CLOUD ACCOUNTING IN JORDANIAN PUBLIC SHAREHOLDING COMPANIES: THE ROLE OF INTERNAL AUDIT

Osama Abdulmunim *

* Faculty of Economics and Administrative Sciences, Jerash University, Jordan
Contact details: Department of Accounting, Jerash University, 26150, Jerash, Jordan

OPEN ACCESS

How to cite this paper: Abdulmunim, O. (2018). Cloud accounting in Jordanian public shareholding companies: The role of internal audit. *Corporate Ownership & Control, 15(4-1),* 158-164. http://doi.org/10.22495/cocv15i4c1p3

ISSN Online: 1810-3057
ISSN Print: 1727-9232

Received: 28.12.2017
Accepted: 09.08.2018

JEL Classification: M4
DOI: 10.22495/cocv15i4c1p3

Abstract

This study showed that in the light of knowledge economy and the emergence of the concept of cloud accounting, it was necessary for the Jordanian public shareholding companies, which aspired to leadership, to develop their regulatory tools. These internal audit tools required the internal auditor to possess the unique element of intellectual capital to keep up with the development of the knowledge economy and the data of cloud accounting, the internal auditor must possess the leading qualities that enable him to keep up with these developments and data and do his work efficiently. Therefore, the present study has analyzed the literature on this profession to try to explain the importance of the possession of the internal auditor of the idea of leadership, which is the strength of observation, the critical ability and the sophisticated thinking of interpreting and linking the phenomena and observations in the organization under the application of cloud accounting mechanisms in the public shareholding companies. This study aimed to focus on the Jordanian contributing companies and how it is hoped to create special sectors of internal auditing and cloud computing that apply the methods and strategies of the cloud accounting with focusing on the necessity of these sectors having the innovative auditing thinking.

Keywords: Intellectual, Cloud Accounting, Internal Auditor, Public Shareholding Companies

1. INTRODUCTION

In recent years, there has been a growing interest in the internal auditing profession by companies in the developed countries. This concern has been manifested in several ways, foremost among which is the increasing interest of companies in the establishment of independent internal audit departments, with the aim of supporting them from all the materialistic and Human resources aspects which allows a butter efficient goals fulfillment Perhaps one of the main reasons for such attention is the separation of management from ownership, the large size of enterprises, and the emergence of multinational companies and international companies. Which led to increased administrative responsibilities, the administration had to establish systems of internal control and internal audit to ensure the smooth functioning and adherence to the policies and instructions of senior management, but recently, because of the revolution in information technology and the emergence of the so-called cloud accounting, which came synonymous with evolution In terms of economic and technological issues of companies and their complexity, the methods and objectives of designing accounting software models and applications have evolved in response to the needs of the users of the financial statements to obtain reliable accounting reports. Online cloud accounting software is embodied in accounting software installed on corporate computers. Where they work through the servers of the Internet, which enables users to access them through their web browsers. Al-zoubi (2017) which means access to information about the company from any place through the Internet connection. Companies should, therefore, have an internal auditor who has creative thinking and skills to understand the nature of the cloud service provided to the company as well as an understanding of the mechanism to perform audits on this service since the purchase process and the direct reason to seek such a service. The internal auditor should also have knowledge of how to develop a special framework to help identify the risks of critical importance to the cloud-based company.

The study attempts to answer the following main question: Is there an intellectual effect of the internal auditor in the pioneering application of the concept of cloud accounting in Jordanian public shareholding companies.

The study aims to:

1. Increasing the companies' knowledge of the concept and the importance of cloud accounting and the impact expected from it when applied to the Jordanian joint stock companies;

2. Concluding about the impact of the internal auditor when applying the system of cloud accounting.

Based on the main question of the study, the hypothesis of the study was centred on the following: "There is no intellectual effect of the internal auditor in the pioneering application of the concept of cloud accounting in Jordanian public shareholding companies".

