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The Role of Internal Audit in Engineering Project Risk Management

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Abstract

In order to minimize the losses caused by internal and external enterprise risk, also, achieve maximization of enterprise value; internal audit department in large numbers of engineering enterprise starts to be involved in risk management. The paper is aimed at illustrating how an engineering enterprise should carry out internal audit for risk management by adopting methods of identifying and evaluating risk such as AHP and etc. Moreover, analyzing advantages of internal audit involved and current situation of development in our country engineering risk management. Finally, in combination of several practical measures put forward by our country to perfect internal audit, risk-oriented internal audit is suggested to be comprehensively applied in risk management of engineering enterprise so that enterprise can improve successfully core competitiveness to promote development of economy in the age of comprehensive risk management.

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1. Introduction

It is a serious subject that how internal audit should be involved in engineering project risk management in our country. To find a cause: firstly, an urgent demand for engineering enterprise risk management of our country faced with must transform risk management activities to adapt demands of scientific risk management. Secondly, our country's internal audit established relatively late is still at the stage of financial audit, so hard to extend audit work to risk management and control system of the entire company. It promotes inevitably risk management to exert greater effect in development of economy to learn from western advanced theory and technology and combine our country's practical situation to formulate an internal audit mode in line with national conditions.

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2. Overview of engineering project risk management in China

As the engineering project have the following characteristics, for instance, numerous participants, complex technology, difficult construction and long construction period etc... Parties of the project involved in the project implementation process are inevitable to face a large number of risks. These risks will not only decline project economic benefits, even making the project failed. Engineering enterprises of China are weak to resist risks; they lack of effective, standardized and scientific management procedures. Engineering project risk management is the weakness in our country constructions field; it has not form a system. Therefore, the project risk management is of great significance, which is not only relates to the quality of the project directly, but also directly affects project cost. We should effectively guard against various possible risks in the process of engineering project construction. To avoid unnecessary consequences of loss, guarantee the smoothly implementation of engineering project. [1]

In order to efficiently control the schedule, cost, quality and safety of project, we must carry out project risk management. It is a process that measure of project risk and select, develop risk treatment options. Risk management in engineering project in China began in the late 1980s, the development time is not so long that still have following problems:

2.1. Technical difficulties existed in the risk management

Most of Chinese engineering enterprises have not comprehensive identify project risk element and various types of risk may be encountered in project life cycle, their own project risk management information has not been fully. There are serious errors of risk evaluation; risk analysis is more focusing on qualitative rather than quantitative.

2.2. Risk management methods are backward

In the present circumstance, most project managers are willing to adopt risk control and risk retention. Without effective risk identification and assessment of risk control is blind and subjective, it means a greater actual risk expenses. In addition, risk retention just can indicate that the risk occurrence probability is very small by risk assessment, or the loss caused by risk in project reserve resource limits can be used, otherwise it is very dangerous.

3. Analysis of advantages for involvement of internal audit in engineering project risk management

Internal auditors in 21st century should be experts in risk management. Effects of internal audit should not point out existing risk in active ways but indicate how to manage and control risk and take precautions before risk.

3.1. Risk can be reviewed objective and independently through internal audit

Internal audit is not involved in specific constructions activities of engineering enterprises, so does not need to bear direct responsibility for problems in various project managements. Its relative independent position is the internal basis on which independence of audit can keep. Audit opinions voiced through carrying out inspection procedures for internal audit can direct to senior management of enterprises, so internal audit is relatively objective.

3.2. Internal audit can control risk from overall situation

The risk of engineering enterprises hides in all aspects, so risk management need, from overall situation, make a comprehensive evaluation for impact degree and priorities of risk, and coordinate all

sides of actions for risk management. Internal audit, with a comprehensive advantage of analyzing and judging risk from overall situation, includes making a systematic and professional supervision, inspection and evaluation for risk management of enterprises, weighing advantages and disadvantage of executing risk prevention and cost benefit, and studying positioning of engineering project risk management in comparison between risk and benefit.[2]

3.3. The proposal of internal audit department caused more attention

Risk management information and experience which have been grasped by internal audit department all derive the long-term practice, it will continue to deepen the risk management and cost control of enterprise. The audit report accepted easier and the value of internal audit can be understood facility if the auditing focused on risk more. As ultimate stockholders of enterprise, internal auditors will have more responsibility on the effect and the establishment of long-term mechanism of risk management.

