


Chapter 6

Combining E-Commerce and Blockchain Technologies to Solve Problems and Improve Business Results: A Literature Review

Albérico Travassos Rosário

 <https://orcid.org/0000-0003-4793-4110>

GOVCOPP, IADE, Universidade Europeia, Portugal

ABSTRACT

The internet and digital transformation have changed our relations with the market. These technologies have been developing continuously, creating opportunities for new business models, and e-commerce has grown overwhelmingly worldwide, changing the consumption process of a large part of the world's population. Companies are increasingly using blockchain technology to improve and create new global trading business models. Blockchain had its first application in cryptocurrencies, but it has quickly become a major solution in all sorts of activity sectors, providing increased security in commercial transactions. An important question is how the blockchain can leverage e-commerce in solving problems and improving business results. It was concluded that blockchain could leverage e-commerce in the four fundamental areas of (1) e-commerce financial transactions, (2) e-commerce supply chain management, (3) e-commerce forecasting and contractual relations, and (4) e-commerce transactions systems' trust and credibility.

BACKGROUND AND INTRODUCTION

The cumulative, transformative impacts of the advent of the Internet and the ever-increasing ubiquity of novel digital technologies on the very nature of contemporary human life are undoubtedly incomparable in magnitude to any other effects of the plethora of notable, drastic developments that have transpired

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throughout the history of human existence. The most profound effects of the Internet and digitalization are, in this regard, arguably most manifest and apparent in the ways these new modalities of social connection have impacted the realm of the conduct of business worldwide. More specifically, the Internet and digital technologies continue to have a significant transformative effect on the patterns and tendencies of modern consumption and how new businesses market their offerings. Extant empirical research demonstrates, in this regard, that the Internet as a medium of marketing has multiple times the influence on consumers than traditional mediums like print media and television (Cochoy et al., 2017). Consumers rely increasingly on the Internet in different ways to make different decisions, including purchasing ones.

From the perspective of modern companies, the Internet has proven to improve marketing strategies effectively and approaches in diverse areas, including the conduction of marketing research, customer service and experience provision, product distribution, and problem-solving (Cochoy et al., 2017). The efficiency and performance in contemporary organizations brought by Internet marketing's intrinsic value give them a massive flow of information, new products, services development, and bolstered market transparency (Cochoy et al., 2017). The sum of new opportunities to organizations brought by the Internet and digital ways has unfolded over recent history through several distinct paths.

One unique path has been the fast development of electronic commerce. E-commerce refers to digital applications acting "as a trading bridge between merchants and purchasers" in an 'online' environment (Kathuria et al., 2019, p.1). The present proliferation of e-commerce companies best shows the rising importance in the modern consumer's life, "there are more than three million companies worldwide engaged in e-commerce," with notable examples of highly successful e-commerce giants like Amazon, Alibaba, and eBay (Kathuria et al., 2019). Driven by rapid advancements in e-commerce and Internet technologies, online shopping has drastically transformed how consumers to shop and buyers trade, mainly through the introduction of unprecedented levels of speed, efficiency, and convenience.

Another essential path that the Internet and the digital world have evolved in commerce has been blockchain technology. This technology can be described generically as constituting "a fully distributed system for cryptographically capturing and storing a consistent, immutable linear event log of transactions between network actors" (Marten & Kai, 2017, p.3). Based on the definition above alone, it is clear that blockchain technology, underpinned by the pervasive penetration of novel cloud-connected digital devices in addition to cloud-based data analytics and storage capabilities, can be potentially disrupted by technical innovations in the age of digitalization—current blockchain use cases in the digitalization of asset ownership evidence this fact. The technology is increasingly demonstrated and seen as a reliable modality for contract ownership and management and for conducting nearly unimpeachable but distributable audit trails through the mediums of distributed cryptocurrencies (Kathuria et al., 2019). The programmable and highly flexible provisions of blockchain technology, particularly concerning payment and transaction platforms, facilitate a broad spectrum of novel financial instruments.

More importantly, the feasibility of combining e-commerce and blockchain technologies is evident from the descriptions and definitions mentioned before. For instance, being a given fact that electronic payments and transactions are an indispensable part of e-commerce systems, it is reasonable to appreciate the possible integration of blockchain technology into e-commerce (Zhao & O'Mahony, 2020). Surprisingly, current digital innovations have failed to generate new applications that leverage e-commerce with blockchain technology. Moreover, to the best of knowledge verified as an author, it is thought that it does not provide a unified framework under which incorporating blockchain into e-commerce and vice versa is achievable. Against this backdrop, the main focus of this discussion is filling the gap mentioned above in the literature. This work wants to build an epistemological basis for that integration by exploring a

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