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Digitization Technologies and Contributions to Companies towards Accounting and Auditing Practices

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ABSTRACT
The purpose of this study is to examine the development of digital technology, including blockchain technology, cloud computing and big data contributing to companies, as well as accounting and auditing practices. The study method uses a systematic literature review (SLR) with a bibliometric approach. The results of the study show that the consistent use of blockchain technology, cloud computing and big data has contributed to increasing organizational effectiveness and efficiency, but the problem of high costs, as well as data security and confidentiality are the most important issues in using these three digital technologies.

INTRODUCTION

The existence of digital technology contributes to the company's strategic and competitive achievements, it also influences innovation, implementation and changes in the company's business model (Nambisan et al., 2019; Teece, 2018). In addition, digital technology innovations contribute to the implementation of accounting information systems (AIS) and management control systems (MCS) in the public and private sectors (Agostino et al., 2021; Mancini et al., 2017). However, on the other hand, it is estimated that the increasing use of automated digital technology will have major consequences for a number of professions in the future (Frey & Osborne, 2017), this estimate reinforces the emergence of the assumption of "technological unemployment" if there is no intervention by the government (Joon et al., 2017). This study aims to examine the development of digital technology, including blockchain technology, cloud computing and big data contributing to companies, as well as accounting and auditing practices.

METHODS

Based on the formulation of the problem of this study, the researcher used a systematic literature review (SLR) with a bibliometric approach. Bibliometric analysis is used to see research trends and measure research progress by evaluating articles.

RESULTS

From the results of a systematic literature review (SLR) analysis using a bibliometric approach, the contributions and limitations of applying block chain technology, cloud computing and big data to companies, as well as accounting and auditing practices, are as follows.

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Table 1. Contributions and limitations of blockchain technology, cloud computing and big data

Digital Technology	Contributions and Limitations	Writer
Blockchains	Contribution:	
	Assist auditors and accountants on financial reports	(Cai & Zhu, 2016; Schmitz & Leoni, 2019; Secinaro & Mas, 2022)
	Efficient and effective and the safest platform for storing and processing data	(Shetty et al., 2022)
	Limitations:	
	Changes in cryptocurrency and bitcoin transaction management have implications for financial accounting and management accounting.	(Lardo et al., 2022; Xu et al., 2019)
	Data confidentiality and cyber security	(Bons & Bednárová, 2019; Guo & Liang, 2016; Jun, 2018; Secinaro & Mas, 2022; Xu et al., 2019)
Cloud computing	Contribution:	
	Cost savings and space effectiveness	(Okai et al., 2014)
	Increase data availability	(Abubakar et al., 2014; Ting & Liu, 2020)
	Limitations:	
	Cloud fees and hidden fees from cloud service providers	(Cegielski et al., 2012; Chang et al., 2019; Walterbusch et al., 2013)
	Cyber security	(Aleem & Sprott, 2013; Cegielski et al., 2012)
	Insufficient knowledge	(Aydin, 2021)
	Adapts to old applications	(Ramchand et al., 2021; Sastararuji et al., 2022)
Big data	Contribution:	
	Company performance	(Shabbir et al., 2020)
	provide valuable services to customers, manage potential risks, identify irregular activities, and build efficient business models	(Nobanee et al., 2021)
	Auditing	(Castka et al., 2020; Cockcroft, 2018; Gepp et al., 2018; Hasan et al., 2020)
	Accountancy	(Rezaee & Wang, 2018)
	Machine learning	(Hasan et al., 2020; Nissim, 2022)
	Limitations:	
	Security and confidentiality as well as data quality	(Nobanee et al., 2021; Rafiq et al., 2022; Rezaee & Wang, 2018; Torre et al., 2018)
	Conflict between units	(Andreassen, 2020)

The existence of blockchain technology has a positive contribution to auditors and accountants, where hybrid blockchain technology will maintain the confidentiality of company information, help auditors and accountants to handle customer information, while guaranteeing the innovation of the auditor and accountant profession (Secinaro & Mas, 2022), blockchain technology is very effective in preventing information fraud (Cai & Zhu, 2016) and block chain technology can improve the efficiency of recording, reconciliation and auditing of accounting data, and at the same time accountants and auditors can save costs and time for carrying out tasks and reduce the risk of human error (Schmitz & Leoni, 2019), the speed with which blockchain technology generates information, is considered to be an efficient and effective and secure platform for storing and processing data (Shetty et al., 2022), on the other hand blockchain technology raises problems of cryptocurrency and bitcoin transactions which have implications for financial accounting and management accounting, so that process management is needed to change the business model, cryptocurrency has an impact on new transactions on financial statements, so the IASB issues special standards regarding cryptocurrency (Lardo et al., 2022; Xu et al., 2019), and potential bottlenecks of blockchain chain technology due to the lack of adequate guarantees about data confidentiality and cyber security (Bons & Bednárová, 2019; Guo & Liang, 2016; Jun, 2018; Secinaro & Mas, 2022; Xu et al., 2019).

