

FUTURE-PROOF ACCOUNTING

DATA AND TECHNOLOGY STRATEGIES

DR. MFON AKPAN, CGMA



Future-Proof Accounting

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Future-Proof Accounting: Data and Technology Strategies

BY

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INVESTOR IN PEOPLE

Dr William Louis Campfield, a true trailblazer whose courage and contributions have illuminated the path for countless professionals in the accounting field. Your legacy has continually inspired us to strive for excellence and innovation. My beloved family – Vivian, Davion, Keturah, and Mfon – your love, support, and belief in my endeavors provide the foundation for all my aspirations. This book is dedicated to you, my guiding stars.

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About the Author

Dr Mfon Akpan, the Assistant Accounting Professor at Methodist University, integrates advanced technology into accounting practices. His academic contributions, particularly in artificial intelligence, guide practitioners in adapting to the evolving accounting landscape. Dr Akpan's commitment to innovation sets a new horizon for accounting research and education, inspiring future generations to redefine what is achievable.

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Preface

In an era where the only constant is change, the accounting profession stands at a pivotal juncture, facing the dual forces of tradition and transformation. “Future-Proof Accounting: Data and Technology Strategies” seeks to bridge this divide, offering a visionary perspective on integrating cutting-edge data and technology within the realm of accounting.

This work was conceived with a singular purpose: to empower accounting professionals, educators, and students to confidently navigate the uncharted waters of digital disruption. It is a testament to our profession’s resilience and adaptability and a guidebook for those committed to staying relevant in a rapidly evolving landscape.

The journey through these pages is expansive and exploratory, beginning with a deep dive into the technological underpinnings of reshaping accounting. From the intricacies of artificial intelligence and blockchain to the transformative potential of cloud computing and cybersecurity, we unpack the complexities and opportunities of these technologies.

As we delve into CPA evolution, narrative underscores a pivotal shift toward a more technologically adept accounting workforce, highlighting the critical skills and knowledge areas essential for modern accountants. The discussion of data analytics and digital transformation sheds light on the essential role of data in driving decision-making and operational excellence.

The exploration extends into the innovative terrains of Ethereum and non-fungible tokens (NFTs), examining their burgeoning impact on accounting practices and their broader implications within the digital asset ecosystem. Through the lens of emerging challenges, such as phishing scams, ransomware attacks, and regulatory compliance imperatives, the manuscript offers a pragmatic approach to navigating the complexities of cybersecurity and legal adherence in the digital age.

In addressing the advent of robotic process automation, smart contracts, and the nuances of sustainability reporting, “Future-Proof Accounting” showcases the myriad ways technology can enhance, augment, and redefine accounting functions. The role of technology consultants and the importance of embracing continuous innovation are highlighted as the cornerstones of a future-proof accounting strategy.

“Future-Proof Accounting: Data and Technology Strategies” is a call to action for the accounting profession to embrace new technologies and data-driven strategies. It invites us to look beyond the horizon, embrace the transformative

power of technology, and chart a course toward a future where accountants are not just number crunchers but strategic visionaries and technologically savvy advisors.

As you turn these pages, I invite you to embark on this journey with an open mind and forward-looking perspective. The future of accounting is not just about adapting to change but about leading it.

Welcome to the future of accounting!

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Chapter 1

The “Players” in Technology: Accountants’ Role and CPA Evolution

Introduction

The accounting profession is undergoing seismic shifts caused by rapid technological advances. Once alien to the accounting world, concepts such as big data, artificial intelligence (AI) and blockchain are integral to the profession (Zhang et al., 2020). For accountants, it is critical to understand and adapt to these changes to remain relevant in an increasingly data-driven and technologically advanced world.

A crucial part of this understanding involves familiarizing oneself with key “players” in technology, their roles, and how they intersect with accounting. This chapter seeks to provide a clear understanding of these roles and illustrate how they have contributed to the ongoing evolution of the accounting profession.

The world is experiencing monumental changes driven by rapid advances in technology, and the accounting profession is not spared from this wave of transformation. Concepts such as big data, AI, and blockchain were foreign ideas for the accounting industry (Qasim & Kharbat, 2020). Today, however, these technologies are not just complementary additions; they are integral parts of the profession, shaping how tasks are carried out, processing data and making decisions.

