgrywa znaczącą rolę w systemie wewnętrznej kontroli wydajności i efektywności w organizacjach. Powinien dostarczać kadrze zarządzającej prawidłowe informacje na temat efektywności zarządzania ryzykiem i kontroli wewnętrznych, w tym zgodności z prawami i przepisami obowiązującymi w organizacji. Obecnie istnieją różne rodzaje audytu wewnętrznego, które głównie przyjmują i stosują takie procedury jak sprawdzanie prawidłowo-

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wości transakcji, sprawdzanie dokładności prowadzenia i wiarygodności ksiąg rachunkowych oraz raportów finansowych, sprawdzanie dokładności, wiarygodności i terminowości raportów z kontroli oraz zgodności procedury kontroli z wymaganiami prawnymi i regulaminowymi. Zadna z powyższych procedur nie umożliwia jednak wglądu w aspekty jakościowe zarządzania organizacją a zwłaszcza zarządzania ryzykiem. Konieczne jest zatem przededefiniowanie audytu wewnętrznego i określenie jego nowego zakresu w celu zapewnienia przyjęcia nowoczesnych narzędzi zarządzania ryzykiem, współmierności i efektywności tych narzędzi oraz pomocy jednostkom organizacyjnym w redukowaniu zagrożeń. Te zmiany w zainteresowaniu i uwadze poświęcanym przez audyt wewnętrzny są możliwe przez zmianę podejścia do audytu i zmianę go w audyt wewnętrzny oparty na ryzyku. W nawiązaniu do tej kwestii, celem niniejszej pracy jest dostarczenie kompleksowego i praktycznego modelu implementacji i stosowania audytu wewnętrznego opartego na ryzyku w firmach i organizacjach. Model ten został stworzony w oparciu o założenia teoretyczne obecne w literaturze i stosowne badania oraz o doświadczenie zawodowe autorów. Ponadto, stworzony model został wdrożony w jednej z dużych organizacji w Iranie, co zwiększa jego wartość i potwierdza możliwość jego zastosowania.

Słowa kluczowe: audyt wewnętrzny, audyt wewnętrzny oparty na ryzyku, ocena ryzyka, zarządzanie ryzykiem

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1. Introduction

The methods and procedures of internal audit have been changed dramatically over past decade. This change was through system-based auditing to process-based auditing and now the focus is on risk-based internal auditing. Risk based internal auditing requires to identify organizational risks, therefore, result in optimum use of scarce audit resources, more coordination between internal auditors and management objectives, facilitating organizational development and decrease of probable risks by focusing on areas which have some weaknesses.

Regarding the growing role and importance of risk-based internal auditing in organizations and also lack of applying risk-based internal auditing in many of them, the main purpose of this research is to provide an empirical model for implementing risk-based internal auditing as well as identifying the requirements for implementation of it. The model was developed based on the related literature and professional experience of authors. Then the designed model was implemented in one of the large Iranian organizations. This matter results to identify and resolve (probable) shortages in designing of the model. Thus, presented model in this study has theoretical aspects and practical support. The model includes

steps such as: determining control objectives, analyzing and prioritizing risks, control activities (necessary requirements to reduce risks), determining existing control weaknesses, providing audit programs, and conducting the required tests and providing audit reports.

This paper has three main contributions: (1) determining background and requirements for implementing and using risk-based internal auditing (2) providing the possibility of full implementing of risk management in companies and organizations (3) providing a comprehensive model for implementing risk-based internal auditing. In this regard, definitions and importance of internal audit in the organization and then classification of organizations according to their risk maturity as well as requirements for implementation of risk-based internal audit will be described. At the end, the empirical model for implementation of risk-based internal audit will be provided at detailed.

2. Definitions and importance of internal audit in the organization

There are different definitions of internal auditing. Internal auditing is a necessary mechanism, which prevents fraud and mistakes, ensure compliance with policies and procedures and increase efficiency and

effectiveness (Eden and Moriah, 1996). Internal auditing compare real operation of organization with standards and expectations based on related criteria, and includes program and comprehensive procedures to help management team to improve organizational controls. Internal auditing traditionally is designed to ensure the reliability of financial information and to protect companies' assets. Recently, internal auditing has been developed, so that covers operational auditing, risk assessment, information technology assurance services and etc. This developed role has increased the importance of internal auditing as a part of risk management system in organization (Spira and Page, 2003). Association of Internal Auditors defines internal auditing as following:

"Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes."