The study is based on the Analytical Descriptive Approach for the subject of the study. This method is applied to many types of research and studies, especially those dealing with social phenomena. A number of researches and studies published in specialized periodicals and journals were studied, as well as the international and Arab efforts to confront this phenomenon which were subjected to analysis and discussion in order to serve the objectives of this study.

2. LITERATURE REVIEW

Rao, M. et al. 2017 evolved consistently over the past decades, with each new addition and innovation making it even better and challenging while providing satisfaction and convenience to the users. Modern accounting has reached the present stage after undergoing gradual changes over the years; by keeping pace with the fast evolving technological advances. There has been consistent modification and development from manual methods to technological alternatives which have made accounting easier and convenient for users. The recent shift in accounting towards faster technologies has immensely increased its capacity to serve users. The recent trend in accounting: Cloud Accounting is expected to make accounting easily accessible, less expensive and time-saving. Cloud Accounting uses use of cloud-based software through any device having an internet connection.

Tsai and others (2017) aimed to identify the factors that determine the performance of the internal audit in the context of the work environment of the internal auditors. This includes the implementation of Enterprise Risk Management (ERM), the Enterprise Resource Planning (ERP) system, the use of audit programs, and information technology in internal auditing. In order to achieve the objectives of the study, a questionnaire was designed and distributed to the internal auditors of the Taiwan companies, 212 questionnaires were distributed to test the theoretical framework with samples from Taiwan.

Data were analyzed using structural equation model (SEM). One of the main findings of the study was that a full implementation of ERM and the effective implementation of the ERP system had significant implications for the performance of the internal audit. It also highlights the importance of internal audit efficiency in using information technology to improve internal audit performance. The main recommendations of the study are to propose improved internal audit performance through the full implementation of corporate risk management, an effective ERP system, and the competence of the internal auditors' skills in information technology. In addition, investments in the internal auditors' work environment, namely, corporate risk management, ERP and IT efficiency, are noteworthy given their impact on the performance of the internal audit.

Nurhajati (2016) concluded that in the future, cloud computing audits will become increasing. The use of that technology has influenced of the audit process and be a new challenge for both external and the Internal Auditors to understand IT and learn how to use cloud computing and cloud services that hire in cloud service provider (CSP), and considering the risks of cloud computing, and how to audit cloud computing by risk-based audit approach. The wide range of unique risks and depend on the type and model of the cloud solution, the uniqueness of the client environment, and the specifics of data or an application make this a complicated subject. The internal audit function is well positioned through its role as a guarantor function of the organization to assist management and the board of the Committee to identify and consider the risks in using cloud computing technology for internal audit can help determine whether the risk has been managed appropriately in a cloud computing environment. Assesses the current impact of cloud computing technology on the audit process, and discusses the implications of cloud computing future technological trends for the auditing profession. More specifically, provides a summary of how that information technology has impacted the audit framework.

Jelonek & Wyslocka (2015) have broadly demonstrated the threats and barriers associated with cloud accounting, as well as the benefits and prospects of enterprise development and the types of services inherent in using the cloud accounting model. The researcher conducted a survey of the Polish businessmen working in Silesia to learn about the concept of cloud accounting. The results of previous studies were analyzed, discussed and compared with previous studies. The use of cloud computing in accounting has reduced the overall IT management costs. In addition, the use of cloud computing has allowed a large scale to maximize the usage of hardware resources and software. The use of cloud computing leads to increased competitiveness by making computing resources widely available for small enterprises and may not be able to afford adequate infrastructure. This trend also represents the ability to equal opportunities in the overall range. This means that emerging economies have at least created an infrastructure that is broadly documented and broad enough.

Racuciu et al. (2015) aimed at identifying concerns about cloud adoption strategies and providing a context in risk management decision making. There are fears that customers will not be notified if there is a breach of data in a timely manner and there are concerns that cloud service providers do not have the necessary security technology. Companies need to track their own data as they move through cloud technology to ensure their protection and Reduce security risks. The study

recommended that system administrators should cooperate with cloud service providers in order to provide audit trail and accountability, the need to develop an appropriate plan in the event of an attack, the need for an accident and disaster recovery plan with the service provider, companies should allocate resources to monitor business processes and Critical data.

