

Blockchain for Business: Efficiency Improvement

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Introduction

Efficiency is a major challenge for businesses in all industries across the globe. Since a company's efficiency directly impacts its bottom line, that is a serious problem. Continuous improvement, process review, and an element of automation are all essential factors for becoming more efficient. Blockchain can help improve business efficiency and solve systemic problems before they become barriers to growth or earnings potential.

The Need to Improve Business Efficiency

Problem - A 2019 survey by OnePoll revealed that as much as one-third of employees' time is wasted due to inefficient processes. Much of this is spent on avoidable administrative chores and outdated technological tasks. In addition to these findings, nearly half of those surveyed said they would be more productive with the right technology and tools. It is not only employees who are frustrated by carrying out time-wasting tasks. According to research by Gartner, alongside growth, cost management, and digital infrastructure, senior executives also mentioned technology as one of their top two ways of improving productivity and maintaining their competitive edge.

Solution - Fortunately, the solution is now within their reach. Blockchain technology is enabling businesses to increase efficiency across their organizations in several ways, from enhanced data security to faster transaction speeds, effective settlement automation to business operational efficiency, and continuous improvement. The transparent nature of blockchain also greatly improves collaboration between businesses and their external partners by providing all stakeholders with a single source of truth.

Blockchain can help streamline and optimize business processes.

Manufacturing - According to CB Insights, there are at least 58 big industries that blockchain can disrupt. In the manufacturing sector, blockchain is already helping to eliminate security vulnerabilities, protect intellectual property from theft, and streamline project management, allowing the



Illustration: Important factors for global manufacturing competitiveness

industry to grow and scale.

Entertainment - The entertainment industry is rife with intermediaries. Blockchain is driving efficiency through disintermediation and ensuring that the profits end up in the right hands.

Supply Chain - The supply chain is perhaps one of the most universally applicable aspects of blockchain, allowing for secure, efficient, and transparent monitoring of goods and transactions. The supply chain is often complex and convoluted, making it difficult to track the movement of goods and ensure that they are being sourced from reputable vendors. Blockchain can help to optimize supply chains by providing a transparent and tamper-proof record of all transactions. This would allow businesses to verify the provenance of their products quickly and easily, ensuring that they are sourced from reputable vendors.

The ability to automate repetitive, time-consuming manual tasks, ensure transparency across the business and its wider network, and remove multiple middlemen means that businesses can

increase efficiency and achieve dramatic cost savings at the same time. From fintech and telecom to healthcare and entertainment, more companies are harnessing the power of blockchain for efficiency.

The meteoric rise of Bitcoin has led to widespread interest in the underlying technology of blockchain. Although Bitcoin is the most well-known application of blockchain, the technology can be used for much more than just cryptocurrency. Blockchain has the potential to streamline and optimize business processes in a variety of industries.

Contract Management - Another area where blockchain could have a major impact is in contract management. Smart contracts can be used to automate a variety of business processes, from payroll to invoicing. Smart contracts can help to streamline business processes and reduce the need for manual intervention.

Data Storage - Blockchain also has the potential to revolutionize the way that data is stored and managed. Currently, data is often siloed within different organizations, making it difficult to share and update. Blockchain could provide a single, tamper-proof record of data that could be shared among different organizations. This would allow for more efficient data sharing and reduce the need for duplicate data entry.

The potential applications of blockchain are endless. Technology has the potential to streamline and optimize business processes in a variety of industries.

Blockchain can help reduce costs and improve efficiency.