This definition illustrates a basic change in the role of internal auditors. This change shows that providing consulting services is one of important parts of internal auditing activities. The main purpose of internal auditing is to aware management from existence of a reasonable and effectiveness and efficient internal control system which can protect organization against losses which arise from risks that they cope with.

Board of directors in each organization has final responsibility to ensure from establishment an adequate and efficient internal control system and risk assessment system so that the risk of the organization can be determined, measured, monitored and controlled, although the executive responsible for creating and establishing such a system is with senior management in organization. In this field, Internal auditors can help board of directors and senior management in doing their work and efficiency of their responsibility by continuous monitoring of internal control by independent evaluation of the adequacy and compliance of policies and procedures which has been determined in organization (Basel Committee, 2000). According to international standards of internal auditing (2001)

internal auditors should cooperate in evaluating and improving risk management and control processes by using a systematic and regular procedure and help organization in determining and evaluating probable risks and improving risk management and control systems. Internal auditors should evaluate the effectiveness of risk management systems of organization and possible risk of corporate governance, operations and information systems related to following items:

- Reliability and accuracy of financial and operating information
- Effectiveness and efficiency of operations
- Safeguarding of the assets
- Compliance with laws, regulations and contracts

Internal auditing should focus on risks regarding to the goals of investigation and should be aware of the existence of other important risks. However, the main role or responsibility of internal auditing is to provide independent assurance about whether the organization manages risk well or not. Internal auditors should be aware from significant risks, which may have consequences on objectives, activities or resources. However, just assurance procedures, even along with professional care, cannot ensure that all major risks are determined. Internal auditing provides insurance about the adequacy of existing controls to reduce risk, effectiveness and efficiency of control processes and realization of short and long term organizational objectives.

Internal auditors evaluate the adequacy and effectiveness of way of determining and managing risk based on the results of risk assessment. They also evaluate other aspects such as ethics principle and values in organization, performance management, transfer of data related to risk and control within organization to facilitate a good process of governance. While management is responsible for internal control, the internal auditors ensure management and audit committee that internal controls are efficient and act according to expectations. Internal auditing is a valuable resource for management, board of directors and audit committee. Objectivity, expertise and knowledge of internal auditors can significantly improve internal controls, risk management and the corporate governance process. Also, an efficient internal auditing

can ensure other interested parties such as regulators, employees, creditors and shareholders.

2.1. The role of internal auditors in corporate governance

Internal auditors increasingly are well-known as important actors in corporate governance (Rezaee, 2009). New statistics provided by the Association of Internal Auditors (IIA) indicate increasing demand for internal auditors. Enactment (approval) and implementation of the Sarbanes-Oxley Act (SOX) is the main reason for increase in the number of IIA members and also to reveal the amazing value which internal auditor can add to their organizations.

Internal auditors play an important role in the Audit Committee (Smith, 2006), transfer pricing management (Dean et al., 2008), preventing Computer scams (Kratchman et al., 2008), application of International financial reporting standards (Smith et al, 2008), applying new technologies such as continuous auditing (Warren and Smith, 2006), reducing the workload and cost of the independent auditors (Gramling, 1999). Internal auditors can decrease auditing fees (costs) by: 1) improving company's internal control, 2) conducting financial tests (exams) which internal auditors can rely on them, and 3) providing overall help to auditors (Wallace, 1984). Internal auditors play a unique and essential role in corporate governance by monitoring organizational risks and help to ensure from reliability of financial reporting (Deloitte, 2005; Schneider and Wilner, 1990).

2.2. The role of internal auditors in risk management

Risk management is an important part of organizational strategic management. The focus of risk management is on determining and reducing risks and its purpose is to increase the maximum stable (continuous) value to all activities of organization. Risk management can increase the likelihood of success and achievement of overall objectives of organization. The risk can be defined as types of events or circumstances that may hinder the achievement of objectives (Roy, 2008). ISO (International Standards Organization) defines a risk as 'the combination of the probability of an event and its consequences'. Thus, deter-

mining all possible risks in a process and their likelihood are the main parts of risk assessment in organization. On this basis, company's risk management can be defined as "A structured and continuous process across the entire organization for identifying, assessing, deciding on responses to and reporting on opportunities and threats that affect the achievement of its objectives". Thus, technically, risks can be either a threat, or an opportunity.