Chou (2015) aimed to demonstrate the challenges facing cloud auditing and the implications of IT auditing and cloud computing. The study said that there are many challenges facing cloud computing such as technological complexity, security risks, lack of cloud computing auditing standards, contractual issues such as service level agreement.

3. DISCUSSION

3.1. Cloud accounting and its origin, concept, benefits and barriers

Operations through the cloud service will push for close cooperation between many service providers as well as increase the possibility of international cooperation on access to diverse information between different companies that promote the internationalization of processes and economic activities (Boomer J., 2016 and Zhygalova, 2013).

On the other hand, the researcher believes that the obstacles facing cloud computing are reflected in the fear of users of the information, that the data stored and transmitted via the Internet will not be used or will not be disclosed in unexpected ways and inappropriate with the original use of them, so companies need to be confident and reassuring service providers about Security information provided. This aspect from the point of view of the researcher is considered one of the most important considerations for business owners who want to take advantage of new solutions. The transfer of data through the internal network (LAN) gave the confidence of business owners to challenge anyone who is not licensed to obtain the private data of any company and this provides the security and reliability of this use from their point of view. (Rao, et al., 2017)

Effective accounting techniques in cloud computing: embodied in the following (Marandertal, 2013; Wyslocka & Jelonek, 2015; Ebenezer et al., 2014):

– Database (for data analysis).

– Expert systems of higher intellectual (help analysis of deviations and risk analysis).

– Neural Network (Prediction Tools).

– Data storage (to provide specific information to users).

– Important decision support programs for the company (help in data analysis and decision support).

– High connection (to improve access to information).

– Digital confirmations and signatures (ongoing audit).

– Artificial intelligence (the possibility of change in reports according to circumstances).

– Synchronization in both search and data analysis (data analysis and decision support).

3.2. Skills required to use new technology (cloud computing)

Cloud computing technology cannot work without human beings so you need IT, professionals, to work more to provide basic business tasks. Therefore, most companies operate some technical elements within the cloud and other elements outside it, which requires creative and fruitful cooperation to manage services between internal and external teams. For example, some companies will need to put some systems on the Internet, and network engineers will also need to solve some management and management problems and meet different challenges. All these elements of IT work will not be mixed into the cloud environment. (Khanom, 2017).

Thus the researcher agrees with (Nurhajati, 2016) that there is a need for new pioneering mindsets that must be available in Jordanian companies to accommodate this type of change also by learning new cloud control methods, such as infrastructure control tools, virtual machine monitors, In which the application is deployed and provided to any cloud provider.

3.3. The internal auditor and cloud accounting system

In reference to the internal audit concept, the Internal Audit Institute (IIA) is an "independent activity that provides objective assurance, a consultative activity designed to add value and improve the Organization's operations, helping it to achieve its objectives, through regulation and organization, Risk management, control systems, and management processes (IIA, 2013: 2)".

While The Basel II Committee considered that internal audit can be defined as: "The effective internal audit function is to provide independent assurance to the Board and senior management on the quality and effectiveness of the Bank's internal control, risk management, and management systems and processes, to assist the Board and senior management to protect its enterprise and reputation (Kolk, 2017). The researcher therefore finds it necessary to have an internal auditor who is intellectually and Eligibly qualified to work in the cloud system. The internal auditor works to help companies' departments in reducing, preventing surprises and avoiding fines. Regulatory and compliance that may have an impact on the corporate reputation, where the internal auditors conduct an assessment of current suppliers, procurement and contracts to identify gaps and errors. (Wadesango et al., 2017).

Five proactive steps can be proposed for internal auditing, which should be taken into account by management in Jordanian joint stock companies when adopting cloud computing initiatives, which are embodied in (Juergens et al., 2014):

1. Engage stakeholders in discussions about the risks and implications of adopting cloud computing.

2. Review the current framework of regulatory risk based on identified cloud risks.

3. Develop risk mitigation strategies to help mitigate the risks associated with cloud computing.

4. Better understanding and review of data management software in the company, which is an essential element in the processing of data in cloud computing.