Digital technology creates an unavoidable development of cloud technology (Aleem & Sprott, 2013), so it takes an institutional role through top management to implement cloud computing technology (Adjei et al., 2021; Kumar et al., 2017). Studies (Ting & Liu, 2020) the implementation of a modern accounting data analysis platform based on cloud computing technology can improve the statistical analysis of accounting data, and the cloud computing technology platform provides certainty of the availability of information technology data (Abubakar et al., 2014). The use of cloud computing technology can save costs and reduce data storage space (Okai et al., 2014), but the delay in adopting cloud computing technology is due to the high cost of making cloud (Cegielski et al., 2012; Chang et al., 2019), hidden costs from cloud service providers so that there are additional costs for using cloud computing services (Walterbusch et al., 2013), security problems from organized cyber in cyberspace (Aleem & Sprott, 2013; Cegielski et al., 2012), inadequate knowledge for the use of cloud computing technology (Aydin, 2021), as well as, the issue of migrating from legacy apps to unsuitable cloud platforms (Ramchand et al., 2021; Sastararuji et al., 2022).

Study of literature (Cockcroft, 2018) shows the development of the use of big data in industrial areas, such as the service industry, the banking and financial industry, and also, the development of big data analyzing customers, then, trade signals and fraud prevention. The development of big data is because it is useful for companies as an important tool for managing large volumes of business data, providing valuable services to customers, managing potential risks, identifying irregular activities, and building efficient business models (Nobanee et al., 2021). Big data in the financial industry contributes to real-time understanding of the stock market through trade and investment changes, fraud detection and prevention, accurate risk analysis through machine knowledge processes (Hasan et al., 2020), so that big data has implications for improving organizational performance (Shabbir et al., 2020). Big data has contributed to improving the quality of audit practices (Cockcroft, 2018; Gepp et al., 2018; Hasan et al., 2020). Auditing combined with technology will provide significant improvements in reliability/correctness and timeliness for social and environmental audits (SEA), closing important knowledge gaps and better informing decisions, where decisions are made based on audit conclusions (Castka et al., 2020). However, in the application of big data there are still several problems which are important issues, including security of confidentiality and inadequate data quality (Nobanee et al., 2021; Rafiq et al., 2022; Rezaee & Wang, 2018; Torre et al., 2018) and studies (Andreassen, 2020) found evidence that the application of big data and digital technology contributed to changes in the role and identity of heterogeneous management accountants as a competing profession.

CONCLUSION

Blockchain technology has a contribution to companies, as well as accountants and auditors, for companies, blockchain technology provides efficiency and effectiveness as well as the safest platform for storing and processing financial and non-financial data, and assists auditors and accountants in carrying out their professional services. The main problem with blockchain technology is that there is no adequate guarantee regarding data confidentiality and cybersecurity.

For companies, cloud computing technology provides certainty of the availability of information technology data, and provides benefits in the form of cost savings and reduced data storage space, but the main obstacles to the adoption of cloud computing technology are high costs, data security problems, low knowledge about cloud computing technology, and migration to unsuitable cloud computing applications.

Big data has a contribution for companies to establish customer-based strategies, big data can manage potential risks, identify fraudulent activities, and build efficient business models, but the main problem with using big data is security from confidentiality and inadequate data quality.

REFERENCES

Abubakar, A. ., Bass, J. M., & Allison, I. (2014). Cloud Computing Adoption Issues for Sub-Saharan African SMEs. *The Electronic Journal of Information Systems in Developing Countries*, *62*(1), 1–17.