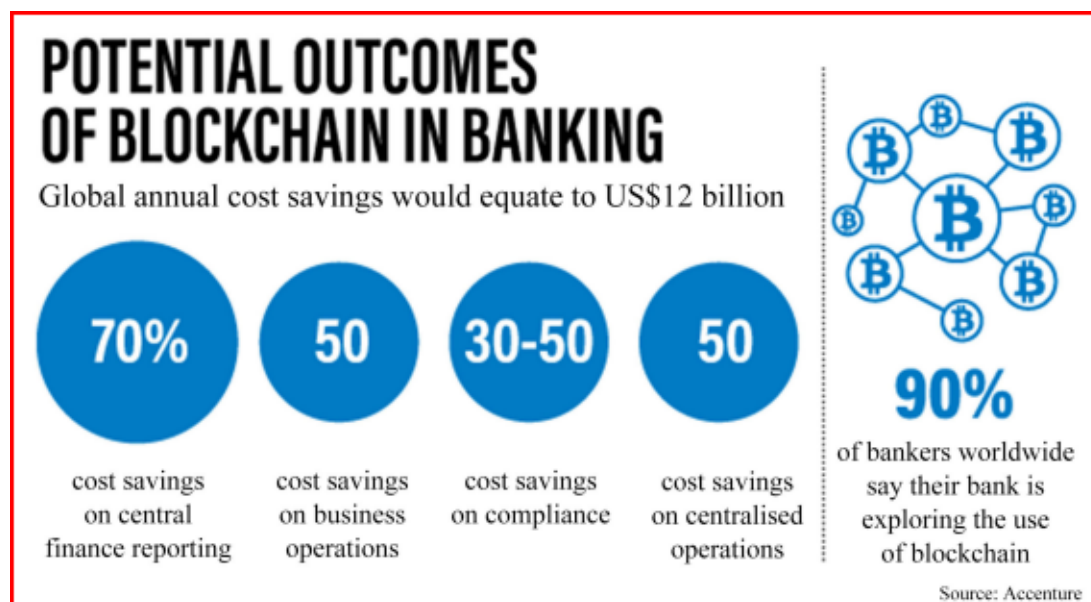


Illustration: Cost reduction by using Blockchain in Banking

The cost of doing business is always a concern for companies, large and small. In recent years, the rise of blockchain technology has led to a lot of excitement about its potential to reduce costs and improve efficiency.

Disintermediation - There are many ways that blockchain can help reduce costs and improve efficiency. For example, blockchain can help reduce the need for intermediaries, which can save time and money.

Fraudulent Activities - In addition, blockchain can help reduce fraudulent activities, which can also save time and money.

Single Source of Truth - Blockchain can also help improve efficiency by providing a single source of truth. This can eliminate the need for duplicate data entry and reconciliation, which can save a lot of time and money.

Automation - In addition, blockchain can help streamline processes by automating them. This can save even more time and money.

Overall, blockchain has the potential to save companies a lot of money by reducing costs and improving efficiency. This is why blockchain is being adopted by more and more companies all over the world.

Blockchain can help increase transparency and accountability.

