CHALLENGES AND OPPORTUNITIES FOR THE ACCOUNTING PROFESSION IN THE CONTEXT OF TECHNOLOGICAL EVOLUTION

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Abstract: The adoption of new technologies brings numerous benefits, but also a series of challenges and difficulties for professionals in every field of activity. This paper highlights the main aspects of this nature faced by accounting professionals in the context of adopting artificial intelligence, blockchain, and cloud computing in their work.

JEL classification: M40, M41

Key words: Accounting, Artificial Intelligence, Blockchain, Cloud Computing

1. INTRODUCTION

Accounting does not merely fulfill an administrative function of managing an entity's assets but also plays an active role as a strategic partner for its management, supporting decision-making in a dynamic and complex environment characterized by rapid changes and developments.

In this context, technological evolution, which influences all fields of activity, also presents a challenge for the accounting profession, which must identify solutions to adapt and strengthen its role in the economic environment.

This paper aims to provide a synthesized overview of the main technologies impacting the business environment and, consequently, the activity of the accounting professional, highlighting the key challenges and opportunities generated by their adoption and use. The rapid pace of emergence and implementation of these technologies is evident in the way they are described in specialized literature, being referred to as both emerging and disruptive, suggesting their swift evolution from an emerging to a disruptive status.

In this context, we highlight artificial intelligence, blockchain, and cloud computing. It must be said, however, that even if these technologies are considered on their own, they form a complementary setting, linking and, in a way, incarnating the force of digital transition in every action field.

Moreover, we also want to emphasize the fact that, "with the use of these technologies, more and more, we can realize that in the future, the process of financial reporting, the process of auditing, and the profession in general will be confronted with

the challenge of being imposed on them by automation and digital revolution, with the profession having more to gain than to lose. "[1]

2. METHODOLOGY

The research strategy of this paper relies on observation and study of the major points established in technical literature and, from them, on drawing conclusions on the points under discussion.

3. RESULTS AND DISCUSSIONS

3.1 Artificial Intelligence

Artificial intelligence (AI) describes a computer program with the capacity for mimicking human cognitive processes such as reasoning, learning, and decision-making, transforming the practice of accounting and posing significant challenges for professional accountants, discussed in greater detail herein.

The use of such technical devices, such as machine learning packages, predictive programs, and automation, compels professional accountants to shift from their traditional working style. This involves realizing what can and cannot be achieved with such technical devices, translating their output, working with IT specialists, undergoing training programs for such technical solutions, changing their attitude, and acquiring higher-order skills in IT, data examination, and computer programming.

The misconception that accounting professionals will be replaced due to the automation of numerous repetitive tasks can lead to resistance to adopting these technologies and create a sense of insecurity among professionals. However, many reputable specialists argue the contrary, stating that "the concern of losing human control due to the implementation of artificial intelligence solutions is a myth for the accounting profession. Artificial intelligence complements human intelligence and will bring benefits to the accounting profession, enabling the accounting field to better interact and more effectively support business management functions." [2] We align with this perspective, considering that regardless of the degree of adoption of such technologies, accounting professionals cannot be replaced, and their role as partners to organizational management will only be enhanced.

Since AI is often seen as a “black box,” with the users unable to fully comprehend how the algorithms generating reports and analysis operate, *ethical and transparency issues* can have far-reaching consequences concerning the actions of accounting professionals. As a result, it is always challenging for accounting professionals to "explain" the output of the algorithm, which may lead to us to rethink the potential and huge burden of the well defined stakeholdersium in accounting problems. Plus, if AI makes a mistake, it falls on the accounting professional to explain what went awry.

A weak legal structure can be source of the issue, since many current laws have not adapted to keep up with developments in artificial intelligence. Universal guidelines

[1] A. Tiron-Tudor, A. Dontu, and V. Bresfelean, "Emerging Technologies' Contribution to the Digital Transformation in Accountancy Firms," ELECTRONICS, vol. 11, no. 22, 2022.

