Business Horizons (2018) xxx, xxx—xxx

Available online at www.sciencedirect.com

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Blockchain tokens and the potential democratization of entrepreneurship and innovation

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KEYWORDS
Blockchain token;
Initial coin offering;
Token sale;
Crowdfunding;
Open innovation

Abstract Over the past few years, Bitcoin has emerged as the first decentralized, global currency. The rise of Bitcoin has brought attention not only to digital currencies but also to the underlying technology empowering digital currencies: blockchain technology. A blockchain is a distributed ledger that records and secures transactions in a peer-to-peer network. Besides empowering digital currencies, blockchain technology has given innovators the capability of creating digital tokens to represent scarce assets, potentially reshaping the landscape of entrepreneurship and innovation. Blockchain tokens may democratize (1) entrepreneurship by giving entrepreneurs new ways to raise funds and engage stakeholders, and (2) innovation by giving innovators a new way to develop, deploy, and diffuse decentralized applications. Blockchain technology and tokens have sparked a new wave of innovation, which may start to revolutionize entrepreneurship and innovation.

1. The tokenization of money and beyond

Since Bitcoin was first conceptualized in 2008 and implemented in 2009 (Nakamoto, 2008), the price of Bitcoin has gone from almost zero (January 2009) to more than $4,000 (September 2017). In the first commercial transaction using Bitcoin in 2010, 10,000 Bitcoins were used to buy two pizzas (Popper, 2015). In September 2017, the same number of Bitcoins was worth around $40 million and was enough to buy a whole pizza chain. The meteoric rise of Bitcoin has made early adopters rich—very fast. Now, people are assessing whether they should jump on the bandwagon; enthusiasts believe that Bitcoin is unstoppable and will continue to rise in the years to come, while skeptics warn that Bitcoin has no intrinsic value and is just a modern-day pyramid scheme. This debate reflects the uncertainty about the future of Bitcoin.

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https://doi.org/10.1016/j.bushor.2018.03.006

Yet, this debate may be misplaced; what is important may not be Bitcoin itself but the underlying technology empowering Bitcoin: blockchain technology (Tapscott & Tapscott, 2016). Even if Bitcoin fails and disappears in the future, the underlying technology will stay with us and will continue to disrupt existing businesses and create new industries.

A blockchain is a distributed ledger that is usually managed by a peer-to-peer network (Buterin, 2014b; Nakamoto, 2008). In the distributed ledger, transactions are organized into blocks that are linked together into a chain. In a blockchain, transactions are validated and recorded by distributed consensus in the peer-to-peer network, eliminating the need for a trusted central entity. Once transactions are validated, they become irreversible, verifiable, permanent, and secure on the blockchain. Because of these characteristics, blockchain technology is well-suited for empowering financial transactions, and its first successful application is the creation of Bitcoin—the first global, decentralized digital currency. Empowered by blockchain technology, Bitcoin and other digital currencies have tokenized and decentralized money, leading to potential disruption in financial industries (Larios-Hernández, 2017). As blockchain technology advances, it becomes capable of tokenizing and decentralizing not only money but also other scarce assets, significantly expanding its disruptive potential (Tapscott & Tapscott, 2016).

The application of blockchain technology to things beyond digital currencies requires new developments in the technology itself (Diedrich, 2016). In 2013, a group of developers led by Vitalik Buterin initiated a project called Ethereum to expand the capabilities of blockchain technology. They recognized the limits of the Bitcoin blockchain. Bitcoin by design was mostly an application—or a platform with very limited capabilities. They wanted Ethereum to become a general-purpose development platform that could be relied upon to create decentralized applications and digital tokens (Buterin, 2014b; Wood, 2014). The Ethereum platform was released in 2015 and the Ethereum community has been growing rapidly, sparking a new wave of innovation. Developers have used the platform to create a wide variety of decentralized applications as well as digital tokens that can be used to interact with decentralized applications. Empowered by Ethereum, developers can now tokenize almost any scarce asset. In the process of tokenizing scarce assets, entrepreneurs and innovators have started to realize the far-reaching, disruptive power of blockchain technology and tokens.

Blockchain tokens can be created on top of a blockchain and can be used to represent a wide range of scarce assets beyond currencies. Some blockchain tokens are like preorders in pre-ordering crowdfunding campaigns, while other blockchain tokens are like ownership stakes in profit-sharing crowdfunding campaigns (Belleflamme, Lambert, & Schwienbacher, 2014). Provided with the ability to create blockchain tokens, developers realize that they can tokenize projects and sell blockchain tokens to fund projects. In no time, a new way of fundraising has emerged: initial coin offerings (ICOs). Like crowdfunding (Belleflamme et al., 2014; Mollick, 2014), ICOs bypass traditional intermediaries (i.e., venture capitalists and investment bankers) and raise funds directly from early investors. Unlike crowdfunding investments, however, blockchain tokens are scarce, global, liquid, and tradable, making them especially appealing to global investors (Coinbase, 2016; Massey, Dalal, & Dakshinamoorthy, 2017).

For entrepreneurs and innovators, blockchain tokens are not only a new way of raising funds but also a new way of building ecosystems. By issuing and selling blockchain tokens, developers can co-opt complementors, early adopters, opinion leaders, and other stakeholders. Blockchain technology and tokens have given entrepreneurs new capabilities and have started to reshape entrepreneurship and innovation. In this article, we will explore how it reshapes fundraising, investing, community building, and open sourcing (see Table 1 for a concise summary).

2. Fundraising through ICOs

ICOs (also known as token sales) are a new way for startups to raise funds—and for blockchain startups, perhaps the prevailing way. This new method of fundraising has existed for only a couple of years, and it has already enabled entrepreneurs and innovators to raise billions of dollars from global investors. Nevertheless, this method is still immature and is somewhat controversial. It may continue to evolve and develop, allowing it to play increasingly important roles in the financing of entrepreneurship and innovation.

2.1. What are blockchain tokens?

Blockchain tokens can represent a wide range of scarce assets, such as currencies, securities, properties, loyalty points, and gift certificates, among others (Buterin, 2014b). Blockchain tokens usually either have a fixed supply or follow a transparent supply schedule, making them anti-inflationary. Moreover, they can be transferred between parties