Risks and Audit Objectives for IT Outsourcing

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In the recent years, as a result of globalization, internet and IT progress, the outsourcing of IT services has seen an exponential growth. As a result more and more companies decide to outsource, partially or totally, their IT services. Nevertheless, the outsourcing process exposes both clients and service providers to a series of risks that can seriously affect their activities. Managing these risks by improving the quality and efficiency of internal control has made the ITO audit a necessary component for all the companies involved in this process. The goal of this paper is to identify analyze and map the influence areas of ITO risks in order to suggest a series of objectives for ITO audit.
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1 Introduction
Outsourcing is becoming an essential component for most of the businesses today. Globalization of business environment enabled an expansion of outsourcing activities. This new economic context stimulated many companies to reposition themselves into the service sector.

In this respect the development of IT services outsourcing (ITO) has seen a progressive evolution.

The two aspects of global economy influencing the growth of IT outsourcing are: (1) the tendency to relocate productive processes where production factors are less expensive [11]; (2) the growing acceptance of the Internet as a means of communication intra- or inter- organizations [17]. At the end of last century, globally, the IT services outsourcing has become a consolidated industry with an average turn-over of $100 billion [9]. The service range has extended to incorporate both IT traditionally services, and infrastructure operations as:

- software development;
- applications support and maintenance;
- ERP system implementation and customization;
- operations, database, system security and network administration;
- Internet hosting;
- cloud computing service provider.

The IT outsourcing decisions are based on the following factors [4]:

- The IT department effectiveness and efficiency. The management might consider that the IT department is not working properly and might decide to outsource this function to an external provider. The research has shown that there is no direct correlation between the amount of money that a company is spending on IT and its profitability. The IT department must work together with all departments in a company in order to ensure that all IT systems contribute effectively to company's goals.
- The IT department authority within the organization could also impact the outsourcing decision. Generally the head of the IT department resists the outsourcing decision because this will cost his/hers and other employees jobs.
- The financial situation of a company might be considered the driving force behind the outsourcing decisions.
- The way in which IT is perceived by the accounting. If the IT is considered fixed costs, all the other company's departments will perceived these services as being free of charge. The outsourcing might modify these perceptions and might generate some discipline in the IT system evaluation.
- The transference of risk. Many managers believe that if they outsource one or more IT services, they transfer some of the associated risks with these services.
- The company structure might affect the outsourcing decisions.
- Culture, national and organizational, might affect the outsourcing decisions.

IT Outsourcing can generate significant financial and functional advantages for a company. However this decision could imply increased internal and external risks for the organization. These risks occur at the client level as well as at service provider level. ITO risks identification and eval-

uation in addition to the development of control functions to minimize those risks represents the main objective for the management of the companies. In order to assure the proper administration of the client and supplier side and that the system performs at the optimal level, more and more companies use ITO audit.

ITO audit can be defined as an activity of gathering and evaluating samples of client/supplier informational system in order to determine if: contractual terms are clearly defined and complied with; processes and data that are outsourced are secured; legal aspect is considered and complied with; outsourcing decision process complies with organization strategy.

In the second section of this paper we conducted an analytical research of the existing literature regarding ITO audit and ITO risks. In the third section we presented the research methodology. In the fourth part we identify and discussed ITO risks and their determinant factors in the areas of influence. In the fifth part we discussed ITO audit objectives. The last part presents our conclusions based on the research we have conducted.

2 Literature review

The strategic importance of IT services outsourcing activity led the managerial and academic literature to focus upon this subject. The research of IT outsourcing (ITO) has examined multiple aspects of the phenomena, from reasons why organizations outsource, to long-term consequences of outsourcing from both client and supplier perspectives. The main aspects approached are [3]: (1) motivations of IT services outsourcing, (2) the relationships between client and IT services provider, and (3) internal and external factors impacting the decision make process. Summarizing the current research on the importance of ITO risk analysis the following questions may arise:

- What are the risks of IT outsourcing?
- What is the impact of every risk factor?
- How are IT outsourcing risks mitigated?

