

HOW FINANCIAL AUDITORS USE CAATS AND PERCEIVE ERP SYSTEMS?

Cardoş Vasile-Daniel

Babeş-Bolyai University Cluj-Napoca, Romania

Faculty of Economics and Business Administration

The adoption, implementation and expansion of complex information systems [IS] have an important impact on organizations. To cope with this situation, financial auditors need to use more and more computer-assisted audit techniques [CAATs] especially when auditing organizations with complex information systems such as Enterprise Resource Planning [ERP] in place. In this article we investigate the way Romanian financial auditors use CAATs during their mission and their perception regarding the effects of ERP systems on financial accounting and reporting system evaluation. Results show that even though financial auditors consider that the existence of an ERP system is influencing at least “to a great extent” their ability to evaluate the client’s information system, they are not using CAATs to the same extent.

Keywords: financial auditors, CAATs, ERP

JEL Classification: M42

Introduction

The adoption, implementation and expansion of information technology [IT] enhanced information system [IS] have an important financial and non-financial impact on business functions and their structure within a firm (Chatzoglou and Diamantidis, 2009). It is thought that the use of IT generates competitive advantage but meanwhile exposes organizations to new risks triggered by IT complexity.

Financial auditors need to develop and/or enhance their IT knowledge and skills in order to fulfill their mission as required by their professional standards. During audit planning they have to consider how the client’s characteristics affect systems risk (Bedard *et al.*, 2005) and the possible misstatements (Bell *et al.* 1998). Also, IT complexity affects the nature of audit testing (Javrin *et al.* 2009). To cope with this financial auditors are forced, by their professional standards and the current environment in which they work, to use more and more computer-assisted audit techniques [CAATs] especially when auditing organizations with complex information systems such as Enterprise Resource Planning [ERP] in place.

Enterprise Resource Planning [ERP] systems are generating unique risks due to business-process reengineering and customizations. This triggers control weaknesses which leads to financial statements errors and inaccurate internal information. These issues need to be addressed in the implementation process overcoming the problems arising from improperly trained personnel and inadequate process reengineering efforts (Wright and Wright, 2002).

The main objectives of this article are to investigate the way Romanian financial auditors use CAATs during their mission and perceive the effects of ERP systems on the evaluation of the financial accounting and reporting system. To achieve these objectives we used a questionnaire addressed to financial auditors in which they had to answer the following questions (on a scale ranging from 1 = to small extent to 5 = to a very great extent):

- To what extent are you using computer-assisted audit techniques (CAATs) for the evaluation of the financial accounting and reporting system? and
- To what extent the existence of an ERP system affects the evaluation of the financial accounting and reporting system?

Review of prior literature

The member bodies of the International Federation of Accountants [IFAC] are required to adhere to International Education Standards [IES] and Practice Statements [IEPS] in order to implement generally accepted “good practice in the education and the development of professional accountants” (IFAC, 2009:2). According to IEPS 2 *Information Technology for Professional Accountants* candidates to the profession have to be knowledgeable in CAATs consisting of: accounting packages; professional research tools; analytical tools and pattern matching/recognition (IFAC, 2009:34). Further, International Education Guideline 11 *Information Technology for Professional Accountants*, a precursor for IEPS 2 requires for the professional development of evaluators/auditors of information systems to use CAATs in the planning phase: in order to design effective and efficient verification procedures to meet evaluation objectives; and during system evaluation when performing planned procedures (IFAC, 2003).

Information Systems Audit and Control Association considers that CAATs may be used in performing the following audit procedures:

- „Tests of details of transactions and balances;
- Analytical review procedures;
- Compliance tests of IS general controls;
- Compliance tests of IS application controls;
- Penetration testing” (ISACA, 2008:2).

During the audit plan the auditor should use an appropriate combination of manual techniques and CAATs. The factors that may influence the use of CAATs might be: computer knowledge expertise and experience of the auditor, efficiency and effectiveness of using CAATs over manual techniques; time constraints and level of audit risk (ISACA, 2008).

In the scientific literature there are only a few research papers describing the extent of CAATs use in the audit practice and the factors supporting their use (Curtis *et al.* 2009). Javrin *et al.* (2008a) reported that financial auditors use extensively CAATs for analytical procedures, audit report writing, work paper management and sampling. Also, auditors perceived other audit applications as being important for audit planning, internal control evaluation and risk assessment, but used them less. In another paper Javrin *et al.* (2008b) identified performance expectancy and organizational and technical as factors that influence the auditor’s acceptance of CAATs. They argued that CAATs usage can be increased by developing training programs within audit firms. Curtis and Payne (2008), found that audit firms influence the implementation of new technology by using long-term budgets and by communicating their support and encouragement to auditors. Hermanson *et al.* (2000) investigated the extent to which internal audit departments are using CAATs for: system analysis and documentation; program testing or data integrity testing.

