Blockchain for technology, media and telecom (TMT) companies

What COOs, CFOs, CIOs, CISOs, and other executives should understand about blockchain

Why blockchain?

Traditional systems operate with a centralised database, usually with a single point of authority. Blockchain technology, on the other hand, allows for a distributed database that holds a growing number of records. Instead of existing in one place, the ledger is continually updated and synchronised across multiple computers in a network. Therefore, any participant in the network with the proper authorisation can view the entire ledger—without relying on an intermediary or any one authority.

As each transaction occurs, it is stored chronologically in a block, and each block is connected to the one before and after it. To ensure data integrity and security, parties in the network must validate each transaction—using agreed mathematical formulas called consensus mechanisms—and each block is secured by cryptography.

As such, the blocks form a permanent, chronological chain of transactions that cannot be changed without the approval of other participants. It is as if a notary is present at every transaction, and the blockchain leaves a public audit trail of all activities, accessible to those with the proper permissions. As a result, all authorised parties in the network have access to a single, shared source of truth, which may foster trust across multiple sites or geographies.

Venture Capital investment in blockchain reached **$2.85 billion in 2018**, an increase of 316% over 2017.[1]

Worldwide spending on blockchain solutions is forecast to reach **$11.7 billion in 2022.**[2]

The business value added by blockchain will surpass **$176 billion** by 2025 and **$3.1 trillion** by 2030.[3]

[1] Bitcoinist, *Blockchain VC Investment Surged 316% in 2018, New Study Finds,* (November 21, 2018)

[2] International Data Corporation (IDC), *Worldwide Semiannual Blockchain Spending Guide* (July 2018).

[3] Gartner, Inc., *Practical Blockchain: A Gartner Trend Insight Report* (March 2017).

Potential benefits of blockchain*

UP TO **95%** reduction in reconciliations and errors

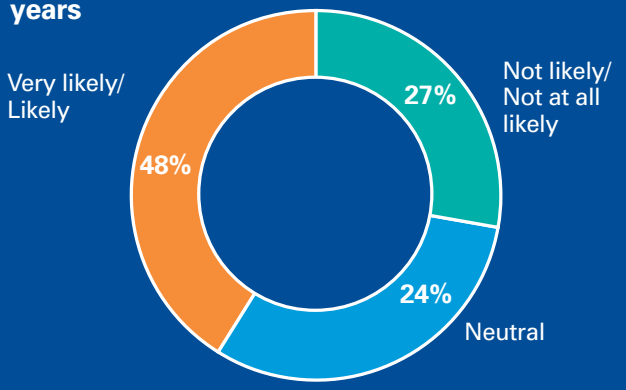
UP TO **40%** increased efficiency of data and digitisation from single source of truth

UP TO **25%** revenue enhancement, as a result of better customer experience and new markets

* Estimates based on KPMG client blockchain projects, 2016-2017.

What are Technology industry leaders saying about blockchain?

Likelihood that blockchain will change the way your company does business in the next three years

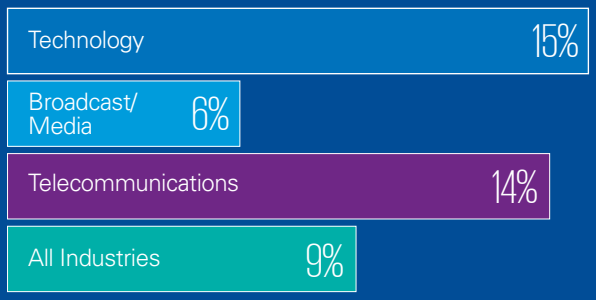


Percentages do not sum to 100% due to rounding.
Source: KPMG Technology Industry Innovation Survey, 2019

Greatest disruption resulting from blockchain initiatives in the next three years

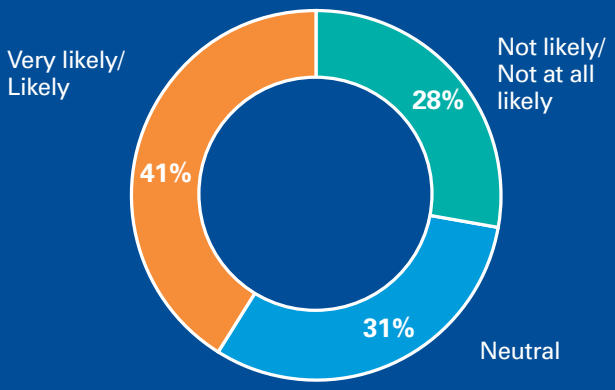
Partial list. Percentages do not sum to 100%.
Source: KPMG Technology Industry Innovation Survey, 2019

Percentage of TMT companies that report moderate/significant investment in blockchain



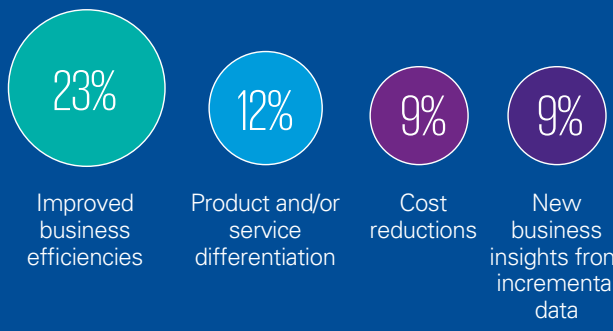
Source: Harvey Nash/KPMG CIO Survey, 2018

Likelihood your company will implement blockchain technology in the next three years



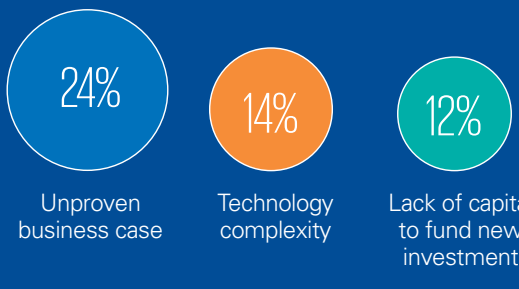
Source: KPMG Technology Industry Innovation Survey, 2019

Top benefits with adopting blockchain technology



Partial list. Percentages do not sum to 100%.
Source: KPMG Technology Industry Innovation Survey, 2019

Biggest challenges with adopting blockchain technology in the next three years



Partial list. Percentages do not sum to 100%.
Source: KPMG Technology Industry Innovation Survey, 2019

How can TMT companies use blockchain?

