Chapter 12
Blockchain for Transformation in Digital Marketing

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ABSTRACT

Today, an increasing number of firms are embracing blockchain as part of their efforts to achieve operational efficiency and improve performance, thereby acting as a catalyst to bring about digital transformation. Gartner listed blockchain as the most promising technology in digital marketing in the year 2019. Blockchain is driving digital transformation by forcing organizations to rethink how they operate, in terms of identifying ineffectiveness of traditional approaches to doing business, to address their business needs, promote innovation, and through establishment of standard frameworks. Blockchain shows massive disruption potential in the area of customer relationship management and enhancing consumer experience, besides improving trust, security, and privacy. Therefore, this chapter focuses on providing an enlightenment on how blockchain can specifically address the areas of transformation in digital marketing, prominent frameworks in use, and listing the benefits and challenges of implementing this technology.

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INTRODUCTION

Blockchain is among the technologies that are rapidly gaining traction worldwide. Today, an increasing number of firms are embracing Blockchain as part of their efforts to achieve operational efficiency and improve performance (Kim & Shin, 2019; Mahyuni et al., 2020). In addition to enabling firms to streamline their supply chain processes and allowing them to keep their costs down (Shashi et al., 2020a), Blockchain has also been credited with improving governance, promoting transparency, and making it possible for firms to generate greater value for their stakeholders (Aristidou & Marcou, 2019; Bauer et al., 2020; Gaur & Gaiha, 2020). However, perhaps the most important impact that Blockchain is having is catalyzing digital transformation.

Blockchain is defined as "An expanding list of cryptographically signed, irrevocable transactional records shared by all participants in a network. Each record contains a timestamp and reference links to previous transactions. With this information, anyone with access rights can trace back a transactional event, at any point in its history, belonging to any participant" (Kandaswamy & Furlonger, 2018, p. 3). The reason behind the popularity of this concept is that it is a highly effective and secure mechanism for transacting in a network because for two reasons: One, it does not need a third party to verify or authorize communication between two entities over the Internet and second, intruders find it immensely difficult to change network configurations as any new link added in the network appear as a fundamental block in the list of networks (Al-Jaroodi & Mohamed, 2019).

Four main features enable the functioning of Blockchains: Digital Identities, Distributed Security, Smart Contracts (Boily, 2022), and Micro-Controls. In addition, Blockchain can be used for (Underwood, 2016; Nofer et al., 2017):

- Digital identities - Creation of digital identities, that is, a compilation of complete information about an entity that exists in the digital form;
- Distributed Security – Refers to the data shared through blockchain network in a compartmentalized manner to ensure the protection of data, also termed as digital approach;
- Smart Contracts - Trackable and unalterable, credible contracts which can be exchanged using this technology over any public network without the involvement of a third party;
- Micro Controls - Implies the micro measurements and dynamic controlling at a granular level at unprecedented fine detail, enabled by Blockchain.

The evolution of this technology lies in open-source communities and dates back to the development of Bitcoin (Al-Jaroodi & Mohamed, 2019). The largest online open-source platform for technology developers 'Github' has 772 different communities on Blockchain. Based on the outcomes of a report on insights from the Github platform (Trujilio, Fromhart, & Srinivas, 2017), the core code which forms the basis for Bitcoin was first published in April 2009, and statistics suggest that each year more than 8600 new projects on Blockchain are added by open-source communities. Therefore, the largest enabler for developing this concept is the Internet, which is also a major reason for the presence of a large number of codes on Internet-based Blockchain network development compared to Intranet-based development. In addition, there is a devoted decentralized platform for the development of Blockchain-based smart contracts known as the Ethereum project, initiated in the year 2013. This project provides a blockchain protocol on top of which the developers can add any new functionality or application. Private and permissioned project 'Hyperledger' initiated in 2015 is also a platform for Blockchain-based applica-