



Market Research

Blockchain Supply Chain

I. Market Size and Customer Analysis

Market Size

The market size of the global Blockchain Supply Chain was valued at USD 260.69 million in 2021 and is projected to grow at a CAGR of 54.34% through the forecast period, reaching USD 3523.14 million by 2027. The forecast period from 2023 to 2030 is expected to witness a significant increase in the Global Blockchain Supply Chain market. In 2022, the market is demonstrating steady growth, and with key players implementing various strategies, it is anticipated to continue its upward trajectory. The supply chain, encompassing support for components, intermediate products, and final products, extending from suppliers and manufacturers to distributors and end-users via sales networks, constitutes the fundamental structure of enterprises.

Customer Analysis

Customers in the global blockchain supply chain include various businesses and organizations that need to:

Enhance Security by Immutability

Blockchain technology boasts high-level security owing to its decentralized structure and reliance on cryptography. The immutability of data stands out as a key feature of blockchain technology. Through the utilization of distributed ledgers and cryptographic methods, information stored on a blockchain becomes permanently secured and resistant to changes over time. This inherent quality makes it exceedingly challenging for malicious entities to tamper with data on the blockchain or manipulate transaction histories. The immutability aspect also contributes to enhanced traceability within a supply chain, as all data remains unalterable and can be easily traced back to its origin. This, in turn, fosters increased trust among various parties in the supply chain and simplifies the task for companies to uphold accountability.

Improve Traceability, Transparency and Trust:

The primary attribute of blockchain lies in its clear and unchangeable record of every transaction within the supply chain. This capability enables the easy tracking of products from their source to their final destination, enhancing accountability and minimizing the likelihood of fraudulent activities. Additionally, it promotes increased transparency throughout the supply chain, enabling companies to monitor products and assess performance in real-time. As a result, trust between partners within the supply chain can be bolstered.

Reduce Costs

The integration of blockchain technology holds the potential to drive cost reduction throughout the entire supply chain by eliminating intermediaries and cutting down on administrative overheads. This impact spans from the initial development and

planning phases to the manufacturing, delivery, and even the product return process. Taking the automotive industry as an example, substantial cost savings can be achieved by reducing the expenses associated with inventory tracking. Currently, this involves manual tasks like checking stock availability and updating records manually. Blockchain facilitates the automation of these processes, diminishing associated administrative burdens.

Furthermore, blockchain's capacity to securely store and share data across the entire product lifecycle enhances real-time accessibility for all stakeholders, including suppliers, manufacturers, and distributors. This not only reduces costs related to manual data entry and errors but also fosters improved collaboration among involved parties. The significant reduction in paperwork throughout the supply chain is another notable benefit. Additionally, blockchain contributes to lowering product development costs by offering a secure platform for tracking progress during the design phase, ensuring accurate change tracking. This minimizes delays and errors in development, ultimately enabling a faster time-to-market (TTM).

Increase Efficiency leads to speed

Blockchain supply management enhanced efficiency results in a fast process. Through the automation of numerous supply chain processes, blockchain technology can boost efficiency and cut down on expenses. This may involve automating payment procedures, monitoring inventory levels, or streamlining logistics operations. Furthermore, it sets the stage for another crucial aspect: the imperative for speed.

Customer Perception

Customer perceptions of blockchain in the supply chain exhibit variability, with some expressing concerns regarding the scalability of implementing blockchain within their supply chain systems. Companies contemplating the adoption of blockchain and its integration into their current systems may face challenges, particularly when dealing with complex and time-consuming processes, especially if numerous legacy systems are in use. Consequently, most companies require dedicated time and resources to ensure seamless integration of their systems with blockchain technology.

Nevertheless, many customers perceive blockchain technology in the supply chain positively due to its potential to enhance transparency, traceability, and overall efficiency. Blockchain can provide consumers with access to detailed information about the origin, production, and journey of products, fostering trust and confidence. Customers increasingly value authenticity and ethical sourcing, and blockchain's ability to verify and secure this information aligns with these consumer preferences.

