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Challenges of digitization for the accounting profession

Dr. Parmeshwar Singh Maravi
Assistant Professor, Department of Commerce, Government Adarsh College, Umaria, Madhya Pradesh, India

Abstract
Accounting is a long-established profession with defined accounting principles and ideas. Accounting is not immune to globalization, increasing regulation, and technological advancements. In a constantly changing corporate environment, accountants must adhere to fundamental accounting standards and concepts. This article will examine and classify the major digital accounting issues. The report is based on extensive professional and academic research. They demonstrate that accounting faces several difficulties in the digital age. Notables include big data accounting, cloud computing, continuous accounting, artificial intelligence, and blockchain technology. Globalization and digitalization will have a major effect on accounting, according to studies. A digital wallet, online accounting, and outsourcing accounting to other nations are among the changes. The increasing digitization of business will impact schooling. Also, in the digital age, accounting information consumers have evolved; they want it now, not later. A new accounting profession may emerge as a consequence of these developments, requiring new abilities, particularly in engineering.

Keywords: Digitalization, big data and reporting, cloud computing, artificial intelligence, accounting profession, accountants' skills

Introduction

Innovation in digital technology impacts a company's strategic and competitive goals, business models, and market strategy. Computerized accounting and management control systems (Mancini *et al*., 2017) [12]. Accounting principles and ideas have developed throughout time. However, the accounting industry is ever-changing. The breadth of accountants' responsibilities and activities is increasing, as are client expectations. Accounting may change and adapt thanks to technological advancements and digitization. Modern computer technologies reduce accountants' workload; repetitive activities that were formerly complex and time-consuming are now easy and quick.

Technological advances, globalization, and increasing competition are rapidly changing occupations. Accounting is one of the professions most affected by technology and globalization. Several digital technologies not available 10 years ago are now actively utilized in accounting (Tekbas, 2018) [19]. According to Frey *et al*., the accounting profession is most likely to be automated and digitized (2017) [5].

This article organizes and evaluates major digitalization-related changes in the accounting profession. The study examines important professional and academic literature.

The document has five parts. The essay is divided into two sections: an introduction and a literature review. The final part covers the article's methodology. To learn more about digital solutions for accountants, read on. The paper concludes with key results, limitations, and research directions.

Literature review

To assess the viability of automating accounting processes, it is essential to distinguish between routine and non-routine duties. Human-centered occupations and activities will not be automated anytime soon, according to Oschinski *et al*. (2017) [15]. Routine activities, on the other hand, may be readily mechanized since they need minimal human interaction (Kim *et al*., 2017) [7].

Many accounting activities are already automated, say Arntz *et al* (especially in large companies). Routine tasks like invoicing, payroll, and bookkeeping are repetitive. Automation helps audit planning, analytical review techniques, materiality assessment, internal control evaluation, risk assessment and going concern judgments, says Moudud-Ul-Huq (2014) [14].

Studies have been done to assess how many businesses now utilize or intend to employ digital solutions. Large accounting companies usually initiate and perform these research.

Integration with internal or external systems, process automation, system consistency, integrated consolidation, real-time reporting and the c (KPMG, 2017) [9].

PWC surveyed 76 German large and medium-sized companies to assess current and potential digital development. Invoice and other accounting document reading (39%) and automated money transfers (39%) are the most preferred AI applications among companies surveyed (29 percent). Data monitoring and document consistency checking share third place on the priority list, both getting 10% of responses (PWC, 2018) [17].

It questioned businesses' intentions to embrace new technology. According to the study, 22% of businesses would employ document recognition, 20% will directly share data with consumers and suppliers, 19% will use money transfers, and 14% will replace Excel spreadsheets.

The following comments regarding accounting digitalization were inquired about by KPMG in 2017 [9]. The findings match a PWC survey. Most firms will adopt paperless accounting, system consistency, and external system integration. Big data analytics and data quality management are included (KPMG, 2017) [9].

These studies are preparing businesses for digitalization and operational changes. Developing new software support solutions takes time and money, particularly when done in-

house. As a result, many service providers and developers of new accounting systems see enormous potential. Large firms have used or are adopting new solutions, since implementing expensive solutions in smaller businesses is not cost efficient.

Methodology

It was decided to examine relevant professional and academic publications. Proquest, EBSCO Host, and Web of Science were among them. Accounting trends, cloud computing, AI, big data, and blockchain were all searched. We selected the most relevant articles published in English and included the full content. Professional papers were gathered by searching the major audit firms' and accounting and auditing professional organizations' websites. The study looked at the effect of digitization on the accounting profession. Scholarly articles were evaluated using scientific research techniques like induction and deduction.

Results

Accounting profession's digitization

Accountants should adopt and utilize new digital technology for several reasons. To fulfill accounting deadlines and provide better and timely information to different users, Wilson *et al*. (1992) [20] found that the following variables may have a major effect and serve as motivators for technological development. Using technology also improves the quality and relevance of accounting data (Al-Htaybat *et al*., 2017) [1], reduces preparation time, and makes data available in real time.

Accounting procedures are becoming more automated and time-consuming, necessitating more client interaction and business advising. (Accountants) may concentrate on more creative, non-routine, and unstructured activities that need greater thought and abilities. These alterations will affect accountants' future work. Accounting businesses are more likely than ever to lose clients due to cloud-based services and easy access to financial data.

