

Telecom Blockchain Infrastructure Market Forecasts to 2032 – Global Analysis By Type of Blockchain (Permissioned/Private Blockchain, Public Blockchain, and Consortium/Hybrid Blockchain), Deployment Model (On-Premises, and Cloud-based), Provider, Enterprise Size, Application, and By Geography

<https://marketpublishers.com/r/T5364616DED9EN.html>

Date: October 2025

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: T5364616DED9EN

Abstracts

According to Statistics MRC, the Global Telecom Blockchain Infrastructure Market is accounted for \$1.1 billion in 2025 and is expected to reach \$10.2 billion by 2032 growing at a CAGR of 37.5% during the forecast period. Telecom blockchain infrastructure uses blockchain technology to create decentralized, secure, and transparent systems for telecom operations. Applications include secure roaming agreements, identity management, and streamlined settlement between carriers. Blockchain eliminates intermediaries, reduces fraud, and automates processes via smart contracts. Telcos are exploring this to reduce operational costs, enable new 5G-enabled services like slice leasing, and enhance trust in multi-stakeholder transactions through an immutable ledger.

Market Dynamics:

Driver:

Need for secure and transparent telecom operations

The telecom sector increasingly requires secure, transparent, and tamper-proof systems to handle large volumes of transactions, subscriber data, and inter-carrier settlements. Blockchain offers decentralized ledgers, cryptographic verification, and

immutable records, which enhance trust, reduce fraud, and streamline operations. Additionally, operators are leveraging smart contracts to automate billing and roaming settlements, improving efficiency. The demand for secure network management, regulatory compliance, and real-time monitoring drives widespread adoption, positioning blockchain as a critical infrastructure solution across global telecom networks.

Restraint:

Regulatory uncertainty surrounding blockchain technology

Despite its potential, blockchain adoption in telecom is hindered by unclear or evolving regulations across jurisdictions. Issues around data privacy, cross-border transactions, cryptocurrency usage, and smart contract legality create compliance risks for telecom operators. Moreover, differences in national policies slow large-scale deployment and raise legal and operational costs. This regulatory ambiguity restricts investments in blockchain infrastructure and inhibits innovation. Companies must closely monitor legislative developments and collaborate with regulators to ensure solutions are compliant and scalable across diverse markets.

Opportunity:

Expansion into IoT security and mobile payment systems

Blockchain provides secure frameworks for managing IoT devices and mobile financial transactions. By enabling decentralized authentication, encrypted communications, and tamper-proof transaction records, telecom operators can enhance IoT network security and support the growing mobile payments ecosystem. Additionally, partnerships with fintech and IoT vendors open new revenue streams, create cross-industry solutions, and attract enterprise clients. This opportunity is reinforced by rising digital adoption, smartphone penetration, and regulatory support for secure mobile and IoT infrastructure, which encourages telecom blockchain investments globally.

Threat:

Security vulnerabilities in blockchain implementations

While blockchain enhances security, improper configurations, weak consensus protocols, or flawed smart contracts can create exploitable vulnerabilities. Hackers may

target decentralized networks, private keys, or transaction layers, causing financial and reputational losses. Additionally, integration with legacy telecom systems can introduce security gaps if not carefully managed. These risks demand continuous monitoring, audits, and cybersecurity investment. Such threats can slow adoption, increase operational costs, and necessitate robust risk mitigation strategies to ensure that blockchain solutions remain trustworthy and compliant with global security standards.

Covid-19 Impact:

The Covid-19 pandemic accelerated digital transformation across telecom networks, creating urgent demand for secure, scalable, and automated solutions. Operators faced increased remote connectivity, mobile transactions, and IoT deployments, which highlighted the value of blockchain for secure data management and operational efficiency. However, supply chain disruptions and slowed regulatory approvals temporarily hindered deployments. Post-pandemic, telecom providers have focused on resilient, decentralized infrastructures, reinforcing blockchain adoption for critical services while emphasizing cybersecurity, compliance, and cross-border interoperability to meet evolving connectivity and business continuity needs.

