# Chapter 11:

# Adoption of New Technologies in Accounting Firm

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**ABSTRACT**

The Malaysian accounting industry is undergoing a significant transformation due to the adoption of Industry 4.0 technologies such as automation, artificial intelligence (AI), and cloud computing. The Malaysian Institute of Accountants (MIA), established under the Accountants Act 1967, plays a crucial role in regulating and overseeing the profession. The integration of digital technologies has improved efficiency and financial transparency, yet the transition presents several challenges. This study explores key barriers to technology adoption, including limited capital, a shortage of skilled professionals, and regulatory compliance issues. High initial investment costs and uncertain returns hinder small and medium-sized accounting firms from implementing new technologies. Furthermore, the lack of trained professionals proficient in data analytics, AI, and cloud-based solutions slows the adoption process, necessitating workforce upskilling. Compliance with evolving financial regulations, data protection laws, and cybersecurity requirements also adds complexity to technology integration. Thus, this study recommends strategic partnerships, flexible financing options, and targeted training programs to enhance accountants' digital competencies. Collaboration between accounting firms, regulatory bodies, and industry stakeholders is essential to establish clear guidelines and best practices for technology implementation. By adopting a proactive approach, Malaysian accounting firms can enhance their competitiveness, improve service delivery, and contribute to the country's economic growth in the digital era.

**Key Words:** Accountants, Technology Adoption, Challenges

## 1. INTRODUCTION

The Malaysian Institute of Accountants (MIA), an organization established under the Accountants Act 1967, regulates and oversees the accounting industry in Malaysia. Setting professional standards, administering tests, and granting practicing certifications to the nation's certified accountants are the responsibilities of MIA. In Malaysia, there are several different specialties within the accounting industry, including auditing, taxes, financial accounting, and management accounting. All specialties have a crucial role such as auditing promotes transparency and investor confidence by ensuring the accuracy and reliability of financial statements (Kelleher, 2024). It ensures financial responsibility, transparency, and smart financial decision-making across a range of sectors, all of which are important for the growth of the country's economy.

Nowadays, Industry 4.0 is reshaping the accounting industry through automation, data analytics, and artificial intelligence (AI). Since technologies like robotic process automation (RPA) are making repetitive tasks like data input, invoice processing, and reconciliation easier, accountants now focus on higher-value work like strategic analysis and decision-making (Razali et al., 2022). Due to that, the accounting and auditing profession is undergoing a transformative shift, driven by the rapid advancements of digital technologies. This revolution is characterized by the integration of AI, cloud computing, and other cutting-edge technologies into various aspects of the accounting and auditing landscape. For instance, AI-powered tools are increasingly employed in fraud detection and forensic accounting, enabling auditors to analyse vast datasets and identify anomalies with greater speed and accuracy (Marvin et al., 2024). Additionally, cloud computing platforms facilitate real-time data access and collaboration, streamlining audit processes and enhancing efficiency (Dunkelberger, 2024).

These technological developments impact the accounting industry by not only automating existing tasks but also changing the skill sets needed by accounting professionals, emphasizing the need of flexibility and efficiency in digital technologies and data analysis. The purpose of this study is to explore the challenges faced by the accounting firms in the adoption of new technology.

## 2. LITERATURE REVIEW

Automation, artificial intelligence (AI), and cloud computing are combining to drive efficiency and innovation across industries. Automation completes the duties, AI gives the intelligence, and cloud computing offers the framework. Systems that are more intelligent, effective, and flexible are the result of this collaboration.

### Automation

Automating processes reduces the need for human intervention by leveraging technology. This entails decreasing errors, increasing productivity, and automating monotonous jobs (Lacity et al., 2020). AI powers intelligent automation, enabling systems to adapt to changing conditions and make autonomous decisions. This leads to more sophisticated and efficient automation processes.

### Artificial Intelligence (AI)

AI is the development of systems that are capable of learning, solving problems, and making decisions tasks that call for human intelligence. Analysing large amounts of information and producing insights requires machine learning a branch of artificial intelligence (Brown et al., 2020). Cloud computing provides the infrastructure and resources needed for AI applications. AI, in turn, optimizes cloud resource allocation, enhances security, and enables intelligent cloud services.

### Cloud computing

Cloud computing uses the internet to give users on-demand access to computer resources, including servers, storage, and applications. This facilitates cost-effectiveness, scalability, and flexibility (Jonas et al., 2019). Cloud-based automation tools and services streamline workflows, automate IT operations, and enable remote management.