Regarding the ERP influence on the audit mission, Hunton *et al.* (2004) examined the extent to which financial auditor are able to recognize higher risks associated with ERP system in comparison to non-ERP systems and assessed financial auditors’ tendency to consult with specialists when assessing ERP and non-ERP system risks during the planning stage of the audit. They observed that financial auditors “do not indicate a greater need to consult with IT audit specialists when auditing an ERP versus non-ERP system and they are equally confident in the ability of financial audit teams to assess risks in both computing environments” (Hunton *et al.* 2004: 7). They suggest that financial auditors are overconfident in their ability to assess risks in complex systems. In a previous research Hunton *et al.* (2001) found that financial auditors are unlikely to consult with specialists with IS risk management practice in their firm which suggests that potential financial statements errors and audit risks may not be identified.

Method used

This study was supported by the Chamber of Financial Auditors of Romania. A questionnaire was indicated to financial auditors addressing matters related to the perceived importance and their opinion or approach to several IT related activities they should be performing during their engagement. The questionnaire was emailed to 1.520 financial auditors, but due to invalid or wrong email addresses 232 emails were undeliverable. Of the 1.288 valid questionnaires mailed we received 96 answers (answer rate: 7.45%). To improve the answer rate we intend to have a second round of questionnaires sent out.

The questionnaire consisted of three main parts. In the first part, the respondents were asked to answer several questions related to their educational background, both academic and professional. The second part contained questions addressing the auditor’s profile: the type of their main activity; years of experience; number of audit missions completed; the nature of the client organization’s activity. In the third part, respondents were asked to answer seven questions related to: the perceived importance of several IT related activities; the way the identified IT related activities are carried out (by the auditor or by an IT specialists); the extent to which auditors apply analytical procedures or use CAATS during their mission; the extent to which ERP systems affect their ability to evaluate the client’s AIS and the influence of AIS evaluation on the audit opinion (using an interval scale rated from 1 = not important/to a small extent to 5 = very important/ to a very great extent).

Results

The collected data showed that 44 respondents (45,8 percent) stated that the most frequently type of business audited by them is manufacturing, followed by services (19,8 percent) public institutions (11,5 percent) and banking (10,4 percent). The majority of the respondents (52,1 percent) have less than five years of experience, while 40 of them (41,7 percent) have between five and ten years of experience. Because the financial audit profession is still “young” in Romania none of the respondents have more than 15 years of experience.

The first question analyzed in this article was: To what extent are you using computer-assisted audit techniques (CAATs) for the evaluation of the financial accounting and reporting system? For this question the auditors had to choose between: to a small extent = 1; to some extent = 2; to a moderate extent = 3; to a great extent = 4; or to a very great extent = 5. The mean rating (see Table 1) for this question (2.8646) is close to the median value (3) suggesting that, on average, financial auditors use CAATs for the evaluation of financial accounting and reporting system ranging mainly from “to some extent” to “a great extent”. But the mode value (2) suggests that most frequently the respondents chose the “to some extent” option (see Table 2).

The second question analyzed in this article was: To what extent the existence of an ERP system affects the evaluation of the financial accounting and reporting system? (available options: to a small extent = 1; to some extent = 2; to a moderate extent = 3; to a great extent = 4; or to a very great extent = 5. The mean rating (see Table 1) for this question (3.6979) is also close to the median value (4) suggesting that, on average, financial auditors consider that the existence of an ERP system is influencing their ability to evaluate the financial accounting and reporting system “to a great extent” (see Table 2). This is confirmed by the mode value (4).

Table 1. Descriptive statistics

	N	Mean	Median	Mode	Std. Dev.
Use of CAATS	96	2.8646	3.0000	2.00	1.25337
Influence of ERP	96	3.6979	4.0000	4.00	1.01691

Table 2. Frequencies of answers for the two questions analyzed

		Use of CAATs		Influence of ERP	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	To a small extent	15	15.6	4	4.2
	To some extent	27	28.1	7	7.3
	To a moderate extent	20	20.8	23	24.0
	To a great extent	24	25.0	42	43.8
	To a very great extent	10	10.4	20	20.8
Total		96	100.0	96	100.0

From Table 3, presented below, we can see that of the 15 respondents who stated they use CAATs “to a small extent”; a third of them consider that the existence of an ERP system is influencing “to a very great extent” their evaluation of the entity’s information system. From an opposite perspective, of the 42 respondents who considered that the existence of an ERP system is influencing “to a great extent” their ability to evaluate the entity’s information system, 14 stated they use CAATs “to a great extent”, while the same number stated they use CAATs “to some extent”.