Blockchain's ability to integrate and penetrate into the heart of business systems and processes makes it an innovation catalyst, efficiency accelerator, and purveyor of trust and transparency. There are many ways that TMT companies can utilize blockchain, including:

– Enabling direct payments between companies
– Tracking and transacting for various types of assets, titles, 22% licenses, and IP
– Streamlining many tax compliance activities. (U.S. companies engaging in R&D efforts in blockchain may also be able to qualify for R&D tax credits.)

Blockchain can manage a complex supply chain that encompasses many third parties and transform procurement for fixed assets. IT systems can be modified by blockchain to streamline operations and reduce manual steps. OEM reporting can be standardised across vendors. Third party performance can be automated and monitored, improving SLA tracking visibility.

Another key feature of blockchain technology is a "smart contract," which is a self-executing protocol that enforces a previously agreed arrangement. For example, a smart contract could trigger an automatic refund under certain conditions or the automatic payment of an agreed commission after a sale. These smart contracts can eliminate delays in traditional processes, while increasing transparency and reducing reliance on middlemen to follow through on their commitments. Moreover, like other parts of a blockchain, smart contracts are immutable, so they can enhance accuracy in the financial statements.

Featured use case: Royalty payments in the music industry

Royalty payments have long been a complicated matter. There is no standardised database that captures a song's writer(s), the artist and/or session musicians that recorded it, or other parties that helped create it. This can result in writers and artists not getting paid correctly, or even at all, for their work. The move from physical to digital distribution, and from downloads to streaming, has greatly increased the number of plays, exacerbating the issue.

The Open Music Initiative (OMI) seeks to simplify the administration of music rights and help make royalty payments more accurate. Step one was to create an open standard application programming interface (API) that companies could incorporate into their systems to identify key data points. These voluminous data points, like names of composers, singers, and musicians, plus when and where their tracks are played, can then be stored in a secure, trusted blockchain that all parties can access. Ideally, this more complete, single source of truth will in turn increase the accuracy of royalty payments.

Use cases for TMT companies

Media & Entertainment
Digital rights management
Royalty reporting
Piracy prevention
Game monetization
Art authentication
Ticket purchases
Fan tracking
Resell of authentic assets
Real time auction & ad placements

Consumer Applications
Digital rewards & loyalty
On-demand services
P2P selling

Computer Science
Micronization of work (pay for algorithms, tweets, ad clicks, etc.)
API platform plays
Notarization & certification
P2P storage & compute sharing
Domain Name System (DNS) services

Internet of Things
Grid monitoring
Smart home & office management
Cross-company maintenance

Payments
Licensing payments
Micropayments (apps, 402)
Direct to developer payments
Device to Device payments
B2B international remittance
Tax filing & collection
Rethinking e-wallets & banks

Supply Chain
Trade finance (Letters of Credit)
Provenance/Chain-of-custody integrity
Real time auction for supply delivery
Shipping & logistics management

What are the next steps for TMT companies?

1. Determine which processes are best suited for blockchain based on this evaluation:

- Is it rule-based? The more standardised a process is, the better suited it is for blockchain.
- Is the data fragmented with multiple versions of the truth? Blockchain brings a clear benefit to fragmented data by creating a single source of truth that is synchronised across stakeholders.
- Does a process require manual intervention? The greater the need for reconciliations, the greater the opportunity for blockchain to obviate them by enabling all parties to view all transactions at their source.
- How many stakeholders are involved? When a process involves many stakeholders, blockchain can bring value through distributed ledgers and transparent records that give all stakeholders access to the same data at the same time.

2. Consider which regulatory and legal frameworks apply. These can include:

- Data protection legislation
- Anti-money laundering
- Know your customer
- SEC securities laws
- Bank Secrecy Act
- Foreign Account Tax Compliance Act
- Legal enforceability of smart contracts
- Income tax and other tax consequences of blockchain transactions

3. Develop a holistic picture of the risks

New technologies challenge and disrupt traditional business models, processes, and reporting. This is especially true for digital assets where it is not always clear how to apply accounting and internal control frameworks. Accountants, finance personnel, and audit committees play important roles in ensuring companies implement the right controls and governance.

To achieve the most value from blockchain, organizations must assume responsibility for its safety and security. Companies considering blockchain should apply a risk assessment lens to help ensure proper governance and security controls over blockchain-like systems, as they would over any other IT system. This way, companies can better position themselves to realize the efficiencies and cost-effectiveness provided by blockchain.

4. Assess other organizational impacts

Blockchain also creates new questions for the organisation, such as:

- What kind of infrastructure will be required and how will it be funded?
- Who will be in charge of managing the blockchain(s) and admitting new participants? How will this impact talent and skills management strategies?
- How will blockchain change the responsibilities of the enterprise data stewards?

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