Adjei, J. K., Adams, S., & Mamattah, L. (2021). Technology in Society Cloud computing adoption in Ghana ; accounting for institutional factors. *Technology in Society*, *65*(April), 101583. https://doi.org/10.1016/j.techsoc.2021.101583

Agostino, D., Saliterer, I., & Steccolini, I. (2021). Digitalization, accounting and accountability: A literature review and reflections on future research in public services. *Financial Accountability &Management*, *38*,

152–176. https://doi.org/10.1111/faam.12301
Aleem, A., & Sprott, C. R. (2013). Let me in the cloud: analysis of the benefit and risk assessment of cloud platform. *Journal of Financial Crime*, *20*(1), 6–24.
Andreassen, R. I. (2020). Digital technology and changing roles: a management accountant's dream or nightmare? *Journal of Management Control*, *31*(3), 209–238. https://doi.org/10.1007/s00187-020-00303-2
Aydin, H. (2021). A Study of Cloud Computing Adoption in Universities as a Guideline to Cloud Migration. *SAGE Open*, *11*(3), 1–14. https://doi.org/10.1177/21582440211030280
Bons, E., & Bednárová, M. (2019). Blockchain and its implications for accounting and auditing implications. *Meditari Accountancy Research*, *27*(5), 725–740. https://doi.org/10.1108/MEDAR-11-2018-0406
Cai, Y., & Zhu, D. (2016). Fraud detections for online businesses : a perspective from blockchain technology. *Financial Innovation*, *2*(20), 1–10. https://doi.org/10.1186/s40854-016-0039-4
Castka, P., Searcy, C., & Mohr, J. (2020). Technology-enhanced auditing : Improving veracity and timeliness in social and environmental audits of supply chains. *Journal of Cleaner Production*, *258*(April 2013), 120773. https://doi.org/10.1016/j.jclepro.2020.120773
Cegielski, C. G., Jones-farmer, L. A., Wu, Y., Hazen, B. T., Cegielski, C. G., Jones-farmer, L. A., Wu, Y., & Hazen, B. T. (2012). Adoption of cloud computing technologies in supply chains: An organizational information processing theory approach. *The International Journal of Logistics Management*, *23*(2), 184–211. https://doi.org/10.1108/09574091211265350
Chang, Y., Hu, P.-Y., Huang, S.-H., & Chen, J. (2019). Determinants of switching intention to cloud computing in large enterprises. *Data Technologies and Applications*, *54*(1), 16–33. https://doi.org/10.1108/DTA-12-2018-0104
Cockcroft, S. (2018). Big Data Opportunities for Accounting and Finance Practice and Research. *Australasian Accounting Review*, 1–11. https://doi.org/10.1111/auar.12218
Frey, C. B., & Osborne, M. A. (2017). Technological Forecasting & Social Change The future of employment : How susceptible are jobs to computerisation ? ☙. *Technological Forecasting & Social Change*, *114*, 254–280. https://doi.org/10.1016/j.techfore.2016.08.019
Gepp, A., Linnenluecke, M. K., Neill, T. J. O., & Smith, T. (2018). Big data techniques in auditing research and practice : Current trends and future opportunities. *Journal of Accounting Literature*, *40*(May 2017), 102–115. https://doi.org/10.1016/j.acclit.2017.05.003
Guo, Y., & Liang, C. (2016). Blockchain application and outlook in the banking industry. *Financial Innovation*, *2*(24), 1–12. https://doi.org/10.1186/s40854-016-0034-9
Hasan, M., Popp, J., & Oláh, J. (2020). Current landscape and influence of big data on finance. *Journal of Big Data*. https://doi.org/10.1186/s40537-020-00291-z
Joon, Y., Kim, K., & Lee, S. (2017). The rise of technological unemployment and its implications on the future macroeconomic landscape. *Futures*, *87*, 1–9. https://doi.org/10.1016/j.futures.2017.01.003
Jun, M. (2018). Blockchain government - a next form of infrastructure for the twenty-first century. *Journal of Open Innovation: Technology, Market, and Complexity*, *4*(7), 1–12. https://doi.org/10.1186/s40852-018-0086-3
Kumar, D., Samalia, H. V., & Verma, P. (2017). Exploring suitability of cloud computing for small and medium-sized enterprises in India. *Journal of Small Business and Enterprise Development*, *24*(4), 814–832. https://doi.org/10.1108/JSBED-01-2017-0002
Lardo, A., Corsi, K., Varma, A., & Mancini, D. (2022). Exploring blockchain in the accounting domain: a bibliometric analysis. *Accounting, Auditing & Accountability Journal*, *35*(9), 204–233. https://doi.org/10.1108/AAAJ-10-2020-4995
Mancini, D., Lamboglia, R., Castellano, N. G., & Corsi, K. (2017). Trends of digital innovation applied to accounting information and management control systems. *Lecture Notes in Information Systems and Organisation*, *20*, 1–19. https://doi.org/10.1007/978-3-319-49538-5_1
Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy*, *48*(8), 103773. https://doi.org/10.1016/j.respol.2019.03.018
Nissim, D. (2022). Big data , accounting information , and valuation. *The Journal of Finance and Data Science*, *8*, 69–85. https://doi.org/10.1016/j.jfds.2022.04.003
Nobanee, H., Dilshad, M. N., Dhanhani, M. Al, Neyadi, M. Al, Qubaisi, S. Al, & Shamsi, S. Al. (2021). Big Data Applications the Banking Sector : A Bibliometric Analysis Approach. *SAGE Open*, *11*(4), 1–18. https://doi.org/10.1177/21582440211067234
Okai, S., Uddin, M., Arshad, A., & Alsaqour, R. (2014). Cloud Computing Adoption Model for Universities to Increase ICT Proficiency. *SAGE Open*, *4*(3), 1–10. https://doi.org/10.1177/2158244014546461
Rafiq, F., Awan, M. J., Yasin, A., Nobanee, H., Zain, A. M., & Bahaj, S. A. (2022). Privacy Prevention of Big

