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# ACCOUNTING AND ACCOUNTANT PARADIGMS CHANGED BY DIGITALIZATION

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**ABSTRACT**

*Two of the paradigms that digitalization has radically changed and transformed are undoubtedly the definitions of accounting and accountant. Many paradigms that are found in the traditional definitions have been changing or even disappearing. Among these paradigms, the abolition of the concepts of classification, recording and reporting as well as the accompanying radical changes in the definitions of accountants are found to be especially attention grabbing. The digitalization, unlike traditional accounting, imposes new functions on the accountant and introduces a new concept of accountant. In this study, the changing definitions of the accounting and accountant and the new paradigms brought about by the new definitions are scrutinized.*

**Keywords:** *Artificial Intelligence, Accounting, Auditing, Digitalization.*

## 1. INTRODUCTION

Fundamental changes and transformations continue to take place in the accounting discipline due to the digitalization. These changes and transformations have brought by new definitions of accounting and of the accountant. Functions of some professions that perform the functions of classifying, collecting, recording, and ensuring that the collected data is ready to use have been changing due to the digitalization and the accounting is one of the most foremost ones among these professions.

The changes that have appeared in the expectations of stakeholders, especially those who use accounting information, after the initialization of the digitalization period have started to be effective in adapting the accounting profession to respond to these demands. Redesign of the accounting profession mean an adaptation into the digitalization process, undertaking digital transformations of businesses and transforming into a digitalizing profession.

Adapting to the digitalization process requires accounting organizations to restructure their infrastructure, strategic business processes, business models and operational processes (Busulwa & Evans, 2021). While adapting to digitalization, various risks arise at the same time. These risks are increasing complexity and uncertainty in practicing the profession, unprecedented regulations, increasing needs in compliance requirements, changing professional capabilities and proliferation of requirements (International Federation of Accountants [IFAC, hereafter], 2017).

Due to the digital revolution, we are currently in, radical changes in the accounting profession are inevitable. In particular, the fact that the recording and reporting functions of accounting will be performed by machines will make the accountants have more time hence it changes the job description of accountants and allows them to focus on adding more value to their customer-based businesses, leading them to take on more specific tasks (Kruskopf et al., 2020: 84-85)

In this context, in this study, the changes and transformations in the concepts of accounting and accountant will be examined with the effect of digitalization.

## 2. THE IMPACT OF DIGITALIZATION ON THE CHANGE IN ACCOUNTING PARADIGMS

The digitalization has enormous impacts on the financial sector and, as a result of these effects, is drastically changing the validity of traditional

accounting definitions. Below these changes are examined.

### 2.1. Changes in Accounting Definitions

With the impact of digitalization, traditional accounting functions such as recording transactions and preparing financial reports are increasingly performed by artificial intelligence. For example, operations such as expense management and processing of accounts are conducted by artificial intelligence-supported algorithms. Accounting plays a key role in controlling and designing the digitalization process, executing changes and tailoring the strategy (IFAC, 2018; Kruskopf et al., 2020: 79).

The emergence and development of concepts such as network connections, cloud computing, IoT and artificial intelligence necessitates the creation of new concepts with changes in the traditional definition of accounting. This situation leads to the emergence of new paradigms. In these paradigms, as will be examined in detail below, accountants are no longer used as inputs in transactions' recording phases.

Digitalization is changing traditional accounting paradigms not only in the recording phase but also in the analysis process. Especially due to the bigger data size, the more diversified data and the easier data access compared to the previous periods, problems may arise in the process of decision-making. The data obtained in this process will have to be integrated, structured, and classified according to business expectations, and the accounting reports transmitted to stakeholders will be more comprehensive and more controversial than before. As the stakeholders will have access to the information that accounting provided them with, the information will be checked for suitability, reliability, accuracy, and usefulness. This audit can take place as a cross-check. When performing these checks, the stakeholders will use artificial intelligence or digital analysis tools, which will call into question the methods of traditional accounting. For example, thanks to the digital technology tools, small and medium-sized business managers can record business transactions and generate performance reports on their own. While this phenomenon does not diminish the value of the accounting information, it will lead stakeholders to change their perceptions of the roles accountants should play and the activities they should perform in providing the information. For example, operations such as the preparation of income or corporate taxes and the making of tax reconciliations can be conducted spontaneously with artificial intelligence. (PWC, 2018). In a way, this situation may cause the creation of digital account books. For example, Blockchain-based technological ledgers will be used in the later processes of digitalization. The prominent issue here is that how the accounting profession will adapt to the technological changes and how it will change the traditional procedures involved in professional operations. What is certain is that automation will significantly reduce the number of personnel required, especially in the traditional tasks. Thanks to automated processes, the repetitive routine tasks of surveyors will be eliminated so that accountants can focus more on the analytical work.