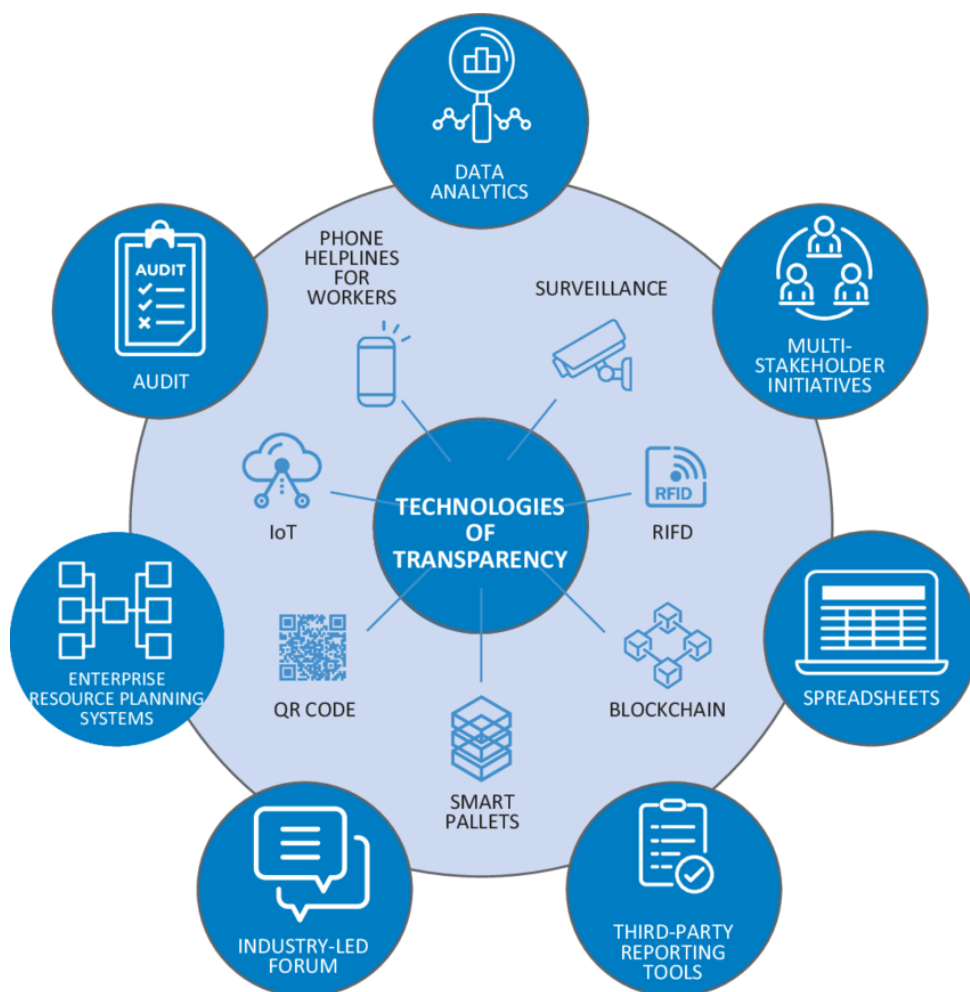


Illustration: Inclusion of Blockchain for transparency

The transparency of a blockchain is ensured by the fact that all transactions are publicly available and verifiable. This means that anyone can see when a transaction occurs and verify that it is legitimate. This contrasts with traditional financial systems, which are often opaque and difficult to audit.

Tamper Proof Record - Blockchain technology can help increase transparency and accountability in many ways. For example, it can be used to create a permanent record of all transactions that cannot be tampered with. This could be used to track the flow of money in an organization or to prevent fraud.

Access - In addition, blockchain-based systems can include mechanisms for ensuring that only authorized users can access certain data. This could be used, for example, to control who can see medical records or financial information.

Smart Contracts - Finally, blockchain technology can be used to create "smart contracts." These are contracts that can be automatically executed when certain conditions are met. For example, a smart contract could release funds from an escrow account only when both parties have signed a document.

Smart contracts can help increase transparency and accountability by making it clear what conditions must be met before certain actions are taken. They can also help reduce the need for manual processing and paperwork, which can save time and money.

Blockchain can help secure and protect business data.

The application of blockchain technology can help organizations to protect their data in several ways. By its very nature, blockchain is secure and transparent, offering a tamper-proof way to store data that is difficult for hackers to exploit.

Blockchain can also help organizations to manage their data more effectively, by providing a single source of truth that can be shared across multiple parties. This can help to reduce duplication and improve accuracy, while also making it easier to track changes and audit data.

Finally, blockchain can be used to create digital signatures that can be used to verify the authenticity of data. This can help to prevent fraud and ensure that only authorized parties can access sensitive information.

Overall, blockchain offers several potential benefits for organizations looking to secure and protect their data. By its very nature, blockchain is secure and transparent, offering a tamper-proof way to store data. In addition, blockchain can help organizations to manage their data more effectively, by providing a single source of truth that can be shared across multiple parties.

Automating Settlements

One universal example of how blockchain can improve business efficiency in any industry is automating settlements. Many companies dedicate entire departments and allocate thousands of working hours a year to tasks related to receiving, organizing, approving, and paying invoices. The ability to create smart contracts with blockchain technology can reduce this burden almost entirely. Once the smart contracts are coded and deployed, settlements can be

automated and handled without human intervention. This removes multiple issues such as delayed payments and human error while reducing costs and freeing up employees for more pressing or creative tasks.

How does a Smart Contract Work?