Nowadays, a greater emphasis on risk management, as a key factor in achieving organizational objectives, is placed. After recent bankruptcies of large companies due to financial irregularities, new laws such as the New York Stock Exchange, the Sarbanes – Oxley (2000), Public Company Accounting Oversight Board Public Company Accounting Oversight reinforced by standards of the Board (PCAOB), London Stock Exchange¹, Turnbull Committee Guidance (TCG), have required companies which listed in the stock exchange in the United States and Britain to use risk management systems to protect the interests of stakeholders (Harrington, 2004).

Internal auditing plays a important role in risk management. Internal auditing is an independent function established by management to examine and evaluate the organization's risk management processes, control systems and corporate governance process and to provide recommendations for achieving the company's objectives (Roy, 2008). Although, according to the Smith and Turnbull Committee Guidance, management of organization is responsible for determining internal and external risks, but internal auditors help management in determining potential risk, risk assessment and determining the risky areas. Also, they provide an independent, objective opinion about the effects of criteria for response to risks, key controls, and whether the organization's risks have been reduced to an acceptable level or not. Risks should be determined by management, and there is no place for auditors to prepare such list of risks. Such list should applied by auditors at the end of the process of determining risk to ensure that all risks are determined. If internal audit conclude that management has not identified all significant risks, they should discuss the omissions with the management involved and if this does not resolve the issue, it should be reported to

senior management, and the audit committee. Internal Audit should never be involved in any risk management activities that might compromise their independence and objectivity.

3. Classification of organizations according to their risk maturity

Each organization with short and long term objectives have internal and external risks. There are several of methods the organization can manage risks to bring them to a level which the board consider acceptable such as: avoid the risks, transfer them, tolerate them, without planning any contingencies (these are the 'asteroid hits earth' type of risk) , Tolerate them, and plan contingencies , and finally introduce some processes to reduce the consequence or likelihood of a risk. These processes are usually referred to as a response to key risk or controls. Internal auditing has a major role in those types of organizations which are interested to plan for possible occurrence of risk, establish appropriate control to reduce and manage risks to an acceptable level.

The main purpose of internal auditing is to provide an independent and objective opinion to an organization's management as to whether its risks are being managed to acceptable levels. Internal auditing plays a major role in risk management in an organization with determined objectives. Internal auditing helps organization in determining potential risk, risk assessment and determining the risky areas, also, it provides an independent, objective opinion about the effects of criteria for response to risks, key controls, and whether the organization's risks have been reduced to an acceptable level or not. This is a continuous process. However, role and responsibility of risk based internal auditing in risk management in an organization are based on risk maturity. Companies can be classified based on their risk maturity as follows (Griffiths, 2006):

3.1. Risk enabled

In this case, risk management and internal control fully embedded into the operations. An understanding of the management of risk and the monitoring of controls will be very sophisticated in this organization. A complete risk register will be

available for audit planning. Confidence in the risk management process should enable a range of auditing techniques to be used, from checking the management of individual risks, to those affecting a complete subsidiary. It is highly unlikely that internal audit work will find problems relating to (1) effectiveness of processes used by management to identify all significant risks, (2) correct assessment of important risks, (3) Evaluating risk management processes. The emphasis of the audit work will be that the risk management processes are working properly, in particular, that key risks are reported to the board and that monitoring of controls by managers is operating.

3.2. Risk Managed

Where enterprise-wide approach to risk management developed and communicated. It is similar to the risk enabled approach, except for, in some parts of the organization, it may be necessary to place more emphasis on above items listed in paragraph (1, 2, and 3). It may be necessary to facilitate management's proposed action where weaknesses are found.

3.3. Risk Defined

Where strategies and policies in place and communicated and risk appetite are defined. While most managers may have compiled lists of risks, it is possible that these will not be assembled into a complete risk register. The internal audit activity will act as a consultant to facilitate the compilation of a complete risk register from lists risks already compiled by managers. The quality of risk management may vary across this type of organization. Any individual audit therefore will have to place emphasis on understanding the level of risk maturity in the areas being audited. Where risk management is poor, internal auditing will have to facilitate the identification of risks, using workshops and interviews. There is more emphasis on items 1,2,3. It is probable that some consultation work will be necessary to advise managers what action to take where weaknesses are found.

