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Retraction

Retracted: Construction of Virtual Marketing Interactive Platform for Digital Twin Innovation and Entrepreneurship Based on Blockchain

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] S. Huang, J. Day, M. Shu, H. Huang, and J. Huang, "Construction of Virtual Marketing Interactive Platform for Digital Twin Innovation and Entrepreneurship Based on Blockchain," *Scientific Programming*, vol. 2022, Article ID 7497323, 11 pages, 2022.

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Research Article

Construction of Virtual Marketing Interactive Platform for Digital Twin Innovation and Entrepreneurship Based on Blockchain

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With the rapid development and application of internet technology, people are gradually entering a state of digital life. However, it is difficult for digital assets to be circulated with a unified standard protocol. Blockchain has the characteristics of decentralization, trustworthiness, and immutability, which can be used to solve the above problems. Although virtual marketing technology shows great potential, as a form of organization that is difficult to manage, there is still a lack of experience in the form factors and operation mechanism of a virtual business model. Therefore, combined with the realistic background, this paper built a digital twin innovation and entrepreneurship virtual marketing interactive platform based on blockchain. The article analyzed the data structure of the blockchain and completed the construction of the platform operation mode. It studied the encryption and decryption process of cryptography and expanded the ciphertext space, then the blockchain is encrypted and decrypted again, and finally, a chi-square analysis is performed. After building the platform, it conducted market research and analyzed the main operating indicators of the A platform on the market. Then, it compared the uncertain string preprocessing enumeration length change and the index occupied space between the platform constructed in this paper and the platform in the literature. The comparison results have shown that the index proposed in this paper is 320 MB in 8 iterative calculations, while the bibliographic index starts at 10000 MB and keeps increasing during the iterative calculation process. The two are not in the same order of magnitude, illustrating the superiority of the platform in this paper.

1. Introduction

The virtual enterprise operates in a virtual way and is a new business model following traditional product management and capital management. It emphasizes the use of external forces to realize the integration and utilization of resources, breaking through the traditional business model of "big and complete," "small and complete," and "everything does not ask for people." The virtual marketing interactive platform is also a product of this era. It can solve the pain points and difficulties of the traditional marketing model, and it also conforms to the current lifestyle of most people who stay at home. Then, how to build a virtual marketing interactive platform has become a key point.

For the construction of a virtual marketing interactive platform, many scholars have conducted research. Gottlieb and Bianchi explored the key drivers and challenges of participating in virtual training spaces (VTS), as well as the virtual marketing capabilities that organizations need. He conducted intensive discussions among executives of Australian institutions who formerly took part in VTS and whose primary incentive for joining VTS was to increase

sales revenue and reduce costs, enter new marketplaces and build a reputation for the brand and corporate credibility of the event. It would be the development of VTS tech and how it is incorporated within current technical and structural business flows that is going to determine the future of VTS. Few studies have empirically tested the experiences of participants in the VTS. Through his research, he has expanded his knowledge of the key dynamics and priorities for involvement in VTS, as well as the virtual marketing capabilities required by exhibition establishments [1]. Wang et al. believed that, at present, the main problem that causes marketing managers in the virtual world was how to design the functions of the virtual world? To mitigate this omission and possible methodological bias, he discussed the impact of virtual world technical characteristics on two platform-level performance criteria. Furthermore, he identified two types of users (new and returning users) and discussed their different impacts on virtual goods marketplaces and usage patterns in virtual worlds. However, the impact of these activities is varied. Specifically, for returning users, the interaction brings a more significant impact [2]. Avasilcai and Bujor reflected on reality, and his study of mobile advertising and the virtual consumptive showed that the digital world plays an important role today. He uncovered that there is growing participation in all facets of the sales and marketing process. Thus, the transition from legacy commercial models to those built on the basis of independent design is an important stride for numerous firms that have recognized the significance of open innovation in their ongoing business evolution [3]. Turchetti et al. discussed the reasons why evidence of clinical effectiveness is insufficient to promote the full adoption of robotics for upper extremity neurorehabilitation. The state-of-the-art is also briefly reviewed. In particular, he stressed that markets that deploy or should deploy these technologies should avoid the drawbacks of these technologies. On the other hand, his research discussed whether low adoption rates depend on communication biases between technology producers and potential adopters. Research showed that while technical efficiency issues are often well documented, the downsides of adopting technology are also hard evidence for the lack of new technology [4].

