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Blockchain implementation — how, why, and when

Blockchain, or distributed ledger technology (DLT), is essentially a store of records that enables the transaction and execution of smart contracts and decentralized applications. Blockchain is the technology that enables cryptocurrencies such as bitcoin. As blockchain adoption grows, companies across a broad range of industries are investigating if and how to implement it.

Mobile operators are aiming to capitalize early on blockchain activity.

To cut costs and make their services more competitive with end customers, mobile operators are actively investing in blockchain-related companies, whether as distributors, system integrators, enterprise ICT vendors, or telcos.

Fraud prevention
Blockchain has the potential to reduce losses due to fraud and minimize costs for fraud detection applications.

Identity management
Blockchain can optimize ID management and bring revenue stream through automated processes based on smart contract.

5G enablement
5G will bring faster, regulated, and reliable connectivity to devices as well as instant monetization of diverse connection types through smart contract.

IoT connectivity
Self-managed P2P networks are taking over regional routing. This improves security and lowers the set-up cost for SMEs.

> Mobile operators and financial services aren't the only industries who can see major benefits from blockchain. The telecom, media, advertising, music, and gaming industries can also see long-term benefits that drive efficiency and security for a wide range of transaction types.
>
> Ruomeng Wang, Senior Analyst, Consumer Platforms & Fintech

BLOCKCHAIN USE CASES
Interest in blockchain spans multiple industries
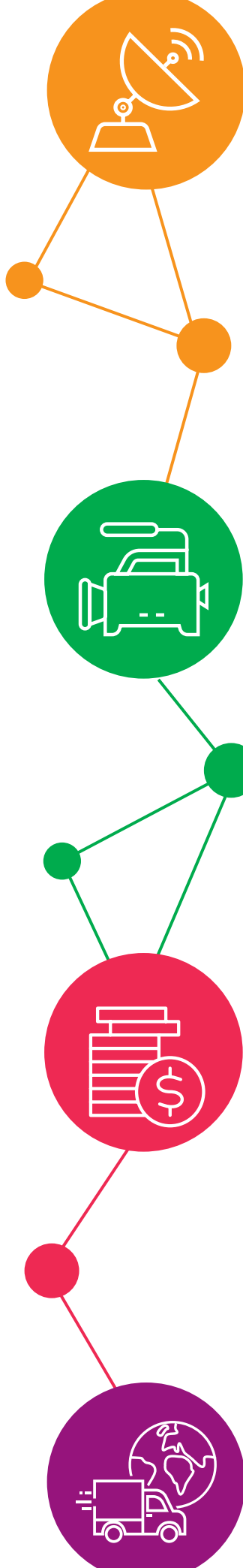
Telecoms
- Telecoms operators have been active investors in blockchain start-ups and initiatives.
- Telecoms operators aim to use blockchain to cut costs and make their services more competitive. Current and potential levels of adoption are focused on fraud prevention, ID management, 5G enablement, and IoT.
- Telecoms adopt blockchain as a part of the company's wider digital transformation efforts, but also to expand the operator's role in adjacent industries and new verticals, including:
  - Banking and finance
  - Healthcare
  - Insurance

Media & advertising
- Blockchain activity across different media and advertising sectors is growing, ranging from fairly limited, relatively niche applications, to much larger cross-industry projects.
- Examples of media and advertising blockchain activity include:
  - Music companies launching services to better manage licensing and royalty payments.
  - Games publishers and developers creating platforms for virtual item transactions.
  - Video and advertising companies aiming to use blockchain to improve audience measurement and attribution and to combat ad fraud.

Financial services
- Blockchain has potential to disrupt the financial industry, with payment-related solutions as early adopters. Use cases include payment authorization, clearing and settlement, and cross-border payments.
- Financial institutions utilize blockchain to improve security from fraud and tampering of records and to streamline operations and lower costs.
- Implementing blockchain technology for wider financial services remains more promise than reality, impeded by a lack of understanding.

Manufacturing & supply chain
The consumer electronics and industrial manufacturing and supply chain industries are also actively looking to deploy blockchain services. Example use cases include improving transparency across the supply chain by better managing information related to pricing, location, and product origin, plus logistics and transport management.

Across industries there are opportunities and challenges for implementing blockchain

Immutability
Immutability has been promoted as one of the advantages of blockchain, as it ensures the security of the data and prevent fraud and corruption.

But...
It also presents challenges when a record needs to be removed or rewritten.

Smart contract
Smart contracts are one of the benefits that blockchain offers. These are contract clauses, written in code and placed onto the blockchain. When a trigger event occurs, they will be activated automatically.

But...
These still need legal expertise. Clear regulatory frameworks need to be defined. Otherwise, smart contracts can make things more complicated.

Speed issues
Blockchain will improve the efficiency of operations through streamlining processes and transparency.

But...
Blockchain has its own limits. The need to update every node means that updates are showed as the network grows and alternatives can be much better.

Private or public
Companies can choose to develop a public or private blockchain based on their business model.

But...
Sometimes, one supplier can be involved in multiple supply chains. Interoperable blockchains are needed to enable transactions across public and private blockchains.

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