3.4. Risk Aware

They are organizations with scattered silo approach to risk management. In this organization, no risk register will be available, only a few managers will have determined their risks. Internal auditing

will act as a consultant to undertake a risk assessment (in conjunction with management) to determine the work required to implement a risk framework that fulfils the requirements of the board. Also, using the key risks agreed with management, an audit/consultancy plan will be generated which aims to provide assurance that risks are being managed, or advice as to how to respond to them. Since this type of organization does not have a risk management framework, RBIA cannot be implemented. However, individual audits (as detailed in section 3.6) can be driven by risks where management understand risks, or internal audit have sufficient expertise to identify risks. Consultancy work will be necessary to advice on the actions to be taken where weaknesses are found.

3.5. Risk Naive

The organizations which have no formal approach for risk management are in this group. As with the risk aware organization, it will be necessary to promote, or provide consultation on, the establishment of a risk management framework for this organization. Until this is done RBIA cannot be implemented. Risk driven audits will be possible, but will require management training and risk workshops to determine risks in the areas concerned. Internal audit should not determine risks without management involvement, nor maintain their own list of risks. This will only reinforce management's belief that internal audit are responsible for risk management. For organizations that are subject to regulations concerning the adequacy of risk management, the level of risk maturity in risk aware and risk naïve organizations is not acceptable, and the audit committee should be aware of this. In all organization, except for risk enabled organization, internal auditing is responsible for risk assessment (consist of determining and classifying all potential risk), risk analysis, risk description, risk evaluation, and risk reporting. It seems that many Iranian companies and organizations are Risk Naive. So, the provided model in this research can play an important role in risk management process in them.

4. Requirements for implementation of risk-based internal audit

In this section, the most important requirements related to implementation of risk based internal auditing are provided.

4.1. Identifying organizational purposes and processes

Regarding the achievement of organization objective in different ways, all processes in organization should be documented. Since each process in practice has one or more subsidiary purpose, then the main process and purpose of organization should be dividend to subsidiary purposes and processes. In each process, related subsidiary purpose(s) and internal and external risks which may affect on this process are determined and classified. A detailed map of the process would be helpful in this work. The action of dividing process to secondary process (cycle) should be done to a place that internal auditor consider it a reasonable size for doing an audit. Therefore, any identified risks should be attributed to related process and purpose which facilitate creating audit units and therefore, preparing audit programs. The processes are used for classifying risks, and these processes should be reasonable and not necessarily real. By identifying risk in each level of process and linking them to main purpose and process, the auditor can be reasonably assured that all significant risk of organization has been determined. This way of considering risks in all process which assist in achievement of organization's goals, has the advantage of creating structure for risks. Risk assessment structure is actually useful for management to ensure that determined risks are complete or appropriate response have been created and risk management responsibilities have been assigned.

4.2. Staff training and providing programs to increase their knowledge and technical ability

One of the important challenges and problems related to acceptance and implementing new systems and technologies is lack of adequate understanding and knowledge to use those (Ngai et al., 2007). Therefore, increase in awareness and knowledge of users and organization's staff about features and way of using new

systems and technologies can play significant role in accepting and implementing them in organization (Park et al., 2009). On this basis, one of the requirements for implementing risk-based internal control is training staff by department of internal auditing in organization about approach and various stages of implementing risk-based internal auditing. Also, given that managers and staff in various departments which are involved in the process play an important role in risk analysis (identification, determination and risk assessment, etc.), training workshop should be provided to them about methods of execution and implementation risk-based internal auditing. Furthermore, other staff should be aware from (familiar with) features and capabilities of new auditing model by different ways (including seminars, sending pamphlets and educational messages).

4.3. Acceptance and support of senior management

Acceptance and support of senior management is essential for successful implementation of new systems and technologies in the organizations.

5. Empirical model for implementation of risk-based internal audit

In this section the empirical model for implementation of risk-based internal auditing is provided. The model includes determining control objectives, analyzing and prioritizing risks, control activities (necessary requirements to reduce risks), determining existing control weaknesses, providing audit program, conducting the required tests, providing audit report. These are explained in more detailed in the following paragraphs. Regarding the necessity of analyzing risks and auditing of all organizational processes, the mentioned steps should be taken separately for all the processes.