For the recently extremely hot blockchain technology, scholars have made the following research: Sikorski et al. aimed to explore the relevant applications of blockchain tech in the fourth technological transformation (Industry 4.0) and to provide an illustrative case for the extremely hot blockchain technology recently. Among other things, blockchain is used to facilitate machine-to-machine (M2M) interactions, and the M2M electricity market is established against the background of the petrochemical sector. The proposed scene involves the transaction of two power manufacturers and one power user via blockchain. Real data generated by the process flow diagram model was provided to all participants. This work contributes to a proof-of-concept for this scenario. In addition, he described and discussed the research and application prospects of blockchain technology related to Industry 4.0. It was concluded that the tech has the considerable under-researched capacity to sustain and improve the productivity of the transition, and future research fields were identified [5]. Kshetri evaluated its role in strengthening IoT security. The research covered the main underlying mechanisms related to IoT security relationships. In terms of security, he highlighted why blockchain-based solutions are superior to today's ecosystems in many ways. The IoT ecosystem, on the other hand, is mainly based on a central cloud server. Its decentralized nature reduces the potential for malware actor manipulation and falsification. In particular, he examined how blockchain-based identity and access management systems can tackle a few critical issues associated with IoT security. Its role in monitoring sources of uncertainty in supply chains associated with IoT devices is also analyzed and described in detail. It is believed that it can also be used in a targeted manner after the discovery of IoT vulnerabilities [6]. Nir considered that one of the major concerns of the scientific community is energy conversion and energy efficiency. In fact, the expansion of object consumption and the Internet of Things has led to a significant increase in energy demand. Thus, finding a solution to this phenomenon is crucial. So, he analyzed smart grids and conducted experimental studies using the decentralized nature of blockchain [7]. In recent years, blockchain technology has shown good adaptability in the fields of supply chain management, international payment, and interbank lending. Since the blockchain can protect the integrity of data storage and ensure the transparency of the process, it has potential application prospects in the field of intrusion detection. Based on this, Meng reviewed the intersection of intelligent decision support systems and blockchain. In particular, he introduced the background of intrusion detection and blockchain and discussed the applicability of blockchain in intrusion detection [8].

Blockchain technology provided technical support for decentralized systems. The blockchain technology used in this paper mainly includes various technologies in the fields of cryptography, computer, and communication such as consensus mechanism and peer-to-peer communication, and the parts that contribute little to the research of this paper are deleted. Blockchain technology is applied to the construction of the virtual interactive marketing platform, then the decentralized characteristics of the blockchain are used, and the encrypted form of the blockchain is considered and integrated into the platform.

2. Construction Method of Virtual Interactive Marketing Platform

2.1. Definition of Blockchain. Blockchain is a new way of applying computer technology, such as distributed data storage, point-to-point transmission, consent mechanisms, and encryption algorithms [9]. In general, blockchain is also considered to be a distributed database that is maintained by multiple parties, decentralized, traceable, and cannot be tampered with. Blockchain has the characteristics of collective maintenance, decentralization, security and trustworthiness, reliable database, quasi-anonymity, open source programmability, etc. The blockchain system packs the

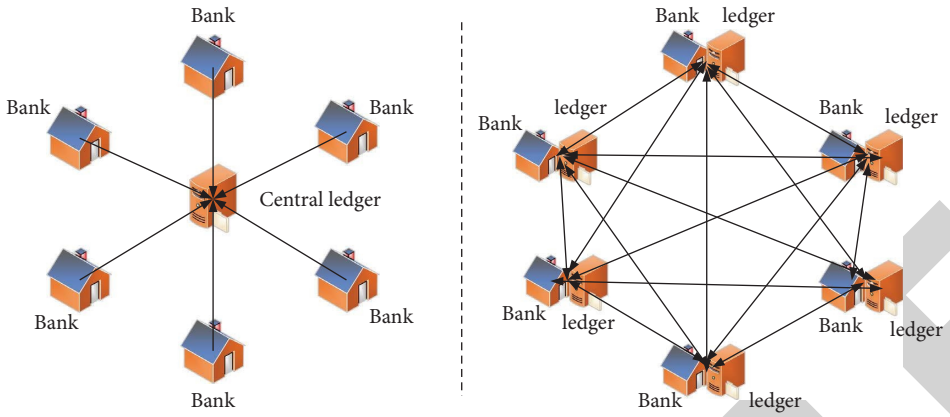

Figure 1: Data structure of blockchain.

requested data for some time into a data block through cryptography and uses hash fingerprints to connect it into a chain structure in chronological order for storage [10]. A data block usually consists of a module header and module body [11]. According to the classification of participants, blockchain can be divided into public chain, private chain, and alliance chain. The public chain is open to the public, and all nodes can read data and send transactions. Among them, the block header usually stores data such as the version number of the system, the hash value of the previous block, the Merkle root, and the timestamp, while the block body contains detailed request data [12]. Taking Bitcoin as an example, in addition to the above information, its block header also stores data such as random numbers used for mining, and the block body stores specific transaction data [13]. A distributed system has no central entity that coordinates its member, as shown in Figure 1.

The network is a network without central hardware and governing body. Each node in the system has the same state [14] and can act as a client or server [15]. Each node on the network stores all data information in the system, and there are multiple data information backups on the network [16]. If more nodes are involved in the network, the number of backups of data information will be larger [17, 18]. In this data architecture, the data of each node is shared and managed, and supervised by all participants [19, 20].

2.2. Operation Mode of Virtual Business Platform. Flask is an excellent lightweight framework based on Python, which uses Jinja2 as the template engine and BSD authorization. The basic virtual operation platform affects the operation and management of virtual operations to a great extent, and its organizational function can only realize a specific basic platform with the support of the virtual operation platform [21]. The virtual platform is generated based on information and computer network technology, and the exchange of knowledge information flow. Therefore, the easy network connection can cover and capture the rapidly changing market environment and has a certain quick response ability. It can also respond to service requests from outside the virtual platform or between partners in the shortest possible time.