To maintain relevance and uphold professional competence in this increasingly data-driven and technologically advanced era, accountants must adopt these technologies and understand their underlying principles and functionalities. This necessity is not just about ensuring survival; it is about staying ahead and taking advantage of these changes to deliver more value and make more informed decisions.

Hence, this chapter’s objective is to provide an understanding of the key roles or “players” in technology – individuals and professions whose work significantly influences the trajectory of the accounting profession’s technological evolution. By shedding light on these roles and how they interact with the accounting profession, we aim to illustrate their immense contribution to the profession’s ongoing evolution.

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We begin by looking at data scientists and experts in deciphering complex digital data, whose skills prove valuable in making sense of large datasets in accounting, helping organizations make data-driven decisions. Then, we will explore the work of software developers and coders – architects of the digital world, who build software and applications that are transforming daily accounting activities.

Furthermore, we will consider information technology (IT) project managers, who ensure the successful implementation of technology projects, and cybersecurity experts, who are tasked with protecting sensitive financial data in an increasingly interconnected digital space. We also discuss the role of database administrators, who ensure the effective storage and management of digital data, and AI specialists, who are at the forefront of designing and implementing AI solutions that automate and enhance various accounting tasks.

By the end of this chapter, we hope to provide a clear perspective on these pivotal roles and paint a picture of a future accounting profession that is robustly integrated with technology. The accounting profession is not just changing; it is evolving, and it is about time that every accountant is part of this evolution.

Understanding the “Players” in Technology

Data Scientists

Data scientists represent a crucial piece of the technological puzzle. They specialize in analyzing and interpreting complex digital data to help organizations make informed decisions (Davenport & Patil, 2023). Data scientists have used statistical techniques and advanced algorithms to interpret and extract meaningful insights. They can help analyze large datasets in accounting to identify financial trends, detect fraud, make forecasts, and support strategic decision-making.

The Role of Data Scientists in Decision-Making

Data scientists not only collect and clean data but also develop models to analyze the data and generate insights (Provost & Fawcett, 2013). These insights can potentially inform strategic decision-making by providing executives with a data-driven foundation to guide their decisions. For instance, by applying machine learning algorithms to financial data, data scientists can predict future revenues or identify potential cost savings, which can help shape a company’s budgeting and strategic planning efforts.

An Ally in Fraud Detection

Data scientists are on the frontlines in the realm of fraud detection (Alfaiz & Fati, 2022). Financial fraud often leaves traces in the data, and sophisticated algorithms can identify subtle patterns that would be nearly impossible for a human to

detect. Data scientists play a critical role in mitigating financial risks and protecting organizational assets by developing and applying these algorithms.

Forecasting and Strategic Support

Moreover, the work of data scientists can be instrumental in forecasting trends, such as predicting future sales, identifying market shifts, and assessing the financial health of clients or business segments (Saura, 2021). By forecasting these trends, organizations can anticipate changes and adapt their strategies proactively rather than merely reacting to events as they occur.

In summary, data scientists are much more than behind-the-scenes players in the realm of accounting. They are crucial actors in the strategic landscape, using their expertise to extract meaningful insights from complex data and to contribute to informed decision-making processes. Their role underscores the growing intersection of technology and accounting and highlights the value of technological competency in the modern accounting landscape.

Software Developers/Coders

Software developers and coders are architects in the digital world. They design, code and test computer software and mobile apps (Murphy-Hill et al., 2021). They may develop customized accounting software, integrate different software solutions, or build applications that enhance the accessibility and usability of accounting data. Their contribution in automating routine accounting tasks and improving efficiency is invaluable.

IT Project Managers

IT Project Managers are responsible for planning, executing, and overseeing the implementation of technology projects within a set time and budget (Uspenskiy et al., 2019). They play a crucial role in digital transformation efforts in accounting, ensuring the successful implementation of new systems, software, or digital solutions.