The literature on ITO risk analysis identifies several risk factors and risk mitigation strategies.

According to Lacity, Khan and Willcocks [16] the most cited paper on ITO risks is written by [8] Earl discusses eleven risks of IT outsourcing: possibility of weak management, inexperienced staff, business uncertainty, outdated technology skills, endemic uncertainty, hidden costs, lack of organizational learning, loss of innovative capacity, dangers of an eternal triangle, technology indivisibility, and fuzzy focus. Considering these

factors the literature discusses several risk mitigation strategies. Some authors analyze risk mitigation on a general level such as: signing short-term contracts [15], engaging multiple suppliers [5], outsourcing standard IT services for which there are many suppliers capable of delivering good services [1], [7], [14], and insourcing highly specific assets [21]. Others outline the risks specific to certain types of outsourcing, such as application service provision or offshore outsourcing.[12] examine specific risks and risk mitigation strategies for application service provision.[19] identifies eighteen risks and risk control mechanisms specific to offshore systems development.

Another approach is to develop specific frameworks for the ITO risk analysis. Thus [12] developed a framework for IT outsourcing risk analysis with "relational due diligence" in risk mitigation. The fuzzy framework for risk assessment developed by [18] could be applied to assess risk of clients as well as service providers. Mathew identifies some key risk indicators in IT outsourcing. These are mapped to an output risk category through a fuzzy inference engine.

Analyzing the current research studies it can be implied that in most of cases the academic research paid more attention to client side issues rather than supplier side in ITO risks.

Regarding the audit and control of IT outsourcing, the academic and managerial literature recommends very few references. Most of the authors reduced their studies to ITO risk analysis. However, there are few authors who managed to cover some aspects of ITO audit [20]. Besides academic research, professional associations had a major impact on studying ITO audit and control. One of the most notable study in this area is "Outsourced IT Environments Audit/Assurance Program" from ISACA (Information Systems Audit and Control Association) [25]. According to ISACA this program was designed and created primarily as an informational resource for audit and assurance professionals. Another study from ISACA, COBIT (Control Objectives for Information Technologies) guide, makes a series of references regarding ITO in the context of organizational internal control [25].

Likewise, IIA (The Institute of Internal Auditors) has made a study regarding ITO in the context of internal audit and control [26]. This study describes how outsourcing activities should be managed by implementing well-defined plans that are supported by a companywide risk, control, compliance, and governance framework. Accord-

ing to IIA this study offers the chief audit executive (CAE), internal auditors, and management information on the types of IT outsourcing activities and the IT outsourcing lifecycle.

3 Research Methodology
Consistent with current research this study analyses the risks and characteristic factors of ITO by grouping them into areas of influence and identifying the ITO audit objectives. This study has a quantitative approach and it is manly bases on previous research on the topic and case studies.

4 IT Outsourcing Risks
The rapid development of IT outsourcing has led recently to a more profound risks analysis regarding ITO. This in-depth analysis has shown a direct correlation between the amount of outsourced IT services and risks to which an organization can be exposed to [10]. Moreover the nature and complexity of these services has a direct influence on ITO risks. Therefore it is very important that IT audit correctly identifies labels and estimates the impact of ITO risks.

Our paper will focus on identifying the most important ITO risks. For a better understanding we will correlate ITO risks with their influencing factors and with their area of influence. As area of influence we denote the client and the service provider or the supplier. This correlation will al-

low us to group the ITO risks in three categories:
- Mixed ITO risks (specific both for the client and supplier).
- Client specific ITO risks.
- Supplier specific ITO risks.

Mixed ITO risks are: violation of contractual terms which will create a conflict between the parties; legal consequences; impossibility to adapt to new technologies.

Client specific ITO risks are: provider's lack of compliance with the contract; unexpected increase in outsourcing costs; losing data privacy for the outsourced services; total dependence / exit barriers.