In the operation mode of the designed virtual business platform, the lines without arrows represent information flow, and the lines with arrows represent logistics, as shown in Figure 2.

2.3. Overview of Encryption Algorithms. Zero-knowledge proof is one of the key technologies for blockchain to realize anonymous transactions. The blockchain uses cryptography to ensure the security of transaction data and customer privacy, which is a necessary condition for the blockchain to attract attention and develop rapidly [22, 23]. There are two main architectural approaches for software systems: centralized architecture and distributed architecture. The encryption and decryption process of cryptography is shown in Figure 3.

The establishment of a random selection of character filtering is carried out, which is obtained by combining random thinking on the basis of minimum probability character filtering. The ECC elliptic curve equation is shown in the following formula:

$$y^2 + m_1xy + m_3y = x^3 + m_2x^2 + m_4x + m_6. \quad (1)$$

The encryption process is as follows:

$$y^2 = x^3 + mx + n(\text{mod } p), \quad (2)$$

and m and n satisfy the following formula:

$$4m^3 + 27n^2(\text{mod p}) \neq 0. \quad (3)$$

For stream cipher encryption, the encryption result is

$$c = c_1c_2 \ldots c_i \ldots = Ek_1m_1Ek_2m_2Ek_3m_3 \ldots. \quad (4)$$

The decryption result is

$$m = Dk_1(c_1)Dk_2(c_2) \ldots Dk_i(c_i) \ldots = m_1m_2m_3 \ldots. \quad (5)$$

For the Vigenère encryption algorithm, the plaintext is

$$C_i = EK(P_i) = (P_i + k_i)\text{mod}\{26\}. \quad (6)$$

The ciphertext is

$$P_i = DK(C_i) = (C_i - k_i)\text{mod}\{26\}. \quad (7)$$

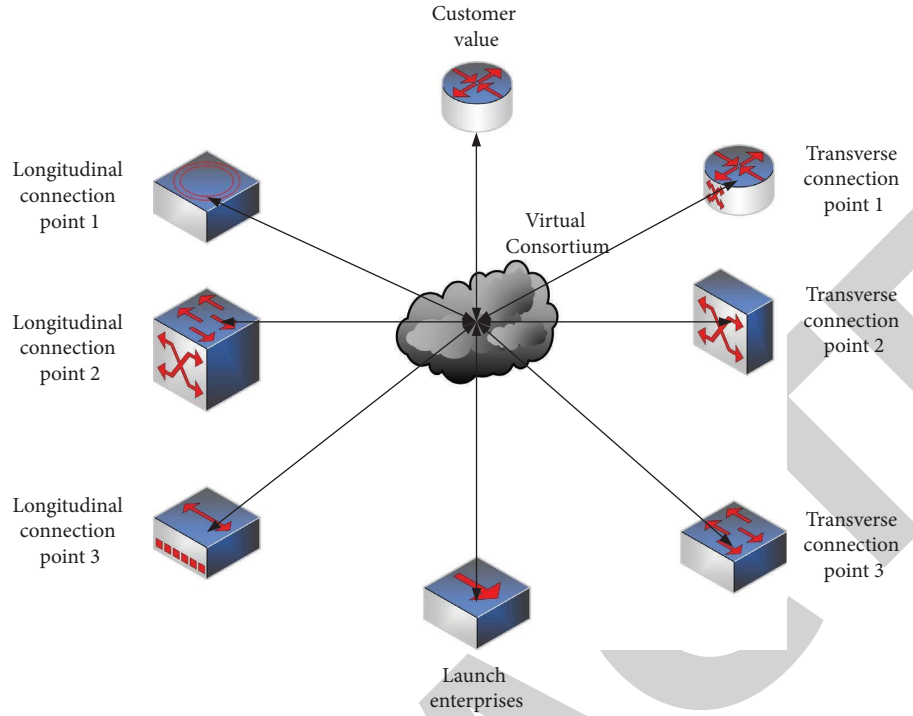

Figure 2: Platform operation business model.

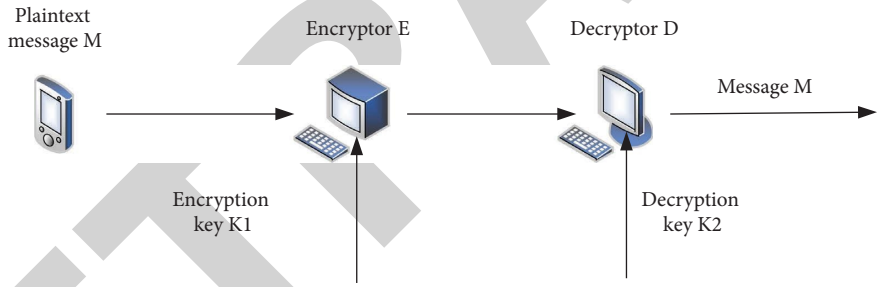

Figure 3: Encryption and decryption process of cryptography.