Data Applications: A Systematic Literature Review. *SAGE Open*, *12*(2), 1–22. https://doi.org/10.1177/21582440221096445

Ramchand, K., Baruwal Chhetri, M., & Kowalczyk, R. (2021). Enterprise adoption of cloud computing with application portfolio profiling and application portfolio assessment. *Journal of Cloud Computing*, *10*(1), 1–18. https://doi.org/10.1186/s13677-020-00210-w

Rezaee, Z., & Wang, J. (2018). Relevance of big data to forensic accounting practice and education. *Managerial Auditing Journal, 34*(3), 268–288. https://doi.org/10.1108/MAJ-08-2017-1633

Sastararuji, D., Hoonsopon, D., Pitchayadol, P., & Chiwamit, P. (2022). Cloud accounting adoption in Thai SMEs amid the COVID - 19 pandemic : an explanatory case study. *Journal of Innovation and Entrepreneurship*. https://doi.org/10.1186/s13731-022-00234-3

Schmitz, J., & Leoni, G. (2019). Accounting and Auditing at the Time of Blockchain Technology: A Research Agenda. *Australian Accounting Review*, 1–12. https://doi.org/10.1111/auar.12286

Secinaro, S., & Mas, F. D. (2022). Blockchain in the accounting , auditing and accountability fields : a bibliometric and coding analysis. *Accounting, Auditing & Accountability Journal*, *35*(9), 168–203. https://doi.org/10.1108/AAAJ-10-2020-4987

Shabbir, M. Q., Babar, S., & Gardezi, W. (2020). Application of big data analytics and organizational performance : the mediating role of knowledge management practices. *Journal of Big Data*. https://doi.org/10.1186/s40537-020-00317-6

Shetty, A., Shetty, A. D., Pai, R. Y., Rao, R. R., Bhandary, R., Shetty, J., Nayak, S., Dinesh, T. K., & Dsouza, K. J. (2022). Block Chain Application in Insurance Services : A Systematic Review of the Evidence. *SAGE Open*, *12*(1), 1–15. https://doi.org/10.1177/21582440221079877

Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, *51*(1), 40–49. https://doi.org/10.1016/j.lrp.2017.06.007

Ting, W., & Liu, Y. (2020). Design and implementation of intelligent accounting data analysis platform based on industrial cloud computing. *EURASIP Journal on Wireless Communications and Networking*, *28*, 1–8.

Torre, M. La, Botes, V. L., Dumay, J., Rea, M. A., Odendaal, E., Torre, M. La, Botes, V. L., Dumay, J., Rea, M. A., Odendaal, E., & Torre, M. La. (2018). The fall and rise of intellectual capital accounting new prospects from the Big Data revolution. *Meditari Accountancy Research*, *26*(3), 381–399. https://doi.org/10.1108/MEDAR-05-2018-0344

Walterbusch, M., Martens, B., & Teuteberg, F. (2013). Evaluating cloud computing services from a total cost of ownership perspective. *Management Research Review*, *36*(6), 613–638. https://doi.org/10.1108/01409171311325769

Xu, M., Chen, X., & Kou, G. (2019). A systematic review of blockchain. *Financial Innovation*, *5*(27), 1–14.