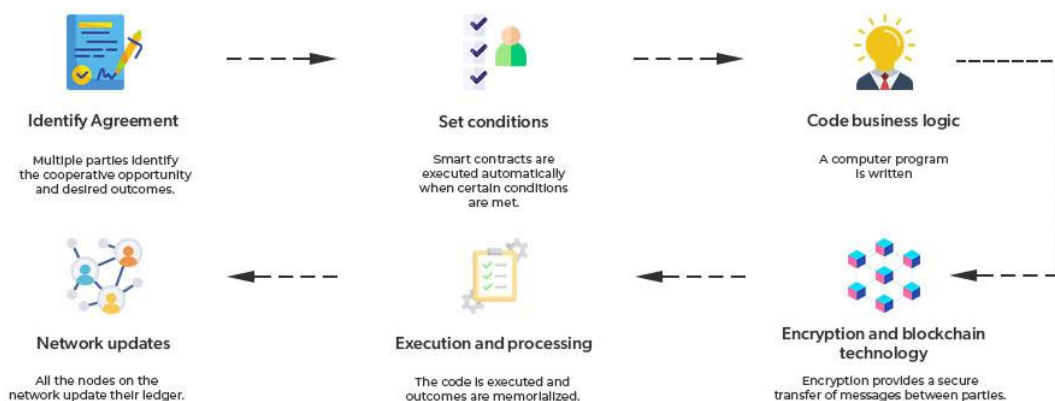


Illustration: Smart Contract Automation

According to a FreshBooks report, processing one single invoice can cost large companies as much as \$40. With blockchain-based solutions, businesses can save hundreds of thousands of dollars a year. Employees can finish the work in a fraction of the time and focus on value-adding activities that help a business grow and gain a competitive edge. And since smart contracts are tamper-proof and immutable, the conditions cannot be altered. This means that all parties can be sure that the agreed-upon terms will be met which, in turn, reduces the need for potentially costly and time-consuming litigation.

Blockchain can drive business efficiency across all departments of global enterprises. Where a business process improvement is needed, its unique attributes make blockchain a front-running technology to provide a solid solution.

Improve marketing campaigns.

Effective marketing strategies are crucial for any business to grow and expand. Although we have traditional marketing modes like social media, outdoor advertising, print advertising, and more, they have their limitations. Marketers can use blockchain to track client information and customer behavior and then utilize this data to craft clever marketing strategies that drive greater returns. Blockchain can also help them identify changes, trace mistakes, and verify whether web/ad traffic comes from real people and not from bots.

Better recruitment

Many candidates who apply for a job position create their resumes by merely editing readymade templates. They also often create an impression of being better than they are and

showcase experiences they don't have. They do this because of the assumption that recruiters do not have time to verify and cross-check the factual accuracy of their qualifications and do a background check. This is true in the case of traditional recruitment processes.

However, blockchain can assist businesses in speeding up the hiring process by providing access to easily verifiable candidate records at their fingertips. Recruiters can quickly verify the authenticity of the candidate's qualifications by going through the academic records, extra-curricular activities, and past employment records stored on the blockchain. Every record can be stored as an NFT which the recruiter can cross-verify easily.

Opportunities for New Businesses

Since blockchain technology is still in its infancy, there are a lot of undiscovered possibilities for firms to investigate. Businesses can therefore use development services to develop ideas for new goods and services, penetrate new markets, and gain a competitive edge.

Crowdfunding - For instance, a company may develop a decentralized platform for crowdfunding or peer-to-peer financing using blockchain development services. As a result, the company may be able to access new funding sources and provide its clients with fresh investment alternatives.

Digital Identities - The use of blockchain development for managing digital identities is another illustration. Businesses can use technology to provide an improved decentralized, secure platform for identity verification, lowering the risk of fraud and identity theft.

What are the benefits of using blockchain in business?

In the business world, the benefits of blockchain technology are becoming more and more apparent. Blockchain provides a secure, decentralized way to store data and conduct transactions. This makes it ideal for a wide range of business applications, from supply chain management to cross-border payments.

Here are some of the key benefits of using blockchain in business:

Security - With blockchain, data is stored in a secure, decentralized network. This makes it much harder for hackers to access or tamper with data.

Transparency - Blockchain's decentralized nature means that all transactions are conducted in a transparent and public way. This can help businesses to build trust with customers and partners.

Efficiency - Blockchain can streamline business processes and reduce the need for intermediaries. This can lead to faster, more efficient transactions.

Cost-savings - By simplifying and automating business processes, blockchain can help to reduce costs.

Improved data quality - Blockchain's tamper-proof nature means that data stored on the network is accurate and reliable.

These are just some of the ways that blockchain can benefit businesses. With its potential to streamline processes, reduce costs, and improve security, blockchain is poised to revolutionize the way businesses operate.

What are the challenges of using blockchain in business?

The challenge of using blockchain in business is that it is a new and relatively untested technology. While there are many potential advantages to using blockchain in business, such as increased security and transparency, there are also potential risks and challenges associated with its use.

Lack of Control - One of the key challenges is that blockchain is a distributed database system, which means that there is no central authority or control over the data. This can make it difficult to ensure the accuracy and integrity of data stored on the blockchain.