The encryption and decryption process after expanding the ciphertext space becomes as follows:

Encryption:

$$EK(p_1, p_2, \ldots, p_m) = (p_1 + K_1, p_2 + K_2, \ldots, p_m + K_m) \pmod{92}. \quad (8)$$

Decrypt:

$$DK(C_1, C_2, \ldots, C_m) = (C_1 - K_1, C_2 - K_2 \ldots C_m - K_m) \pmod{92}. \quad (9)$$

Combining the above passwords, the new algorithm is as follows:

$$K_i = EK(K_i) = (K_{i-n} + K_{i-n+1} + K_{i-n+2} + \ldots + K_{i-1}) \bmod (26), \quad K_i = K_i \, (i < n). \quad (10)$$

Encryption:

$$EK(P_1, P_2, \ldots, P_m) = (p_1 + K_1, p_2 + K_2, \ldots, p_m + K_m) \, (\mathrm{MOD}26). \quad (11)$$

Decrypt:

$$DK(C_1, C_2, \ldots, C_m) = (C_1 - K_1, C_2 - K_2 \ldots C_m - K_m) \pmod{26}. \quad (12)$$

The ordering service uses a distributed protocol or a centralized service where different levels of fault tolerance can be implemented. A chi-square test is performed as follows:

$$X^2 = \sum_{i=1}^{k} \frac{(A_i - E_i)^2}{E_i}. \quad (13)$$

In summary, the algorithms are introduced.

2.4. Digital Twins and Innovation and Entrepreneurship. A digital twin is one of the effective ways to realize the correlation between digital space and physical space. Its basic idea includes three parts: digital space (virtual space), physical space, and their mutual relations, as shown in Figure 4.

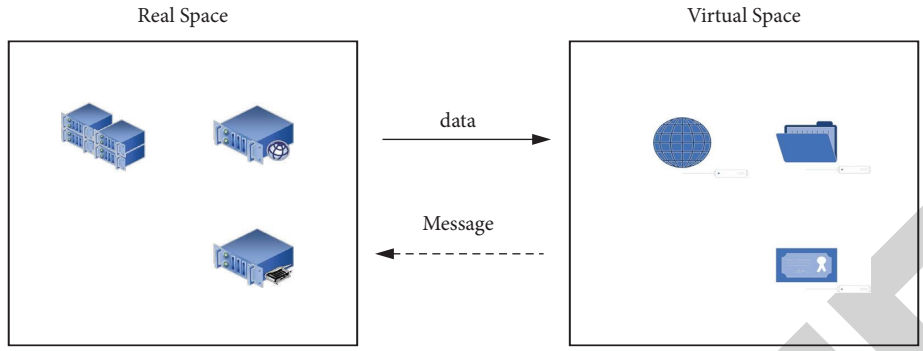

Figure 4: Conceptual model of the digital twin.

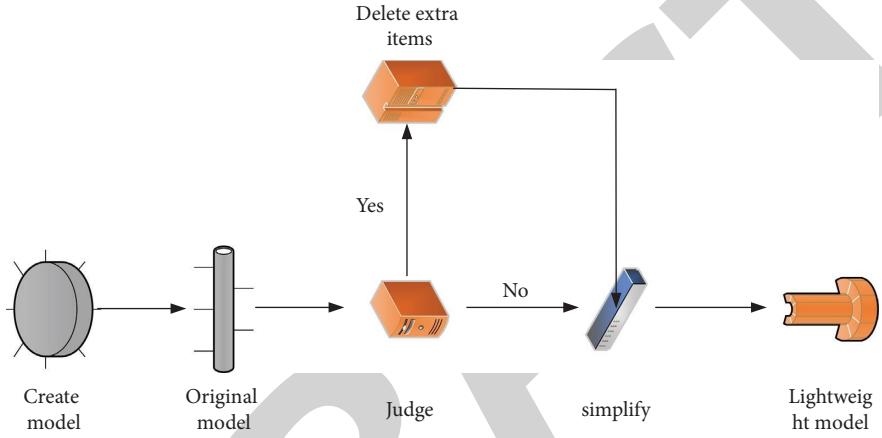

Figure 5: Geometric lightweight model of digital twin.

In order to better understand the connotation of the digital twin, it is necessary to further interpret the concept of digital twin from the specific application of digital twin. A digital twin is a universally applicable theoretical and technical system that can be applied in many fields. At present, it is widely used in product design, product manufacturing, medical analysis, engineering manufacturing, and other fields. Nowadays, China has the most in-depth application in the field of engineering construction. The field of intelligent buildings has received the most attention and research is also the most popular. The geometric lightweight model based on the digital twin is shown in Figure 5.

Under the geometric model of the digital twin, a space creator complex can be constructed to stimulate innovation and entrepreneurial enthusiasm. Vocational training for innovation and entrepreneurship should be based on reality and combined with the current economic and social environment. It should help entrepreneurs to enhance their entrepreneurial confidence and acquire the basic knowledge and skills needed to start a business through personalized and professional training. Business opportunities are used sensitively to improve the management capabilities of enterprise groups and enterprises, and ultimately increase the success rate of entrepreneurship. Entrepreneurs should arrange time reasonably to participate in those high-quality activities that are beneficial to their entrepreneurial careers. In addition to promoting employment, it also promotes technological innovation and the transformation of scientific and technological achievements, as well as optimizes the industrial structure and improves the quality of industrial workers.