### 2.2. Changes in the Accounting Information Systems

Accounting information systems are generally defined as the acquisition, design, implementation and operation of systems that work together to collect, store, manage, process and receive data.

The accounting information systems ensure that the information needed in functions such as financial accounting, cost accounting, management accounting and auditing is ready in a timely and accurate manner. Accounting information systems help business managers and stakeholders in making correct and reliable decisions.

Accounting information systems covers financial systems managers, application leaders, designers, analysts, and accountants of these financial systems. Through these different roles, financial systems acquisition activities (business cases, system or vendor evaluation, service level agreement negotiations etc.), financial systems design or modification activities, financial systems integration activities, data management activities (data entering and leaving financial systems and instruments etc.), implementation of system controls, design of standardized reports and automation of financial

processes are included in the scope of accounting information systems (Busulwa & Evans, 2021).

Accounting information systems may help managers in identifying problems, taking action towards solutions and monitoring results. These actions can be aimed at directing the strategic goals of the organization or stay in the operational framework. The relationship in which the strategy dictates the structures that determine which accounting systems should be applied in firms can be gradually developed within linear boundaries so that accounting practices adapt to the increasing complexities in the business environment. Therefore, the role of accounting information systems in conceptualizing, detecting, and communicating new phenomena revealed by digitalization is also becoming effective (Bhimani, 2021: 66-136).

✓ Advances in digital technology are changing the functioning of accounting information systems through four key routes (Busulwa & Evans, 2021). Developments in digitalization are changing data usability and stakeholder expectations. Since much more internal and external data are available; the roles, activities, and outputs of these data in accounting may transform into new shapes.

✓ Second, advances in digital technology can change the functionality of the accounting information systems by significantly increasing the number and variety of internal and external applications that require integration with these systems. For example, software and hardware tools used by operations or different value chain functions may require real-time access to accounting standards and access to standards can be easily achieved through these systems. Examples of these applications and tools include mobile applications, data science applications, timeline applications, manager applications, operational applications, and IoT applications. The diversification of hardware and software tools stemming from the improvements in the accounting information systems will be able to improve integration with accounting standards, data management and participation in system architecture activities.

✓ Third, advances in the digital technology may lead to financial information being exposed to greater digital risk. This situation can increase the responsibility of and the necessity for regulatory agencies to ensure that cybersecurity, information privacy, and digital ethics risks are identified, mitigated through effective controls, and their negative impacts are minimized.

✓ Finally, digital technology advances are affecting the applicability and agility of accounting standards that are still in use. In this context, information systems that can be rapidly scaled and integrated with accounting standards, which can be made available in different environments (at work, home, online, outside the office etc.) and that can be reconfigured according to different architectures are becoming necessary. Failure to do so effectively can hinder the performance of all other accounting functions and put the life of the organization at risk.

## 3. THE IMPACT OF DIGITALIZATION ON THE CHANGE IN ACCOUNTANT PARADIGMS

Rapid developments in digital technology are likely to raise customer expectations, change customer behaviour, increase the capabilities of existing competitors while creating new competitors, and transform the foundations of competition. For this reason, strategic leaders and managers will expect support from accountants in different contexts and dimensions, and radical changes may take place in the nature and practices of the accounting business resultingly. To ensure that their value continues through the eyes of strategic leaders and managers, accountants must keep up with evolving digital technologies and find ways to benefit from advancements in the digitalization to both support their organizations and improve efficiency.

Thanks to automation trends such as machine learning as well as technologies like blockchain, some of the daily accounting operations will be carried out by the artificial intelligence instead of the accountants. Accountants, on the other hand, will turn to functions such as evaluating the actual economic interpretation of blockchain records or combining records with the economic reality and valuation instead of their traditional definition

functions. For example, while blockchain can confirm the existence of a borrower, it may not be able to analyse recoverable value or economic value. As another example, although the ownership of an asset can be verified by blockchain records, accountants will be able to secure its status, location, and true value. Blockchain will also allow for increases in accounting coverage by eliminating friction and providing certainty over transaction history and will be more cautious of functions that are currently considered too difficult or unreliable to measure, such as the value of data owned by a company (Institute of Chartered Accountants in England and Wales [ICAEW], 2018).

Given the vital position accountants hold and the roles they can play, they are critical to the success of digital transformation efforts. Accountants can play a critical partnership role in the field of digital business transformation. For example, they can implement secure business model changes and process designs, effectively manage growing transformation risks, and ensure optimal decisions based on reliable data and smart investments in enabling technologies (Busulwa and Evans, 2021).