[2] M. Stancu and A. Dutescu, "The impact of the Artificial Intelligence on the accounting profession, a literature's assessment," in PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON BUSINESS EXCELLENCE, 2021, vol. 15, no. 1, pp. 749-758.

for all accounting professionals globally have not been set, and international divergences make it difficult to implement a non-market solution.

Data security is another important challenge with AI adoption, as it can lead to breaches that cause accounting professionals and other businesses to experience reputational damage, among other negative impacts.

Integrating technology with existing systems was tricky even before AI hit the scene, but its adoption has just magnified the problem. Companies face additional costs and implementation periods due to compatibility issues with pre-installed software. These factors are well-known among experts as the underlying causes of resistance to change and all its harmful consequences.

These challenges, however, come with significant opportunities regarding AI-based systems for the accounting profession, which we list below.

Use of Robotic Process Automation (RPA) helps in automating redundant tasks that save time when it comes to data collection processes with less human error.

AI is capable of sifting through large volumes of data to recognize patterns and trends leading to enhanced forecasting precision; thus, the prospect of conducting advanced financial analysis becomes possible, ultimately enabling data-backed decision-making.*Faster fraud detection and more efficient risk management* are achievable through the use of this technology, which allows for the easy detection of anomalies in transactions carried out by entities by enabling the rapid analysis of large data volumes. In this way, the accounting professional has access to the necessary tools for identifying suspicious activities (e.g., real-time data analysis, automated alert systems, etc.) and, through proactive measures, can contribute to risk minimization.

Enhanced financial auditing is achievable, as the accounting professional benefits from additional tools compared to traditional methods of data analysis. Unlike the previously used sampling method, artificial intelligence allows for the analysis of all transactions, risk prioritization by automatically identifying high-risk areas, and focusing efforts on these areas. Additionally, automatic documentation of suspicious activities is facilitated.

Moreover, the quality of collected data is improved, reducing the risk of issuing conclusions without rigorous evidence.

3.2. Blockchain

Blockchain is a technology used for the decentralized, secure, and transparent transfer and storage of data. Due to its structure (operating based on a distributed network of nodes), it allows data to be accessible to all participants in the network, with control being shared, significantly reducing the risks of manipulation or centralized attacks.

Although this technology offers undeniable advantages for accounting professionals, its implementation and use come with numerous challenges, among which the following are considered relevant:

Lack of necessary knowledge: Blockchain is a complex technology that requires advanced expertise, necessitating the formation of teams that include IT specialists. This aspect complicates its efficient adoption.

Significant data volume: Blockchain permanently stores all transactions, leading to an exponential increase in the amount of stored data.

Confidentiality and security: These represent significant challenges due to one of blockchain's core features—transparency. This transparency can create difficulties

when handling confidential information. Accounting professionals must ensure a balance between the need for transparency and confidentiality requirements. This balance can be achieved by adopting private blockchains, which limit access to data.

Audit approach: This is a challenge for professionals in the field, as their focus will primarily shift to the initial data entered into the system rather than reviewing the final records, which are characterized by immutability.

Regulatory and standardization risks: These arise because there are no specific regulations for the use of blockchain in accounting, nor is there global standardization. Different types of blockchain networks function in various ways, creating further complications.

There are many opportunities that blockchain offers accountants, which not only makes processes more efficient by providing high-quality data and the likes of:

Transaction settlement eliminates manual intervention in reporting, reconciliation, and other such tasks, resulting in better accuracy and saving effort. As a result, this increases efficiency and gets rid of human mistakes.

Transparency and traceability: The use of blockchain gives, a hardy audit log that records transactions and records, which can be used to track transaction in real time and can build trust among the stakeholders on the governance of an entity's process.

Audits become less resource-intensive: The moment every single record is stored permanently and is available to be accessed at a glance, it means they now have to undergo audit for compliance and this significantly reduces the chances of fraud. Combine this with blockchain's cryptographic protocols and decentralized structure and you have the holy grail of data safety.