2.5. Sharing of Virtual Environments. At present, the leading countries in virtual reality technology are European countries, the United States, and other developed countries. Resource sharing mainly refers to network-based information sharing. Everyone shares their information, pictures, video software, and books with everyone through the network platform. The sharing of a virtual environment refers to a specific virtual network environment, which can be a virtual local area network of a single machine or a virtual computer in a physical local area network. After setting up a virtual environment, the network settings are changed. After the host's files are set to be shared, the share on the host can be found on the network of the virtual machine. Then copy and paste it, and when the sharing is over, the network settings are changed to NAT mode, saving the trouble of restarting the machine.

The immersive virtual reality system is relatively complex, and the user has the feeling of being in the virtual realm. Users communicate with the virtual environment through devices such as helmets and data gloves.

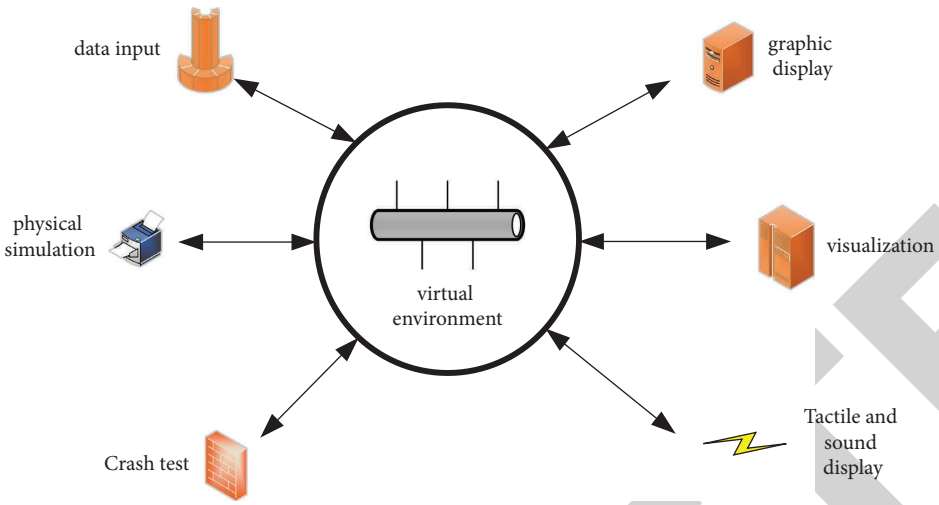

Figure 6: Data manipulation in the virtual environment.

The desktop virtual reality system uses personal computers and low-end workstations for simulation. It uses the computer screen as a window for users to observe the virtual environment and fully interacts with the virtual reality world through various input devices.

The distributed virtual reality system is connected by multiple users through a computer network so that users in different geographical locations seem to enter the same real environment.

Theoretical teaching of computer science through virtual environment technology is currently becoming more and more mature in technology and means, and there is still a rapid development speed. However, the teaching of laboratory environments through this technology is rare in practical application, and it can even be said that it has just started. Building a virtual network environment through some virtualization tools enables some experimental phenomena (such as TCP/IP protocol analysis) to run in a virtual network environment through a computer. This virtual environment built by virtual technology can create multiple virtual computers on a single physical computer. As a completely independent node, each virtual machine can install an operating system and can simulate multiple network cards on a single physical network card to establish virtual network communication. Then the packet capture program can be run on one or more virtual machines to capture and analyze the protocol packets. Through the in-depth study and analysis of many protocols in the TCP/IP protocol family, a deeper understanding of how computers communicate with each other can be achieved. The data operation of the virtual environment is shown in Figure 6.

3. Market Experiment of Virtual Interactive Marketing Platform

3.1. Simulation Experiment. Through the extended compilation of Cloud Sim and the rewriting of related classes and interfaces, the corresponding experimental environment is obtained, and the virtual machine deployment and scheduling test are completed, as shown in Table 1.

The number of physical servers, CPU, and memory parameters are shown in Table 2.

The total number of physical server dynamic migrations when the three strategies reach a balanced state is shown in Table 3.

Strategy 1 has the largest number of migrations during virtual machine deployment, and strategies 2 and 3 can better reduce the total number of dynamic migrations in load balancing and improve the utilization of physical server resources. The correlation matrix is listed in Table 4.

The construction of the virtual marketing interactive simulation platform is ready.

3.2. Market Survey. Market research is conducted on virtual marketing interactive platforms and platform A is selected. The platform officially opened in June 2012 until the end of 2012, with nearly 500,000 registered members in just half a year. The number of settled merchants reached 11,040, and the turnover reached nearly 3 billion yuan. The number of transactions has reached nearly 150,000, and the amount of financing has reached nearly 1 billion.

The main operating indicators of the platform from 2014 to 2016 are shown in Figure 7.