Irreversible - Another challenge is that blockchain transactions are irreversible, which means that once data is stored on the blockchain it cannot be changed or deleted. This could pose problems if errors are made or if data needs to be updated.

Lack of Standardization - Finally, blockchain technology is still in its early stages of development and there is no standardization across different platforms. This lack of standardization could make it difficult for businesses to interoperate and exchange data on the blockchain.

In what ways do businesses use blockchain to improve their efficiency?

The way businesses use blockchain to improve their efficiency is constantly evolving. While the underlying technology of blockchain is still relatively new, businesses are already finding ways to use it to streamline their operations. Here are some of the most common ways businesses are using blockchain to improve their efficiency:

Asset management - Blockchain can be used to track and manage assets more efficiently. For example, a business can use blockchain to track inventory levels in real time and automatically trigger reordering when levels get low. This can help to reduce waste and ensure that inventory is always available when needed.

Supply chain management - Blockchain can also be used to manage supply chains more effectively. By tracking the movement of goods through the supply chain on a blockchain, businesses can get a clear picture of where items are at any given time. This can help to avoid delays and disruptions and ensure that goods are always delivered on time.

Payment processing - Blockchain can also be used to streamline payment processing. For example, a business can use blockchain to process payments automatically, without the need for manual intervention. This can help to reduce errors and speed up transaction times.

What are some potential applications for blockchain in business?

The potential applications for blockchain in business are numerous and varied. At its most basic, a blockchain is a digital ledger of transactions that is shared among a network of

computers. This decentralized network prevents any single computer from having sole control over the ledger, which makes it incredibly difficult to tamper with. This tamper-proof nature of blockchain makes it ideal for several different applications in business, from streamlining supply chain management to creating more secure and efficient financial systems.