Contrary to common perception, automation and AI cannot read and analyze financial data (Zarowin, 1994) [21]. Senior accountants, according to Kokina *et al*. (2017) [8], think human accountants will not be replaced soon.

According to Automatization, robots and robotic automation will increase the value of services. Basic services may be enhanced, enabling accountants to focus on current and future client requirements.

The same technology will be used by accountants and bookkeepers. With Excel and other key analytics tools gone, Consumer, financial, and industrial data are being accessed by controllers and CFOs through structured and unstructured data.

Automating data input using cloud computing, AI, and blockchain will benefit accountants and the financial sector.

Accounting Engineering reimagines the profession in light of digitalization, AI, and the Fourth Industrial Revolution (Tekbas, 2018) [19]. Engineers in Finance and Accounting will prepare accountants to gather data, manage and use technology in the classroom. Philosophy, mathematics, and technology may be combined in an accounting engineer (Tekbas, 2018) [19].

Digitalization requires changes in corporate processes, techniques, and activities (Mancini *et al*., 2017) [12]. Universality, openness, and sharing are defined by Mancini (2016) [11]. As a result, data and information easily flow across businesses and groups. The ability to access complete company data in real time will alter how businesses develop digital strategy. Thanks to better data, managers can now plan more effectively.

In addition, the availability of a digital wallet as an online service affects consumer trust and transaction volume. Online purchases of products and services are safe and secure. Digital wallets are intended to ensure data accuracy at retail checkout.

The primary digital options available to accountants

Artificial intelligence

Data in near-real time has been provided through AI and machine learning. Accounting and auditing may benefit from AI and automation. Artificial intelligence can automate tasks that require little human expertise (Moudud-Ul-Huq, 2014) [14]. Intelligent technologies are being developed to assist accountants become better business advisers. Thanks to AI and machine learning, accounting companies will have greater access to near-real-time data from more sources. While AI is still in its infancy, 18% of businesses polled utilized it in 2017. PWC (2018) [17] Instead of simply matching order numbers, software developers understood invoices.

Block chain

Thanks to block chain technology, businesses may now receive real-time data from many sources. Most businesses use this method to protect sensitive financial data and streamline complex processes. Crypto currency does not use "blockchain technology." Block chain technology may replace traditional techniques of auditing, compliance, and reconciliation. According to a PWC survey of German companies, 8% use block chain technology. Others utilize blockchain to handle consumer and supplier relationships. Useful for contract signing (PWC, 2018) [17].

Accounting that is continuous

The availability of information is increasing daily. Despite this, stakeholders, auditors and others demand comprehensive and real-time information. It will require time and effort to go from a periodic financial reporting system to a more comprehensive reporting system. More thorough accounting will result in job loss and disruption (Smith, 2018) [18].

Big data

How companies are managed, financial statements are generated and audited will all be affected by big data and data analytics. Big data also improves decision-making processes by providing better data measurement, completeness, and understanding (Liu *et al*., 2014) [10]. Digital technology enable accountants to work more effectively and efficiently. Big data may assist reduce reporting time due to real-time changes. Analytical skills and tools may help people gain insight into data and change business choices.

Big Data will affect Finance, Management

In computing, big data is a phrase used to describe very massive databases. In accounting and information systems, the most important effect of information technology has been on data management (Mancini *et al*., 2017) [12].

On big data in accounting and finance, Cockroft (2018) [3] examined academic publications. Accounting and finance

big data research gaps Data management, data quality, data visualization and predictive analytics are among them. The more study done in these areas, the better.

In today's corporate climate, accountants must learn new skills and understand AI and other digital technologies. Lifelong learning is essential for all workers (even accountants) (David, 2015 [4]; Marcello *et al*., 2017) [16]. Accounting success needs motivation, excellent written and spoken communication, solid judgment, financial analysis, and professional judgment (Parham *et al*., 2012) [16]. School must reform to focus on critical and system thinking while fostering students' creative talents. Finally, since accountants will be proactive in the company, they will need to work with other departments, especially IT experts.

Conclusion and Suggestions

Businesses may significantly benefit from digitalization and IT advancements. Accounting is similarly affected by digitization. CPAs will have to adapt. Rather than being replaced by machines, accountants will be aided by digital solutions and automation. Accounting positions and tasks need critical thinking and creativity, making automation challenging. As a consequence, digitalization will impact the accounting profession's development. Automation demands new knowledge and abilities from accountants. Accountants' repetitive, organized duties are or will be automated. Data mining, knowledge-based systems, and a larger information network are all valuable business tools. In the future, new digital technologies will decrease the need for human data entry while increasing data speed, quality, and accuracy. Automation may help businesses run more effectively. Bookkeepers and accountants will become advisers, consultants, and accountant engineers. To grow, accountants must embrace the chance to create technology that helps them.

Small businesses cannot afford to digitize processes and use knowledge-based management tools.

Accounting and financial reporting digitalization may influence investment choices, particularly for small investors. Digitalization allows consumers of financial statements to obtain daily balance sheets.

Last but not least, human intelligence will always trump machine learning in accounting.

As a result of this piece, accountants will increasingly be advising or consulting. Accountants' IT, analytical, and tax skills will also need to be enhanced. To prepare accounting students for work in today's automated and digital environment, schools must adapt and alter their educational curricula.

The study's drawback is the lack of literature coverage. While digitization and automation are widespread, professional and academic research on their impact on accounting are uncommon (especially in certain countries).

Accounting activities that are automated in companies of all sizes should be the focus of future study (micro, small, medium and large).

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