4. Specific application of internal audit in engineering project risk management

The section will regard every factor in ERM frame of COSO as researched object to analyze specific application of internal audit in engineering project risk management. Determining whether risk management of an organization is effective or not is a subjective judgment based on evaluating if design and execute factors of risk management correctly. It determines whether risk management of an enterprise is effective or not that whether design of risk management of an enterprise includes all factors and is executed or not.

4.1 Analyze risk environment

The internal environment is foundation of other factors in risk management; it provides framework and constraint for other factors. In the internal control environment, internal auditors are clear about the business workflow and critical control point. Their position in the enterprise is relatively independent, they do not participate in the decision or specific management affairs generally, so more likely to evaluate business in global height, more clear insight into the weak points of business operation, ensure the effective operation of constructions activities.

In considering the method of enterprise risk management, management should consider all the internal and external environment-related information and internal auditors outline organization's overall risk profile or contour through information integration. So, when auditing the internal environment should combine with external engineering project environment.

4.2 Fully identify risk

Engineering enterprise should identify all internal and external risk events in the risk identification activities in order to ensure the integrity of the risk profile. In practice, all kinds of risks often intertwined, causes of risk are complex, and it brings some difficulties to identify correctly the risk. So, internal auditors need to draw support from the different risk analysis technology, such as risk analysis questionnaire or project observation , analyze creatively in order to judge whether management completely identify all the risks of enterprise, and remind the management to consider the missive risk. Without doubt, only depend on one or two methods are unable to identify all the risks faced by enterprises. Therefore, internal auditors must make good use of all kinds of risk identification techniques to confirm whether enterprises' risk recognized on greatest degree or not. [3]

As the most important point in process of risk management, risk identification, demands internal audit department to evaluate the adequacy of identified risk and find out unrecognized risk. Evaluation can focus on the following aspects: firstly, according to the range of risk which confirmed by audit to verify

risk distinguish whether comprehensively. Secondly, all levels of risk classifications whether reasonable. Thirdly, whether scientifically identified controllable risk and uncontrollable risk.

The common methods for engineering project risk identification are that: Delphi method; financial statements analysis; graphical approach; scenarios analysis; project structure decomposition.

4.3 Reasonably assess risk

After the risk identification, internal auditors need to analyze the incidence by different risk for audit results and audited unit. Only by solving this problem can the right method be selected, which dealing with risk based on diverse situations.

In risk assessment activities, as unique independent status of internal auditor make they can assess risk objectively through analyzing risk assumptions and calculation methods, and then, give professional advice. Internal auditors should measure risk results for inspection in order to determine whether appropriately and correct inappropriate results. Matrix assessment, Priority degree evaluation method and AHP are common evaluation methods used for risk assessment. AHP is the most suitable method, testing the potential issues, assessing potential and residual risk for negative issues, analyzing VAR in order to find out maximum losses within a certain period of time and measurement. Enterprises could make foundation for hedge risk in this way.

Risk management policies and procedures established by enterprise should execute strictly. However, with the time elapse, social economic and enterprise internal environment will change; new risk factor will also emerge. Therefore, internal auditors must evaluate and improve regularly the appropriateness of risk management policies and procedures and the effectiveness of implementation in operation appropriately deal with risk.

4.4 Appropriately deal with risk

After the risk assessment, management should decide how to response to risk. The main strategies are terminated, restrain, tolerate and transfer risk.

Terminate risk is actually nonfeasance, whether internal auditors adopt this strategy should consider that, firstly, it may not be possible to avoid a risk; secondly, it is the most economic method; thirdly, another new risks may arise even terminate a risk.

Regarding restrain risk, internal auditors need measure the integrity of internal control design and the effectiveness of implementation in order to decide whether adopt or not. Evaluating risk transfer should clear about advantages and disadvantages of its various forms.

If management determines tolerate risk, there are three conditions can use to judge whether reasonable by internal auditors:(1)the cost of dealing with risk is more than bearing it;(2) a risk of significant losses that may occur can safely bear by themselves;(3)risk can not be transferred to others, or the losses can not be prevented.

4.5 Scientifically control risk

In risk control activities, enterprise limit and reduce risk by designing control procedure, many internal control procedures all designed for this purpose. Internal audit can participate in overall process of risk inspection, find out weak link and critical control point of risk management, control and administer existing risk in the whole process, for that, the potential risk can be avoided by enterprise.