The cloud-based segment is expected to be the largest during the forecast period

The cloud-based segment is expected to account for the largest market share during the forecast period due to its flexibility, cost-effectiveness, and reduced IT maintenance requirements. Operators benefit from subscription-based models, rapid provisioning, and integration with edge computing and IoT networks. Additionally, the cloud facilitates seamless smart contract execution, inter-operator settlements, and secure data sharing. The ability to scale resources according to network demand, combined with robust vendor support and compliance adherence, positions the cloud-based segment as the primary choice for telecom blockchain infrastructure across enterprise, mobile, and enterprise-grade service deployments.

The application & solution providers segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the application & solution providers segment is predicted to witness the highest growth rate. The surge in demand for end-to-end, vendor-supported blockchain solutions fuels growth for application and solution providers. Operators prefer these services to reduce implementation time, minimize risk, and ensure compliance with emerging standards. Furthermore, providers facilitate multi-use-case

deployments, from secure roaming to IoT management, enhancing value for operators. Continuous innovation, partnerships, and expanding client portfolios accelerate CAGR, positioning application and solution providers as the fastest-growing segment in the telecom blockchain infrastructure market globally.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share due to early adoption of blockchain technology, mature telecom networks, and supportive regulatory frameworks. Operators invest heavily in secure, scalable blockchain solutions to enhance operational efficiency, IoT security, and mobile payments. Moreover, a robust ecosystem of technology vendors, startups, and research institutions accelerates innovation. High digital penetration, extensive enterprise networks, and favorable government initiatives reinforce the region's dominance, ensuring continued investment and expansion of blockchain-based telecom infrastructure across both service providers and enterprise customers.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Rapid digital adoption, increasing mobile connectivity, and government initiatives supporting blockchain adoption are driving the growth. Telecom operators in emerging markets are deploying blockchain to secure IoT networks, streamline mobile payments, and enhance cross-border transactions. Additionally, rising smartphone penetration, growing enterprise demand, and collaboration with global technology providers create favorable conditions for rapid market expansion. This combination of technological readiness, investment, and demand positions Asia Pacific as the region with the highest CAGR in the telecom blockchain infrastructure market.

Key players in the market

Some of the key players in Telecom Blockchain Infrastructure Market include IBM Corporation, Microsoft Corporation, Amazon Web Services (AWS), Huawei Technologies Co., Ltd., Oracle Corporation, SAP SE, Blockchain Foundry Inc., Bitfury Group, Cegeka NV, Clear Blockchain Technologies, Reply S.p.A., ShoCard Inc., Auxesis Group, Blockchain Foundry, BlockCypher, Blockstream, Blockpoint, Chain Inc., Filament Inc., and TBCASoft Inc.

Key Developments:

In September 2025, TBCASoft announced the launch of a blockchain-based platform tailored for telecom operators. The platform aims to enable services such as mobile payments and digital identity management, facilitating seamless cross-border transactions.

In June 2025, IBM announced collaboration with 35 partners to create a comprehensive ecosystem aimed at transforming the telecommunications industry. This initiative focuses on leveraging blockchain to enhance data sharing and transaction transparency across networks.

In June 2025, Microsoft showcased Telco Analytics POC Accelerator at the TM Forum DTW event. The solution utilizes blockchain to provide a unified data model, enabling telecom operators to gain deeper insights and improve decision-making processes.

In May 2025, IBM introduced the IBM Cloud for Telecommunications, a platform designed to help telecom operators modernize their networks and business models. The platform integrates 5G, AI, and blockchain technologies to enable services such as mobile payments and digital identity management.

