**Blockchain: Future of e-Governance in Smart Cities[** Abhirup Khanna , Anushree Sah , Vadim Bolshev , Michal Jasinski , Alexander Vinogradov , Zbigniew Leonowicz and Marek Jasinski ]

The paper highlights the potential of blockchain technology in transforming e-governance in smart cities. It explores the benefits of blockchain integration in addressing challenges and improving transparency, efficiency, and citizen trust. The research identifies key areas of e-governance where blockchain can have significant advantages and discusses various urban applications. The paper emphasizes the decentralized and secure nature of blockchain, its ability to enable smart transactions, and its impact on industries such as agriculture and food supply chains. It also mentions the growth of blockchain technology in cities worldwide and its potential to reduce effort and save time. The paper provides insights into the systematic review of blockchain technology, application examples, and bibliometric analysis. It discusses the relevance and architecture of smart cities, types of blockchain implementations, citizen participation, government initiatives, and the benefits of blockchain integration in creating and sustaining smart cities. The research suggests that combining blockchain with other technologies like AI, IoT, and cloud computing can contribute to sustainable smart cities. It emphasizes the need for policymakers to understand blockchain and its applicability in e-governance. The paper concludes by discussing future research directions, including scalable transactions, energy consumption optimization, DeFi applications, and supply chain management for perishable goods. Overall, blockchain technology is expected to enhance trust, transparency, and security in the relationship between citizens and governments in smart cities.

**Land Registration: Use-case of e-Governance using Blockchain Technology[ Karthika Veeramani1 and Suresh Jaganathan]**

The paper discusses the limitations of existing e-Governance systems, such as lack of transparency and susceptibility to corruption. It proposes the use of blockchain technology as a solution to these challenges, focusing on the specific use case of land registration. By leveraging blockchain's immutability and distributed ledger, the paper suggests that corruption can be eliminated, transparency can be enhanced, and citizen trust can be improved. We get the benefits of blockchain technology in e-Governance, including secure data storage, reduction in bureaucracy, elimination of paperwork, and cost reduction. It also addresses the barriers to e-Governance in India and suggests ways to improve adoption, such as increasing internet penetration and providing training to officials. The paper concludes by emphasizing the potential of blockchain technology in revolutionizing e-Governance and increasing citizen trust in the government.

**Blockchain Technology and It’s Applications in E-Governance Services: [Om Pal, Surendra Singh]**

Blockchain technology is gaining popularity as it has the potential to eliminate the need for third-party validation in peer-to-peer transactions. It offers features like smart contracts, consensus mechanisms, and secure and efficient transaction completion. This technology has applications in various fields such as medicine, IoT, e-Governance services, smart cities, taxation, supply chain, and banking. This paper provides an in-depth discussion of blockchain technology, including its data structure, open-source platforms like Ethereum and Hyperledger, technical aspects, potential applications, and challenges and limitations in its adoption. Blockchain technology is disruptive and has the potential to transform ICT services by eliminating the need for third-party validation and ensuring data integrity through its decentralized and. It originated with the proposal of Bitcoin in 2009, where transactions are validated by peer members without the need for a controlling authority. Each transaction is recorded in blocks, which are linked together in a chain. Blockchain technology combines various elements such as mathematics, cryptography, consensus algorithms, peer-to-peer networks, and decentralized databases. It utilizes the Public Key Infrastructure (PKI) for the identification and authentication of peer members and ensures the immutability of the blockchain. After its success in the realm of cryptocurrencies, blockchain technology is now being adopted in other sectors such as medical treatment, IoT, e-Governance services, smart cities, taxation, supply chain, and e-vehicles, promising significant growth and advancements in these areas.

**A Blockchain-based Framework for Property Registration System in E-Governance**

[Siddhartha Sen,Sripati Mukhopadhyay ]

The text discusses the potential of blockchain technology in addressing the challenges faced by Electronic Property Registration (EPR) systems in e-Governance. It proposes a Smart Contract-based blockchain framework to improve the security, transparency, and efficiency of property registration processes. The framework aims to address issues such as data security, integrity, single-point-of-failure, and data interoperability among different government agencies. It highlights the benefits of blockchain, such as tamper-proof records, decentralized data storage, and trust among stakeholders. The proposed framework demonstrates scalability and performance in handling transaction loads. Overall, it concludes that the framework offers practical solutions for enhancing EPR systems and can be implemented within the existing e-Governance ecosystem.