5. Evaluate providers of cloud services from a risk perspective and the internal audit team within the joint stock company can help the company move to one or more cloud computing models by:

1. Help build a Business Case to move to cloud computing services (Kinkela, 2013).

2. Choose the best cloud computing model. Choose the best service provider.

3. Ensure that the Company continues to comply with previously agreed risk management frameworks.

4. Assist in planning implementation management or transition to cloud computing services models.

5. Develop security frameworks and controls for the new cloud services environment. (Sacer & Oluic, 2013).

6. Monitor the provider of cloud services, security, service performance and all other related issues.

In light of the shift towards global cloud computing, including Jordan, internal auditors need to devise new ways to identify the risks posed by these services and to verify the security, reliability and availability of critical data from the service provider. In turn, internal auditors can advise their companies on how to choose a cloud service provider and prepare for the challenges they may face (Ramachandra, at al., 2017; Sutaryo & Lase, 2015; Maphanga &, Jokonya, 2017).

Thus the researcher agrees with the logic of "The key question for many successful companies around the world is not whether cloud computing should be part of a company's strategy, but when and how," that was asked by Charlie Willis, principal manager of Deloitte & Touche LLP, because in light of the intense pressure from corporate administrations to find and provide solutions, companies may tend to take advantage of cloud services quickly without the risk associated with them. As the third line of defence, the internal auditors with their intellectual competence can help provide an appropriate framework for risk reduction that the company should consider when moving to cloud computing (Deloitte, 2014). The researcher considered them to be the leading creative source in adding additional value to the companies working with them and the possibility of adopting them as a supervisory control centre for the risks resulting from the application of cloud accounting in the Jordanian public shareholding company.

3.4. Areas of use of cloud accounting for internal auditor services

Internal audit has witnessed several developments in recent years in different countries of the world. In the middle of the first decade of the 21st century, corporate commitment to the Sarbanes-Oxley Act increased the demand for many internal auditors and focused on compliance testing and financial controls. Many companies in the world see internal auditing as providing two primary functions: risk reduction and consulting. This view is driven by two fundamental issues: technology enablement and data analytics (Oven, 2015; Gaikwad & Bharatratna, 2014; Drogalas & Siopi, 2017).

By utilizing technology, the internal auditor can contribute to:

1. Cyber-risk: in the United States, the average cost of data breaches is $ 188 per lost or stolen record or an average of $ 5.4 billion per infringing company. It is clear that understanding the risks involved in asset protection and cost containment is the best the CFO can do, as well as an effective risk management program that includes e-learning. From here, the researcher believes that the internal auditor can help the company understand its readiness better through the use of analysis to detect patterns of violations and review internal controls and on a regular basis.

2. Strategic risk: according to a recent study by Deloitte Touche Tohmatsu Limited, strategic risks have become the primary focus, with 81% of the companies surveyed focusing on strategic risk management rather than on traditional (operational, financial, compliance).

3. Investment risk: in a study conducted by Deloitte Touche Tohmatsu Limited, financial managers indicated that more than half of capital expenditure will be allocated to growth and innovation, i.e. 37% and 14%, respectively. The use of traditional audit techniques to indicate whether these projects are successful will support and follow the historical approach, but using visionary models, internal auditors can help improve the prospects for successful project completion on time, meeting specifications, business requirements and within the specified budget (Oven, 2015 and Özdemir, 2015).

3.5. Steps to be taken by the internal auditor to benefit from the applications of cloud accounting

There are many proactive steps to be taken by the internal auditor when adopting cloud computing initiatives:

1. Engage stakeholders in discussions, especially on the implications of cloud computing risks.

2. Review the company's current regulatory risk framework based on identified cloud risks.

3. Develop appropriate mitigation strategies for cloud accounting.

4. Review and understand the corporate governance and data management program (a key element in data processing).

5. Evaluate cloud service providers from a risk perspective.

Failure to ensure adequate security protection when using cloud services can ultimately lead to higher costs and potential losses for businesses and enterprises and thus eliminate any potential benefits of cloud computing.