Such *smart contracts can be implemented* by integrating blockchain technology. By doing so, this minimizes the chances of disputes and automates some commercial transactions which enhances efficiency.

Strengthening the worth of the accounting profession: Blockchain allows accounting professionals to gain new skill sets, deliver greater value to their organizations, as well as focus on more strategic, advisory roles. Moreover, this technology unlocks new professional opportunities for the professionals working in this field.

3.3. Cloud Computing

At its very essence, cloud computing is a new architecture for providing computing services like storage, processing, networking, and applications through the internet. As the service is performed by specialized vendors, it is a convenient service for businesses and individuals and hence is widespread and scalable.

The adoption of cloud computing in accounting processes can bring about a series of challenges, with the most relevant ones outlined below:

Ensuring data security: This remains a primary concern, as data is stored in external environments (the cloud provider's servers), which can increase the risks of cyberattacks, data loss due to technical failures, or unauthorized access to confidential information. In addition to generating a sense of mistrust, as noted earlier in the context of other technologies, this can also lead to legal sanctions, which could harm the reputation of the accounting profession.

Limited access of accounting professionals to IT infrastructure: This is due to organizations outsourcing this component, creating dependency on the cloud provider for the continuity of operations and data recovery in the event of failures.

Proper management of large volumes of data: Cloud technology facilitates the storage of vast amounts of data, which then needs to be organized, analyzed, and processed by specialists. This often involves a high level of complexity, posing challenges for accounting professionals.

Data Migration Risk: A data migration from legacy systems to the cloud can be a complicated and risky process, even a simple problem can expose information to errors and potential loss.

Cloud computing has several benefits for accountants, as listed below:

Multi-user real-time Collaboration: In cloud computing, numerous users can access databases/news and anrelated documents at the same time. It enhances efficiency in accounting operations and enables smooth sharing of information among the stakeholders.

Availability of Service: A characteristic of cloud technology is that service providers ensure continuous and uninterrupted access to their platforms. This results in enhanced operational efficiency and productivity in work-related tasks.

Lower operational costs: Accounting firms can flexibly scale up the operations to manage their costs while peak demands occur and reduce storage demand when the need drops. This helps avoid the needed purchase and maintenance of pricey servers.

Improved data security: Small and medium-sized enterprises (SME) that may otherwise lack resources to apply solid security controls benefit from the robust protection offered by cloud service providers. This reduces the chances of sensitive data leakage.

Encouragement for Sustainability and Lower Carbon Footprint: The use of the cloud reduces energy consumption because there's no need for on-site servers. Moreover, direct transfer of accounting activities to the cloud reduces the use of paper manyfold, thus making the work atmosphere more ecofriendly!

Versatility in serving multiple clients and managing advanced projects: Cloud computing enables several users to access the same set of data in one place, thus enabling accountants to interact more smoothly with clients and oversee projects with higher agility.

4. CONCLUSIONS

This well-connected world enables the accounting sector to provide high-quality and efficient services to businesses and industries, thus, accounting practices have become very different from traditional types of practices as elaborated above and adaptation to new technologies requires considerable energy and effort for accounting professionals.

Policy Becker Walid Nasr read more Empowering Accountants to Shape the Future of Work in Finance and Accounting Skill development and interaction with information technology specialistsTo respond to the challenges and opportunities caused by technology developments, it is fundamentals for accountants to build new IT skills and able to cooperate with IT specialists. When accountants cannot deal IT-related complexities by themselves, a communication skill becomes another vital competency — not only to enable working with clients and auditors but also to be able to collaborate with the IT team.

Reconfiguring the role of the accountant: The profession needs to turn its focus to higher-level analysis and support in relation to decision-making in the business. This

means not only doing the day-to-day but also, being part of the long-term business strategies in an increasingly dynamic and complex environment.

Leverage the Enhance Ties Between Professional Accounting Associations and Academic Institutions: As the demand for professionals trained as accountants grows and needs to be met, it is vital to facilitate continuing education in postgraduate programs. These programs allow professionals to learn the most recent advancements and get new certifications to stay relevant.

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