Supplier specific ITO risks here according to Das Aundhe and Mathew (2009) the risks can be grouped into three categories: project specific, relationship specific and macroeconomic [17]. Project specific risks include risks generated by project delivery. This category covers risks due to (mis)management of schedule and budget, client expectations, requirements capture, knowledge transfer and staffing. Relationship specific risks for service providers include structural changes in an organization, cultural differences and the client's opportunistic behavior. Macroeconomic risks occur due to exchange rate fluctuations and changes in government policies. The table 1 summarizes the existing correlation between ITO risks, areas of influence and influencing factors.

Table 1. ITO risks impacting factors on area of influence

Influence on	ITO Risks	Determinants
Client / Supplier	Violation of contractual terms which will create a conflict between the parties [2], [14]	- Unclear contractual terms regarding roles and responsibilities. - Lack of experience and expertise of the client and/or of the supplier with outsourcing contracts [8] - Insufficient legislation knowledge
Client/Supplier	Legal Consequences [22]	- Change in government policies [6] - Contractual terms
Client/Supplier	Impossibility to adapt to new technologies	- Inability of client's employees to adapt to new technologies. - Implementation failure of supplier's new technologies - Supplier financial stability [8]
Client	Provider's lack of compliance with the contract [10]	- Lack of experience and expertise of the supplier with the activity [8] - Complexity of the outsourced activities - Insufficient understanding of client needs. [6]
Client	Unexpected increase in outsourcing costs [8],[14],[3]	- Lack of experience and expertise of the client with contract management [8],[14] - Lack of experience and expertise of the supplier with the activity [8] - Complexity of the outsourced activities - Transition costs incurred by switching suppliers

		[3]
Client	Losing data privacy for the outsourced services [22]	▪ Unclear contractual terms regarding data privacy ▪ Impossibility for the internal audit to supervise all the functions and processes of the service provider for the outsourced IT services. ▪ Supplier's systems lack of security management.[22]
Client	Total dependence / exit barriers [22]	▪ Small number of suppliers ▪ Asset specificity
Supplier	Inadequate requirements capture [6]	▪ Inadequate communication with the customer ▪ Lack of experience and expertise of the supplier with the activity [8] ▪ Lack of experience and expertise of the client with the activity [8],[14] ▪ Lack of system development technology ▪ Ambiguity in requirements gathering
Supplier	Inadequate staffing	▪ Supplier size [8] ▪ Lack of competent employees
Supplier	Difficulties in client relations	• Changes in client's corporate structure [6] • Engaging with an inexperienced client • Client culture • Client size
Supplier	Supplier locked-in	▪ Client's activity is very specific ▪ The Client owns more than 70% from the supplier's business.

In the context of the presented risks, the auditor must evaluate and quantify as many of these risks as possible. This task should be done regardless of the nature of the internal or external audit.

5 Audit objectives of IT Outsourcing

The literature review has emphasized a considerable discrepancy between ITO risk analysis and ITO audit and control. We consider that efficient and effective risk analysis and risk mitigation strategies can be accomplished only with the support of ITO audit (internal or external). The arguments supporting our statement are: (1) risk management and risk mitigation for a company that has outsourced some or all its IT services must be effectively through appropriate controls; (2) assurance of the compliance with contractual terms and that the services are provided in good conditions; (3) effectiveness of the ITO security management; (4) assurance of the ITO compliance with organization's business strategy.

According with ISACA's the main objectives of the ITO review are to [25]:

▪ Provide management with an independent assessment of the IT outsourcing process relating to the attainment of outsourcing objectives, compliance with the terms and conditions of the outsourcing contract, the accuracy of billing, and successful remediation of issues identified during the execution of

business processes;
▪ Provide management with an evaluation of the internal controls affecting business processes relating to the activities outsourced and internal processes affected by the outsourcing.