So the researcher finds that there are steps to be taken to ensure the success of information security in the cloud environment of any joint stock company which are:

1. Ensure the existence and effectiveness of governance and compliance processes: this is done through the establishment and development of policies and procedures to protect the assets and intellectual property of companies, especially in the field of information technology. These policies and procedures are developed based on an analysis of the impact of these assets, as well as the

development of a framework of controls and other risk-reducing measures to be an indicator of implementation and compliance verification, enhancing and improving governance, quality and risk management (Standards Customer Council, 2015; Nest, 2017).

2. Audit operations and businesses: companies must ensure compliance and audit procedures for the IT systems of the service provider by understanding the internal control environment, including risks and controls, to ensure compliance with company and government requirements and policies.

3. Managing people, jobs, and identity: the use of cloud computing means there will be people working with the service provider who has access to company data, as well as company employees who need to do some operations. Therefore, the company must ensure that the cloud service provider can control the access to the data and allow it only by authorized people each according to the authorization assigned to them.

4. Ensure the proper protection of data and information: the security of information and data is the core of the security of information technology for any company, regardless of the form of infrastructure being used. The cloud environment does not change this concept but it brings additional focus to the nature of its infrastructure distribution. Companies should ensure that security considerations are applied to data whether they are in storage or when they are transmitted through any form of communication (Mohamad, 2014).

5. Enforcement of privacy policy: privacy and protection are gaining increasing interest worldwide and often involve laws and regulations relating to the acquisition, storage and use of personally identifiable information (PII). This requires limitations on the ease of use and access to PII, the marking and safekeeping of data, and allowing only authorized persons to access it.

6. Assess the protection of cloud applications: Companies need the proactive protection of their important business applications from internal and external threats throughout their lifecycle from design to implementation to production. This requires clearly defined policies and security measures to ensure the integrity of applications. Companies need to understand the security policy considerations of the applications on which the various cloud computing models are based.

7. Ensure the process of network security: the service provider must allow the flow of legitimate data across the network and prevent the passage or movement of illegal (malicious) information. Therefore, companies should assess the external network controls of the cloud service provider (Dandago & Rufai, 2014).

8. Assessment of security controls on infrastructure and physical facilities: the security of the IT system depends on the infrastructure and physical facilities where companies must obtain confirmations from the cloud service provider about security controls and availability and their presence in the right places (protection against external environmental threats, workers and employees control, security equipment controls).

9. Management of the security aspects of the agreement to provide cloud services: the contract for providing the service involves two elements which are the cloud service provider and the beneficiary of this service (companies). Therefore, the security responsibilities of each party must be clarified through the terms of the contract, including some aspects such as reporting any security breaches.

10.Understanding the security requirements to terminate operations: once the work is completed and the cloud service is used, any copies of the data available to the service provider must be deleted in any stored location including backups, servers and data repositories on the Internet.

3.6. The role of internal audit in improving audit performance under the cloud accounting system

IIA defines internal auditing as an objective and independent evaluation and advisory activity designed to add value and improve corporate operations, helps companies achieve their objectives by providing regular input to assess and improve the effectiveness of risk management oversight and processes involved in the regulatory performance of the company (IIA, 2015).

This definition of internal audit demonstrates its importance as a key pillar in the performance of a company's performance by assessing and improving the effectiveness of risk management in the company, using cloud accounting, and providing assurance on the adequacy and effectiveness of the procedures and controls used.

The researcher believes that the efforts of the internal auditor are considered a fundamental pillar for the benefit of everyone who is related to the performance of the audit in the company so it is clear that the role played by the internal auditors are:

1. Risk assessment and analysis and follow-up of control systems using the cloud accounting system in any company or organization.

2. Accurate examination and verification of adherence to policies, procedures and systems applied in companies.

3. The assertions made by the internal auditor for the Board of Directors, the Audit Committee and the senior management regarding the risks to companies as a result of the use of the cloud system and the extent of their control, and the extent of the strength and effectiveness of the performance of the corporate audit.

