

Accounting in the Era of Industrial Revolution 4.0: The Shift from Traditional to Cloud-Based Practices

*Raja Nazima Raja Ahmad¹, Nurulhuda Aziz¹, Nor Kartini Mohd Rodzi²

¹Department of Commerce, Politeknik Port Dickson

²Faculty of Accountancy, Universiti Teknologi MARA Cawangan Perlis

*Corresponding author: nazima@polipd.edu.my



Introduction

Traditional accounting practices have given way to more contemporary ones in the business world due to advancements brought by the Fourth Industrial Revolution (IR 4.0). The utilization of internet-based cloud computing to enhance e-accounting services is a key component of IR 4.0 (Zuria & Hartini, 2022). E-accounting applications enable users to access financial data anytime and from any location. As data consumption has increased, cloud computing has emerged, allowing people and businesses to use their resources without being constrained by storage capacity on mobile devices. Cloud computing offers various features to customers, including the ability to store data in the cloud and access it from anywhere (Dineswaran & Elankovan, 2024). Additionally, cloud computing offers a more affordable and predictable cost, thus can save business from investing in expensive hardware and IT infrastructure. (Mishra, 2024).

Cloud computing is considered a transformative force in modern accounting, revolutionizing the way financial data is managed, processed, and analysed. According to research conducted by Ali et al. (2023), the demand for cloud services has increased due to the COVID-19 pandemic. During that period, most companies accelerated their adoption of digital technologies to respond to emerging challenges. There was a sharp increase in cloud usage during the COVID-19 pandemic, and companies needed to undergo digital transformation to remain relevant in the evolving business landscape (Zuria & Hartini, 2022). This transformation involves integrating digital technology into all areas of a business, fundamentally changing how operations are conducted and how value is delivered to customers. As business organizations navigate this shift, they must also prioritize safety measures to protect sensitive data and maintain customer trust (Kouatli, 2016).

Large organizations, government agencies, and small and medium-sized businesses (SMEs) extensively use cloud computing. This aligns with Malaysia's goal to develop into a high-tech country by 2030 (Nurul Suhaidi, 2023). Cloud computing industry is projected to grow to RM16.86 billion with a 13% compounded annual growth rate by 2024, which seeks to make Malaysia a high-tech country that leads in automation, robotics, big data analytics, artificial intelligence, and the Internet of Things by 2030. The adoption of cloud computing is crucial to the growth of smart cities and digital transformation.

According to Mohd Fairuz et al. (2020), cloud computing is a technology infrastructure used in modern accounting practices where a specific corporate entity owns all associated data. There is no direct ownership or management relationship with the responsible entity that enters the accounting data into the cloud. In addition, cloud accounting, also known as cloud-based accounting, uses cloud technological infrastructure to store, manage, and process a business's financial data (Hamzah et al. 2023). In essence, cloud accounting integrates cloud computing and accounting software, enabling businesses to view their financial information from any location. This accessibility allows for greater collaboration among team members and facilitates real-time updates, ensuring that businesses can make informed decisions swiftly. As a result, business organizations can enhance their financial management practices while benefiting from the scalability and efficiency that cloud computing offers.

Traditional Accounting Vs Cloud Accounting

Despite sharing the same fundamental accounting rules and guidelines, cloud accounting and traditional accounting differ in the tools and technologies they employ (Watkins, 2020). The term "traditional accounting" refers to the use of software that is either hosted by a provider or installed on-site. Its effectiveness is limited by the reliance on locally installed software, which often requires vendor intervention for troubleshooting or updates. Furthermore, handling financial transactions using traditional accounting necessitates more accountants, which raises overhead expenses, especially when urgent tasks demand extended working hours. According to Whitmire (2018), traditional accounting systems lack adaptability, making it difficult for businesses and accounting departments to integrate their software with a broader selection of applications. The software is only accessible from the machine on which it is installed, not via other networks or devices. This limitation can hinder collaboration and data sharing, making it difficult for teams to work efficiently across different locations. As businesses evolve, the need for more flexible and accessible accounting solutions becomes increasingly critical.

The main difference between traditional accounting and cloud accounting lies in the tools that are used to record transactions (accounting and financial data) as noted by Atadoga et al. (2024). The business maintains its books using primary data storage, which is the computer itself. Even when using the internet, this storage functions independently by providing offline access and control over data security and storage. However, this independence can also lead to challenges, such as limited accessibility and difficulties in collaboration among team members. In contrast, cloud accounting offers real-time access to financial data from any location, fostering greater flexibility and enhanced teamwork.

