THE IMPORTANCE OF BLOCKCHAIN TECHNOLOGY IN INTERNATIONAL TRADE

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ABSTRACT

International trade enables countries to expand their markets and obtain goods and services that might otherwise be unavailable domestically. Countries that engage in international trade typically have a competitive advantage since they specialize in manufacturing and exporting to their trading partners, resulting in higher economic growth. International trade enables countries to use their resources more efficiently, such as labor, technology, and capital. Although blockchain technology is still in its early phases of development, it offers enormous promise for improving and lowering the costs of international trade. This fact has prompted many businesses to upgrade their antiquated systems with blockchain technology in an effort to address issues with third-party verification and trust in international trade transactions, as well as issues with information sharing, transparency, documentation, costs, and payment delays. With the help of blockchain technology, participants in the system can complete all of their tasks in a decentralized, transparent, traceable, and dependable manner, and they can save the results in a digital ledger that makes it easier to keep track of assets and record transactions in the corporate network. The blockchain network reduces risk and costs for all parties involved by enabling the tracking and trading of almost anything of value. Blockchain technology and artificial intelligence (AI) together open up new economic opportunities, enhance automation, and spur innovation in the way different industries cooperate. According to projections, the worldwide market for blockchain technology is expected to increase significantly over the next several years.

Key words: Blockchain technology, International trade, Economic growth, Artificial intelligence (AI).

INTRODUCTION

Blockchain technology serves as the foundation for smart contracts, new currencies, and financial services. Blockchain technology can be viewed as the fifth disruptive computing paradigm, following mainframes, personal computers, the Internet, and mobile devices (Swan, 2015). Issues with information sharing, openness, paperwork, costs, and payment delays in international trade can

all be resolved with the help of this technology (Weerakoon & Chandanie, 2021). Thanks to the digitalization of business, companies now have access to a whole new market and endless opportunities for growth (Ravić et al., 2022), and blockchain technology, which may be compared to a large ledger that anybody can freely read, enables the maintenance and chronological organization of a public register of transactions based on a decentralized network of users (Bonsón & Bednárová, 2019).

Blockchain technology has the potential to address the problems of third-party verification and confidence in international commerce transactions. Blockchain's reliability and transparency in particular give businesses a rare chance to deploy digital identities in international transactions. A company's digital identity in an international trade transaction might work as a sort of business passport, allowing it to be used anywhere in the globe for trade-related activities like logistics, trade financing, and customs clearance (Grier, 2023). By improving third-party verification and dependability in the context of international trade, blockchain technology and digital identities for businesses have the potential to save trillions of dollars globally. In light of the growing incidence of cybercrime and the potential long-term effects on those exposed to it, the potential of blockchain technology becomes particular significance (Baltezarević et al., 2023). A digital token that functions as a business passport could be used to store information about a company's operations across national boundaries. This would enable data to be gathered at every stage of an international trade transaction, resulting in a comprehensive record that could be used to validate and rank the company's business reliability (Grier, 2023).

National economies are significantly impacted by international trade. Organizations endeavor to seize chances and broaden their activities beyond national boundaries. It is inevitable to look to overseas markets in order to break away from reliance on domestic markets. Customers in many countries can obtain a broad choice of items, quality, and pricing through international trade (Surugiu & Surugiu, 2015). Countries can profit economically from selling their domestic goods to foreign nations through international trade. Consequently, participation in trade agreements or commerce with other nations has a favorable effect on economic growth (Abdullahi et al., 2013). International trade can be efficiently reshaped by blockchain technology. Digital platforms and technology can solve issues related to time, money, and distance while also improving agility, efficiency, and coordination (Lund et al., 2019). It can help participants in a blockchain system carry out all of their tasks in a decentralized, transparent, traceable, and dependable manner, all of which can be recorded in a digital ledger (Rawat et al., 2021). This technology has an impact on international trade in a number of ways, including how much it costs, how it is financed, how it affects supply chain visibility, logistics, and transport processes, how it affects customs procedures, certification, fraud, and more (Slatvinska et al., 2022). According to forecasts, the worldwide blockchain technology market is predicted to grow rapidly in the next years, reaching a value of over US$39 billion by 2025. Approximately thirty percent of the market value of blockchain technology is focused in the banking sector, which has been one of the first to invest in the technology (Statista, 2023). Blockchain technology can make business transactions faster, safer, more transparent, and independent (Toorajipour et al., 2022). Furthermore, by offering thorough understanding of distinctive items, this technology might enhance the effectiveness of current supply chains as well as trading patterns and markets (Allen et al., 2019). Additionally, blockchain technology can improve the traceability, reliability, and verifiability of sustainability communication (Cao et al., 2023).