Cybersecurity Experts

As accounting becomes more digital and interconnected, the risk of cyber threat increases. Cybersecurity experts are tasked with protecting sensitive financial data from such threats. They implement security measures, monitor systems for breaches, and respond to incidents to minimize damage.

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Database Administrators

Database administrators are responsible for storing, organizing, and managing digital data. Accounting might involve maintaining a database of financial transactions, ensuring data integrity, and optimizing database performance.

AI Specialists

AI specialists design and implement AI algorithms and machine-learning models. AI can automate data entry, perform complex calculations and even analyze financial data for trends and anomalies in accounting.

These are a few of the key players in technology that interact with and influence the accounting profession in significant ways.

The Role of Technology Consultants

Technology consultants are pivotal in aligning technological solutions with an organization's strategic goals. They provide invaluable insights for identifying and implementing the best software and systems for specific accounting tasks in the accounting sector. This could include auditing tools, tax software, or enterprise resource planning (ERP) systems. They are a bridge that connects the world of technology with the needs of the accounting profession, ensuring seamless integration that boosts efficiency, reduces errors and contributes to overall financial management effectiveness.

Blockchain Specialists

Blockchain technology, while often associated solely with cryptocurrencies, such as Bitcoin, has far-reaching implications for accounting. Blockchain specialists can develop and manage distributed ledgers that provide unparalleled security, transparency, and efficiency for recording transactions. Their knowledge can be invaluable in enhancing audit trails, reducing fraud, and increasing the speed of transaction verification, and the specialized nature of blockchain allows accountants to carry out tasks such as reconciliations, contract management, and asset tracking.

Data Privacy Professionals

Data privacy professionals ensure the organization's compliance with various data protection laws and regulations. Given the sensitive nature of the financial data that accountants handle daily, these professionals are crucial in preventing unauthorized data access, breaches, and leaks. They work to implement and maintain robust data protection measures and foster a privacy-conscious culture within the organization.

Robotic Process Automation Experts

Robotic Process Automation (RPA) experts are transforming the way repetitive and time-consuming tasks are being performed. By programming ‘bots’ to replicate human actions within digital systems, tasks such as data entry, invoice processing, and report generation can be automated, allowing accountants to focus on more strategic, analytical tasks. The use of RPA in accounting is increasing, making RPA expertise invaluable in modern accounting environments.

Cloud Specialists

As more organizations move their accounting systems and data to the cloud, the role of cloud specialists becomes more crucial. They help organizations transition to cloud-based platforms, manage cloud services and ensure data security and integrity in cloud environments. The benefits of cloud computing, such as scalability, cost-effectiveness, and accessibility, have made it a popular choice for accounting applications.

Business Intelligence Analysts

Business Intelligence (BI) analysts use software and services to transform raw data into meaningful insight. In the accounting field, they can help create dashboards and reports that visualize complex financial data, making it easier to understand and act upon. They play a critical role in decision-making, planning, and strategy development.

In conclusion, the confluence of technology and accounting has created new roles and reshaped the accounting landscape. Understanding these roles and their contributions can empower accountants to effectively leverage technology and stay ahead in an ever-evolving digitally driven world. The future of accounting is indisputably intertwined with technology, which can open new avenues for efficiency, innovation, and strategic value in the accounting profession.

The Evolving Role of Accountants in the Technological Landscape

The Changing Skill Set

In the past, accountants focused primarily on crunching numbers, ensuring regulatory compliance, and preparing financial reports. Today, the accounting profession is no longer just about debits and credit. The explosion of data and technological advancements demands a broader skill set from the accountants.

In this new environment, accountants are expected to be comfortable with data analysis, understand the principles of database management, and become familiar with advanced tools and software. They must be capable of translating data into meaningful insights that can influence business strategy and decision-making. The

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line between accounting, data science, and IT is blurred, and accountants who can traverse this multidisciplinary landscape will have a distinct advantage.

The Intersection of Accounting and Technology

The rise in technology has also introduced new dimensions to the accounting profession. Tasks that are traditionally manual and time consuming, such as data entry, invoice processing, and reconciliation, can now be automated using AI and machine learning. This allows accountants to shift their focus from mundane tasks to higher-value functions such as data analysis, interpretation, and strategy formulation.

