

Chapter 21:

The Changing Role of Management Accountants Due to Technological Evolution

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ABSTRACT

The accounting field has undergone significant transformation in the role of Management Accountants (MAs) due to advancements in technology. This paper explores the evolving responsibilities of MAs amidst automation, digitalization, and artificial intelligence (AI). As organizations increasingly integrate technologies such as AI, blockchain, big data, and cloud computing, traditional accounting tasks like data entry, payroll processing, and report generation are being automated, leading to concerns about job redundancy and the need for workforce retraining. The study highlights the emerging skill gaps in the profession, emphasizing the necessity for MAs to acquire competencies in IT, programming, and data analysis to remain relevant. Additionally, the shift towards real-time financial reporting necessitates the adoption of cloud-based systems and enterprise resource planning (ERP) tools to facilitate prompt decision-making. Ethical and regulatory challenges have also surfaced, including data privacy concerns, cybersecurity risks, and compliance with international financial regulations. Through case examples, such as Baxter's implementation of JD Edwards (JDE) and Blackline systems, this paper demonstrates the practical implications of these technological advancements on management accounting. The findings suggest that while technology enhances efficiency and accuracy, it also demands a redefinition of the MA's role, incorporating analytical, technological, and ethical expertise. The paper concludes that organizations must invest in continuous learning and adaptive strategies to ensure that management accountants can navigate the evolving landscape effectively.

Key Words: Management Accountants, Technology Evolution

1. INTRODUCTION

Accounting is a dynamic field that involves both Management Accountants (MA) and Financial Accountants (FA). The complexity of organizations has been exacerbated by globalization, economic liberalization, advanced technologies, and networking. Markets are becoming increasingly globalized, uncertain, and customer-oriented, demanding better product quality and service. The importance of fast, accurate, transparent, and comprehensive data has become increasingly important. Middle managers' roles have evolved with new technologies like AI, blockchain, big data, and cloud computing. This research paper aims to examine how technology has changed the role of management accountants, exploring the implications of digital transformation, skill requirements, ethical challenges, and cybersecurity concerns. The study also highlights the importance of continuous learning and organizational adaptation to these technological advancements.

2. LITERATURE REVIEW

The issue in the accounting field due to the changing role of management accountant due to evolution of technology is the automation processes and the subsequent replacement of manpower. Tasks like data entry, payroll processing, routine report generation and most other data processing jobs have made traditional accounting positions irrelevant. This gives rise to a state of ambiguity concerning how accountants will be employed and in what capacities they will be used in the future and, therefore, about whether and to what extent they will require retraining (Attard, 2023). Baxter implements JD Edward (JDE) and Blackline systems which

automate routine operations such as recurring journal postings and account reconciliations as a part of the overall accounting industry trend towards automation. The improved operational speed through this process shows the potential elimination of individual roles while accounting specialists must learn to integrate modern technical developments.

Another problem area in the accounting profession is skill gaps attributable to change in technological advancement. Technological developments in the accounting profession have had an impact of creating disparity in the skills of management accountants. They concentrate on the conventional accounting jobs but with the new world transforming towards an automated one there is a need to hire people who understand computer applications, data, and analysis, and software models. Employing this paper's findings, it is clear that this lack of formal training in these areas puts accountants at a disadvantage. As the reflection moves toward technology-based positions, IT education in programming languages, deep knowledge of blockchain options, and registering with cloud providers is necessary. There is also the exploitation of the firm's softer skills, such as flexibility, analytical abilities and interactions with the IT departments (Legaspi, 2024). The advanced tools JDE and Blackline together with financial systems at Baxter show why accountants need well-developed technical capabilities. Job requirements needed system proficiency while demanding analytical abilities to show the necessity of skill-based training in technology-intensive workplaces.