4.6 To communicate risk information timely

Risk management requires that risk information deliver to internal stakeholders timely and effectively in communication link, in favor of taking relevant control measures. Risk communication is a two-way;

according to Evaluation Reporting System, internal auditors can transfer the information correctly.

Internal audit report make board of directors and audit committee realized that whether risk be effective managed. [4] In addition, internal auditors conduct risk monitoring and control prove that enterprises have effective risk management for creditors and other external stakeholders.

4.7 Monitor the risk comprehensively

By means of monitoring operational process of internal control system, evaluating regular inspection results and accidental item processing result, in order to ensure sustained of management. Internal auditors inspect update of internal control system and control new risk by analyzing variation of risk. Then, according to the problems are found and treatment of accidents in follow-up audit by audit management, internal auditors can assess whether the new control measure is useful, the results of the analysis and suggestions will provide for the management in order to improve control measures.

In conclusion, internal audit plays an important role in engineering project risk management. Internal auditors can use their expertise in risk management from an independent and objective position to provide valuable assuring and consulting services, so that enhance the level of engineering enterprise risk management.

5. Measures to promote internal audit to exert better effects in engineering project risk management

5.1 Apply risk-oriented internal audit to engineering project risk management

The key of risk-oriented internal audit is transferring and controlling risk based on the enterprise's risk capacity. The origin of this audit is to provide independent assurance to risk management, guide and improve it when necessary. Audit scope and priorities determined by risk of enterprise faced; meanwhile, fully consider the enterprise's own perception of risk.

Risk-oriented internal audit compared with the traditional internal audit, the advantages are that:(1) The audit work is rooted in the future-oriented risk analysis which pay more attention to the risk and business in the future.(2)Risk monitoring is interactive, instant and continuous.(3) Internal audit methods emphasize confirming the operation risk rather than others.

In the age of comprehensive risk management, as an effective tool combine internal audit and risk management, risk-oriented internal audit will promote internal audit exerting more effectiveness.

5.2 Improving quality of internal auditor and accelerating construction of professionalism

Risk-oriented internal audit requires that internal auditors should not only familiar with accounting or auditing. They should familiar with the whole process of engineering enterprise construction activities. However, a large number of internal auditors in our country are from the accounting or management department. This cannot adapt to other types of audit except financial audit. Internal auditors should train regularly in information, risk management and building operations, etc. Keep up with the pace of knowledge update. [5] In addition, in the special risk assessment, internal audit department can employ professionals in supervision and construction department temporarily; all the people form a work group. It is can accelerate construction of professionalism of internal audit by auditing in this way.

5.3 Positioning correctively objectives of internal audit and strengthening risk awareness

Our country's internal audit mainly emphasizes supervision and evaluation roles. Especially, internal audit of state-owned enterprises not only serves for enterprises but also prevents tax evasion for country, so internal audit department is often in dilemma.[6] Nevertheless, IIA considers that functions of internal

audit are not only confirmation service, but also achieve goals through providing internal consultancy service. The positioning symbolizes that internal audit transforms gradually from “police” giving priority to supervision to “advice assistant” giving priority to consultation.

Therefore, in order to perfect our country’s internal audit to make it exert effects in the whole course of risk management, firstly, internal audit must be “returned” to enterprises in system to make it spare no effort to serve for enterprises thereby increasing enterprise value. Secondly, our country’s internal audit should exceed supervision and evaluation role of internal audit, explore potential of internal audit and carry out various consultancy activities, which can serve better for achieving enterprise’s objectives. Last, our country’s internal audit should learn from internal audit practice and pay close attention to risk and control, which increases values for enterprises.

6. Conclusions

The paper studies related questions of internal audit involving in engineering project risk management, which focus on illustrating specific application of internal audit involved, and combines with elements of ERM framework. Put forward measures to promote internal audit to exert better effects, the author suggest that risk-oriented internal audit should comprehensively applied in engineering enterprise risk management.

Involvement of internal audit in engineering project risk management as a new progress direction of internal audit not only provides opportunities for self-development of internal audit but also gains competitiveness of enterprises in markets, which is a win-win situation. With increasing complexity of enterprise environment, risk management techniques will develop continuously, and simultaneously, internal audit itself and corresponding audit technique will move forward, while involvement of internal audit in study on risk management will have a broader prospect in future. With the development of practice, internal audit need more practitioners to be involved in study so that not only enrich the study on theories on this field, but also improve practicality of findings.

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