As can be seen from the figure, in 2014, the platform had 7.9875 million registered members, 2.188 million transactions, and a turnover of 46.279 billion yuan. In 2015, the platform had 11.93 million registered members, 2.51 million transactions, and a turnover of 50.145 billion yuan. In 2016, the platform had 16.38 million registered members, 6.95 million transactions, and a turnover of 74.581 billion yuan. Whether it is the number of members, the number of transactions, or the turnover is increasing year by year.

3.3. Platform Index Construction Scale. The existing GSIC algorithm needs to establish an index structure composed of a suffix tree and a suffix array for an uncertain string. Both

Table 1: Requirements list of virtual machine resource.

Virtual machine type	Number of CPUs	Memory size/GB	Number of virtual machines
Calculate demand	2	1	6
Storage demand type	1	1	7
Network demand type	2	0.5	5
No special needs	1	0.5	6

Table 2: List of physical server resources.

Physical server	Number of CPUs	Memory size/GB
a	8	4
b	8	4
c	8	4
d	8	4
e	8	4
f	8	4
g	8	4

Table 3: Total number of dynamic migrations.

	1	2	3	4	5
Strategy 1	4	6	5	4	5
Strategy 2	1	2	1	0	1
Strategy 3	0	1	1	0	1

Table 4: Correlation matrix.

	P12	P123	P1234	P12345	P29	P79	P123456789
T1	1	0	0	0	0	0	0
T2	0	1	0	0	0	0	0
T3	0	0	1	0	0	0	0
T4	0	0	0	1	0	0	0
T5	0	0	0	0	0	1	0
T6	0	0	0	0	0	0	1
T7	0	0	0	0	0	0	1
T8	0	0	0	1	0	0	0
T9	0	0	0	0	0	0	1

the suffix tree and the suffix array are data structures with relatively high search efficiency, but they are both proposed based on deterministic strings. Uncertain string preprocessing enumeration length changes is shown in Figure 8.

Figure 8(a) is the system index structure proposed in this paper, and 8(b) is the system index structure of the document. It can be seen that the space cost of the uncertain string index structure proposed in this paper is very stable linearity. The lowest point is (2000, 2000), the highest point is (20000, 20000), and the linear effect is very good. The lowest point of the literature method is (2000, 4000), and the highest point is (20000, 140000). Therefore, the index structure of this platform is good, and the space efficiency is very high.

The two platforms are iteratively calculated for 8 times, and the space occupation is shown in Figure 9.

It can be seen that the index proposed in this paper is 320 MB in 8 iterative calculations, while the document index starts at 10000 MB and keeps increasing during the iterative calculation process. The two are not in the same order of magnitude, illustrating the superiority of the platform in this paper.

4. Current Situation of Blockchain

4.1. Technical Introduction of Ethereum. The UDP protocol is the upper layer protocol of IP. It is one of the two main protocols of the transport layer and is a connectionless protocol. The TCP protocol is undoubtedly the most important protocol in the transport layer. The biggest advantage of the TCP protocol over the UDP protocol is that it enables the network to provide reliable connection services. Ethereum is a new global platform based on a public chain that allows anyone to create and use blockchain technology on the platform to run centralized applications. Its innovation is a new type of software application. Truly decentralized application has been extended to computer networks. Compared with Google, it has established a new cryptographic technology framework that enables users to facilitate the development of apps flexibly and friendly, while permitting apps to subscribe to a workable economic landscape and solid safety.

Ethereum is a comprehensive place for creating and developing decentralized applications. It has a whole kit that extends the functionality. Backed by encrypted networks and other technologies, it implemented a blockchain similar to Bitcoin. It enabled agreement via a certificate of work scheme and it is mined by miners. Then, by formulating a new network protocol, its synchronization operations are carried out. Different from smart contracts, smart contracts can be written arbitrarily in the ether pit, and powerful functions can be realized through intelligent integration to realize decentralized development applications. Smart contracts developed in Ethereum run on a specific virtual machine and interact with the underlying blockchain through the Ethereum virtual machine and interfaces. Suffix tree and suffix array are index structures based on deterministic strings, and cannot be directly applied to indeterminate strings.

Each node of the network executes and executes the contract code. Thus, Ethereum is like a "global computer" running in parallel, performing account state transitions on all nodes simultaneously and forming consensus among all clients at the network level. While this mode of operation is not the most efficient, it is the safest.

4.2. Blockchain Trading Platform System. The core application of the blockchain lies in the decentralized trust transaction, so the application scenario of the energy internet on the blockchain is realized. The core part of the architecture is the blockchain platform, which can access energy flow and information flow. The blockchain trading platform is a reasonable model to realize the application