4. Make recommendations to improve processes, policies and procedures when there is an appropriate opportunity to improve the oversight performance within any company to improve the efficiency of the cloud system.

5. Provide advisory services related to operational aspects to improve the effectiveness and efficiency of the company's corporate governance processes.

This is to reject the basic hypothesis of the study because there is no intellectual effect of the internal auditor in the leading application of the concept of cloud accounting in the Jordanian public shareholding companies and accept the alternative hypothesis as there is a clear intellectual effect of the internal auditor in the pioneering application of the concept of cloud accounting in Jordanian public shareholding companies.

4. CONCLUSION

Internal auditors of Jordanian shareholding companies and the knowledge economy must meet the challenges of cloud computing when they are integrated into the company's operations for which they are required to provide guarantees. As the cloud service providers are independent, it is essential that internal auditors either audit the cloud computing issues of the service provider or be able to obtain reports on controls being used by the service provider. From a proactive point of view, internal auditors should work with the IT department and other departments that use cloud applications to ensure that the agreements they have with service providers contain an audit requirement or include reporting on the controls used. The internal auditor should be sure to understand the nature of the cloud service provided to the company and to perform audits on this service starting from the purchase process and set the direct reason to seek such a service. A special framework should also be developed to assist in identifying the risks that are of paramount importance to the company and all that can be achieved only after the availability of a set of attributes, attributes and capabilities of the internal audit (intellectual capital), early contact and development of the persuasive powers of the auditor, emphasis on ethical qualities in the practice of the profession, clear understanding, adoption, analysis and evaluation of company or organization strategies, full knowledge of modern information technology, ability to judge and express neutral technical opinion, ability to understand and communicate. As all of this will lead to achieve the professional leadership of internal audit in the fulfilment of the requirements of cloud accounting at the local and global level.