Accountants who lay the groundwork to develop their digital technology, digital business, and digital transformation competencies mentioned above can then use these competencies to increase the chances of success of their digital transformation efforts and improve their transformation. For example, managers can develop their digital transformation, business, knowledge, and skills to improve the digital business and transformation competencies of their reports. In this way, managers may be empowered to shape appropriate digital, transformational, attitudes and behaviours, and thus foster a digital culture (Boulton, 2020).

Bank account statements are automatically issued and saved to the system with artificial intelligence algorithms, receipt photos are taken with phone cameras and as a result the photographs taken can be read by algorithms and saved in the system. Examples of such emerging tools include Xero, SAP S/4HANA, Tableau, XBRL, SAS and idaciti (Busulwa & Evans, 2021).

In the face of accountants who cannot build up their knowledge, skills and abilities in digital business and digital transformation, there is the possibility that digital business transformation efforts will become bottlenecks or obstacles for them. For example, accountants who lack the knowledge, skills and abilities of digital business and digital transformation are likely to be seen as lagging behind by those who have those knowledge, skills, and abilities.

The roles of accountants as initiative-taking providers of enterprise-wide exploration, investment and effective use of new or more advanced digital technologies and related tools are widely discussed (Busulwa & Evans, 2021). For example, the International Federation of Accountants (IFAC) recommends that accountants should actively participate in technology investment decisions to ensure investing in the right technologies and tools, implementing technology adoption projects quickly and effectively, and adopting the most appropriate technology (IFAC, 2018). As part of the digitalization of accounting, IFAC recommends that accountants should become partners with chief information officers (CIO) to raise awareness of the strategic value of different digital technologies and tools and to accurately address the value of their digital technology investments (IFAC, 2017).

As explained above, digitalization creates radical changes in the definition of accountancy and related concepts. Phenomena such as classification and recording in today's accounting definitions have disappeared with digitalization and a new definition of accountant has emerged. With this definition , the qualifications that should exist in the accountant have changed and new qualifications have been determined. These qualifications are described below in headings (Hood, 2020; Webb, 2020).

### 3.1. Strategical and Critical Thinking

Majority of the functions that were carried out by accountants are accomplished by algorithms now because of the digitalization. That is why, as the accountants got rid of routine Daily chores, they are able to focus on new responsibilities including ensuring efficiency, creating added value for their employers, trying to increase revenues and analysing

the data. Correspondingly, accountants are required to have strategical and analytical thinking skills due to the new paradigms.

### 3.2. Recognizing and Satisfying Emerging Needs

The accountants are expected to be qualified enough to answer emerging work demands in addition to have strategical and critical thinking skills. In other words, the profession will play a primary role in solving the potential problems faced due to the automation, making accurate forecasts, creating added-values for their employers and transforming these added-values into efficiency by producing creative ideas. In sum, accounting offices have to work almost as an innovation centre due to the new paradigms.

### 3.3. Integration and Cooperation Skills

Stemming from digitalization, the roles accountants play will be more varied, strategical and requiring close cooperation with people from other disciplines with varying expertise and skills. As the global businesses and remote working have become more prominent, it is almost an obligation for the accountants to have online cooperation and management skills.

### 3.4. Technological and Data Analysis Skills

The accountants need to improve and maintain their enthusiasm about both recent technologies and intellectual curiosity about what is next to ensure recognizing the current developments and examining most effective ways for gaining advantages. As the machine learning gets more complicated and new applications emerge, trying to find a way for maximizing both their employers' and own potentials becomes the basic function of the accountants. At the end, synthesizing these skills with abilities will allow accountants to solve problems effectively and handle the data accurately.

## 4. CONCLUSION

The accounting discipline, which is among the areas where the impacts of digitalization are seen most significantly, having radical changes and transformations undoubtedly. These changes and transformations revolutionize traditional accounting Notion and allowing new notions and definitions to emerge correspondingly. In other words, as the functions in the traditional definitions like recording, classifying and reporting will be performed by artificial intelligence from now on, these definitions will change in accordance with the new paradigms.

On the other hand, in parallel with the changing concept of accounting, the definitions of accountants are also changing and undergoing transformations. In particular, new business models are loaded into the concept of accountant, and this leads to the emergence of different business lines. Correspondingly, the functions of raising customer expectations, changing customer behaviour, introducing new competitors, increasing the capabilities of existing competitors and transforming the foundations of competition will be performed by accountants with the new definition.

In this context, accounting offices will work as innovation centres, and accountants will develop their ability to think strategically and critically, to anticipate evolving needs, to learn technology and data analytics through integration and collaboration.

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