Furthermore, the organizations now require instant financial information to enable them to make better decisions than before. Real-time financial information is important for an organization in order to be able to make correct decisions and act promptly in response to market conditions. Effective presentation of data is a core duty of management accountants, thus the need for the application of online systems such as cloud systems and ERP systems. AI and data visualization solutions are critically important to ensure the organization delivers timely accurate data. This is especially true because the success, reliability, and accuracy of the information depend on the effectiveness of data management systems and processes. Consequently, unsynchronized and imprecise data may result in improper decisions, losses or failures to seize opportunities. Therefore, highlighting the need for management accountants to support reporting in real-time (Arkhipova et al., 2024). The business requirements for timely journal posting and account reconciliation to satisfy Asia region deadlines at Baxter show the rising need for instant financial reporting. The escalating managerial task for offering precise and prompt analytical results serves as pressure on management accountants to support organizational decision processes.

In addition, the applied advanced technologies into management accounting give more ethical and regulatory issues. I also point to the possibility of negative usage of artificial intelligence with regards to particular financial processes, abusing AI for manipulation of all data and using customer's behaviors for their purposes without permission. Another issue being experienced in organizations is data privacy, especially where exhaustive information requests are being processed. They must, for example, understand the GDPR that has been implemented in many European countries in order to avoid penalties and maintain the confidence of other stakeholders. Possible new topics may involve the use of block chain with a focus on transparency of financial practices, or new developments in the application of artificial intelligence in decision making (Schweitzer, 2024). All high-value transactions which surpassed 500,000 USD needed Baxter employees to follow both financial rules and regulatory requirements at all times. Management accountants hold an ethical duty to maintain full transparency as well as precise data and total adherence to evolving accounting standards.

As organizations increasingly rely on digital systems, they also will face data security concerns. This is brought about by the increased use of digital systems and moving operations on to cloud-based platforms. Despite having advantages such as improved operations productivity and ability to provide instant reports, digitalization creates increased risks such as cybersecurity risks. Management accountants deal with highly sensitive financial information which can result in serious penalties such as loss making, operational complications, and loss of reputation. It is important to know that Cloud platforms raise peculiar risks that may encompass misconfigured settings, weak passwords or third-party applications and software bugs. Furthermore, a violation of a system that is linked to other systems will violate other systems (Arkhipova et al., 2024). Baxter requires critical protection for its sensitive financial data due to its extensive adoption of cloud-based platforms and digital tools. My Blackline document verification work follows financial policy standards in addition to serving Baxter's cybersecurity protection requirements against potential breaches.

3. DISCUSSION

The evolving role of management accountants is closely tied to the transformative impact of technology. Once seen primarily as financial record-keepers, management accountants have embraced a dynamic, technology-driven landscape that requires them to be strategic business advisors. The integration of advanced tools and data-driven methodologies has not only expanded their responsibilities but also heightened their influence on

organizational decision-making. The following aspects highlight the significant ways in which their roles have evolved.

Firstly, computerization of actual records like data entry and reconciliations has relieved management accountants from doing mundane jobs. Technologies like robotic process automation and machine learning tend to eliminate errors in order to improve efficiency. It also enhances the facilitation of value addition to processes that include recognition, measurement, interpretation and presenting financial information. In transitioning from low level transactional work to strategic advisory work they actively participate in organizational strategic planning, they analyze and define scenarios, and strategic financial impacts and growth. This makes businesses remain capable and flexible in extending their operations during exits of unfavorable economic conditions (Mohammadi, 2023). Personal observations at Baxter revealed the organization's transition from basic operational duties to critical strategic operations. The account-based work I performed in JD Edwards (JDE) and Blackline needed automated processes that lowered the need for human intervention. I could concentrate my time on checking data accuracy and compliance identification and discrepancy detection because these activities support crucial strategic planning. An examination of financial data during the reconciliation process strengthened reporting accuracy thus supporting managerial decision-making according to company strategy.