ITO has become a very important resource for business worldwide; therefore many governments and professional associations begin to understand the strategic role of this process. This new understanding of ITO processes triggered a series of changes in professional audit standards which specify some audit guideline for all the parties involved in an ITO process. For example AICPA's SAS 70 has become a widely recognized standard and indicates that a supplier has had its control objectives and activities examined by an independent accounting and auditing firm.

At organization level, ITO audit can be included not only in the internal audit process but also in the external audit process. Moreover ITO audit can be extended from client to service provider. Regardless of his/hers position, the auditor must focus on evaluating the particular risks of the audited area and testing the effectiveness and efficiency of deployed controls.

Considering the multitude of ITO risks and the role of IT audit in this process, Table 2 will present the major objectives of ITO audit. For a better understanding we will separate these ob-

jectives in client area and supplier area.

For each of the above mentioned objectives, the auditor may develop a series of questionnaires and work procedures according to the nature and the scope of the audited topic. Several help guides and specific ITO software were developed among the auditor communities such as ISACA's "Outsourced IT Environments Audit/Assurance Program" and IIA's "Global Technology Audit Guide (GTAG) 7: Information Technology Outsourcing".

Table 2. ITO audit objectives

Area	Audit objectives
Client	• Outsourcing decision process • Service provider selection and evaluation • Forecasting outsourcing cost • Outsourcing contract and SLA (Service-Level Agreement) • Budget allocation and execution • Communication with service provider • Reliance on service provider • Monitor provider's service execution and performance • Managing risks in client/service provider relationship • Impact on IT strategy
Supplier	• The analysis of the client requirements in the pre-contractual phase • The outsourcing contract and SLA Service-Level Agreement) • Control tools and system security • Analysis and implementation of client requirements • SDLC Controls • Delivery of services and client satisfaction monitoring • Personnel selection, training and performance monitoring • Client dependency • Change Management

In the context of the present study the most important audit objectives are: the outsourcing contract, the SLA (both client/Supplier area) and the control procedures and system security (supplier area). These three objectives are the most relevant for this study and cover the majority of the possible risks. However, the other objectives should not be ignored since the auditor has to develop its working tool to be compliant with the nature and the scope of the audit mission.

6 Conclusions

The outsourcing of IT services is and will be a major component of business world. The expansion of ITO can be seen as a natural effect of globalization and the exponential growth of internet and IT. Thus more and more companies find financial and functional incentives to outsource, partially or totally, their IT services. However the outsourcing decision exposes the companies to a series of new risks that needs to be analyzed.

The outsourcing related risks can inflict substantial influence on both the client and the service provider activities. Therefore it is very important for both parties to ensure a very solid ITO risk management policy as well as a thorough ITO audit. In this context we consider that the client can have more confidence in a service provider who has been audited by an external IT auditor.

In this paper we tried to identify the major risks associated with the IT outsourcing and to focus the risks analysis on two dimensions: client and service provider. Based on the risks categories that we have identified we tried to present what are the main objectives of an ITO audit so that an auditor could test and evaluate the efficiency and effectiveness of audit controls.

Our goal is to underline the fact that ITO audit has a positive impact on risk mitigation and quality of internal control. Moreover we tried to analyze the nature and the variety of ITO risks in order to suggest a series of objectives for ITO audit.

References

[1] U. Apte, M. Sobol, S. Hanaoka, T. Shimada, T. Saarinen, T. Salmela and A. Vepsalainen, "IS outsourcing practices in the USA, Japan, and Finland: a comparative study," *Journal of Information Technology*, Vol. 12, 1997, pp. 289–304.

[2] B. A. Aubert, M. Patry and S. Rivard, "A Tale of Two Outsourcing Contracts," *Cahier du GreSI*, 97-05, 1997.

[3] J. Barthélemy and D. Geyer, "An empirical investigation of IT outsourcing versus quasi-outsourcing in France and Germany," *Information & Management*, Vol. 42, No. 4, 2005, pp. 533–542.

