

Chapter 34

Anticipating Blockchain as Disruptive Technology

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ABSTRACT

Today, people are going to senior managers in almost all industries pitching about their “I have a new product” thing. Disruptive technology transforms a differentiated product that was so expensive and sometimes complicated or sophisticated into a simplified implementation with the applicability of APIs. APIs provide a platform where startup companies can be nitrated to a giant and established companies. Secondly, it changes the business ecosystem to suit all kinds of players small or big. In previous years, only major companies with a lot of resources had access to such technologies. This selfish access to new technologies would make such giants flourish like Amazon, eBay, Google. Blockchain is a form of distributed ledger technology gaining significant research devotion in numerous areas cutting across e-commerce, cryptocurrency, cryptography, logistics, security, finance, and now it is gaining grounds in e-commerce, big data, and internet of things. This chapter introduces the concept of blockchain, applications, and benefits it possesses in various fields related to e-commerce.

INTRODUCTION

There has never been a better time to invest or innovate than today with a sequence of technologies coming on the market. “An idea that has long affected business sustainability: a new technology that has created new markets, or disrupts, the status quo in existing markets is regarded as a disruptive technology (Christensen, Raynor et al. 2015)”. With upcoming disruptive technologies, such as artificial intelligence, crowdsourcing, big data, Internet of Things, Blockchain (CeArley, Burke et al. 2016, Dinh and Thai 2018, Nambobi, Khan et al. 2018), the playfield has been tilted in that big, small and medium

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companies alike have similar access and can afford the consumption of the same technology product at the same pace to create competitive advantage. This disruption has moved its way into different business environments and companies facing trust, operational, legal compliance issues. Blockchain technology is visualized as that single technology that can resolve these issues created by disruptive technologies.

It has been predicted that by 2019, 20% of all IoT deployment will have some basic form of blockchain technology-enabled (I-scoop 2016). Since IoTs is involved in producing massive amounts of data, some form of blockchain technology will be involved in big data transactions. Companies that utilize big data transactions, smart devices and the Internet of Things are not going to be left undisrupted by blockchain. These blockchain technologies will force companies to venture into new markets so as to harness the three basic advantages of blockchain technologies that are build trust including reducing risks of collusion and tempering, reduce cost by removing overhead caused by mediators and accelerate transactions by reducing settlement time than before.

Formally, many scholars have defined blockchain differently, the authors tried to describe this concept in a broader perspective. The underlying technology that enables moving of digital coins or assets among individuals. it can also be defined as an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value (Prasad and Rohokale 2020). Blockchain can be used as a universal network where all kinds of information can be stored and exchanged in a distributed manner to inform distributable ledgers that are known for being immutable, secure and easily auditable whenever required. This renders a huge level of transparency that most of the current system lack.

Alternatively, blockchain can be defined as a data structure where each block is linked to another block in a time-stamped chronological manner (Ayed and Belhajji 2020). Every new record is validated across the distributed network before it is stored in a block. Therefore, blockchain self-sustain, self-validates a network integration. Every block that is going to be written in the existing blockchain has to go through a standard validation process before getting a record in the block. It is important to note that before this validation process occurs, the validator decides and records only good blocks and bad blocks are discarded. Each block is identified by its cryptographic signature which makes blockchain safe and secure. The information is not available in plain format, everything is stored and saved in the form of encrypted information only.

The first block in the blockchain you develop or produce is called Genesis block (Lewenberg, Sompolinsky et al. 2015, Bhadoria, Arora et al. 2020). This is the first block created at position zero when we talk about the length that should be the point where the entire chain starts and others follow. The Genesis block will always be the first block in any chain block network when designing it, developing and start using it, another block in the chain identifies the previous block using its block id so this way every next block is aware which block to follow.

Motivation Factors for Blockchain

Although we have current trading system, blockchain is required to solve the obstacles that are facing the current systems. Some of the challenges include: The fees are taken to carry out the transaction, mediating cost which increases the transaction cost, minimum practical transaction are limited, cutting off the possibility for small casual transactions, financial exchange is slow, checking and low-cost wire service taking days to complete because of the current system of mediators. The system is opaque and non-transparent because people don't know what happens to their money that they investing in banks

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