Table 3. Cross-tabulation CAATs x ERP

		The influence of ERP					Total
		To a small extent	To some extent	To a moderate extent	To a great extent	To a very great extent	
Use of CAATs	To a small extent	2	3	2	3	5	15
	To some extent	1	0	10	14	2	27
	To a moderate extent	0	2	8	6	4	20
	To a great extent	0	0	3	14	7	24
	To a very great extent	1	2	0	5	2	10
Total		4	7	23	42	20	96

Conclusions

The above analysis suggests that even though financial auditors consider that the existence of an ERP system is influencing at least “to a great extent” their ability to evaluate the client’s information system they are not using CAATs to the same extent. This means that a significant number of auditors still rely on a traditional approach “around the computer”, by using tests of details and analytic procedures rather than “with the computer” by using CAATs, when they evaluate the financial accounting and reporting system or during their overall mission. As technology is constantly evolving auditors will be forced to be knowledgeable and use IT tools and techniques that will allow them to detect misstatements and by this properly changing their audit plan in order to avoid the possibility of issuing an erroneous opinion.

References

1. Bedard J.C., Graham L. and Jackson C. (2005) *Information Systems Risks and Audit Planning*, International Journal of Auditing, 9 (2005), p. 147-163
 2. Bell T.B., Knechel W.R., Payne J.L. and Willingham J.J. (1998) *An Empirical Investigation of the Relationship Between the Computerization of Accounting Systems and the Incidence and Size of Audit Differences*, Auditing. A Journal of Practice & Theory, vol.17, no.1, p.14-38
 3. Chatzoglou P.D. and Diamantidis A.D. (2009) *IT/IS implementation risks and their impact on firm performance*, International Journal of Information Management, 29(2009), p.119-128
 4. Curtis M.B. and Payne E.A. (2008) *An examination of the contextual factors and individual characteristics affecting technology implementation decisions in auditing*, International Journal of Accounting Information Systems, 9 (2008), p.104-121
 5. Curtis M.B., Jenkins J.G., Bedard J.C. and Deis D.R. (2009) *Auditor's Training and Proficiency in Information Systems: A Research Synthesis*, Journal of Information Systems, vol. 23, no. 1, p.79-96
 6. Hermanson D.R., Hill M.C. and Ivancevich D.M. (2000) *Information Technology-Related Activities of Internal Auditors*, Journal of Information Systems, vol.14 suppl., p.39-53
 7. Hunton J., Wright A.M. and Wright S. (2001) *Business and audit risks associated with ERP systems: knowledge differences between information systems audit specialists and financial auditors*, American Accounting Association Midyear Meeting, available on-line at: <http://aaahq.org/audit/midyear/02midyear/papers/ERP.pdf>
 8. Hunton J.E., Wright A.M. and Wright S. (2004) *Are Financial Auditors Overconfident in Their Ability to Assess Risks Associated with Enterprise Resource Planning Systems?* Journal of Information Systems, vol.18, no.2, p.7-28
 9. Information Systems Audit and Control Association (2008) *IS Auditing Guideline G3 Use of Computer-Assisted Audit Techniques (CAATs)*, available on-line at: <http://www.isaca.org/AMTemplate.cfm?Section=Standards, Guidelines, Procedures for IS Auditing&Template=/ContentManagement/ContentDisplay.cfm&ContentID=39261>
 10. Javrin D., Biersbaker J. and Lowe D.J. (2008a) *An Examination of Audit Information Technology Use and Perceived Importance*, Accounting Horizons, vol.22, no.1, p. 1-21
 11. Javrin D., Lowe D.J. and Biersbaker J. (2008b) *Auditor Acceptance of Computer-Assisted Techniques*, available on-line at: https://www.mtc.gov/uploadedFiles/Multistate_Tax_Commission/Audit_Program/Resource/AuditorAcceptance.pdf
 12. Javrin D., Biersbaker J. and Lowe D.J. (2009) *An Investigation of Factors Influencing the Use of Computer-Related Audit Procedures*, Journal of Information Systems, vol.23, no.1 p.97-118
 13. Wright S. and Wright A.M. (2002) *Information System Assurance for Enterprise Resource Planning Systems: Unique Risk Considerations*, Journal of Information Systems, vol.16, supplement, 99-113
 14. * * * International Federation of Accountants [IFAC], (2003), *International Education Guideline 11: Information Technology for Professional Accountants*, available on-line at: <http://web.ifac.org/media/publications/6/ieg11-information-technol/ieg11-information-technol.pdf>
 15. * * * International Federation of Accountants [IFAC], (2009) *International Education Practice Statement 2: Information Technology for Professional Accountants*, available on-line at: <http://web.ifac.org/media/publications/d/handbook-of-international-e/ieps-2-information-techno.pdf>
- * * * Information Systems Audit and Control Association [ISACA], (2008) *IS Auditing Guideline 13 Use of Computer-Assisted Audit Techniques (CAATs)*, available on-line at:

[http://www.isaca.org/AMTemplate.cfm?Section=Standards, Guidelines, Procedures for IS Auditing&Template=/ContentManagement/ContentDisplay.cfm&ContentID=39261](http://www.isaca.org/AMTemplate.cfm?Section=Standards,_Guidelines,_Procedures_for_IS_Auditing&Template=/ContentManagement/ContentDisplay.cfm&ContentID=39261)