**Performance Evaluation of Multi-Organization E-Government Based on Hyperledger Fabric Blockchain Platform:[** *Osama I. Kadhum , Ali H. Hamad]*

The text highlights the security challenges faced by e-governments, such as cyberattacks and data breaches, and explores the potential of blockchain technology, specifically the Hyperledger Fabric platform, in enhancing security and transparency. The study conducted performance evaluations and analyses of the platform in multi-organization and multi-client scenarios, focusing on parameters like latency, throughput, and scalability. The results show that increasing the number of organizations and clients negatively affected the platform's performance, leading to reduced throughput and increased latency. Additionally, the impact of transaction rates and block sizes was examined, with a block size of approximately 100 transactions per block showing better results. The study concludes that the performance of the Hyperledger Fabric platform is influenced by various factors, including hardware and software configuration, smart contract complexity, user and organization volume, and network architecture. It suggests that a moderate number of organizations and clients can have a positive impact on performance while increasing their numbers can degrade system performance.

**Blockchain Technology for Secure Supply Chain Management: A Comprehensive Review**

*:[UDIT AGARWAL, VINAY RISHIWAL, SUDEEP TANWAR, (Senior Member, IEEE), RASHMI CHAUDHARY 3, (Member, IEEE), GULSHAN SHARMA, PITSHOU N. BOKORO, AND RAVI SHARMA]*

The paper discusses the adoption of blockchain technology in supply chain management (SCM) to address issues faced by traditional SCM systems. The traditional SCM is described as centralized, time-consuming, and lacking transparency and traceability. The paper gives me the benefits of blockchain in improving security, transparency, traceability, stakeholder involvement, and countering issues like product counterfeiting, delays, fraud, and instabilities.

The study provides a comprehensive analysis of existing literature on blockchain characteristics, implementations, and business consequences in various SCM contexts. It identifies transparency, traceability, information sharing, and product anti-counterfeiting as key drivers for adopting blockchain in SCM.

The paper also discusses the challenges and open research questions in implementing blockchain in SCM. It emphasizes the need for decentralized infrastructure, a trust layer for business logic, tamper-proof tracking, and cryptographic security. It highlights advantages such as real-time data handling, reduced paperwork, increased efficiency, improved supply chain visibility, and reduced risks of SCM attacks with blockchain adoption.

The motivation behind the survey is to address SCM challenges and explore the potential of blockchain technology. It compares existing surveys on blockchain and SCM integration and provides insights for researchers interested in this field. The study aims to provide an understanding of blockchain technology in SCM, its current adoption status, and future research directions.

Overall, the paper presents a comprehensive overview of blockchain adoption in SCM, discussing benefits, challenges, and potential applications. It serves as a valuable resource for researchers, engineers, educators, and readers interested in understanding the intersection of blockchain technology and supply chain management.

**Exploring blockchain-supported authentication based on online and offline business in organic agricultural supply chain**

*Sensen Hu , Shan Huang , Xinghong Qin*

Two models are proposed: the blockchain certification traceability model (BTM) for offline business scenarios and the blockchain-based e-commerce model (BEM) for online business scenarios. The BTM allows consumers to check product information by scanning barcodes in offline stores, while the BEM enables consumers to verify and purchase products online. The paper highlights the need for quantitative methods to confirm the benefits of blockchain adoption in OASCs and presents a comparative analysis using the Stackelberg game to evaluate supply chain profit and consumer surplus.

The study extends the analysis by using the case of Red Beauty oranges to demonstrate the effectiveness of the blockchain e-commerce model in scenarios with high shopping convenience and low operating costs of the blockchain platform. The findings suggest that the BEM is a favorable supply chain model that improves the performance of OASCs. The paper emphasizes the nutritional and health benefits of organic products, the growing consumer preference for organic agriculture, and the potential of blockchain technology to enhance the credibility, efficiency, and transparency of supply chains.

However, the benefits of blockchain adoption in OASCs and the existence of divergent views regarding the economic impact of blockchain technology. It identifies the need to compare the benefits of offline and online business scenarios and explores potential trade-offs between the two. The paper contributes by providing a conceptualization of the BTM and BEM models, a quantitative analysis of their benefits, and guidance for implementing blockchain traceability in online and offline businesses.