[4] I. Boldea and C. Brandas, "Some considerations about IT Outsourcing process," *MPRA - Munich Personal RePEC Archive*, 2007.

[5] W. Currie, "Using multiple suppliers to mitigate the risk of IT outsourcing at ICI and Wessex Water," *Journal of Information Technology*, Vol. 13, 1998, pp. 169–180.

[6] Das Aundhe and S. K. Mathew, "Risks in offshore IT outsourcing: A service provider perspective," *European Management Journal*, No. 27, 2009, pp. 418– 428.

[7] L. A. De Loof, "Information systems outsourcing decision making: a framework, organizational theories and case studies," *Journal of Information Technology*, No. 10, 1995, pp. 281–297.

[8] M. Earl, "The risks of outsourcing IT," *Sloan Management Review*, Vol. 37, No. 3, 1996, pp. 26–32.

[9] E. Gelbstein, "Outsourcing," *International Computing Center, United Nations, Encyclopedia of Information Systems*, Vol. 3, 2003.

[10] R. Gonzales, J. Gasco and J. Llopis, "Information systems outsourcing risks: a study of large firms," *Industrial Management & Data Systems*, Vol. 105, No. 1, 2005, pp. 45-62.

[11] R. Heecks et al., "Synching or sinking? Global software outsourcing relationships," *IEEE Software*, Vol. 18, No. 2, 2001, pp. 54-60.

[12] T. Kern and L. P. Willcocks, "The Relationship Advantage," *Information Technologies, Sourcing and Management*, Oxford University Press Inc., New York, 2001.

[13] T. Kern, L. Willcocks and M. Lacity, "Application service provision: risk assessment and risk mitigation", *MIS Quarterly Executive*, Vol. 1, No. 2, 2002, pp. 113–126.

[14] M. Lacity, R. Hirschheim and L. Willcocks, "Realizing outsourcing expectations," *Information Systems Management*, Vol. 11, No. 4, 1994., pp. 7–18.

[15] M. Lacity and L. Willcocks, "An empirical investigation of information technology sourcing practices: lessons from experience," *MIS Quarterly*, Vol. 22, No. 3, 1998, pp. 363–408.

[16] M. C. Lacity, S. A. Khan and L. P. Willcocks, "A review of the IT outsourcing literature: Insights for practice", *Journal of Strategic Information Systems*, no. 18, 2009, pp. 130–146.

[17] N. Marchand H. A. and Jacobsen, "An economic model to study dependencies between independent software vendors and application service providers," *Electronic Commerce Research*, Vol. 1 No. 3, 2001, pp. 315-34.

[18] S. K. Mathew, "Understanding risk in IT outsourcing, a fuzzy framework," *Journal of Information Technology Cases and Application Research (JITCAR)*, Vol. 8, No. 3, 2006.

[19] S. Sakthivel, "Managing risk in offshore systems development," *Communications of the ACM*, Vol. 50, No. 4, pp.60, 69–75.

[20] A. Sayana, "Audit of outsourcing," *Information Systems Control Journal*, Vol. 5, 2004.

[21] B. Watjatrakul, "Determinants of IS sourcing decisions: a comparative study of transaction cost theory and the resource-based view," *Journal of Strategic Information Systems* Vol. 14, 2005 pp. 389–415.

[22] C. Wright, "Top Three Potential Risks With Outsourcing Information Systems," *Information Systems Control Journal*, Vol. 5, 2004.

[23] C. Yang and J. B. Huang, "A decision model for IS outsourcing," *International Journal of Information Management*, Vol. 20, No. 3, 2000, pp. 225-239.

[24] A. Zhaohui Zeng, "A synthetic study of sourcing strategies," *Industrial Management & Data Systems*, Vol. 100, No. 5, 2000, pp. 219-26.

[25] ***, www.isaca.org

[26] ***, www.theiia.org

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