The Effect of Blockchain Innovation on Increasing Business Productivity

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Abstract. With the development of the economy and technology, blockchain is widely used in the business field. Blockchain can enable transparent, efficient, and secure information exchange within and between enterprises, which enables blockchain technology to have a significant impact on global businesses. Blockchain, through its decentralization, tamper proof information, and openness, further unleashes its development potential and improves enterprise efficiency. Due to the shortcomings of traditional technology in centralized data, it is impossible to achieve long-term efficient development of enterprises. The significance of the blockchain system in strengthening corporate operational efficiency is thoroughly examined in this essay and thoroughly examines how blockchain affects financial trade, identity verification, and value chain oversight. The application of blockchain can improve supply chain efficiency, enhance identity authentication, and achieve efficient trade. Therefore, enterprises are adopting emerging technologies such as blockchain to improve data transparency and integrity, thereby promoting digital development. This will drive company operations and management, enabling enterprises to achieve high-quality development.

Keywords: Blockchain Efficiency, Supply Chain, Economic and Trade Data Management

1 Introduction

The operational capability of enterprises is crucial for their development, and the emergence and development of blockchain technology help enterprises continuously improve operational efficiency and capabilities. As a new subversive Internet technology, blockchain technology has received constant attention. Its decentralized and consensus mechanism can effectively solve the problems of inefficiency, security and sharing faced by traditional enterprise management, and spawn a new operation management model.

With the increasing emphasis on blockchain technology, the core components and applications of enterprises are analyzed to improve information exchange through the decentralized functions of blockchain. With the widespread recognition of blockchain and its long-term technological progress, the potential application scope of blockchain

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continues to expand in the industrial field. Blockchain enhances the implementation and logistics administration capabilities, encouraging the manufacturing network's development and change; In finance and trade, the application of blockchain can help optimize resource allocation efficiency and promote transaction transparency and security [1,2,3]. Although blockchain technology is widely used in industry and finance, it still lacks practical and comprehensive applications to improve enterprise efficiency. This technology has problems such as the complexity of practical applications, imperfect governance mechanisms, data privacy and security.

Nowadays, while people attach great importance to improving quality and efficiency, they will also pay more attention to the application and development of blockchain technology. The relationship between digital currency and company profitability is covered in this article, along with how the technology can be used to increase supply chain reliability, business operational productivity, managing information and sharing, and business efficiency in trade and finance. Explain the structure and possible advantages of blockchain based on its components; the ways in which blockchain is used in various industries can more accurately represent the elements that influence efficiency gains. In the end, blockchain improved corporate efficiency and enhanced research on the connection between bitcoin with businesses' operational capabilities by resolving the issues with traditional models.

2 Enterprise Efficiency and Blockchain Technology

In the modern business environment, the important sources of enterprise efficiency are cost advantages, business activities, organizational management, and technological development, which are increasingly becoming competitive advantages that determine the success of enterprises. Only through the complementary development of all resources can businesses become more efficient over the long term [4].

A system that uses distributed ledgers is called the technology of blockchain. The basic principle is to sort transactions by time and record relevant information in a chain composed of multiple nodes through decentralization. Zhen et al. conducted empirical research using multi-period double difference (DID) modeling and other methods, confirming that blockchain software may boost company productivity, reduce enterprise risks, and thus enhance enterprise performance [5].

Decentralized administration, openness, permanence, and intelligent agreements are features of blockchain innovation. The technology can optimize the supply chain, provide effective management, enhance data sharing, and reduce human intervention, providing new possibilities for improving enterprise efficiency. With the continuous maturity of blockchain technology, more and more enterprises will use this technology to achieve more efficient operations and management.

3 Blockchain Technology Promotes Enterprise Supply Chain Management

With the expansion of enterprise production volume, companies will pay more attention to product quality and operational efficiency. Therefore, the improvement of company supply chain functions and the application of smart contracts have become key parts of enterprise operation and strategy. This involves two parts: full chain traceability and automated settlement.

3.1 Full Chain Traceability

The manufacturing sector now has greater demands for the permanence and traceability of materials across the production chain due to financial expansion and technological advancements. It is now possible to employ ICT technology for traceability solutions and merge bitcoin with manufacturing processes [6]. The full chain traceability of blockchain technology and optimization of information technology enables enterprises to connect supply chain participants (SCA) and product identifiers through digital certificates, thereby achieving participant authentication and product traceability. This technology can not only improve the transparency of the supply process, and combat counterfeit and inferior goods, but also achieve more complete traceability management [7].

3.2 Automated Settlement

The development of an automated settlement economy and the advancement of digital finance have also promoted the continuous development of blockchain technology. As an emerging technology, blockchain can perform intelligent contract operations and automatically trigger payment and other operations when conditions are met. Research has shown that automated clearing based on intelligent contracts not only fills the gap between reality capture technology and information models but also reduces reliance on intermediaries and cumbersome procedures, improving the execution efficiency of enterprises [8]. In addition to its application in business operations, it is also widely used in a new model, the e-commerce field of enterprises. According to research, e-commerce can depend on connected objects for independent processing of transactions, and creating independent incident control systems for IoT and the internet with blockchain can greatly increase efficiency [9]. Blockchain-based automated settlement not only provides high information openness but also streamlines procedures for transactions, increasing transaction security and efficiency.

