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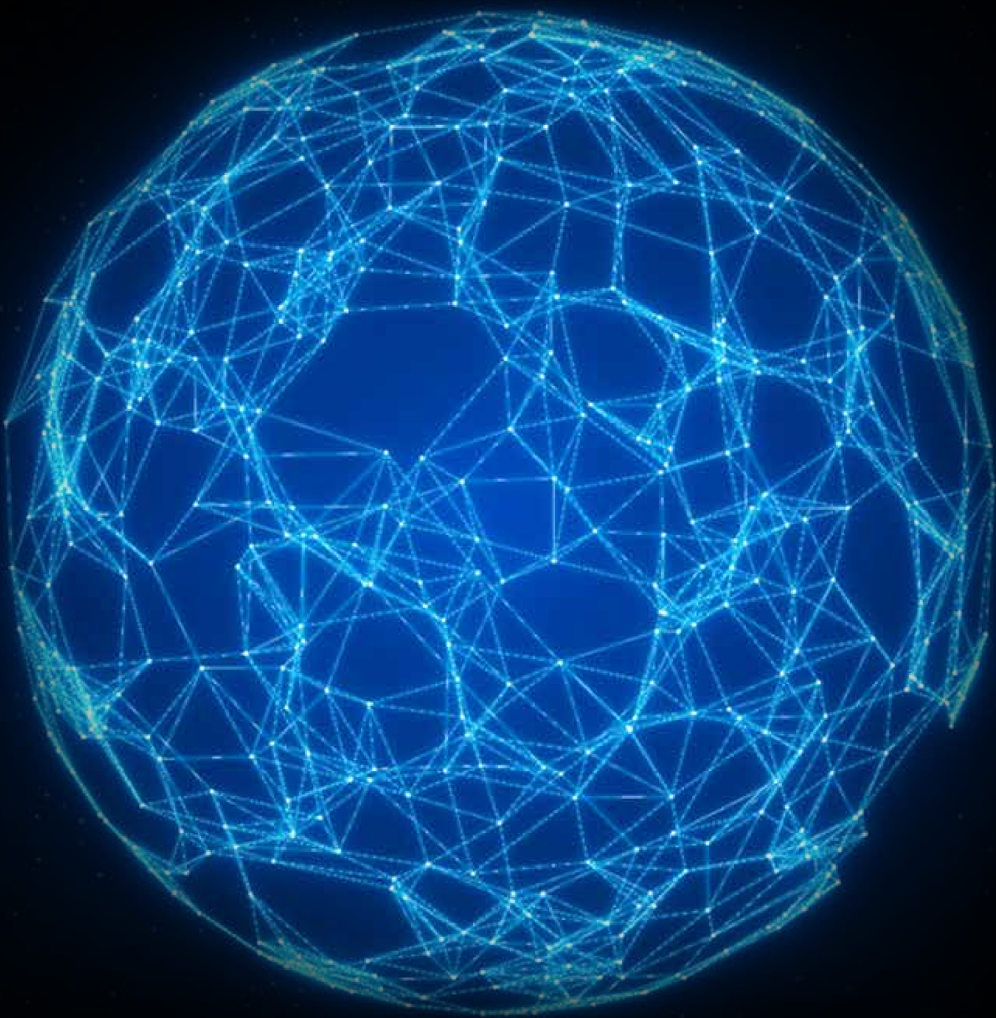

Blockchain key considerations and risk management

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Blockchain has re-emerged as a key technology with the potential to transform several aspects of business. In India, policymakers have tabled the first bill that touches upon blockchain, in an attempt to regulate the use of crypto or decentralised currencies. While crypto currencies remain the most popular use case of blockchain, this technology has a far greater impact on other business processes.

Blockchain is a continuously growing list of records, called *blocks*, which are linked and secured using cryptography. Each block contains, typically, a link to a previous block, a timestamp, and transaction data. Transactions must be approved by all blockchain users and then stored; this makes modifying an older block of data impossible. Only updating future records is permissible, making the system secure (relatively speaking) and therefore, reliable. This also means an entire blockchain can serve as a secure ledger that records transactions, negating the need for multiple disparate trails of information or overwriting of records.

One of the interesting use cases of blockchain is "smart contracts". These are algorithm-driven contracts that execute themselves once the contract terms have been met. This means, the system will automatically secure a contract that meets the agreement criteria, and execute it without the involvement of any of the involved parties or intermediaries. Considering how much overhead costs can be saved through smart contracts, one can imagine the implications in areas such as vendor management, client agreements, and payments in general.

Another interesting area is the use of blockchain for 'track and trace' that can help organisations maintain supply chain integrity. The use of track and trace in supply chain has huge implications in highly regulated industries, such as pharmaceuticals and consumer health, where there is a constant risk of pilferage and counterfeiting.