Type of Block chains Covered:

Permissioned/Private Blockchain

Public Blockchain

Consortium/Hybrid Blockchain

Deployment Models Covered:

On-Premises

Cloud-based

Providers Covered:

Infrastructure Providers

Middleware Providers

Application & Solution Providers

Enterprise Sizes Covered:

Large Enterprises

Small & Medium Enterprises (SMEs)

Applications Covered:

Identity Management & Authentication

Fraud Management & Security

Smart Contracts & Billing Settlements

Roaming and Inter-Carrier Settlements

Supply Chain Management & Asset Tracking

5G Network Slicing Management

IoT Device Management & Monetization

Other Applications

Regions Covered:

North America

US

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

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 2024, 2025, 2026, 2028, and 2032
- 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)

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

Contents

1 EXECUTIVE SUMMARY

2 PREFACE

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
 - 2.4.1 Data Mining
 - 2.4.2 Data Analysis
 - 2.4.3 Data Validation
 - 2.4.4 Research Approach
- 2.5 Research Sources
 - 2.5.1 Primary Research Sources
 - 2.5.2 Secondary Research Sources
 - 2.5.3 Assumptions

3 MARKET TREND ANALYSIS

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Application Analysis
- 3.7 Emerging Markets
- 3.8 Impact of Covid-19

4 PORTERS FIVE FORCE ANALYSIS

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

5 GLOBAL TELECOM BLOCKCHAIN INFRASTRUCTURE MARKET, BY TYPE OF

BLOCKCHAIN

- 5.1 Introduction
- 5.2 Permissioned/Private Blockchain
- 5.3 Public Blockchain
- 5.4 Consortium/Hybrid Blockchain

6 GLOBAL TELECOM BLOCKCHAIN INFRASTRUCTURE MARKET, BY DEPLOYMENT MODEL

- 6.1 Introduction
- 6.2 On-Premises
- 6.3 Cloud-based

7 GLOBAL TELECOM BLOCKCHAIN INFRASTRUCTURE MARKET, BY PROVIDER

- 7.1 Introduction
- 7.2 Infrastructure Providers
- 7.3 Middleware Providers
- 7.4 Application & Solution Providers

8 GLOBAL TELECOM BLOCKCHAIN INFRASTRUCTURE MARKET, BY ENTERPRISE SIZE

- 8.1 Introduction
- 8.2 Large Enterprises
- 8.3 Small & Medium Enterprises (SMEs)

9 GLOBAL TELECOM BLOCKCHAIN INFRASTRUCTURE MARKET, BY APPLICATION

- 9.1 Introduction
- 9.2 Identity Management & Authentication
- 9.3 Fraud Management & Security
- 9.4 Smart Contracts & Billing Settlements
- 9.5 Roaming and Inter-Carrier Settlements
- 9.6 Supply Chain Management & Asset Tracking
- 9.7 5G Network Slicing Management
- 9.8 IoT Device Management & Monetization

9.9 Other Applications

10 GLOBAL TELECOM BLOCKCHAIN INFRASTRUCTURE MARKET, BY GEOGRAPHY

10.1 Introduction

10.2 North America

10.2.1 US

10.2.2 Canada

10.2.3 Mexico

10.3 Europe

10.3.1 Germany

10.3.2 UK

10.3.3 Italy

10.3.4 France

10.3.5 Spain

10.3.6 Rest of Europe

10.4 Asia Pacific

10.4.1 Japan

10.4.2 China

10.4.3 India

10.4.4 Australia

10.4.5 New Zealand

10.4.6 South Korea

10.4.7 Rest of Asia Pacific

10.5 South America

10.5.1 Argentina

10.5.2 Brazil

10.5.3 Chile

10.5.4 Rest of South America

10.6 Middle East & Africa

10.6.1 Saudi Arabia

10.6.2 UAE

10.6.3 Qatar

10.6.4 South Africa

10.6.5 Rest of Middle East & Africa

11 KEY DEVELOPMENTS

- 11.1 Agreements, Partnerships, Collaborations and Joint Ventures
- 11.2 Acquisitions & Mergers
- 11.3 New Product Launch
- 11.4 Expansions
- 11.5 Other Key Strategies

12 COMPANY PROFILING

- 12.1 IBM Corporation
- 12.2 Microsoft Corporation
- 12.3 Amazon Web Services (AWS)
- 12.4 Huawei Technologies Co., Ltd.
- 12.5 Oracle Corporation
- 12.6 SAP SE
- 12.7 Blockchain Foundry Inc.
- 12.8 Bittfury Group
- 12.9 Cegeka NV
- 12.10 Clear Blockchain Technologies
- 12.11 Reply S.p.A.
- 12.12 ShoCard Inc.
- 12.13 Auxesis Group
- 12.14 Blockchain Foundry
- 12.15 BlockCypher
- 12.16 Blockstream
- 12.17 Blockpoint
- 12.18 Chain Inc.
- 12.19 Filament Inc.
- 12.20 TBCASoft Inc.