## 3. DISCUSSION

### Limited Capital

According to Manooj Shah's “The Woordard Report” (April 8, 2024), he claimed that the accounting firms might find it difficult to sustain initial investment in advance technology due to the limited capital. This is because implementing new technologies, such as cloud computing, data analytics software, or cybersecurity solutions, often requires significant upfront investments in hardware, software licenses, and implementation services. These costs can be particularly burdensome for firms with limited financial resources, hindering their ability to adopt and integrate these technologies (Ginani, 2024). Additionally, the return on investment (ROI) from technology investments is often uncertain and difficult to quantify in the short term. This uncertainty can deter firms from making significant upfront investments, as they may be hesitant to allocate resources without a clear guarantee of a positive return (Gurney, 2024).

Moreover, ongoing maintenance can be a significant barrier for accounting firms adapting to new technology (Manooj et al., 2024). This is due to the constant need for updates, bug fixes, and security patches to ensure software functions correctly and remains compatible with evolving systems and regulations such as International Accounting Standards Board (IASB) pronouncements. These maintenance requirements can divert valuable resources, disrupt workflows, and increase operational costs, hindering the firm's ability to fully leverage the benefits of the new technology and maintain a competitive edge in the market.

### Lack of Skilled Workers

The accounting firms may face the shortage of skilled professionals in adoption of new technology. According to the World Economic Forum (WEF), Malaysia ranks 83rd out of 130 countries in terms of technological abilities (WEF, May 15, 2023). This is also revealed by research conducted by Malaysia Institute of Accountants (MIA), which found that the accounting industry in Malaysia lacks of professionals with adequate technological expertise.

This shortage may hinder the adoption and effective utilization of new technologies, such as cloud-based solutions and AI-powered tools, which may automate tasks, improve accuracy, and increase efficiency in accounting processes. Firms may not be able to fully profit from new technologies if they lack the requisite skills to run and maintain them, which could result in slower adoption rates and a competitive disadvantage. Due to that, it emphasizes how the current workforce must be retrained and upskilled to meet the demands in digital

era. This is because the effectiveness of accounting information systems is significantly influenced by an individual's technical skills, particularly when using information systems (Prakoso et al., 2024).

**Compliance with Regulations and Standards**

Accounting firms may find it challenging to comply with relevant regulations and standards when adopting new technologies (Hacker, 2024). In Malaysia, the regulatory landscape for technology adoption is complex and evolving. While there is no single, overarching law specifically regulating technology adoption in accounting firms, various existing legislations and guidelines impact the sector. For instance, the Financial Reporting Act 2012 and the Malaysian Accounting Standards Board (MASB) pronouncements provide a framework for financial reporting and auditing, which indirectly shaping technology use in these processes.

Additionally, the Personal Data Protection Act (PDPA) 2010 mandates strict data management measures when managing client data via technology and governs the gathering, use, and dissemination of personal data (Lee et al., 2021). This is because the PDPA governs the handling of personal data in business transactions to safeguard people's privacy and interests (*Government of Malaysia's Official Portal*). As users of data, accounting firms must implement robust organizational and technical safeguards to mitigate potential security breaches.

Furthermore, the Securities Commission Malaysia (SC) has issued guidelines on technology risk management for capital market participants, which apply to accounting firms involved in auditing public companies. However, these guidelines may not comprehensively address the complexities of integrating advanced technologies such as blockchain and artificial intelligence (AI). The lack of detailed regulatory guidance can lead to ambiguity and uncertainty for accounting firms striving to comply with legal requirements while adopting innovative solutions.

## 4. RECOMMENDATION

**Use Flexible Payment Plans and Partner with Other**

To alleviate limited capital, accounting firms should consider flexible payment models offered by technology providers, such as pay-per-use plans or subscription models, which allow them to spread out the cost of technology over time and avoid large upfront costs. Such models are particularly beneficial for small and medium-size enterprises (SMEs) that may not have easy access to capital. By utilizing these flexible payment models, businesses can lower their initial investment and better align their technology expenditures with their cash flow, which facilitates the adoption and integration of new technologies into their operations.

Additionally, the firms may also seek to establish partnerships with other businesses or technology suppliers to pool resources and expenditures (Hendrie, 2023). Collaborating with technology providers can significantly reduce the costs associated with developing and implementing new technologies. Instead of shouldering the full cost, companies may divide R&D and implementation costs with their partners. This might include co-investments in technological infrastructure, technology sharing agreements, or collaborative enterprises. For instance, the strategic alliances significantly increase innovation capacity by encouraging information sharing and access to a range of perspectives (Gulati et al., 2021). Also, collaborations can lower the risks associated with market entry, supply chain disruptions, and research and development (Luo et al., 2023). This collaborative approach encourages greater resilience and adaptability in a business environment that is always changing.

Governments and industry associations can also assist by providing grants or tax benefits to encourage accounting businesses to adopt new technology. These initiatives might encourage accounting companies to embrace advanced technology and reduce the initial investment load. The government may provide SMEs accounting businesses with subsidies to help them pay for the expenses of investing in cutting-edge data analytics technology or utilizing cloud-based accounting software. Similarly, tax incentives may be offered for investments in cybersecurity or AI-powered audits, which not only promote innovation but also support the growth and competitiveness of the accounting industry.