Then, technological advancements have increased the interaction between management accountants and other business units, particularly IT and big data departments. Accountants must collaborate with IT specialists to manage the technological environment crucial to finance execution. This ensures technology implementations align with organizational processes and enhances their utilization. Accountants also work with data scientists and business analysts to decipher large sets of data and match accountancy plans to the organization's strategic goals. For example, they may develop machine learning models to analyze trends and make selective budgetary forecasts. This paper presents how management accountants can apply their technical expertise and embrace innovation to realize organizational strategy (Mohammadi, 2023). During Baxter's month- end closing cycle I worked intensively alongside supervisors and requesters and approvers. The success relied on efficient communication to obtain timely validation and maintain entry precision. The work I did demonstrates an evolving collaboration pattern where accountants now work together with multiple teams to drive business goals. The collaboration with Asia region teams required me to demonstrate how financial alignment functions best when meeting organizational strategic objectives.

Next, the current management accountants use technologies such as ERP systems, Artificial Intelligence (AI), and cloud computing to accomplish their responsibilities adequately. ERP systems combine financial and operational data, and this enables accountants to process information efficiently. Applying artificial intelligence in accountancy means that data analysis is done automatically, and accountants are given a prediction of future markets and their risks. Cloud Practice has been magnificent in facilitating financial information storage and dissemination in near real-time within various departments, and across the organizational structures. This enhances decision making and eliminates the problem of scalability in business as it grows, by doing away with the usual problem associated with data storage (Mhaskey, Sanjay Vijay., 2024). I used sophisticated financial platforms JDE and Blackline to combine processes through integrated data processing. The tools allowed simple preparation of journals and precise control of significant transactions. Cloud-based platforms enabled me to work productively alongside global teams to deliver outcomes within the designated Asia region time frame thereby showing how modern technology enables real-time seamless collaboration.

Lastly, with the adoption of digital systems, it has led to increased adoption of financial reporting and control, introducing a new threat which is cybersecurity threats. Management accountants are responsible for protecting key financial records from theft and hacking, using secure principles like encrypted data, fire walls, and multiple identity authentications. They must also consider data protection rules like GDPR and local rules, inform themselves and staff about potential threats, and address weaknesses in cybersecurity plans. Understanding the financial and reputational loss caused by data breaches has become a benchmark in the role of management accountants, emphasizing the importance of cybersecurity (Foya & Garikayi, 2021). My role demanded an absolute priority for preserving data security. Recent financial data management within the Blackline system demanded both regular observation of internal controls and active financial policy observance. To prevent risks, I checked supporting files for accuracy before uploading them with enhanced security measures. Data security remains a top priority in management accounting because a single breach could generate both financial losses and reputational damage.

4. RECOMMENDATION

With the progressive changes brought about to the profession by technology, it means there is a need for management accountants and the organizations they work for to embrace the changes. Here are specific

suggestions on how management accountants can best move to prepare for technology work, best enhance their contributions to business plans, and best exist post-technology disruption.

Organizations should provide continuous training and development to management accountants to keep up with the rapid evolution of technology. This includes focusing on areas like data science, AI, and financial modeling. Information analysis skills help accountants understand big data and make informed decisions. Understanding AI helps them complete routine tasks and improve decision-making. Additionally, organizations should encourage accountants to obtain professional certifications in areas like forensic accounting, cybersecurity, or IT auditing. These certifications not only enhance technical competency but also increase their utility within the organization. For example, IT auditing certifications enable accountants to address risks related to information technology and comply with regulations. This approach not only produces human capital that meets firm competency requirements but also allows them to acquire new skills as technology changes. (Donnelly, n.d.). The company shows how training programs drive success when navigating advanced financial tools at Baxter. Learning about the financial reporting tools JDE and Blackline formed part of my onboarding program since these systems maintain business operations' efficiency. Accurate use of these tools needed both accounting expertise with strong technical abilities which proved the importance of ongoing education. Learning how to use these systems allowed me to prepare data with accuracy while achieving high-standard transaction management competency. Training expansion will prepare staff members with next-level skills including predictive analysis expertise and artificial intelligence financial modelling competence thus they can stay competitive in this dynamic industry.