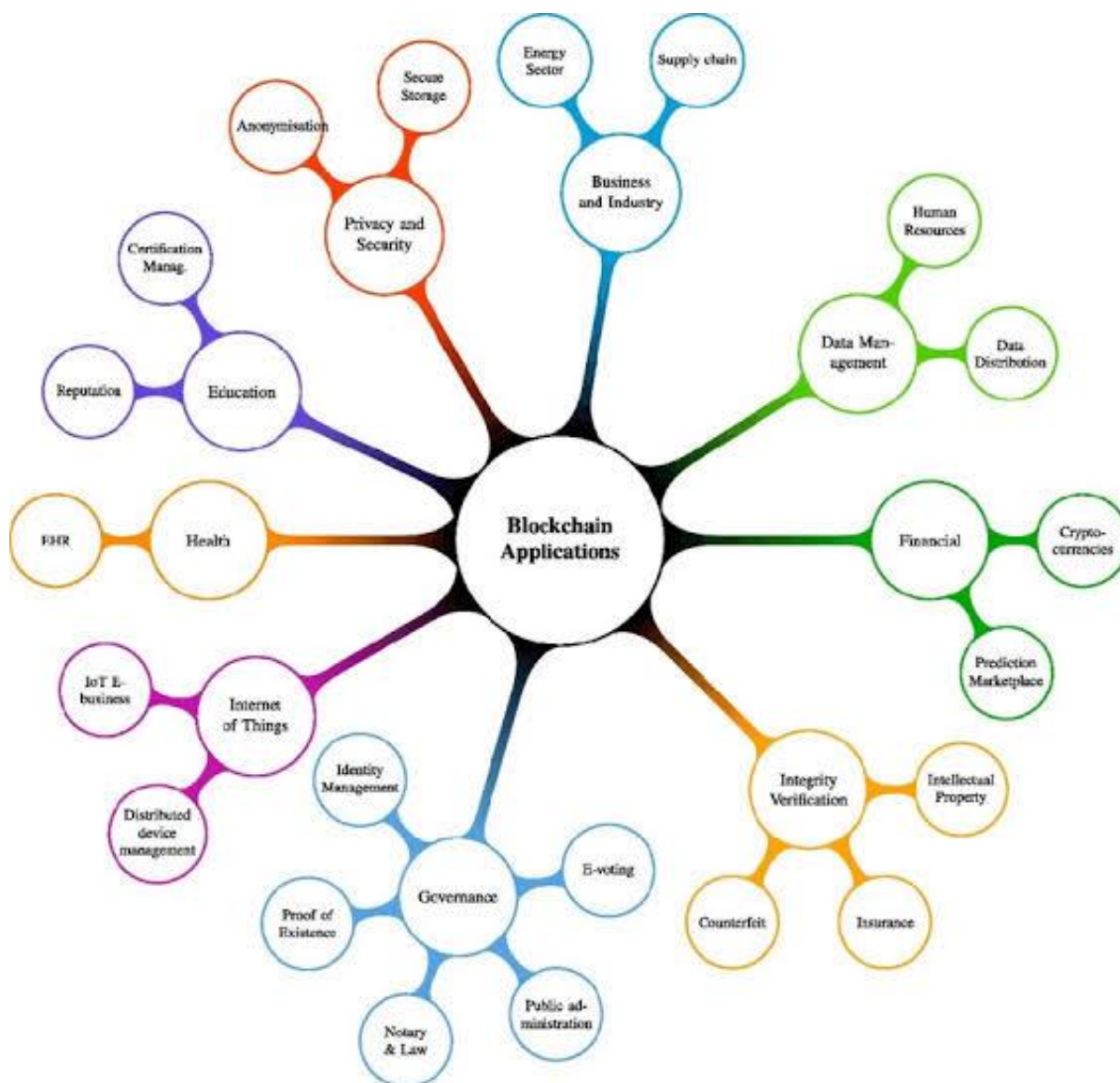


Illustration: Blockchain Applications

Supply Chain - One potential application for blockchain in business is supply chain management. Blockchain could be used to track the movement of goods throughout the supply chain, from the moment they are manufactured to the moment they are sold to the consumer. This would allow businesses to have a more transparent and efficient supply chain, as they would always know where their products are and who has handled them. This would also reduce the chances of fraud or error, as all the information would be stored on the blockchain and could not be altered.

Financial Services - Another potential blockchain application is in the financial sector. Blockchain could be used to create a more secure and efficient system for handling payments and other financial transactions. Currently, financial institutions rely on a centralized system that is slow and often insecure. Blockchain could provide a decentralized alternative that would be much faster and more secure. This would reduce the chances of fraud and could potentially save businesses a lot of money.

These are just a few of the potential applications for blockchain in business. As the technology continues to develop, there will likely be many more applications that emerge. With its tamper-proof nature and ability to streamline various processes, blockchain has the potential to revolutionize the way businesses operate.

Case Study: How does Blockchain Technology enhance the efficiency of Supply Chain Management?

The Chain Gang — Blockchain Meets Supply Chain

Blockchain's impact on supply chain operations encompasses various aspects such as real-time tracking of goods, facilitating seamless payments & streamlining information gathering and sharing processes, leading to reduced time and costs.

Unlike conventional supply chains, those based on blockchain technology will update transaction records automatically whenever a change occurs, thereby improving traceability throughout the entire supply chain network. Supply chain networks using blockchain technology might require a closed, private & permissioned blockchain, involving a limited number of participants. This differs from financial blockchain applications like Bitcoin, which tend to be public. Nevertheless, the chance for a broader range of partnerships might still be present.

In supply networks based on blockchain technology, there are four important participants: registrars, standard organizations, certifiers & actors:

Registrars assign unique identities to network participants.

Standard organizations establish rules & technical guidelines for blockchains, similar to Fairtrade standards for eco-friendly supply chains.

Certifiers validate individuals to participate in supply chain networks.

Certified auditors or certifiers need to authenticate participants or **actors** such as producers, sellers & buyers to uphold the system's credibility.

The way a particular actor claims ownership or transfers a product is an interesting aspect of managing structure and flow, particularly within supply chains leveraging blockchain technology. Yet does blockchain truly enhance transparency in supply chain management?

Before a product changes hands, the involved parties must meet a condition in the smart contract, ensuring the validation of goods or services exchanged between them. Once all

participants fulfill their obligations & processes, the blockchain ledger is updated with transaction details. This process enhances transparency throughout the entire value chain.

Furthermore, blockchain technology transparently outlines details such as the nature, quantity, quality, location & ownership of a product. This enables customers to track the complete chain of custody and transactions, from raw materials to the final sale, removing the need for a dependable central organization to oversee & uphold digital supply chains.

How is Blockchain used in the Supply Chain?