4 Identity Authentication and Authority Management

With the progress of the Internet and technology, enterprises continue to explore the digital field. In order to improve the efficiency of enterprise resource allocation and reduce human resource costs. Blockchain technology can provide matching salary and

career advice to improve the adaptability of high-quality talents and positions, thereby reducing costs. Based on the combination of human resources and blockchain technology, not only has a huge impact on human resources and employee selection but also reduces the impact of high costs on the company and improves enterprise efficiency.

In the field of identity authentication and permission management, enterprises can use blockchain technology to achieve cross-system identity authentication while also matching employees' skill performance with their work abilities; In talent recruitment, companies can further reduce the risk of fraud and minimize time-consuming procedures.

In the research, it was found that through the encryption verification mechanism of blockchain, candidates' education, work experience and other information can be automatically verified in real time, reducing the cost of manual verification [10]. Blockchain can not only reduce enterprise costs but also evaluate employee performance and improve enterprise efficiency. According to a study, utilizing conventional technologies to assess government employees' performance in smart cities poses just one cause of the breakdown issue. In light of this, a blockchain-based distributed assessment mechanism has been suggested, and the vulnerabilities in the system are solved using blockchain to improve the matching degree between skills and performance in work [11].

Blockchain can improve the matching of employee skills and performance, enhance the credibility of recruitment systems, and improve enterprise efficiency. Research has shown that blockchain recruitment systems can improve recruitment processes to increase transaction speed and reliability, and reduce the risk of fraud and time-consuming procedures for businesses [12]. Blockchain technology provides companies with sustainable competitive advantages. However, blockchain still faces some technological and environmental challenges. It is expected that the use of blockchain technology in the recruitment process will be a gradual process in the future.

5 Finance and Trade Improve Enterprise Operational Efficiency

In finance and trade, data transactions are often influenced by various factors, such as the diversity of data sources and the complexity of transaction processes, which make accurate analysis and prediction difficult. The decentralization and other characteristics of blockchain have improved the transparency and security of data, providing strong support for applications in cross-border payments and trade financing.

5.1 Cross Border Payments Reduce Transaction Costs

Electronic commerce between countries has become crucial to global trade as globalization has progressed, particularly in facilitating international transactions and streamlining settlement procedures. Research has shown that compared to traditional cloud computing, cross-border payments utilize technologies such as blockchain decentralization and cross-domain collection contracts, which have significant advantages in solving data theft, multi-platform sharing, saving system overhead, and reducing

operating costs. At the same time, blockchain not only improves the operational efficiency of enterprises but also solves the problem of data sharing and enhances transaction security[13].

Cross-border e-commerce not only brings transaction convenience but also involves legal and regulatory issues. According to studies, standardized payment contracts are capable of safeguarding small and medium-sized businesses and consumers' freedoms and desires in legal matters [14]. Therefore, in addition to the efficiency improvement brought by technological innovation, strengthening legal supervision is also particularly important. It helps to regulate market operations, create a stable business environment, and promote the efficiency improvement of cross-border settlement. The transparency and tamper-proof recording capabilities provided by blockchain can establish more trustworthy payment contracts and transaction records, reducing additional costs caused by legal disputes. Furthermore, blockchain's degree of intelligent agreement technology may seamlessly carry out contract conditions, minimize human interference, and enhance settlement precision and efficacy. Therefore, under the dual protection of legal supervision and blockchain technology, cross-border payments and settlements can not only improve efficiency but also enhance market trust and promote the healthy development of global trade.

5.2 Trade Financing

Medium-sized companies sometimes struggle to get running without sufficient funding, and they also have to deal with lengthy transaction processing delays and financing issues [15]. A study suggests that effectively combining blockchain decentralization and AI technology in small and medium-sized enterprise trade can establish a credit risk assessment system to obtain high-quality and transparent data [16]. Applying blockchain technology to small and medium-sized enterprises can not only fully solve their problems in traditional trade, but also become a major force in trade financing to promote economic development. In the research, it has been shown that fully utilizing blockchain technology in Qatar's development, achieving secure data sharing, allows small and medium-sized enterprises to enter, and ensures efficient business development [17].

6 Conclusions

The application of blockchain in enterprises can solve the information asymmetry among multiple parties in the enterprise supply chain. Enterprises can trace from the source, optimize process transparency, and accurately identify vulnerabilities in each link point-to-point; The application of blockchain can reduce the internal operating costs of companies, achieve the rational use and effective matching of human resources; It can solve complex cross-border trade procedures and cumbersome procedures in the context of global trade, accurately simplify business processes, and analyze and predict key information. The practical application of blockchain in enterprises can effectively improve operational efficiency, solve cross-border business barriers, reduce costs and

time consumption, and streamline complex processes, thereby overcoming major loopholes in traditional technologies. Blockchain's fundamental characteristic is decentralized management, which breaks down data silos while maintaining data sovereignty and successfully addresses the issues like openness, sharing, and isolation in information exchange. However, although there is some research on blockchain technology at present, further exploration is still needed for empirical evidence. The future trend may continue to create hybrid chain and blockchain services, achieving the integration of IoT data on the chain and AI technology analysis.

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