On the other hand, cloud accounting stores data and software on remote servers, typically managed by third-party IT providers (Sobhan, 2019). This implies that businesses using cloud accounting must keep direct control over the data's physical storage. Instead, accountants must rely on the IT company to ensure the security and accessibility of the data. These systems require an internet connection but also enable real-time updates and remote accessibility. This is a significant advantage in today's increasingly digital and mobile business environment. Despite these differences in data storage and access, both types of software, traditional accounting and cloud accounting, perform similar functions.

Conclusion

In the rapid digitalization era, accounting is increasingly adopting cloud computing. Cloud technology catalyzes the digital transformation journey of businesses and economic situations offering significant benefits such as more flexibility, reduced costs, and enhanced security. Despite the numerous benefits of using this technology, some organizations are still wary of it

due to cybersecurity threats, a lack of awareness of the benefits of cloud computing, and a lack of control over financial data. However, the advantages of integrating cloud technology into accounting practices far outweigh these challenges. Cloud accounting also benefits organizations, such as reducing organizational barriers in storage and access limits, because there is a large storage capacity, and all data can be accessed through browser software. In addition, a study by Renjen (2020) reported that approximately 90% of organizations with a comprehensive cloud computing or IR 4.0 strategy were able to generate revenue growth of at least 5% and had a systematic impact on job effectiveness in terms of talent and leaders with the right skills.

REFERENCES

- Ali, A.F., Hassan, A.A., Abdullahi, H.O., & Abdulah, R.H. (2023). Analyzing the factors influencing the adoption of cloud computing by SMEs using the SEM approach. *International Journal of Advanced and Applied Sciences*, 10(7), 66-79.
- Adnan, M.F., Zawari, S.A., & Hashim, S. (2024). Factors influencing the integration of cloud computing in modern accounting practices in the Malaysian accounting sector: A conceptual study. *Accounting and Finance Research*, 13 (2), 63-71.
- Atadoga, A., Umoga, U. J., Lottu, O. A., & Sodiya, E. O. (2024). Evaluating the impact of cloud computing on accounting firms: A review of efficiency, scalability, and data security. *Global Journal of Engineering and Technology Advances*, 18(2), 065-074.
- Dineswaran, N., & Elankovan A. S. (2024). Penyimpanan data sulit dalam persekitaran berbilang awan. *Jurnal Wacana Sarjana*, 8(1), 1-24.
- Hamzah, A., Suhendar, D., & Arifin, A. Z. (2023). Factors affecting cloud accounting adoption in SMEs. *Jurnal Akauntansi*, 27(3), 442-464.
- Kouatli, I. (2016). Managing cloud computing environment: Gaining customer trust with security and ethical management.
- Mishra, R. (2024, April). Cloud accounting unveiled: Investigating challenges and prospects in modern financial management. *International Education and Research Journal*, 10(4). https://www.researchgate.net/publication/384542093_cloud_accounting_unveiled_investing_challenges_and_prospects_in_modern_financial_management
- Punit Renjen. (2020, January 20). The fourth industrial revolution: At the intersection of readiness and responsibility. *Forbes*. <https://www.forbes.com/sites/deloitte/2020/01/20/the-fourth-industrial-revolution-at-the-intersection-of-readiness-and-responsibility/?utm>
- Suhaidi, N. (2023, July 24). Investment and strategy: Keys to accelerate Malaysia's cloud computing adoption. *The Malaysian Reserve*. <https://themalaysianreserve.com/2023/07/24/investment-and-strategy-keys-to-accelerate-malysias-cloud-computing-adoption/>
- Sobhan, R. (2019). The concept of cloud accounting and its adoption in Bangladesh. *International Journal of Trend in Scientific Research and Development*, 3 (4), 1261-1267.
- Whitmire, M. (2018, October 19). CPAs advance their careers through the cloud. Retrieved from <https://www.accountingtoday.com/opinion/cpas-advance-their-careers-through-the-cloud>
- Watkins, E. (2011, November 20). What is cloud accounting? *Chron - Small Business*. <https://smallbusiness.chron.com/cloud-accounting-33995.html?utm>
- Zuria Fatmi & Hartini. (2022). Pelaksanaan perakaunan awan di Malaysia: Peluang dan cabaran. *International Journal of Accounting, Finance and Business (IJAFB)*, 7(40), 19 - 27.