In today's economic world, companies are investing in technological solutions like artificial intelligence, robotic process automation, blockchain, and cloud platforms to stay afloat in the economic world. Artificial intelligence automates tasks like data entry, variance analysis, and expense management, freeing accountants for more demanding tasks. Blockchain ensures accountability and transparency, while cloud platforms offer scalability and flexibility, allowing real-time access to financial information. Adopting advanced technologies requires careful consideration, tool selection, training, and compatibility with the organization's strategic plan (Adeyelu et al., 2024). Baxter implemented technologies JDE and Blackline and cloud-based platforms to demonstrate its dedication towards operational excellence and adaptive capabilities. The tools delivered smooth teamwork coordination among teams particularly when closing schedules ran short in Asia. By implementing AI-powered analytics and blockchain technology companies would see enhanced transparency along with reduced manual work. Through AI automation of selected data reconciliation processes companies can decrease manual work while maintaining accuracy levels in line with worldwide best practices

Nowadays, that is why cybersecurity is crucial as organizations transition to digital platforms, as violating mandatory financial information can result in financial, legal, and image losses. To mitigate these risks, organizations should establish good cybersecurity management practices, including data encryption, firewalls, and intrusion detection systems. Mandatory MFA and regular security updates should be implemented. Employee training on cybersecurity measures is also essential, as people are the weakest link in cybersecurity measures. Management accountants should recognize new connections like phishing scams and ransomware attacks. Organizations can also conduct cybersecurity audits to identify weaknesses and take necessary action. Improving cybersecurity measures ensures the safety of financial data and trust from investors and other parties (Udoh, O. R. 2024). While employed at Baxter, data protection emerged as an essential organizational priority. The processing of sensitive financial data through Blackline systems demanded complete compliance with demanding system controls. I established secure document upload systems while performing transaction verification procedures to reduce exposure to risks. The organization can reach a stronger data security position by implementing training programs that teach employees about protective cybersecurity habits such as password security and phishing attack detection capabilities. Comprehensive security measures have become crucial because of our organization's ongoing use of cloud systems alongside our multinational operations.

Specifically, new techniques in management accounting that closely engage with IT and data scientists to integrate them with the innovation ecology are essential in today's integrated business environment. IT support can be useful in the actual integration of various applications into organizations' work for its digital enhancements, data scientists are useful in the enhancement of data for organizational uses. Through interaction with these teams, accountants obtain relevant knowledge about technological products and relate them with financial objectives. It also increases innovation because many disciplines come together in an effort to solve problems. For instance, an intervention by accounting professionals in cooperation with computer experts may come up with a unique reporting system that can compile financial information in different departments. Such arrangements do help in mitigating the obstacles during technology change over and improve on the general operations of the financial processes (Razali et al., 2024).

5. CONCLUSION

Today's management accountants are not only different from the traditional accountants who merely prepare and present the financial statement, or budgeting and cost control of products and services they offer. As technology continues to progress, they are not just data stockpilers or calculative individuals anymore. Instead, they have emerged as key internal stakeholders of organizations who participate in making other critical business decisions. By doing so, it has also allowed management accountants to take on a lead the charge of the company's core strategic change processes, improve how operations function, and cultivate sustainable success amid a rising tide of economic pressure.

Over the past fifty years, technology has significantly impacted professional management accountants. Advances in artificial intelligence, big data analytics, and cloud computing have allowed accountants to focus on strategic planning, performance evaluation, and risk management. These sophisticated tools enable accountants to provide valuable value, forecast future financial situations, and uncover potential for business sustainability and profitability. However, this technological development necessitates accountants to stay updated on new skills beyond professional accounting, including computer and data sciences, computer systems, IT, and cyber security.

To remain relevant in the modern world, accountants must be receptive to applied technologies and the changing tasks and responsibilities required. New competencies include skills in predictive analytics, blockchain, and decision support systems based on artificial intelligence. Additionally, accountants must be able to work in cooperation with other departments and present financial information concisely and practically. Those who can easily switch between the financial side of a business, technology, and strategy will offer the most value to an organization.