List Of Tables

LIST OF TABLES

Table 1 Global Telecom Blockchain Infrastructure Market Outlook, By Region (2024-2032) (\$MN)

Table 2 Global Telecom Blockchain Infrastructure Market Outlook, By Type of Blockchain (2024-2032) (\$MN)

Table 3 Global Telecom Blockchain Infrastructure Market Outlook, By Permissioned/Private Blockchain (2024-2032) (\$MN)

Table 4 Global Telecom Blockchain Infrastructure Market Outlook, By Public Blockchain (2024-2032) (\$MN)

Table 5 Global Telecom Blockchain Infrastructure Market Outlook, By Consortium/Hybrid Blockchain (2024-2032) (\$MN)

Table 6 Global Telecom Blockchain Infrastructure Market Outlook, By Deployment Model (2024-2032) (\$MN)

Table 7 Global Telecom Blockchain Infrastructure Market Outlook, By On-Premises (2024-2032) (\$MN)

Table 8 Global Telecom Blockchain Infrastructure Market Outlook, By Cloud-based (2024-2032) (\$MN)

Table 9 Global Telecom Blockchain Infrastructure Market Outlook, By Provider (2024-2032) (\$MN)

Table 10 Global Telecom Blockchain Infrastructure Market Outlook, By Infrastructure Providers (2024-2032) (\$MN)

Table 11 Global Telecom Blockchain Infrastructure Market Outlook, By Middleware Providers (2024-2032) (\$MN)

Table 12 Global Telecom Blockchain Infrastructure Market Outlook, By Application & Solution Providers (2024-2032) (\$MN)

Table 13 Global Telecom Blockchain Infrastructure Market Outlook, By Enterprise Size (2024-2032) (\$MN)

Table 14 Global Telecom Blockchain Infrastructure Market Outlook, By Large Enterprises (2024-2032) (\$MN)

Table 15 Global Telecom Blockchain Infrastructure Market Outlook, By Small & Medium Enterprises (SMEs) (2024-2032) (\$MN)

Table 16 Global Telecom Blockchain Infrastructure Market Outlook, By Application (2024-2032) (\$MN)

Table 17 Global Telecom Blockchain Infrastructure Market Outlook, By Identity Management & Authentication (2024-2032) (\$MN)

Table 18 Global Telecom Blockchain Infrastructure Market Outlook, By Fraud

Management & Security (2024-2032) (\$MN)

Table 19 Global Telecom Blockchain Infrastructure Market Outlook, By Smart Contracts & Billing Settlements (2024-2032) (\$MN)

Table 20 Global Telecom Blockchain Infrastructure Market Outlook, By Roaming and Inter-Carrier Settlements (2024-2032) (\$MN)

Table 21 Global Telecom Blockchain Infrastructure Market Outlook, By Supply Chain Management & Asset Tracking (2024-2032) (\$MN)

Table 22 Global Telecom Blockchain Infrastructure Market Outlook, By 5G Network Slicing Management (2024-2032) (\$MN)

Table 23 Global Telecom Blockchain Infrastructure Market Outlook, By IoT Device Management & Monetization (2024-2032) (\$MN)

Table 24 Global Telecom Blockchain Infrastructure Market Outlook, By Other Applications (2024-2032) (\$MN)

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

I would like to order

Product name: Telecom Blockchain Infrastructure Market Forecasts to 2032 – Global Analysis By Type of Blockchain (Permissioned/Private Blockchain, Public Blockchain, and Consortium/Hybrid Blockchain), Deployment Model (On-Premises, and Cloud-based), Provider, Enterprise Size, Application, and By Geography

Product link: <https://marketpublishers.com/r/T5364616DED9EN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/T5364616DED9EN.html>