**Offer Training Programs to the Workers**

To overcome the barrier of lack of skilled workers, accounting firms should invest in training programs for their employees. These training programs equip accountants with essential technological skills, enabling them to integrate digital tools into their daily workflows effectively. The training programs enable accountants to innovate, adapt, and stay competitive in the digital age by bridging the gap between traditional accounting abilities and the rapidly changing technical world.

The improvement of technical proficiency is a major advantage of training programs. Through organized training sessions, accountants can gain practical experience with a variety of accounting software, data analytics tools, and automation technologies. They have a thorough grasp of the features, potential, and constraints of these technologies because of this hands-on experience, which empowers them to use them successfully in real-world situations. For example, receiving training in cloud-based accounting software can give accountants the

ability to work with clients in a seamless manner, manage financial data remotely, and receive real-time financial performance statistics. The proactive approach to professional development not only improves individual capabilities but also strengthens the overall technological competence of the accounting profession. As technology continues to evolve rapidly, training programs are a crucial mechanism for ensuring that accountants remain relevant and adaptable in the face of constant change.

Additionally, customizing training programs to meet specific firm's needs ensures targeted learning. For instance, firms struggling with data analysis can benefit from specialized training in visualization techniques, while those concerned with cybersecurity can receive training in risk management and data protection protocols (Pittman, 2024). Continuous professional development strengths the industry's overall technological proficiency and ensures accountants remain competitive in the evolving digital landscape (Prakoso et al., 2024).

**MIA Guidance and Industry Regulator Collaboration**

Several proactive steps might be taken by the accounting sector to reduce the legal barriers to technology adoption in Malaysia. First and foremost, the Malaysian Institute of Accountants (MIA) can play a pivotal role in assisting firms with regulatory barriers by issuing best practice guidelines and conducting educational seminars.

Second, in order to offer insightful comments and suggestions on the regulatory framework, accounting firms can engage with regulators such as the MASB and SC. Through this partnership, rules may be made more realistic, reasonable, and innovatively friendly. Thirdly, accounting companies may give their employees ongoing professional development to improve their knowledge of technology and how it affects accounting procedures (Shaleh, 2024). This covers instruction on cybersecurity, data security, and the moral use of technology in the accounting industry.

Lastly, while maintaining adherence to pertinent standards, accounting firms might adopt a culture of creativity and experimentation. Piloting new technologies, doing risk analyses, and adjusting to the changing regulatory environment can all be part of this. By following these guidelines, Malaysia's accounting industry may successfully negotiate the legal obstacles associated with technology adoption and fully utilize technology to improve its offerings and maintain its competitiveness in the global market.

## 5. CONCLUSION

Malaysia has both tremendous opportunities and barriers because of the use of new technology. Despite the promise for work automation, increased productivity, and improved data analysis skills, several barriers prevent the broad adoption of technologies such as artificial intelligence (AI), cloud computing, and robotic process automation (RPA). At this point, since the initial cost for new technology can be substantial, accounting firms may discover that restricting resources is a considerable hurdle. Firms may also be deterred from making significant upfront investments due to the uncertain return on investment. Furthermore, the benefits of new technology may be limited, and their successful implementation may be thwarted by a shortage of staff with the necessary skills to operate and maintain it.

A focused effort must be made to upskill the present workforce through comprehensive training programs that include a range of technologies, from data analytics and cloud computing to cybersecurity and artificial intelligence, to solve this.

Moreover, accounting firms must also traverse complicated legal and ethical issues when using new technology due to the constantly changing regulatory framework, which includes the PDPA and SC recommendations. The MIA can be extremely helpful in addressing this by offering best practices and unambiguous direction for the implementation of technology within the current regulatory framework.

Therefore, the accounting firms must develop a proactive and strategic approach to technology adoption considering these barriers. This entails making training and development investments for staff members, looking into creative funding options, and maintaining active communication with industry groups and authorities. Accounting firms in Malaysia may become more competitive, provide better services, and better meet the changing demands of their clients in the digital era by proactively addressing these barriers and seizing the possibilities brought about by new technology. Also, the effective use of new technology would help the Malaysian economy expand and develop overall in addition to benefiting individual businesses. The accounting profession contributes significantly to economic growth and sustainable development by increasing efficiency, strengthening data-driven decision-making, and encouraging accountability and openness.

Looking ahead, technology will become more and more integrated into Malaysian accounting. The landscape will continue to change because of the introduction of new technologies like blockchain and the metaverse, which will present both fascinating opportunities and new barriers. The accounting profession may guarantee

its success and relevance in the years to come by embracing these developments and adjusting to the shifting environment.

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