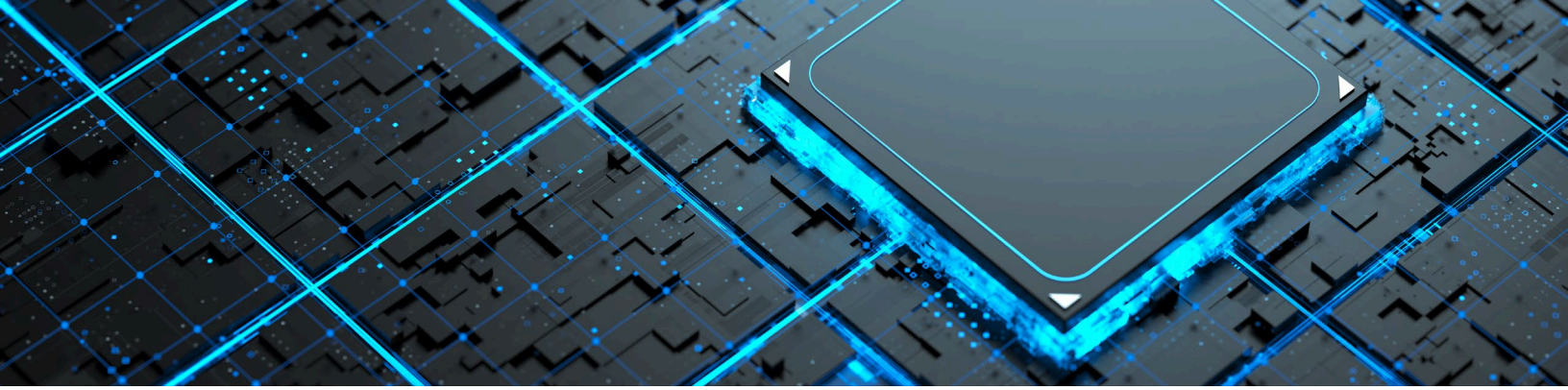


# Blockchain technology: why boards should pay attention



**Directors upskilling on technology series**



As blockchain use cases multiply, the technology is becoming essential to operations across sectors, with a wide range of companies not only adopting the technology but regularly finding new applications. Indeed, [PwC economists](#) see continuing potential for blockchain to create value in nearly every industry — including healthcare, government, manufacturing, finance and retail — and expect the majority of businesses to be using the technology in some form by 2025.

A refresher: A blockchain is a ledger of all transactions in a peer-to-peer network. Decentralized and accessible from anywhere, the information is available to every network participant simultaneously. The visibility means that participants can track assets, sign contracts, and make and confirm transactions — or “blocks” — in real time, without involving a trusted third-party intermediary. Cryptographic functions ensure the information’s integrity and security, making blockchain valuable for improving trust, transparency and efficiency across organizations.

Long associated with cryptocurrencies such as bitcoin, blockchain technology has far broader applications. For example, blockchain can bolster a supply chain’s security by authenticating the provenance of goods, such as fresh produce, raw materials or even diamonds. As these goods change hands, each participant can add records and log inspections and deliveries. In addition, payments can be released automatically, improving business processes by reducing costs and increasing speed.

### Blockchain solutions across sectors



**Retail:** Retailers can track products’ provenance, using transparency — for instance, showing environmental impact or fair-trade history — to build customer loyalty and trust. Counterfeit, stolen or contaminated goods can be flagged within seconds.



**Healthcare:** For healthcare organizations, blockchain technology can facilitate the secure transfer of patient medical records, boost confidence in drugs and medical products’ authenticity, and provide transparency into supplies and therapies.



**Financial services:** Blockchain’s potential in financial services is huge, with pilots and products already spanning payments, capital markets, trade services, investment and wealth management, and securities and commodities exchanges. The technology’s speed and security can make it the center of redesigned post-trade reconciliation and settlement processes.



**Education:** A blockchain platform can allow educational institutions to securely issue, verify and share a candidate or employee’s credentials digitally, with no need for paper documents.



**Industrial manufacturing:** Blockchain can increase transparency and trust at various stages of the industrial value chain, from sourcing raw materials to delivering the finished product. The technology can also help with materials provenance and counterfeit detection, asset tracking throughout the process, identity management, quality assurance and regulatory compliance — and aggregate the information to help companies alleviate pain points and effectively redesign systems.

## How will blockchain technology impact boards?

As with other emerging technologies, blockchain opportunities carry risks. To add value and keep transactions secure, a blockchain needs rules of participant engagement and enforcement mechanisms, including for data governance and regulatory compliance. Boards will need to take a holistic approach to cybersecurity oversight given the security and privacy risks as well as risks from threat actors inherent in a blockchain ecosystem. This is paramount in maintaining trust for not only a particular transaction but the organization's system as a whole.

The board will play a critical role in assisting management with its choice of use cases for the technology, in overseeing its implementation and in monitoring risks that it could pose to the company and other network participants.

## What questions should boards be asking?

### Business case

*Strategic clarity will help your blockchain initiative have a business purpose around which participants can align.*

- How will blockchain fit into the company's strategy? Has management identified use cases for the technology?
- What are our competitors doing?
- Does the company have the skills and resources needed to oversee, implement and maintain the technology?

### Industry ecosystem

*Blockchain may call for competitors to collaborate and communicate in new ways.*

- Has management identified and engaged with participants in a given blockchain network?
- Has management considered interoperability with other blockchains?

### Rules of engagement

*Every blockchain requires rules.*

- Have standards been developed for how participants will access and engage blockchain networks?
- Will the blockchain be open to everyone (public) or for a controlled group (private)? What opportunities and risks come with each?







## Controls

*Effective processes and controls are needed to mitigate risk and produce audit evidence.*

- Are internal controls in place to ensure a blockchain's effective implementation and operation, timely identification and mitigation of security and privacy risks, and ongoing monitoring?
- How will the blockchain be integrated with current systems and processes?
- How has each network member implemented these processes to ensure data integrity?
- Has management engaged with auditors to see how evidence will be developed and maintained to support transactions recorded on the blockchain?

## Regulatory uncertainty

*Knowledge and practice need to stay agile to meet regulatory and other requirements as they evolve.*

- What is the current regulatory environment, and is there a process in place to monitor regulatory requirements as they evolve?
- What are the compliance, legal and accounting issues that blockchain might pose?

## Ongoing education

*Directors need to be brought up to speed on an evolving technology.*

- How is management keeping pace with ongoing blockchain developments, and how can the board learn more?
- What internal or external resources are available to give directors a strong understanding of blockchain's developing opportunities and risks?

## Resources

For a deeper dive into how businesses can benefit from blockchain technology, see:

- [Time for trust: How blockchain will transform business and the economy](#)
- [A Strategist's Guide to Blockchain](#)

## For more information

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