Blockchain

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Hype or Innovation

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Preface

Is blockchain an "alien technology" or a new encryption algorithm to achieve the creation of digital currency that has been turned into hype for marketing reasons? Technically speaking, blockchain is presumably a highly complicated, non-transparent technology, something that only corporate giants with innovation labs can work with – at least that is what most people think. The confusion is understandable, as even today[1] the debate rages on as to the "correct" definition of blockchain technology.

In 2016 and 2017, when the hype surrounding blockchain had reached its peak, numerous companies began to take part in the "blockchain experiment." Each had its own visualization of blockchain. This meant that the hype surrounding blockchain technology not only served to spur on development but, at the same time, was the most common cause of failure. The planning and development phases of numerous projects were shortened dramatically, so that the product could be brought to the market as quickly as possible and thereby profit from the extensive hype. At the same time, many technical concepts and projects that had already existed before the appearance of blockchain technology (and had little to do with its innovation) could be sold more successfully under the blockchain name. That the strongly hyped blockchain technology was met with disappointment should therefore come as no surprise. Looking at a new technology realistically is the cornerstone of its success. This can only happen when the innovation is used correctly.

In this book, we focus on the innovation of blockchain technology and the advantages this technology offers us when compared to existing solutions. Our goal is to provide a clear and comprehensive overview of blockchain technology and its possibilities, thereby helping you to form an opinion and draw your own conclusions.

Right from the start, we would like to sharpen our focus on the main objective of blockchain technology. To do this, we begin in the first chapter with the topic of decentralized networks, familiarizing ourselves with their challenges and using

[1] At the time this book was written.

the example of an online trading platform. In succeeding chapters, we explain what blockchain technology is, where it comes from, and how it works. Before we take a closer look at technical questions, we will explore the necessary technical foundations. In this chapter, we examine individual approaches at the core of blockchain technology, and how they are composed. With the help of well-known examples, such as Bitcoin and Ethereum, we look at the architecture of blockchain technology and focus on the challenges facing it, such as those involving security and scalability. Subsequently, we discuss the options available when introducing blockchain technology. Among other things, we will target best-practice examples to get a better idea of what areas benefit from this technology.

Numerous examples and detailed explanations will accompany you throughout this book. It is our hope that by the time you have reached the end, you will be able to decide for yourself what is truly innovative about the blockchain technology and what is nothing more than hype.

This book builds on our Technical Report [25] and aims to provide a comprehensive overview of blockchain technology. In addition to the technical foundations, it aims to cover the big picture, from the idea of the Bitcoin system to the challenges facing blockchain technology and its alternatives.

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