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Blockchain for Sustainable Supply Chains Market Forecasts to 2030 – Global Analysis by Blockchain Type (Public Blockchain, Private Blockchain and Consortium Blockchain), Supply Chain Stage, Deployment Type, Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Blockchain for Sustainable Supply Chains Market is accounted for $109.4 million in 2024 and is expected to reach $1339.1 million by 2030 growing at a CAGR of 51.8% during the forecast period. Blockchain for Sustainable Supply Chains is the application of blockchain technology to improve supply chain management's efficiency, traceability, and transparency while emphasizing sustainability. Blockchain ensures ethical sourcing, minimizes waste, and minimizes environmental impact by utilizing decentralized and immutable ledger systems to enable real-time tracking of products, materials, and resources from point of origin to point of end-use. Blockchain facilitates the creation of more resilient, ethical, and sustainable supply chains through safe and transparent data sharing, helping businesses to comply with legal and sustainability standards.

Market Dynamics:

Driver:

Rising Adoption of Smart Contracts

The growing use of smart contracts is altering the blockchain for sustainable supply chains market, improving transparency, efficiency, and traceability. Smart contracts

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minimize fraud and manual intervention by automating adherence to sustainability requirements. They make it possible to track products in real time, guarantee ethical sourcing, and reduce environmental effect. They reduce expenses and boost stakeholder trust by simplifying operations. Smart contracts enable carbon footprint tracking and responsible procurement, promoting resilient and sustainable supply chains across industries as businesses prioritize ESG objectives.

Restraint:

High Implementation Costs

High implementation costs can significantly hinder the adoption of blockchain in sustainable supply chains. Organizations may face challenges in investing in the required infrastructure, technology, and skilled personnel. These costs often act as a barrier for small and medium-sized enterprises (SMEs), limiting their ability to leverage blockchain for improving transparency, traceability, and efficiency. Additionally, the return on investment may take longer to materialize, further discouraging widespread adoption.

Opportunity:

Increased Focus on Circular Economy

The rising emphasis on the circular economy is propelling the market by encouraging resource efficiency, waste reduction, and material recycling. Blockchain technology guarantees supply chains' accountability, transparency, and traceability, allowing companies to monitor product lifecycles, cut waste, and promote sustainable practices. This move to circular economy models is essential for supply chain transparency and responsible consumption since it encourages cooperation among stakeholders, strengthens sustainability initiatives, increases product durability, and lessens environmental effect.

Threat:

Scalability Challenges

Scalability issues in the Blockchain for Sustainable Supply Chains market impede wider adoption by restricting transaction speed and volume. Slower processing times and greater transaction prices are the result of the blockchain network's inability to maintain

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efficiency and reduce congestion as it expands. These problems may make it more difficult for the system to manage massive supply chain data and less able to satisfy the requirements of international sustainability projects.

Covid-19 Impact

The COVID-19 pandemic accelerated the adoption of blockchain for sustainable supply chains by highlighting vulnerabilities in global trade. Disruptions in logistics and sourcing increased the demand for transparency, traceability, and resilience. Blockchain solutions enabled real-time tracking, fraud prevention, and ethical sourcing verification, ensuring compliance with ESG goals. Post-pandemic, companies continue leveraging blockchain to mitigate risks, enhance sustainability, and build more resilient supply chains against future disruptions.

The cryptographic algorithms segment is expected to account for the largest market share during the forecast period

The cryptographic algorithms segment is expected to account for the largest market share during the forecast period, because advanced encryption techniques like SHA-256, elliptic curve cryptography (ECC), and zero-knowledge proofs enhance trust among stakeholders by preventing fraud and unauthorized modifications. These algorithms secure smart contracts and decentralized ledgers, enabling tamper-proof traceability of sustainable sourcing and ethical supply chain practices. As regulatory demands for ESG compliance grow, robust cryptographic mechanisms drive blockchain adoption in sustainable supply chains.

The automotive segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the automotive segment is predicted to witness the highest growth rate, due to increasing demand for transparency, traceability, and sustainability in sourcing raw materials and components. Blockchain ensures secure, immutable records, reducing fraud and inefficiencies in supply chains. It enhances compliance with environmental regulations, optimizes logistics, and supports ethical sourcing of materials like lithium and cobalt for EV batteries. Automakers leverage blockchain for carbon footprint tracking, promoting circular economy practices and boosting overall sustainability efforts.

Region with largest share:

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During the forecast period, Asia Pacific region is expected to hold the largest market share, because it improves traceability, guarantees ethical sourcing, and lowers fraud. Smart contracts save expenses and emissions by automating regulatory compliance. Decentralized ledgers optimize resource usage and reduce waste in logistics. Companies use blockchain to validate sustainability claims, increasing customer confidence. Blockchain is being used by governments and businesses to achieve ESG objectives, promoting robust, environmentally friendly supply chains and hastening the region's shift to a more sustainable economy.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, as it enables real-time tracking of goods, eliminating fraud and waste while also assuring ethical sourcing and lowering carbon footprints. Blockchain encourages trust and accountability by allowing stakeholders to validate sustainability claims through the secure recording of transactions. As businesses place a greater emphasis on sustainability, blockchain's capacity to cut down on waste and promote eco-friendly projects increases its influence throughout the region's industries.

Key players in the market

Some of the key players profiled in the Blockchain for Sustainable Supply Chains Market include Accenture, Ambrosus, Chainpoint, De Beers, Everledger, Hyperledger, IBM Blockchain, Microsoft, Modum, Oracle, Provenance, R3 Corda, SAP, Talon.One, TE-FOOD, VeChain and Walmart.

Key Developments:

In January 2025, BCC Iccrea Group and Accenture signed a partnership agreement to support the Group's IT transformation within the framework of the broader IT reinvention plan devised by BCC Sistemi Informatici.

In January 2025, Accenture and Meiji Yasuda Life Insurance Company have signed an agreement to collaborate on a comprehensive corporate transformation initiative that will use artificial intelligence (AI) to reinvent how Meiji Yasuda’s workforce operates.

In January 2025, Telstra and Accenture announced a proposed joint venture (JV) to rapidly accelerate Telstra’s data and AI roadmap to further extend its network

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leadership, improve customer experience, and help its teams operate more efficiently and effectively.

Blockchain Types Covered:

- Public Blockchain
- Private Blockchain
- Consortium Blockchain

Supply Chain Stages Covered:

- Sourcing and Procurement
- Manufacturing and Production
- Distribution and Logistics
- Retail and Consumption

Deployment Types Covered:

- Cloud-based
- On-premise

Technologies Covered:

- Distributed Ledger Technology (DLT)
- Cryptographic Algorithms
- Interoperability Platforms

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Applications Covered:

- Traceability
- Transparency
- Smart Contracts
- Tokenization and Incentives
- Data Integrity and Security
- Other Applications

End Users Covered:

- Agriculture and Food Supply Chain
- Manufacturing
- Retail
- Pharmaceuticals
- Fashion and Textiles
- Automotive
- Electronics
- Other End Users

Regions Covered:

- North America
  - US

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- Canada
- Mexico

Europe

- Germany
- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina

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Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

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SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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