Management accountants should prioritize learning, innovation, and action-taking for the future. Governments should support career enhancement through professional growth and cooperation among departments. By embracing a culture of continuous professional development, accountants can prepare for new client challenges in the growing digitization of the economy.

Finally, only those management accountants who are open to change, technological advancements, and develop both hard and soft skills are crucial for organizational success. They take on significant responsibilities in decision-making and innovation, enabling companies to adapt to a rapidly changing global environment, achieving financial and visionary solidity and growth.

REFERENCES

- Adeyelu, O. O., Ugochukwu, C. E., & Shonibare, M. A. (2024). The impact of artificial intelligence on accounting practices: Advancements, challenges, and opportunities. *International Journal of Management & Entrepreneurship Research*, 6(4), 1200-1210.
- Arkhipova, D., Montemari, M., Mio, C., & Marasca, S. (2024). Digital technologies and the evolution of the management accounting profession: a grounded theory literature review. *Meditari Accountancy Research*, 32(7), 35-64.
- Attard, K. (2023). The impact of automation on the accounting profession. <https://www.um.edu.mt/library/oar/handle/123456789/118593>
- Donnelly, S. (2023). *Future Proofing Accountancy Training: A Critical Analysis of Skills Development Within the ICAEW Qualification* (Doctoral dissertation, University of Northumbria at Newcastle (United Kingdom)).
- Foya, D., & Garikayi, V. R. (2021). Assessing Cyber Security Awareness and Organisational Preparedness on Cyber Security in Audit Firms: A Case of the Big 4 Audit Firms (EY, Deloitte, KPMG, PWC) [2017–2020]. *Indiana Journal of Economics and Business Management*, 1(1), 19-34.
- Schut, L. G. (2023). *Investigating the impact of technological advancements on the job of a management accountant: identifying capabilities required for the future* (Master's thesis, University of Twente). <https://essay.utwente.nl/97208/>
- Cudia, C. P., & Legaspi, J. L. R. (2024). Equipping Accountants for an AI-Driven Future: Academic Adaptations and Career Pathways. *Library of Progress-Library Science, Information Technology & Computer*, 44(3).

Mhaskey, S. V. (2024). Integration of artificial intelligence (AI) in enterprise resource planning (ERP) systems: Opportunities, challenges, and implications. *International Journal of Computer Engineering in Research Trends*, 11(12), 1-9.

Mohammadi, H. (2023). How Industry 4.0 Impacts the Management Accountants' Role - An Exploratory Thesis (By Dr. Hassan Kazmi, EM Strasbourg Business School, Dell Technologies, & Mrs. Maria Fernandez Martinez) [Thesis]. https://publication.theses.unistra.fr/public/memoires/2023/EMS/2023_Mohammadi_Hamza.pdf

Razali, F. A., Ahmad, N. L., & Jamaluddin, N. S. (2024). Accountant in the industry 4.0 era: the need for multidisciplinary skills. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 9(10), e003029. <https://doi.org/10.47405/mjssh.v9i10.3029>

Schweitze, B. (2024). Artificial intelligence (AI) Ethics in Accounting. *Journal of Accounting Ethics & Public Policy*, 25(1). <https://doi.org/10.60154/jaepp.2024.v25n1p67>

Taipaleenmaki J, Ikaheimo S. On the convergence of management accounting and financial accounting-the role of information technology in accounting change. *International Journal of Accounting Systems*. 2013;14(4):321-348.

Udoh, O. R. (2024). Enhancing Internal Audit Efficiency For Effective Risk Management and Corporate Governance Frameworks. *International Journal of Research Publication and Reviews*, 5(12), 3646-3659.

Yazdifar*, H., & Tsamenyi, M. (2005). Management accounting change and the changing roles of management accountants: a comparative analysis between dependent and independent organizations. *Journal of Accounting & Organizational Change*, 1(2), 180-198.