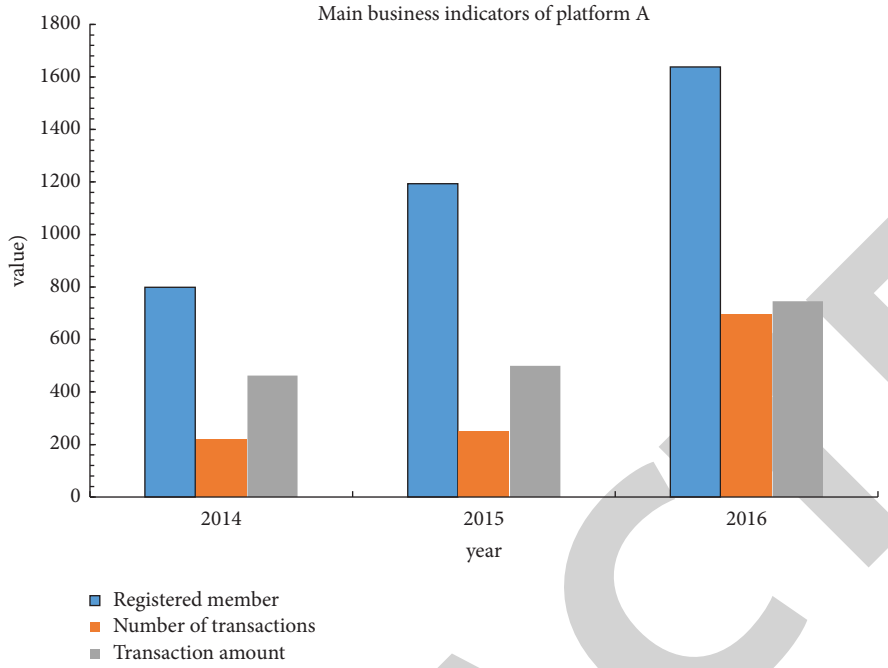

Figure 7: Main operating indicators of platform a from 2014 to 2016.

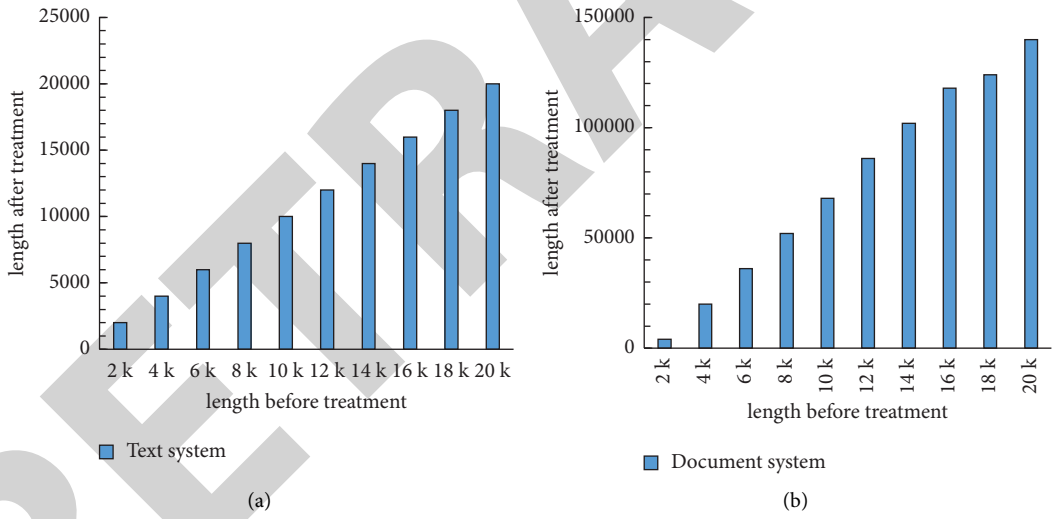

Figure 8: Uncertain string preprocessing enumeration length variation.

scenario of the energy internet in blockchain technology. The blockchain trading platform can be divided into three layers including the bottom layer of the blockchain trading platform, the blockchain trading container, and the blockchain trading platform web application.

The traditional blockchain model uses a PC as the terminal. It relies on the existing internet to conduct peer-to-peer internet transactions, and realizes blockchain applications in the form of smart contracts or "mining." At the energy internet level, the concern is not only the information flow but also the energy flow. Blockchain technology is applied to the information layer, and the coupling with the energy layer must rely on hardware devices. An energy router or power router is an effective way to solve this problem. However, the energy router is currently under development and design, and there is no actual product. Therefore, referring to the concept of energy router design, the basic platform of the blockchain trading platform should include a data acquisition and monitoring system, a control and scheduling system, and an extensible operating system platform. SCADA collects energy information to form an information flow, and couples it with blockchain technology at the information level. The control system ensures the output of the information layer to the energy flow and realizes the blockchain transaction behavior at the physical layer.

The web application of the blockchain trading platform includes the application layer and the incentive layer. The incentive layer is currently mainly used in the public chain. It

