

Introduction

The Internet has been developing, particularly in general business, for a little over twenty years. No previous media developed so fast and none had such great impact on social change, economic development, including development of the so-called digital economy, or on the life of “ordinary people”. The first smartphone, significantly changing the way people behave, as well as access to knowledge, information, data, etc., appeared just 12 years ago. 10 years ago, an unknown creator or group of creators, functioning under the nickname of Satoshi Nakamoto, proposed and launched the blockchain-based smart contract, creating Bitcoin. At first, the concept of blockchain and cryptocurrencies seemed pipe dreams, apparently without any real impact on the economy, as demonstrated by a number of reports (prepared by governments or private institutions) from several years ago. The last 3-4 years have drastically changed that view, both with regard to cryptocurrencies, which are more and more often used or at least tested by financial institutions, including banks, and to the blockchain technology used more and more commonly in numerous areas, such as: power generation, health, education, finance, government, logistics, transportation and others. Many states have made strategic decisions to transfer their resources to blockchain-based systems. In other parts of the world, the first laws regarding blockchains have been adopted. This new technology has resulted in many new fortunes and many entities have been established, but some have also gone bankrupt (including “cryptocurrency exchanges”), and in the meantime the price of one bitcoin skyrocketed to almost USD 20,000 and then dropped to just several thousand. Besides Bitcoin, many other cryptocurrencies were introduced, with a capitalization of several billion dollars.

Therefore, it has become necessary to examine the legal aspects of that technology and its impact not only on the principles and concepts but also on the legal regulations, to define and determine the blockchain-related processes and to standardize the terminology used to describe the technology, as well as to indicate the method for or attempt at solving the problem associated with blockchains in different legal systems. However, the aim of this publication is not to assess blockchain technology or the rationale for introducing it. Its character, just like that of blockchains, is not uniform and refers both to private law and public regulations. Legal issues are inter-

woven with technical ones. The global character of a blockchain and the opportunities related to it have forced a supralocal attitude to that issue, taking into account the cross-border and international character of problems.

A lot of publications, documents and information exist or have been published solely in electronic form, so this study contains many online references.

The research into blockchains has required understanding its essence as well as the IT-related principles of functioning, which forced a number of not only legal, but also technical and IT consultations, within which the easy questions asked to an IT specialist were accompanied by more and more serious questions; cryptocurrencies were tested, including transactions using them, many ICT systems were reviewed and a number of scientific discussions were held with specialists from multiple areas of the law, as well as of cybersecurity, IT, identification, cryptography, ICT systems, etc. I would like to thank them for every discussion and for the time devoted to conversations and online seminars, because without that assistance, neither the scientific research nor this publication would have been possible.

Also, if it had not been for the support from the Universities that provided opportunities for work, internship, scientific research and access to library resources, this publication would not have come to life, especially considering that a number of quoted sources or described legal regulations are just several months old, while others were published while this monograph was being written, and were urgently obtained by partner Universities for the purpose of allowing me to use them and conduct the scientific research.

Opole, 2019