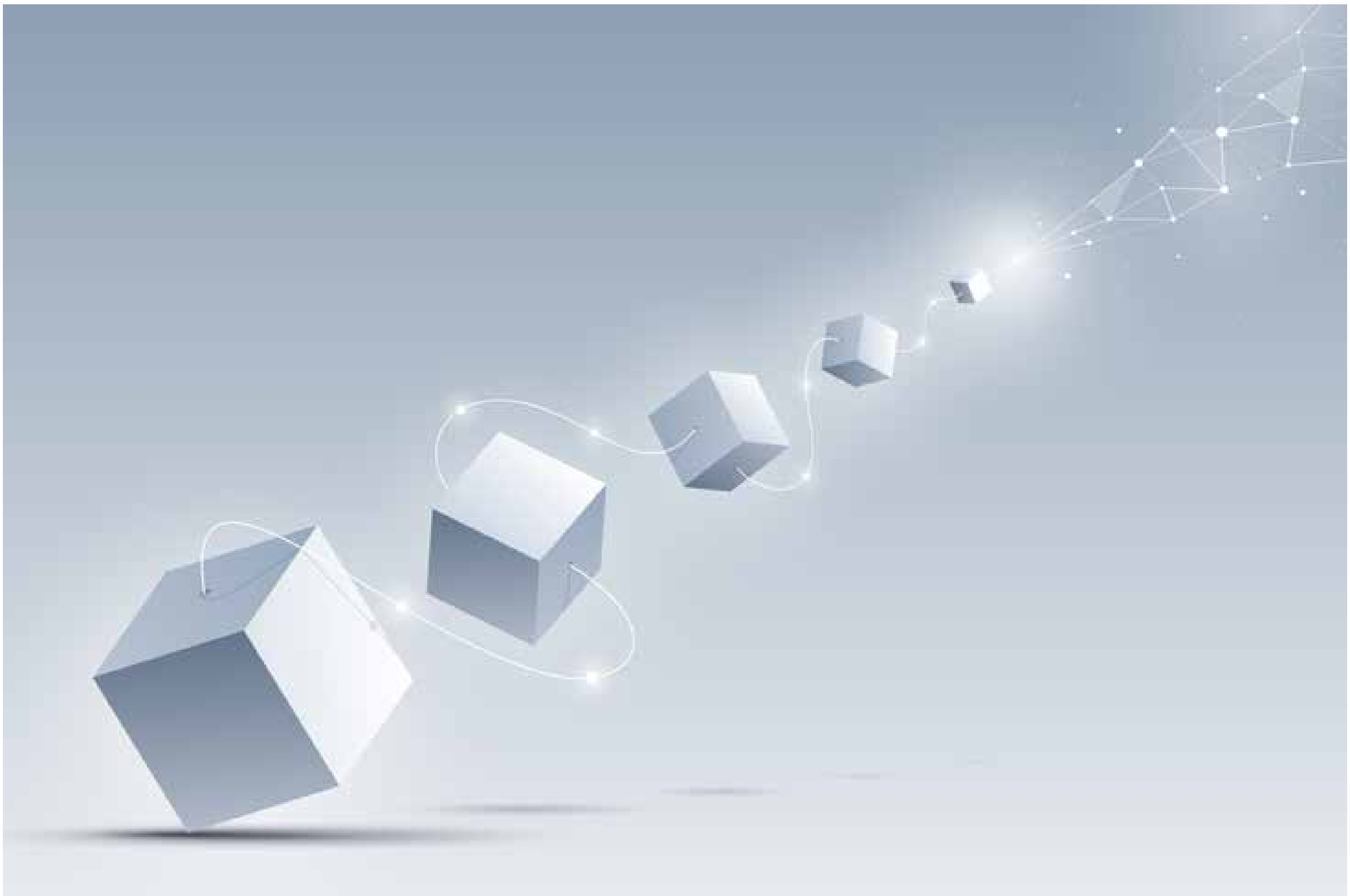
As the technology evolves, we need to continuously evaluate the implications of implementing blockchain – particularly, how existing controls in the organisation would need to be reimagined and applied to the new technology. Considering that, below are some key considerations in adopting blockchain.

Blockchain is a foundational technology. It is equivalent to the introduction of TCP/IP that became the standard for internet communications − any foundational technology would have to integrate well with legacy systems. This means from an Information Technology General Controls (ITGC) perspective, blockchain applications and their interactions with other legacy systems must be included within the purview of existing governance mechanisms. A similar exercise was undertaken when Robotic Process Automation (RPA) was introduced. At present, most organisations have controls that apply to the automation environment.

Hence, considering how blockchain and its use cases fit into the overall strategy of the organisation, is important. Smart contracts, for instance, can impact the relationships that the organisation has with its distributors and suppliers. A similar issue arose when a major consumer goods manufactures wanted retailers to upgrade to the RFID technology. A few retailers refused to comply and hence, decided to boycott the goods of the consumer goods company. This led to the loss of revenue and disruption of operations for the consumer goods manufacturer.

Cyber security and information security continue to be key considerations for emerging technologies. Although blockchain has in-built features, such as encryption and immutability, it is totally secure. There have been cases where the algorithms governing smart contracts have been accessible to threat actors that have taken advantage of vulnerabilities to modify smart contracts. Hence, existing cyber security controls, such as detect and respond, incident management, and threat prevention, have to be applied to blockchain.

India's new bill on cryptocurrency aims to control and eliminate the misuse of the crypto currencies while encouraging the use of blockchain for areas such as research and development. It is also looking at understanding the implications of blockchain for the general good. While we need to keep a watch on the emerging regulatory scenario around the blockchain, discussions with cross-functional groups, including business, technology, process, and risk functions, must be started. At the end of the day, the necessary controls must be put in place to ensure that the advantages presented by blockchain are not lost due to poor security and governance mechanisms.



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