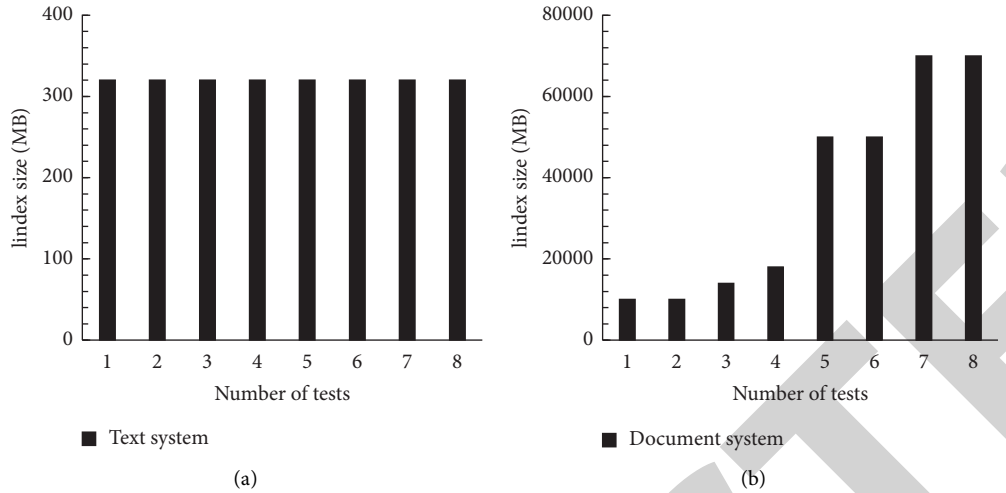

Figure 9: Index footprint comparison.

digitizes assets and motivates users and nodes in the form of tokens or points. The application layer is the top-level structure of the blockchain. Users can realize blockchain transaction behavior through the application layer. The application module includes user management, user transaction, transaction query, transaction pending order buy order, etc. The Web Service API of web transactions integrates the code of the business layer and the web visualization interface. The trading platform for energy application scenarios based on blockchain applications is built through the B/S architecture. The interactive mode uses the Restful style through online blockchain transactions and offline power scheduling. Through the link of smart contracts, the two realize the scene-based, business-oriented, and personalized energy direction of blockchain technology.

4.3. Problem of Information Coordination in Traditional Supply Chain. The poor compatibility of information technology, the unstable trust foundation, and the high cost of introduction and maintenance all seriously restrict the degree of information coordination in the supply chain. In the early stage of the establishment of supply chain relationships, enterprises often focus on the improvement of short-term economic profits but do not realize that the realization of information synergy benefits requires multilevel and multifaceted collaborative management. Therefore, supply chain companies often neglect to formulate unified information transmission standards and standardize information transmission processes to solve the problems, resulting in bottlenecks in the improvement of information coordination in the later stage, and it is difficult to achieve continuous optimization of synergy benefits. At the same time, some enterprises are satisfied with their existing interests and no longer pay attention to the maintenance of trust relationship between partners, which leads to a decrease in the degree of information synergy, thereby affecting or weakening the original synergy situation and reducing the information synergy benefit of the supply chain. The degree of information coordination is the main aspect of the sustainable existence of supply chain cooperation.

The complexity of the supply chain is mainly reflected in the diversity of types and levels of partners. From production to after-sales service, the supply chain involves many processes from small to large, and it also links various types of enterprises including core enterprises with strong financial strength, as well as small factories responsible for parts assembly. Therefore, in the process of traditional supply chain information collaboration, core enterprises need to take into account the financial strength of small and medium-sized enterprises. On this basis, suitable and economical information collaboration technologies are screened out, which to a certain extent limits the introduction of efficient and competitive technologies and hinders the development of supply chain informatization.

4.4. Innovation and Entrepreneurship Laws and Industry Risks. Business legal risk means "the possibility of loss and legal consequences for the operator from being unable to exercise its rights and perform its obligations under law or contract, or due to changes in the external legal environment or due to the emergence of external legal practices in the business process."

Under the conditions of a market economy where the rule of law is increasingly strengthened, innovation and entrepreneurship must have the corresponding legal knowledge and abide by relevant laws and regulations. If entrepreneurs do not take the initiative to learn and understand the law, they cannot operate legally under the legal framework or do not know how to use powerful legal weapons to effectively protect their legal rights, which will eventually lead to the dilemma of startups. However, today's entrepreneurs may be more concerned with market development and financing and deprived of sufficient attention to the legal risks that may exist in corporate legal procedures and operations. Weak legal awareness can lead to a frequent focus on legal risks, which can result in the failure or even bankruptcy of startups.

5. Conclusions

Decentralization not only shows the distributed structural characteristics of the blockchain but also shows the original intention of the blockchain system design, creating trust. This is a new mechanism proposed to improve the shortcomings of the existing centralized credit system. In this context, the article built a blockchain-based digital twin innovation and entrepreneurship virtual marketing interactive platform. The article mainly introduced the technology of Ethereum and the blockchain trading platform system. It considered the problem of traditional supply chain information coordination and analyzed the advantages of virtual display based on network. In the simulation experiment, Cloud Sim is extended and compiled, and virtual machine deployment and scheduling tests are completed. A list of virtual machine resource requirements, a list of physical server resources, the total number of dynamic migrations, and an association matrix are listed for the experiment. The experimental results have shown that the space cost of the uncertain string index structure proposed in this paper is stable and linear. The lowest point is (2000, 2000), the highest point is (20000, 20000), and the linear effect is very good. The lowest point of the literature method is (2000, 4000), and the highest point is (20000, 140000). Therefore, the index structure of this platform is good, and the space efficiency is very high. It illustrated the success of the platform construction in this paper. The data sample can be expanded in future experiments for the broader utility of its platform.

Data Availability

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of the paper.

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