REFERENCES

1. Al-Zoubi, A. M. (2017). The effect of cloud computing on elements of accounting information system. *Global Journal of Management and Business Research: Accounting and Auditing, 17(3),* 1-8.
2. Boomer, J. (2016). *The benefits and challenges of cloud accounting*. Retrieved from the World Wide Web: http://www.cpapracticeadvisor.com/article/11074737/the-benefits-and-challenges-of-cloud-accounting
3. Burke, J. F., & Jameson, S. E. (2015). *A global view of financial services auditing: Challenges, opportunities, and the future.* Retrieved from the World Wide Web: https://www.iia.nl/SiteFiles/Publicaties/ A_Global_View_of_ Financial_Services_Auditing.pdf
4. Campbell, B. (2014). *IT alternatives: Cloud computing – Observations from the front lines.* Retrieved from the World Wide Web: https://www.pwc.com/mt/en/publications.html
5. Chambers, A. D. (2014). New guidance on internal audit-an analysis and appraisal of recent developments. *Managerial Auditing Journal, 29(2),* 196-218. https://doi.org/10.1108/MAJ-08-2013-0925
6. Chou, D. C. (2015). Cloud computing risk and audit issues. *Computer Standards & Interfaces, 42,* 137-142. https://doi.org/10.1016/j.csi.2015.06.005
7. Cloud Standards Customer Council. (2015). *Security for cloud computing ten steps to ensure success.* Retrieved from the World Wide Web: https://toolsynergie.files.wordpress.com/2016/09/cloud-council-10-steps-to-assure-proper-security-for-cloud-computing.pdf
8. Dandago, K. I., & Rufai, A. S. (2014). Information technology and accounting information system in the Nigerian banking industry. *Asian Economic and Financial Review, 4(5),* 655-670. Retrieved from the World Wide Web: http://www.aessweb.com/pdf-files/aefr-2014-4(5)-655-670.pdf
9. Deloitte. (2014). *Cloud computing – What auditors need to know.* Retrieved from the World Wide Web: http://www.ucop.edu/ethics-compliance-audit-services/_files/webinars/10-14-16-cloud-computing/cloudcomputing.pdf
10. Dimitriua, O., & Mateia, M. (2015). Cloud accounting – A new business model in a challenging context. *Procedia Economics and Finance, 32,* 665-671. https://doi.org/10.1016/S2212-5671(15)01447-1
11. Drogalas, G., & Siopi, S. (2017). Risk management and internal audit: Evidence from Greece. *Risk Governance & Control: Financial Markets & Institutions, 7(3),* 104-110. https://doi.org/10.22495/rgcv7i3p10
12. Ebenezer, E. E. S., Omane-Antwi, K. B., & Effah Kyei, M. (2014). Accounting in the cloud: How cloud computing can transform businesses (the Ghanaian perspective). Paper presented at the *Second International Conference on Global Business, Economics, Finance and Social Sciences* (GB14 Chennai Conference), Chennai, India. Retrieved from the World Wide Web: http://globalbizresearch.org/chennai_conference/pdf/pdf/ID_CF440_ Formatted.pdf
13. Gaikwad, B. P. (2014) A critical review on risk of cloud computing in commercial. *International Journal of Innovative Research in Computer and Communication Engineering, 2(5),* 1-8. Retrieved from the World Wide: http://www.ijircce.com/upload/2014/sacaim/1_Paper%201.pdf
14. Gosnell, P. (2017). The challenges of cloud accounting. *Australian Restructuring Insolvency & Turnaround Association Journal, 29(1),* 14-17.
15. Juergens, M., Wasti, K., & Wasti, K. (2014). *Will risk rain on your move to the cloud? The role of internal audit in the digital enterprise.* Retrieved from the World Wide Web: http://deloitte.wsj.com/cfo/files/2014/07/ internal_audit_cloud.pdf
16. Kavis, M. J. (2014). *Architecting the cloud: Design decisions for cloud computing service models (SaaS, PaaS, and IaaS)* (1st ed.). Hoboken, NY: John Wiley & Sons.
17. Khanom, T. (2017). Cloud accounting: A theoretical overview. *IOSR Journal of Business and Management (IOSR-JBM), 19(6),* 31-38. https://doi.org/10.9790/487X-1906053138
18. Kinkela, K. (2013). *Practical and ethical considerations on the use of cloud computing in accounting.* Retrieved from the World Wide Web: http://www.aabri.com/copyright.html
19. Kolk, K. (2017). *The role of auditors and information technology* (Master's thesis in economics, specialization: Accounting & Control, Radboud University Nijmegen, School van Management). Retrieved from the World Wide Web: https://theses.ubn.ru.nl/bitstream/handle/123456789/4414/Kolk%2C_Kirsten_1.pdf?sequence=1
20. Maphanga, G.C., & Jokonya, O. (2017). The risk of users' negative behaviours influence on information security compliance policy in organizations. *Risk Governance and Control: Financial Markets & Institutions, 7(4),* 30-40. http://doi.org/10.22495/rgc7i4art4
21. Marand, A. A., Marand, E. A., & Dashtebayaz, M. L. (2013). Investigating the effects of cloud computing on accounting and its comparison with traditional models. *Advances in Environmental Biology, 7(10),* 2836-2846. Retrieved from the World Wide Web: http://www.aensiweb.com/old/aeb/2013/2836-2846.pdf

