Market Research

Blockchain Supply Chain

Emmanuel Ngongo

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Venture Capital

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.

The latest research showed the smart contracts market size reached USD 187 million in 2022 and it is anticipated to experience substantial growth, projecting a market size of USD 1,417 million by 2032. This growth is expected to occur at a Compound Annual Growth Rate (CAGR) of 22.8% from 2023 to 2032.

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, a consensus among many businesses exists that blockchain is regarded as a cutting-edge technology poised to enhance the existing structure of contemporary supply chains. This enhancement is anticipated through the elevation

of trust, efficiency, and transparency within the supply chain, underscoring the potential benefits that blockchain can bring to the overall business landscape.

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 sneaker: 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 groundbreaking 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 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. Chronicled 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. IBM

In the corporate realm, the success of blockchain relies on the development and expansion of business networks. IBM has been at the forefront of this effort, pioneering the establishment of various emerging networks such as IBM Food Trust™ and TradeLens. While these blockchain networks are still in their early stages, they exhibit significant potential, presenting numerous opportunities to address use cases that are poised for enterprise adoption (IBM 2019).

Recognizing the potential in collaboration, IBM advocates for a winning strategy wherein corporations join forces with startups. To implement this strategy, IBM is systematically partnering with some of the best startups in the world through the new IBM Blockchain Accelerator program. Through this initiative, IBM aim to assist companies with proven traction in scaling their blockchain business networks. If executed successfully, the collective opportunity is immense – according to the World Trade Organization, blockchain has the potential to create economic value exceeding $3 trillion USD by the year 2030.

2. Microsoft Corporation

Microsoft has been actively involved in the blockchain space, including applications in supply chain management. Microsoft Azure, the cloud computing platform offered by Microsoft, provides various tools and services for building, deploying, and managing blockchain applications.

One of the notable initiatives is the Azure Blockchain Service, which enables users to deploy, manage, and govern blockchain networks. This service supports multiple blockchain protocols, and users can choose the one that best fits their requirements.

In terms of supply chain applications, Microsoft has been working on solutions that leverage blockchain technology to enhance transparency, traceability, and efficiency in supply chain processes. These solutions aim to address challenges such as counterfeit goods, provenance tracking, and the overall optimization of supply chain operations (Microsoft 2022).

3. Oracle

Oracle strategically introduced the Oracle Blockchain Platform Enterprise Edition (OBP EE), marking a pivotal moment that solidified its position as a key player in the blockchain supply chain industry. Leveraging its deep expertise in enterprise solutions, Oracle unveiled OBP EE to address the growing demand for scalable,

secure, and seamlessly integrated blockchain technology. The platform's introduction was accompanied by a clear vision to revolutionize supply chain management, offering organizations advanced tools to build, deploy, and manage blockchain networks efficiently. OBP EE's emphasis on scalability and integration with existing enterprise systems positioned Oracle as a trailblazer in facilitating the adoption of blockchain within the complex landscape of supply chain operations. Through strategic initiatives and the continuous evolution of its blockchain solutions, Oracle has played a significant role in shaping the industry and empowering businesses with transformative capabilities for transparency and efficiency in supply chain processes.

4. 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.

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