For example in 2019, the International Food Information Council conducted a survey and found out that 63% of Americans said they would pay up to a third more for products that are responsibly made and transparently sourced, and 94% of consumers surveyed said they would be more loyal to a brand that offers complete transparency.

Investor Perception

Investors have shown interest in blockchain supply chain solutions, recognizing the technology's capacity to address issues such as counterfeiting, fraud, and inefficiencies in traditional supply chain processes. Companies offering innovative blockchain solutions for supply chain management have attracted investment, reflecting a belief in the long-term potential and scalability of such technologies. However, like any emerging technology, there are challenges and uncertainties, and investor perceptions may vary based on factors such as regulatory developments, technology maturity, and market adoption.

II. Market Outlook and Trends

Market outlook

The Blockchain Supply Chain Market size is expected to grow from USD 0.56 billion in 2023 to USD 4.21 billion by 2028, at a CAGR of 49.87% during the forecast period (2023-2028) (Blockchain Supply Chain Market Insights, 2023). With the growing acknowledgment of the advantages offered by blockchain technology, we can expect to see greater adoption across the entire supply chain. This trend is poised to establish a more interconnected and efficient ecosystem, yielding benefits for all parties involved in the supply chain process.

Trends

- **Pharmaceutical Industries:** A key factor propelling growth is the integration of blockchain in the pharmaceutical sector to address the issue of counterfeit drugs. Through authenticating the legitimacy of medications at every stage, the technology plays a crucial role in stopping the entry of fraudulent pharmaceuticals. This not only safeguards patient well-being but also contributes to the expansion of the market.
- **Counterfeit sneakers:** Approximately 40% of the estimated USD 600 billion global counterfeit fashion industry is attributed to fake sneakers. Conventional methods employed by manufacturers to ensure authenticity, such as seals and certificates, are susceptible to counterfeiting themselves. However, retailers are now starting to integrate blockchain technology as a solution to address the issue of counterfeiting in the industry (Blockchain Supply Chain Market Insights, 2023).
- **The automotive sector:** Within the automotive industry, blockchain finds application in supply chains to establish a dependable record of a vehicle's history, encompassing details like parts replacements, repairs, and accidents. This transparency provides advantages for both buyers and sellers in the

used vehicle market, contributing positively to the overall growth of the market. Additionally, the increasing demand for refurbished vehicles stands as another influential factor propelling the advancement of the blockchain supply chain market.

Blockchain Supply chain Deal

A. Connecting Food raised €4M from Banca Patrimoni Sella & C. and European Innovation Council (1 May 2022):

Connecting Food offers digital solutions aimed at establishing transparency in the food supply chain, spanning from the origin to consumption. They serve major European grocery retailers and food brands. Among their offerings is LiveAudit, a continuous digital audit system ensuring compliance with product criteria (e.g., organic or GMO-free status) before recording on the blockchain. LiveEthic employs smart contracts to reward farmers based on their participation and the quality of their produce. Additionally, their smartphone app enables consumers to scan QR codes, accessing comprehensive information on the food supply chain and audit outcomes, fostering brand credibility and consumer trust.

In collaboration with IBM, Connecting Food is exploring a "network of networks" model, positioning Connecting Food as an upstream auditor for food supply chain data linked to the IBM Food Trust™ solution. This collaborative effort aims to enhance data accuracy on the blockchain and provide consumers with a user-friendly app, allowing them to track the journey of their food through the supply chain.

B. Provenance raised \$5M from Angele Academe and others (7 Mar 2022):

Provenance is establishing a ground-breaking global benchmark for consumer sustainability. The platform verifies and enhances sustainability credentials for consumer-packaged goods, empowering customers to discern genuine sustainability efforts and make informed, confident choices. Businesses can leverage provenance's platform to showcase transparency regarding their impact, spanning from product discovery to checkout. This empowers them to achieve their sustainability goals and secure their market share for the future.

