

Chapter 9

Finance in the World of Artificial Intelligence and Digitalization

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ABSTRACT

This chapter considers finance in the world of artificial intelligence and digitalization with a special focus on the role and physical forms of money throughout history, modes of executing financial transactions, development of banking and investment industry, and its overall importance for financial management. Innovative and alternative business solutions in the financial industry result from the development of modern technologies, information and communication networks, smart devices, and various applications. Digital money and cryptocurrencies are extremely interesting current phenomena producing a broad range of speculations and mystery about their role in the future. Electronic payments bring many benefits and opportunities for corporate finance, capital markets, and investment and banking activities. Digitalization of business operations and use of artificial intelligence applications increases competitiveness and efficiency of all controlling processes and improves corporate risk management and at the same time decreases information asymmetry in the market.

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INTRODUCTION

The development of technology has generally increased efficiency of human activity and its effects are particularly measurable in business activities of companies as intermediaries and key points of communication between producers and consumers. A good idea turned into a well-designed project can produce amazing results. One such case comes from the entertainment industry with gambling and slot machines in Las Vegas, a small town in the desert and the origin of financial jargon for dividing shares into blue and black chips as money substitutes in the game of poker (Orsag, 2011). The Las Vegas entertainment industry needed additional sources of electric energy in order to secure the necessary glamour accompanied by indispensable glittering light effects. It also needed vast supplies of drinking water as this fast growing town was significantly exhausting its local water resources. In a way that was unimaginable before, the completion of the Hoover Dam Power-plant project allowed for the future development of that small town together with its greenery which would not have survived without irrigation, grandiose fountains and artificial lakes serving as platforms for water shows and other performances for tourists. Today's gambling machines reap the benefits of the digital era, so the appearance of a robot croupier would not be so unexpected in the future (Thompson, 1971).

There is a downside to every good story. Various social issues may arise here, and the discussion on the robot croupier may be among the most innocent ones. With regard to the increasing global problem of sustainable development, suffice to mention that due to the strong development of Las Vegas and the entertainment industry based on gambling, the taming of the magnificent Colorado River took place. The river whose stream shaped the rocks of the monumental Grand Canyon is a river that no longer reaches its delta today.

The word 'digitalization', which generally refers to converting data and information into digital form, is commonly used in a broader sense, primarily in business in which it denotes 'the use of digital technologies to change a business model and provide new revenue and value-producing opportunities'. This is a process of directing the economy to doing business digitally in the broadest meaning, which encompasses not only business but the complete process of digitalization also called digital transformation (Gartner IT Glossary). If digital transformation broadly denotes everything related to digital and other ensuing technologies, digitalization is an expression that also refers to doing business. This also means that digitalization occupies a significant role in finance as indicated in the Merriam-Webster Dictionary.

The origins of finance are related to the appearance of money. The change of the essence and form of money is related to technological changes. Today, these also include software changes which also comprise human knowledge. Money transactions developed in the Roman Empire nearly disappeared after its collapse, so natural production and barter were reestablished upon the ruins of the Empire. With the gradual development of medieval economies and the re-emergence of money as a means of exchange there was a need to delineate money transactions from bartering, a formerly dominant type of transactions. A new Latin word was thus coined - *financiae* (financiones) - an expression used in the language of the then high society, which today exists in all modern European languages (Orsag, 2015).

Business digitalization is significantly present in finance. Probably the first association that comes to mind in this respect is digital money together with different forms of the so-called cryptocurrencies, bitcoin apparently being the most prominent one. In recent years, there has been a growing interest in the concepts of artificial intelligence, machine learning, big data, deep learning and related concepts in economics and finance.

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