22. Mohamad, S., Hendrick, M., O'Leary, C., & Best, P. (2014). Developing a model to evaluate the information technology competence of boards of directors. *Corporate Ownership & Control, 12(1),* 63-74. http://doi.org/10.22495/cocv12i1p4
23. Nurhajati, Y. (2016). The impact of cloud computing technology on the audit process and the audit profession. *International Journal of Scientific & Technology Research, 5(08),* 1-9. Retrieved from the World Wide Web: http://www.ijstr.org/final-print/aug2016/The-Impact-Of-Cloud-Computing-Technology-On-The-Audit-Process-And-The-Audit-Profession.pdf
24. Oven, C., Pundmann, S., &White, N. (2015). *CFO insights: Can internal audit be a command center for risk?* Retrieved from the World Wide Web: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/finance/us-cfo-internal-audit-041014.pdf
25. Özdemir, S., & Elitaş, C. (2015) The risks of cloud computing in accounting field and the solution offers: The case of Turkey. *Journal of Business Research Turkey, 7(1),* 43-59. Retrieved from the World Wide Web: http://isarder.org/isardercom/2015vol7issue1/vol.7_issue.1_article03_full_text.pdf
26. Pacurari, D., & Nechita, E. (2013). Some considerations on cloud accounting. *Studies and Scientific Researches. Economics Edition, 18,* 193-198. http://dx.doi.org/10.29358/sceco.v0i18.227
27. Prichici, C., & Ionescu, B. Ş. (2015). Cloud accounting – A new paradigm of accounting policies. *SEA-Practical Application of Science, 3(7),* 489-496. Retrieved from the World Wide Web: http://seaopenresearch.eu/Journals/articles/SPAS_7_71.pdf
28. Racuciu, C., & Eftimi, S. (2015). Security threats and risks in cloud computing. *"Mircea cel Batran" Naval Academy Scientific Bulletin, 18(1),* 105-108. Retrieved from the World Wide Web: https://www.anmb.ro/buletinstiintific/buletine/2015_Issue1/NMS/105-108.pdf
29. Ramachandra, G., Iftikhar, M., & Khan, F. A. (2017). A comprehensive survey on security in cloud computing. *Procedia Computer Science, 110,* 465-472. https://doi.org/10.1016/j.procs.2017.06.124
30. Rao, M. T., Jyotsna, T. G., & Sivani, M. A. (2017). Impact of cloud accounting: Accounting professional's perspective. *IOSR Journal of Business and Management (IOSR-JBM), 7(11),* 53-59. Retrieved from the World Wide Web: http://www.iosrjournals.org/iosr-jbm/papers/Conf.17037-2017/Volume-7/11.%2053-59.pdf
31. Sačer, I. M., & Oluić, A. (2013). Information technology and accounting information systems quality in Croatian middle and large companies. *Journal of Information and Organizational Sciences, 37(2),* 117-126. Retrieved from the World Wide Web: https://jios.foi.hr/index.php/jios/article/view/820/694
32. Sutaryo, S., & Lase, Y. (2015). Auditors characteristics and audit delay: Evidence from Indonesian regional governments. *Corporate Ownership & Control, 13(1),* 66-73. http://dx.doi.org/10.22495/cocv13i1p7
33. The Institute of Internal Auditors (IIA). (2013). *Certified internal auditor (CIA).* Retrieved from the World Wide Web: www.theila.org.
34. The Institute of Internal Auditors (IIA). (2015). *Global Technology Audit Guide (GTAG) 3: Coordinating continuous auditing and monitoring to provide continuous assurance* (2nd ed.). Retrieved from the World Wide Web: https://na.theiia.org
35. Van der Nest, D. P., Smidt, L., & Lubbe, D. (2017). The use of generalised audit software by internal audit functions in a developing country: A maturity level assessment. *Risk Governance and Control: Financial Markets & Institutions, 7(4-2),* 189-202. http://doi.org/10.22495/rgc7i4c2art2
36. Wadesango, N., Mhaka, C., & Wadesango, V. O. (2017). Contribution of enterprise risk management and internal audit function towards quality of financial reporting in universities in a developing country. *Risk governance & control: financial markets & institutions, 7(2-1),* 170-176. http://dx.doi.org/10.22495/rgcv7i2c1p5
37. Wyslocka, E. & Jelonek, D. (2015). Accounting in the cloud computing. *The Online Journal of Science and Technology, 5(4),* 1-11. Retrieved from the World Wide Web: https://www.tojsat.net/journals/tojsat/articles/v05i04/v05i04-01.pdf
38. Zhygalova, A. (2013). *Perceived value of cloud based information systems. Case: Accounting information systems* (Master's thesis, Aalto University). Retrieved from the World Wide Web: https://pdfs.semanticscholar.org/b1ce/d70ef1db6448a36e2fd018f381d577791d6a.pdf