Tackling Food Safety Concerns

Most of the time, a complex global supply chain that includes a complicated web of manufacturing, processing, packing, storage & distribution produces the food that we eat. Food safety may suffer because of all of this moving us farther and farther away from the source of our food supply. It can be challenging to monitor several food safety concerns separately, such as cross-contamination & the spread of foodborne diseases. Furthermore, it is difficult to respond quickly to problems in traditional supply chains due to a lack of data & visibility, which may damage a business's reputation and finances. Blockchain technology, renowned for its reliability and integrity, emerges as a promising solution to address these challenges.

Since 2017, key players in the food industry have collaborated to explore how blockchain can elevate global food safety standards. Presently, industry giants leverage blockchain to expedite the identification & removal of sources contributing to foodborne illnesses.

To Improve Tracking & Transparency

Implementing blockchain technology alongside Internet of Things (IoT) devices like smart sensors and RFID tags enhances the efficiency of recording product movements within the supply chain. It captures detailed data regarding factors like temperature, vibration & humidity, storing it securely in a blockchain while employing smart contracts for real-time monitoring.

This integration offers high precision in tracking, facilitating quicker issue detection & resolution for companies. Also, it presents opportunities for cost savings. By using a distributed digital network, the system minimizes stock loss and waste, while eliminating the need for paper-based workflows. This elimination of physical document management reduces additional costs associated with storage and labor, streamlining operations significantly.

Improving Payment Efficiency

Within supply chains, the multitude of suppliers, intermediaries & third-party services often complicate the management of goods movement, pricing, and supplier payments. Conventional payment terms via invoices typically span weeks or even months. However, employing blockchain-powered smart contracts facilitates immediate payments.

The decentralized structure of blockchain technology proves beneficial in establishing a transparent payment system. This system allows all involved parties in a specific supply chain to track payment transactions, thereby mitigating fraud & minimizing human errors. Also, blockchain-based cryptocurrencies empower supply chain participants to transact directly,

bypassing the need for banks. This approach reduces fees & accelerates the payment process significantly.

Improving Communication & Collaboration

In the intricate web of invoices, order requests & contracts within a modern supply chain, constant exchanges between different entities often lead to friction and delays.

However, the integration of blockchain technology in supply chains holds the promise of enhancing communication and collaboration among all involved stakeholders. By enabling shared databases across multiple parties, blockchain eliminates the necessity for intermediaries to validate, document or synchronize these transactions, as per reports. The report highlights that blockchain's shift from a centralized to a decentralized system liberates previously isolated data, which were confined within safeguarded silos.

Furthermore, smart contracts play an important role by incentivizing all parties to fulfill their agreed-upon obligations promptly, comprehensively & accurately. This comprehensive visibility into financial data and performance not only enhances financing opportunities for small businesses but also reduces processing times by minimizing uncertainties and risks.

To Advance Ethical & Sustainable Sourcing

In recent years, consumer awareness has significantly grown regarding the impact of their shopping choices on the environment and society. Whether it's clothing, food, or vehicles people seek assurance that the companies they support prioritize ethical & sustainable sourcing practices.

Companies have undergone a profound shift in their perception of their responsibilities, embracing a broader role as global participants. This shift has been made possible by the transparency within supply chains. Blockchain technology emerges as a powerful tool in this pursuit for several reasons. Firstly, it enables the verification of a product's origin, allowing consumers to make informed decisions about their purchases. Secondly, its traceability & secure characteristics offer customers a transparent view into the journey of materials and products, from sourcing to manufacturing and throughout the entire supply chain. Customers are now better equipped to comprehend and verify the sustainable and ethical features of the products they purchase.

Some of the reputed names in the business world are utilizing blockchain in their supply chain management.

IBM Food Trust is a popular platform for food supply chain management, which allows food producers, distributors, retailers, and other stakeholders dealing in the business to track the flow of food products across the supply chain, from production to delivery, maintaining a high level of traceability and transparency.

Provenance allows businesses to track the movement of products across the supply chain, from the source of origin to the end consumer, providing a complete view, transparency, and traceability of products.

Ambrosus is another well-known platform for food and pharmaceutical supply chain management. The platform allows persons with permission to track the movement of goods, ensuring the authenticity and quality of products.

Summing up

Blockchain has a lot to offer businesses, both in terms of increased profit and improved operations. It can drive business efficiency across all departments of enterprises. Where a business process improvement is needed, its unique attributes make blockchain a front-running technology to provide a solid solution. For example, it can streamline transactions, reduce costs and risks, offer better data security and authenticity, ensure transparency, and create new revenue streams.

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