5.1. Determining control objectives

As previously mentioned, each organizational process in addition to its role in achieving organizational objectives, also has certain objective(s) itself that should be identified and determined. In other words, each process is serving in achievement of certain purpose (objectives) which is its

existing philosophy. For example, the main purpose of purchasing process is to provide required goods and services in accordance with the predetermined rules and regulations. In organizations may exist several types of purchasing processes (major, average and small), regarding to different steps and procedures of them, subsidiary process are created as each of them has certain objective. Yet, each of these processes (cycle) also may have secondary objective within itself. Determination of mentioned objectives (in level of process and cycle) normally requires identifying and documenting organizational processes which was mentioned previously as a prerequisite for implementation of risk-based internal audit.

5.2. Analyzing and prioritizing risks

Risk analysis consists of identifying and determining risks (potential risks), risk assessment and prioritizing them (determining estimated level) which are described as follows:

5.2.1. Identifying and determining risks (potential risk)

After determining control objectives (previous section) all risks associated with each of these objectives should be identified and determined. Thus, the definition provided by Roy (2008) "risk is a set of events (circumstances) which may hinder achievement of the organization's objectives" can be very useful. Therefore, in order to determine risks related to each control objective, all conditions or factors (if the happen or exist) which may affect negatively the achievement of the organizational objectives should be identified.

5.2.2. Risk assessing and ranking (risk assessment level)

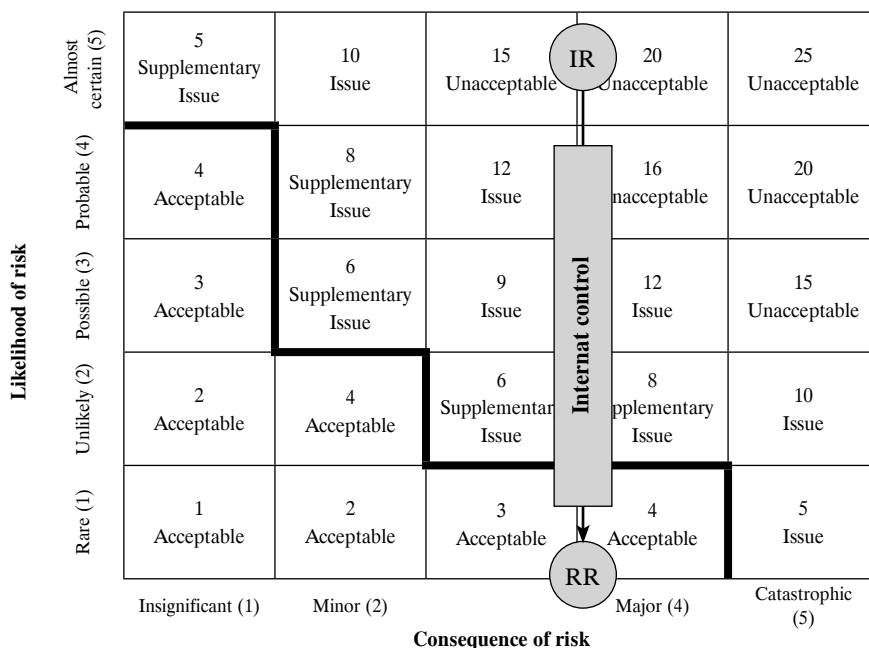
After determining the potential risks for each process/cycle, their probable effects on the achievement of control objectives and the probability of their occurrence should be determined. For evaluating and ranking risk and classifying potential risk, it is appropriate to determine or assign numerical values to each risk considering the potential effect and probability of their occurrence (Figure 1) and display (draw) them on a risks matrix (Figure 2). It should be noted that the evaluation method (assign numbers from 1 to 5) are optional

Figure 1. Scoring risks

If the consequence when the risk occurs is:	OR the likelihood of the risk occurring is:	Then the measure is defined to be:
A catastrophic impact on the organisation, threatening its existence	Almost certain	Catastrophic (5)
To prevent the organisation achieving all, or a major part, of its objectives for a long time.	Probable	Major (4)
To stop the organisation achieving its objectives for a limited period.	Possible	Moderate (3)
To stop the organisation achieving its objectives for a limited period.	Unlikely	Minor (2)
To cause minor inconvenience, not affecting the achievement of objectives	Rare	Insignificant (1)

Source: Griffiths (2006).