INTERNATIONAL TRADE IN THE MODERN WORLD

The exchange of commodities or values with the purpose of making a profit is referred to as trade. Goods are moved from areas where they are plentiful to areas where their supply is insufficient to meet consumer needs, driven by these economic transactions. Apart from its fundamental economic

significance, trade fosters the growth of transportation and communication networks as well as the flow of cultural influences across various populations (Sandroni, 2016). Trade theory conventionally held that countries that engage in trade have a comparative advantage because they are experts in manufacturing goods that they can sell to other trading partners, and that trade fosters economic growth by redistributing wealth. Economic growth continues to be a significant challenge for emerging economies globally, notwithstanding the multitude of attempts that developing nations have undertaken to liberalize trade with the rest of the globe (Doan, 2019).

The exchange of products, services, and capital across international borders or territories is referred to as international trade (Grozdanovskaa et al., 2017). This state of affairs will persist in the future since it serves as a bridge between nations (Terzea, 2016). Views on the relative importance of factors impacting trade and trade patterns, as well as the role of trade in economic development, have changed in recent years due to the development of trade theory and its use in trade policy (Wangwe, 2003). Due to the significant relationship between openness to trade flows and their impact on economic development and performance, trade between nations with comparative advantages is thought to boost growth (Pologeorgis, 2010).

The digital economy is widely acknowledged for its role in fostering sustainable economic growth in the modern era. Through the wise use of natural resources, human capital, and the building up of productive capacity in extractive sectors, digitization fosters economic development (Hofman et al., 2016). It is argued that the digital economy boosts trade because it leads to a redistribution of capital (Lwoga & Sangeda, 2019). Protectionist policies and trade disputes have the potential to hinder trade while also encouraging a number of intricate substitution effects and the rerouting of global trade flows. Few analyses have evaluated the relatively little effects on international trade flows of the tariff increases linked to the US-China trade war (Gunnella & Quaglietti 2019).

At different phases of their formation, trade was essential to the growth of many nations. Recent research indicates that regional trade agreements are assumed to decrease growth and investment, but broad trade liberalization, which takes the form of unilateral tariff reductions or the removal of non-tariff trade barriers, is shown to enhance growth performance (Thrilwall, 2002). One way that foreign entities communicate economically is through trade, which exemplifies the concept of economic connectedness. Multinational companies, overseas workers, and foreign financial investments are examples of additional economic connections. Globalization is the process by which these types of economic connections have grown (CFI, 2015). Countries can access goods and services that are unavailable domestically and grow their markets through international trade. The market is increasingly competitive as a result of international trade. In the end, this leads to more competitive pricing and gives the customer a cheaper product (Heakal, 2023).

BLOCKCHAIN TECHNOLOGY AND ITS EFFECTS ON INTERNATIONAL TRADE

Blockchain is a shared, unchangeable ledger that makes it easier to track assets and record transactions in a network of businesses. Assets might be intangible (intellectual property, patents, copyrights, branding) or tangible (home, car, money, land). The blockchain network reduces risk and costs for all parties involved by enabling the tracking and trading of almost anything of value (IBM, 2023). Blockchain is a technique for storing data that makes system manipulation, hacking, and alteration difficult or impossible. This technology is a block-based structure used to store transaction records. Every entry in this ledger is validated by the digital signature of the owner, ensuring the transaction's validity and guarding against manipulation (Ravikiran, 2023). Information forms the basis of business. The more accurate and quicker the information is obtained, the better. Because blockchain technology stores information in an immutable ledger that is accessible only to authorized network users, it is perfect for delivering instantaneous and transparent information. Orders, payments, invoicing, production, and other data may all be tracked via the blockchain network. Additionally, members have a single view of the truth and can observe every element of a

transaction from beginning to end, which fosters better confidence and opens up new possibilities and efficiencies (IBM, 2023). The digital book's information is therefore extremely secure. For the purpose of keeping transaction records based on actual purchases, a digital ledger can be thought of as a Google spreadsheet that is shared across several computers connected to a network. Though not tamperable, the data is visible to anyone (Ravikiran, 2023).