In conclusion, the paper tells us that the adoption of blockchain technology in OASCs can increase the profit of the supply chain, enhance consumer surplus, and promote the growth of organic agriculture. It emphasizes the importance of improving service quality in traditional supply chain models, setting reasonable certification costs for the blockchain platform, and considering the BEM as an optimal decision-making approach.

**The effect of management accounting and blockchain technology characteristics on supply chains efficiency**

*Murad Ali Ahmad Al-Zaqebaa\*, Baker Akram Falah Jaraha , Nehad Ibrahim Ineizeha , Zeyad Almatarneha and Mufleh Amin AL Jarraha*

The provided text discusses the potential impact of blockchain technology and management accounting on the efficiency of supply chains in Jordanian Manufacturing Companies (JMC). The study conducted a survey with 258 respondents from JMC and found that both blockchain technology characteristics and management accounting have a positive and significant impact on the efficiency of supply chains in JMC. Blockchain technology offers advantages such as lower costs, avoidance of human errors, and enhanced control of information integrity. It can improve transparency, trust, cooperation, and coordination among supply chain parties. The adoption of modern information technology, including blockchain, can reduce transaction costs and improve supply chain operations. The paper acknowledges the need for more research in developing countries and highlights the obstacles to implementing blockchain in supply chains. The findings of the study support the use of blockchain technology and management accounting to increase the efficiency of supply chains in JMC, helping them survive and thrive in competitive business environments.

**Blockchain-Enabled Information Sharing Within a Supply Chain**

PAUL KENGFAI WAN , (Member, IEEE), LIZHEN HUANG , AND HALVOR HOLTSKOG

The document discusses the challenges of information sharing within supply chains and explores the potential impact of blockchain technology on addressing these challenges. Supply chains are complex and fragmented due to globalization and market competition, resulting in a lack of trust and transparency in information sharing. The paper aims to understand how blockchain technology can improve information sharing within supply chains.

The text explains that blockchain technology, with its decentralized and transparent nature, offers a solution for trustable information sharing. Through a systematic literature review, the authors identify potential benefits, challenges, and gaps in blockchain-enabled information sharing within supply chains.

The findings suggest that blockchain technology can enhance collaborative work in various types of supply chains, including health, construction, and smart cities. By providing verified information to all members, blockchain strengthens collaborative partnerships. The use of blockchain-based platforms with smart contracts enables secure information sharing between trusted and non-trusted institutions.

However, the paper also highlights barriers to blockchain adoption, such as the lack of understanding among businesses and conflicts of interest. The authors recommend further research in areas like information hiding and understanding different supply chain dynamics to better deploy blockchain technology.

In summary, the document emphasizes the potential of blockchain technology in improving information sharing within supply chains, while acknowledging the challenges that need to be addressed for successful implementation.

**Application of Blockchain Smart Contracts in E-commerce and Government**

*Kamal Kishor Singh*

the implications of blockchain smart contracts in modern e-commerce. the shift of business challenges to online platforms and the need for secure and transparent solutions. Smart contracts are identified as a potential solution to enhance security, accountability, inclusiveness, cost-effectiveness, and transparency in e-commerce.

various domains of e-commerce, including financial transfer, record-keeping, real estate, insurance, supply chain management, and more. The widespread adoption of smart contracts offers benefits such as decentralization, efficacy, cost-effectiveness, transparency, speed, autonomy, privacy, and security, etc.

the technology faces challenges related to security, transparency, cost-effectiveness, and regulatory frameworks. Organizational and technical challenges, such as compatibility with legacy systems, scalability, bugs, speed, and lack of talent and understanding, hinder the deployment of smart contracts.

the need for policymakers, developers, researchers, practitioners, and stakeholders to invest time and effort in addressing these challenges and fostering the global adoption of smart contracts in small and big businesses.

pharma, mechanical engineering, healthcare, insurance, tourism, construction, and public administration. In this paper the increasing interest and investments in blockchain technology, as well as the potential transformational impact it can have on traditional business models.

blockchain technology, particularly smart contracts, holds significant potential for e-commerce, but there are still challenges to overcome before its widespread adoption.