Chapter 15
Digitalization in Accounting Through Changing Technology and Accounting Engineering as an Adaptation Proposal

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ABSTRACT

When the historical process of accounting is looked at, it is seen that there are revolutionary turning points such as development of double-entry bookkeeping method, uniform accounting system and international accounting standards practices, and use of computer software in accounting. Technology has initiated a radical transformation process by enabling the transfer of accounting to the digital platform. Involvement of accountants in this digital change process, their adaptation, and responses must be simultaneous. Students who are receiving accounting education should also be trained in this direction so that not only accountants but also future accountants will be able to adapt to digitalization. Accounting engineering is a model developed as a solution offer at this point. In this study, the concept of digital accounting and accounting engineering which emerged through the adaptation of accounting as an information system with new technologies will be discussed.

INTRODUCTION

"Accountancy is running after even insignificant amounts like 36 kurus'', this is a statement used by Halid Ziya who is one of the important Turkish writers to describe the life of an accountant in his novel called "Ferdi ve Şürekası'' (Ferdi and His Associates) that he wrote in 1984. Undoubtedly, this is a striking sentence that draws attention to the difficulty of accounting procedures which was executed manually

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before digitalization. Because, the "recording function'' which is included in the traditional accounting definition at that time caused considerable loss of time for accountants. Information technologies which develop in time and evolve continuously have brought radical changes, new facilitators as well as new duties and responsibilities to the accounting profession and accountants just like the all other areas of life.

When accounting history is taken into consideration, it is seen that the biggest steps regarding the development of accounting are taken in the digital age. In this context, it would not be wrong to classify accounting as "before the digital age'' and "after the digital age". The major development in accounting until the beginning of industrial revolutions before digitalization was the introduction of the double entry method. However, after the 1900s, the technological developments that occurred continuously after the industrial revolution brought many innovations and facilitators to accounting.

The development of accounting and the need for accounting types occurred due to the emergence of the needs in this area. As a result of the development of the company culture and especially the expansion of joint stock companies, the need for corporate accounting has emerged.

Accounting historians also claim that cost accounting is a consequence of the industrial revolution (Yükçü & Atagan, 2014, p.145). The mass production which is the cause of this revolution has led to the need to find the unit and total costs of the products or the cost accounting in other words. The growth of transport business, the increase in the distribution companies, the increase in production between the years of 1850 and 1925 as well as the need for accounting systems with the aim of planning and control in the American Railways in the 1860s and 1870s have had a significant impact on the development of administrative accounting following the cost accounting (Yükçü & Atagan, 2014, p.154).

Following the first and second Industrial Revolution, third Industrial Revolution started with the development of computer and automation followed by the fourth Industrial Revolution (Industry 4.0). What makes this revolution different from the previous "industrial revolutions'' is the speed of developments and the change it brought through affecting the production, management and governance systems in all major industries (Serçemeli, 2018, p.372). Many social and economic benefits began to be produced in a short time with the internet which was made available to the use of the world in 1990s.

Continuously developing and changing "information technology'' and the concept of "digitalization'' which is a result of the use of information technology has brought the concept of "digital accounting" into the field of accounting.

In this study, information technologies and digitalization will be mentioned briefly and the impact of these concepts along with the innovations that they brought to accounting profession will be explained.

The impact of all the information technologies or one or more IT tools on accounting, auditing and tax draws the attention of the academicians, because the dynamic aspect of technology brings new applications and changes with itself. Some of the academic studies on this subject are as follows:

Aytekin et al. (2016) stated that cloud computing which hosts services such as software, hardware and data hosting in a remote server and provides services as if they are close in order to increase their competitiveness should not be ignored. The accounting systems combined with the cloud computing services formed a new business model called Cloud Accounting. Some accounting softwares which can be considered important in Turkey have started to provide this service.

Serçemeli (2018) investigated the place and importance of artificial intelligence in the future of accounting and auditing professions and argued that these professions will not disappear completely in the future but there may be a decrease in the number of employment. It is envisaged that the professional roles will change and become more dependent on information technologies. They will continuously develop and form different strategies based on this information. As a result of this transformation, it has

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