Figure 2. Matrix showing the significance of risks



- Unacceptable:** Immediate action required to manage the risk
- Issue:** Action required to manage the risk
- Supplementary issue:** Action is advisable if resources are available
- Acceptable:** no action required
- Risk appetite, as defined by the board
- IR = Inherent Risk RR = Residual Risk

Source: Griffiths (2006).

and other criteria (e.g., numbers 1 to 100) also can be used in this field. Also, given that statistically the probability of occurrence of an event is between zero and one, we can use percentages in this domain to assess the probability of occurrence (for example 20%, 30% etc.).

5.3. Control activities (necessary requirements to reduce risks)

As is shown in the risk matrix (Figure 2), the primary responsibility of internal control system is to reduce organizational risk levels to an acceptable level. In other word, internal control system should be able to protect organization against losses which result from different risks. Therefore, after the identification and assessment of organizational risks, the appropriate internal control should be appropriately determined. The existence of such methods (system) results in obtaining assurance regarding the reduction of risks and realization of long and short term objectives. As previously mentioned, internal control is a method to manage risk. In other words, controls are responses to risks.

5.4. Determining existing control weaknesses

After determining desirable internal control system (control activities), it is used as a criteria and indicator for evaluating and organizing existing (controls) system in organization. Existing control weaknesses actually shows non-conformities between these two systems (desirable and existing) which should be adjusted and improved. Experience acquire from implementing risk based internal auditing in one of large Iranian organizations shows that there are some risks for which there are no control activity to manage and control them. This results from lack of systematic and organized method of identifying and determining organizational risk and lack of designing an appropriate internal control system for them and also changes in objectives, business processes and organizations/companies environment which result in changes in related risks. To resolve this problem, the identified control weaknesses and proposed control activities should be reported to senior management and necessary decisions and actions to eliminate and improve them and use of proposed controls should be done. Also, organizational risk should

be continually monitored and any changes in the objectives, processes and related risk be identified and necessary actions to manage them should be done.

5.5. Providing audit program

An audit program for each individual process/cycle to collect necessary evidences should be prepared and provided. Audit programs provide overall framework of audit area (name of process/cycle), audit period, purpose of investigation, date of preparation, audit team, sampling methods, organizational area of implementing program, and control procedure. Control procedures existing in audit program are key controls related to each control activity which its implementation results in reduced organizational risks to an acceptable level. Laws, regulations and rules governing and monitoring each process, provide related framework of control activities. Therefore, in order to provide audit program, all mentioned items should be studied and considered and key controls (according to identified risks) should be selected among them.

5.6. Conducting examinations and providing audit report

Risk-based internal auditing aims to assess inherent risks in each process and the effects of key existing controls and identify remained risks. In risk-based internal auditing process, audit program is used as guidance for operations and audit worksheet is used for documenting examinations and conducted actions and also collected evidences. The worksheet should have Completion Guide to provide necessary information for internal auditors to use this worksheet. A risk matrix may be used to make decision about priority or audit time period. Risks which are ranked high may be audited several times during the period while others may be audit each two or three years.

6. Conclusions and recommendation

Regarding to the role and importance of risk based internal auditing and various advantages of it in organizations and also lack of implementation of risk based internal auditing in many organizations and companies, it's necessary to develop a model in this regard. In response to this

need, this paper provides a comprehensive and applicable model to implement and use risk based internal auditing. This model includes determining control objectives, analyzing and prioritizing risks, control activities (necessary requirements to reduce risks), determining existing control weaknesses, providing audit program, conducting the required tests, providing audit report. Using this model not only increase the effectiveness and efficiency of internal auditing, but also have a variety of benefits such as: providing the possibility and conditions of implementing risk based internal auditing, providing the possibility and conditions for conducting complete risk management, improving and updating internal control system by recognizing and identifying existing control weaknesses and taking adjusting actions, decreasing organization's risk taking, and finally decreasing cost of internal and independent auditing. Thus, we advice organizations and companies to accept, implement and use risk based internal auditing by using the provided model to take these advantages.

Footnote

¹ Combined Code.

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