C. Chronicled raised \$8.3M from TGV and Fortune (17 Feb 2022)

Chronicled is a provider of AI and blockchain-driven solutions for supply chain management. The company offers a highly secure system to verify the authenticity of limited edition collectible sneakers and luxury goods. Addressing the significant issue of counterfeit luxury and consumer products, which now represents over 2% of global gross domestic product (GDP), Chronicled's platform utilizes NFC and blockchain technologies to establish an open, decentralized, and permanent public record for the authenticity and ownership of consumer products. This information is easily accessible through

the company's mobile consumer app. Chronicle has plans to transition its registries onto blockchain-hosted systems within the next 12-36 months, aiming for completion by 2019. Additionally, the company provides Temptracker for temperature monitoring and CryptoSeal, offering cryptographic identity, sealing, and provenance solutions for products and packaging.

D. Dust identity raised \$40M from Castle Island Ventures, Kleiner Perkins and others (05 Dec 2023).

The company specializes in providing security tags based on diamonds, ensuring they are unclonable. Their solution offers a robust and uncompromisable tracking system for authenticating hardware, utilizing blockchain technology. The Diamond Unclonable Security Tag (DUST) involves an invisible layer of minuscule diamonds, enabling manufacturers and enterprises to integrate high-security authentication with comprehensive lifecycle tracking down to the individual component level. The company provides an optical scanner and cloud-based infrastructure, offering an interface for object identity and provenance.

III. Key Players

1. Walmart

Walmart is a multinational retail company that operates in both the retail and wholesale sectors. As of January 2023, Walmart is the world's largest retailer, with 10,623 stores and 380 distribution facilities in 27 countries. In February 2023, Walmart announced that its FY2023 total revenue was \$611.3 billion.

Walmart Canada announced a \$3.5 billion investment in blockchain, AI, and IoT over the next five years. The investment is part of a digital transformation plan that includes developing smarter stores and distribution centers, and partnering with local tech companies..

2. Provenance

Provenance is a technology company utilising blockchain to enhance transparency in supply chains, with a particular focus on industries like food and fashion. The platform leverages blockchain technology to create an immutable ledger, recording the journey of products through the supply chain. It emphasizes supply chain transparency, allowing businesses to share and consumers to verify information about the origin, production, and ethical practices associated with products. Provenance engages consumers by providing easy access to detailed product information through features like QR codes. The company collaborates with brands and organizations to implement its technology, promoting sustainability and ethical sourcing in various industries. Provenance is a technology company utilizing blockchain to enhance transparency in supply chains, with a particular focus on

industries like food and fashion. The platform leverages blockchain technology to create an immutable ledger, recording the journey of products through the supply chain. It emphasizes supply chain transparency, allowing businesses to share and consumers to verify information about the origin, production, and ethical practices associated with products. Provenance engages consumers by providing easy access to detailed product information through features like QR codes. The company collaborates with brands and organizations to implement its technology, promoting sustainability and ethical sourcing in various industries.

Provenance raised \$5 million in Series A round. The round included 10 investors, including Angel Academe, Working Capital, Digital Currency Group, Nordic Eye, Brandtech Group, WakeUp Capital, and The Index Project.

In march 2023, Provenance Blockchain Foundation has announced a \$50 million grant program for blockchain developers to support the development of regulated financial services on blockchain.

GANNI partnered with Provenance, a transparency technology solution provider. The partnership allows GANNI to be transparent about the environmental impact of their clothing and the people who make them.

3. Amazon

Amazon has introduced a new initiative called the Counterfeit Crimes Unit, with a specific focus on prosecuting counterfeiters attempting to introduce fraudulent products into its supply chain. The primary goal is to safeguard the Amazon store from instances of counterfeiting. In 2019, Amazon committed an investment of close to USD 500 million to combat abuse and fraud, particularly counterfeit activities. These efforts successfully thwarted almost 2.5 million suspected fake accounts, preventing any of their products from being made available for sale. The establishment of this unit enables the company to effectively pursue legal action through civil lawsuits against alleged offenders, assist law enforcement authorities, and collaborate closely with brands in both independent and joint investigations.

References:

- Blockchain Supply Chain Market Insights (2023). Available at: <https://www.mordorintelligence.com/industry-reports/blockchain-supply-chain-market>. (Accessed: 29 Dec 2023).