Blockchain technology, the backbone of cryptocurrencies and non-fungible tokens (NFTs), also offers exciting accounting possibilities. It provides a secure, transparent, and tamper-proof platform for recording transactions, potentially revolutionizing auditing and assurance services.

The Need for Continuous Learning and Adaptation

To keep pace with rapid technological advancements, continuous learning and adaptation have become a necessity for accountants. This might involve undertaking specialized training, gaining new certifications, or even returning to academia to acquire new knowledge and skills. It is an ongoing journey of growth and evolution that every modern accountant must embrace.

CPA Evolution: Navigating the Future

The CPA Evolution Initiative

Recognizing these changes, the American Institute of Certified Public Accountant (CPAs) (AICPA) and the National Association of State Boards of Accountancy (NASBA) have launched the CPA Evolution initiative. This initiative aimed to transform the CPA licensure model to integrate technological and analytical expertise into the core competency requirements of CPAs.

The new model proposed under the CPA Evolution initiative comprises three core sections: accounting, technology, and the business environment and concepts. This underscores the recognition of technology as a core competency on par with traditional accounting knowledge.

Implications for Accountants

The CPA Evolution initiative signified a paradigm shift in the accounting profession. Aspiring CPAs must demonstrate proficiency in accounting principles, technology, and data analyses. This places additional pressure on accountants to upskill and reskill, opening new avenues for growth and specialization.

The CPA Evolution initiative is a clear indicator of the significant shift in the accounting profession. Aspiring CPAs are required to demonstrate not only their proficiency in accounting principles but also their expertise in technology and data analysis. This underscores the pressing need for accountants to upskill and reskill. It also opens up new avenues for growth and specialization, where accountants can explore their interests in particular technological aspects of the field.

For instance, some accountants might find their niche in utilizing blockchain technology for secure transactions and record keeping, whereas others might prefer to focus on using AI for auditing processes. Regardless of the chosen specialization, the increased integration of technology into accounting practices is bound to redefine the contours of the profession and its roles.

Preparing for the Future

As technology reshapes the accounting landscape, accountants must prepare proactively for the future. This means staying abreast of the latest technological trends, continuously enhancing their skills, and becoming open to new working methods. It is a challenging, yet exciting, time to be an accountant.

As the advent of technology continues to redefine the accounting landscape, the onus lies on accountants preparing for the future proactively. This preparation requires not only an understanding of traditional accounting principles but also a commitment to becoming adept in new technological tools and trends. Accountants must become lifelong learners, regularly updating their knowledge and skills to keep pace with technological advancements.

First, staying abreast of the latest technological trends is not optional; it is necessary. This does not mean mastering every new technology that emerges but rather understanding its impact on accounting practices. By knowing what is on the horizon, accountants can better anticipate the skills and knowledge that they will need in the near future.

Second, enhancing one’s skills is a continuous journey. This might involve formal education, such as pursuing a master’s degree in data analytics or becoming certified in specific software. Alternatively, they could involve less formal routes such as attending webinars, participating in online courses, or learning from thought leaders in the field. The aim is to ensure that their skills remain relevant and that they can leverage the benefits offered by these new technologies.

Finally, being open to new ways of working is crucial. Integrating technology in accounting is not just about automating tasks; it is also about enabling new ways to analyze data, provide insights, and add strategic value. Accountants must be willing to step out of their comfort zones and embrace new methodologies enabled by technology.

Being an accountant is challenging and exciting. The integration of technology into accounting brings a host of new opportunities. By embracing change and adopting a forward-thinking mindset, accountants can drive the profession forward, ensuring its relevance and value in an increasingly digital world.

Conclusion

Technology has undoubtedly introduced a wave of change in the accounting profession, turning traditional roles on their head and bringing in a host of new “players.” However, at its core, the essence of accounting remains unchanged, providing accurate, timely, and meaningful financial information to support decision-making.

In this technology-driven era, accountants are not just number-crunchers but also strategic advisors, data analysts, and IT experts. By understanding the “players” in technology, embracing the CPA Evolution, and committing to continuous learning, accountants can navigate these changes and emerge as indispensable custodians of financial truth in the digital world.