Blockchain technology has immense potential for innovation and economic growth. The reliance of our society on decentralized intelligent systems has grown significantly during the past ten years (Calvaresi et al., 2019). The following principles define blockchain: decentralization (functions without a central management organization), transparency (information is shared among users and is public), and data protection (no data is altered, information is verified by network nodes, data is not deleted, and anonymity is maintained) (Cai, 2021). Because of this technology's intrinsic benefits, it has been widely embraced in many industries. For instance, in the financial industry, which sparked the creation of cryptocurrencies like Bitcoin and made cross-border transactions easier, safer, and less expensive (Abeyratne & Monfared, 2016). Industry 4.0 refers to the fourth industrial revolution that is defined by the integration of smart technologies, automation, and data interchange in production and other industries. Blockchain technology, together with artificial intelligence (AI), plays a crucial role in this context (Javaid et al., 2021). The efficiency, security, and transparency of multiple processes are all improved when blockchain technology and AI are combined. It promotes innovation in the way industries cooperate, enhances automation, and makes new business models possible (Fernandez-Carames & Fraga-Lamas, 2019). AI makes data prediction possible through the extraction and analysis process, which can assist businesses in making wise decisions (Baltezarević, 2023).

Blockchain uses particular data structures, consensus algorithms, trust, incentive, and security measures to construct a distributed autonomous system that is independent of third parties. Because blocks cannot be modified, trust is only necessary when a user or program provides data. This feature lessens the need for reliable third parties, which are typically auditors or other costly and fallible individuals (Hayes, 2023). Blockchain technology offers an immutable, secure ledger that can record the ownership history of digital assets, which has the potential to revolutionize records management (Malveeya, 2023). Many organizations and consortia have updated their antiquated technology due to the potential influence of new technology on international trade finance. The tokenization of current documents, credentials, and other data is made possible by blockchain, which also ushers in the age of digitalization. The automation of agreements, business events, and other labor-intensive procedures has enhanced collaboration between importers and exporters using smart contracts. Standardization, trade settlement, and cross-border coordination will all gain even more from the widespread use of blockchain technology (Consensys, 2023). Across the whole supply chain ecosystem, blockchain enables participants to digitally connect, share information, and cooperate. Building the required ecosystem to involve all stakeholders, handle actual or perceived risks, and guarantee that blockchain can efficiently support sustainable and equitable development may be mostly accomplished by governments, regional, and international organizations (Unctad, 2022). Private blockchains do, however, come with setup and maintenance charges for the infrastructure. This could entail installing dedicated servers, hosting on cloud platforms, and paying other associated costs (Websoft, 2023). Experienced developers are in great demand because to the extensive use of blockchain in sectors including technology, healthcare, and finance. The relative dearth of skilled blockchain engineers is one of the main barriers to the technology's quicker adoption (Balmer, 2024).

CONCLUSION

Although blockchain technology is still in its early stages, it has already started to completely transform international trade. The fundamental idea behind this technology is to both decentralize

and maintain trust amongst parties seeking to do business. It proposes a new digital notion for data storage. It is an example of a concept ledger system that keeps transactional data in an open and viewable registry. This technology is appealing because of how easily it can replace conventional documentation techniques, improve trade planning and monitoring, accelerate logistics, boost transparency, and speed up transactions. The blockchain has important implications for trade automation. In supply chains, manual processes are reduced as most operations are digitalized. Regardless of the distance between trading parties, this technology also ensures a secure and uniform trade.

Numerous blockchain-based technologies create extremely intriguing opportunities for international trade. Potential obstacles to the widespread use of this technology include cost and interoperability. Because this technology is still in its infancy, the scarcity of blockchain-experienced developers may potentially drive up the price of creating these applications. It is indisputable, though, that this technology will soon be broadly accessible and that blockchain technology and digital identities for businesses have the potential to save trillions of dollars worldwide by enhancing the trustworthiness and verification of third parties in the context of international trade.

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