


Chapter 10

Securing End User Computing Environments Using Blockchain

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ABSTRACT

COVID-19's phenomenal effect has expedited the adoption of digital technologies over several years, indicating that several of these breakthroughs are here to stay. Several enabling technologies are currently being implemented as major solutions for improving and responding to the pandemic's numerous issues, with blockchain being one of the preferred solution options. Blockchain can be used to re-structure processes, resulting in most effective operational and business models (e.g., democratising quality cancer detection with advanced artificial intelligence based radiomics technologies). The authors posit here that while there is a lot of anticipation about using blockchain to improve business capabilities, the lessons learned from the many pilots and proofs of concept so far should be considered. The necessity for a structured, formal decision-making process, based on good business logic and an awareness of the problem's process lifecycle, is however critical. Blockchain is a means to an end, not an end in and of itself.

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INTRODUCTION

There are some upcoming and emerging technologies like Artificial intelligence and machine learning, the internet of things, blockchain, robotics, synthetic biology, nanotechnology, 5G, cloud and edge computing, and big data that could support effectively globally to overcome the challenges due to the recent pandemic, including developing intellectual, quick emergency strategies and outcome oriented for future recurrences and massively improving the response to public health systems. There is also a business sector that advocates for the integration of these technologies post-pandemic, such as the integrating blockchain with multi-drones and multi-robot to optimise an effective end-to-end chain, surveillance monitoring and identifying crucial features of end-user computing.

Blockchain technology is one of the numerous technologies of the Industry 4.0 regime that have entirely disrupted the environment, according to Tan et al (2020), that will ultimately revolutionise the way people work and live. Kritikos (2020) campaigned for blockchain technology, citing it as one of the top ten technologies for combating COVID-19.

In 1991, through their research, Stuart Haber and W. Scott Stornetta visualised in detail what is now characterised as blockchain. They created a cryptographically protected chain of blocks that would prevent anyone from manipulating document timestamps as a part of their first project.

Their entire business was modified considerably in 1992 to include Merkle trees, which lead to an increase in efficiency and allowed them to undertake collection of more records on a stand-alone structure. However, because of Satoshi Nakamoto, Blockchain archaeology eventually took prominence in 2008. Bitcoin was the first implementation of Blockchain created in 2008. Satoshi Nakamoto described it as an electronic peer-to-peer system in his research. Nakamoto created the genesis block, and used it to mine other blocks, culminating in one of the strongest chains of blocks carrying metadata and operations. Since the emergence of Bitcoin, a slew of other ones have highlighted on the front, the key concepts and intensive possibilities of the digital blockchain systems. As a result, blockchain heritage encompasses a regime where the movement enhances a progressive approach on the traditional methods towards more application-oriented ones. Now, many Indian successful corporates have experimented with Blockchain in the fields of bill discounting, trade payment systems, cross-border remittances, supply management financing, branding engagement and digital identity transformation.

The fusion of public and private Blockchains into an ecosystem where enterprises, clients, and vendors can engage collectively in a safe, auditable, and in a web - based environment will drive Blockchain's exponential and disruptive growth. This is exploratory research with the intent of giving a more general overview of a concerned

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