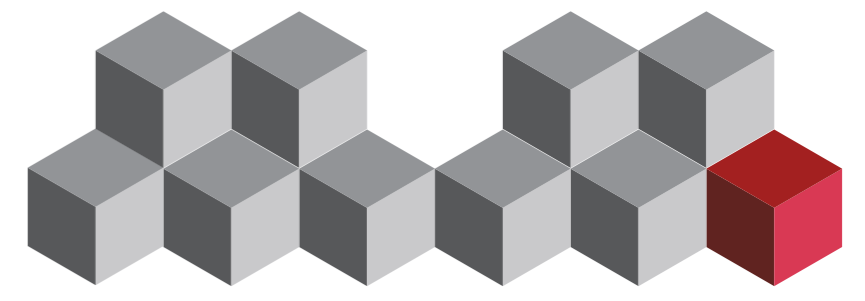


# Understanding blockchain transparency, risks, and controls



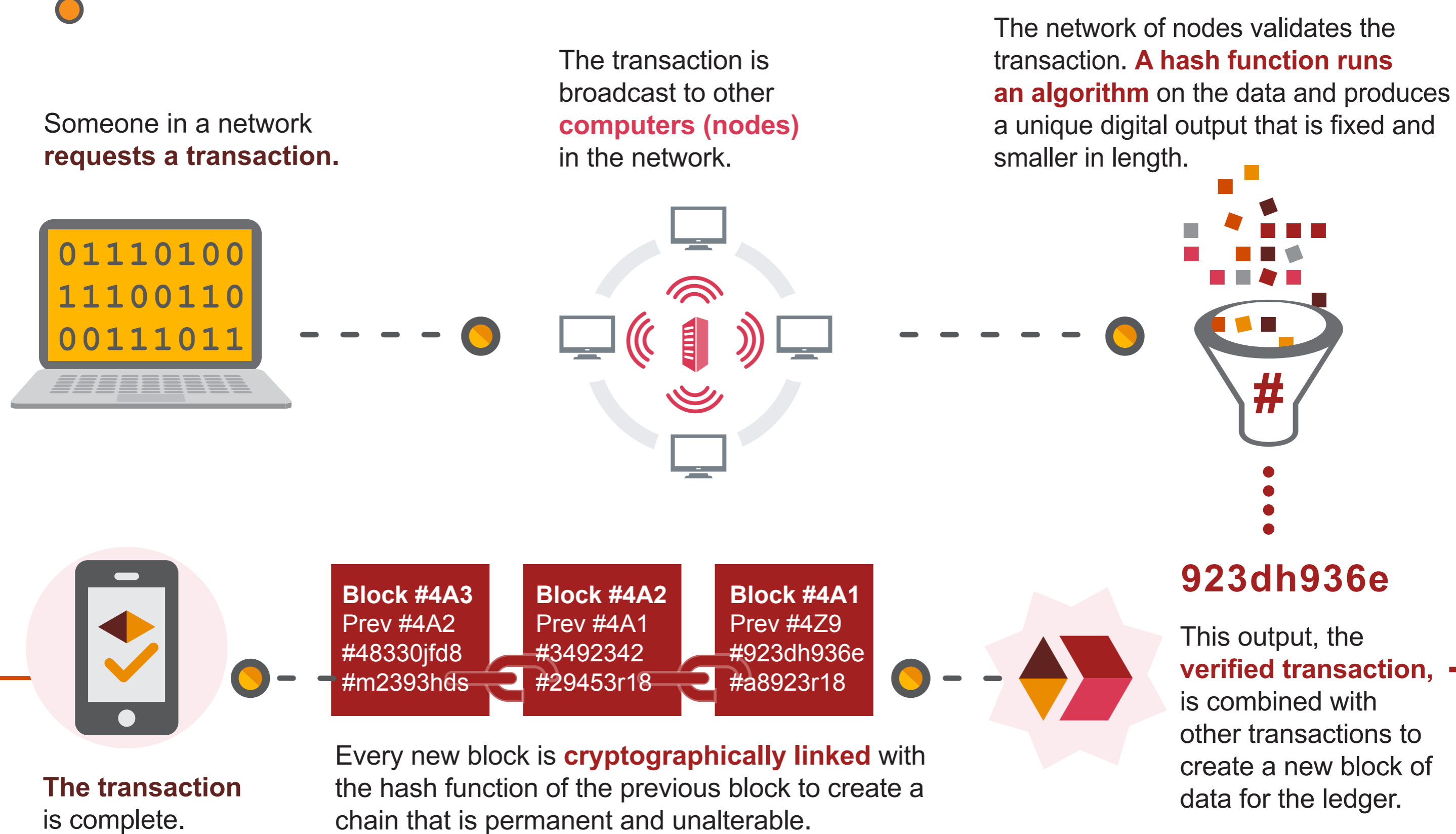
Blockchain's distributed ledger technology, which can confirm transactions without the need for a trusted third-party intermediary, has great potential for business and government. While it's often associated with cryptocurrency, organizations in every industry are experimenting with how to use the technology for cash settlement, smart contracts, supply chain, provenance, and other applications.

While the technology brings transparency to transactions, it also introduces **risk and control challenges** that limit its enterprise potential. These are the three biggest risk issues for organizations looking to innovate with the technology:

- While the technology chains together all of the transactions in a network, blockchain lacks a way to directly view and analyze historical transactions.
- Because there are no technology standards—each enterprise environment is different—there's no established risk and control framework.
- Few internal audit or risk teams have the skills needed to understand the design and control of blockchain business processes.

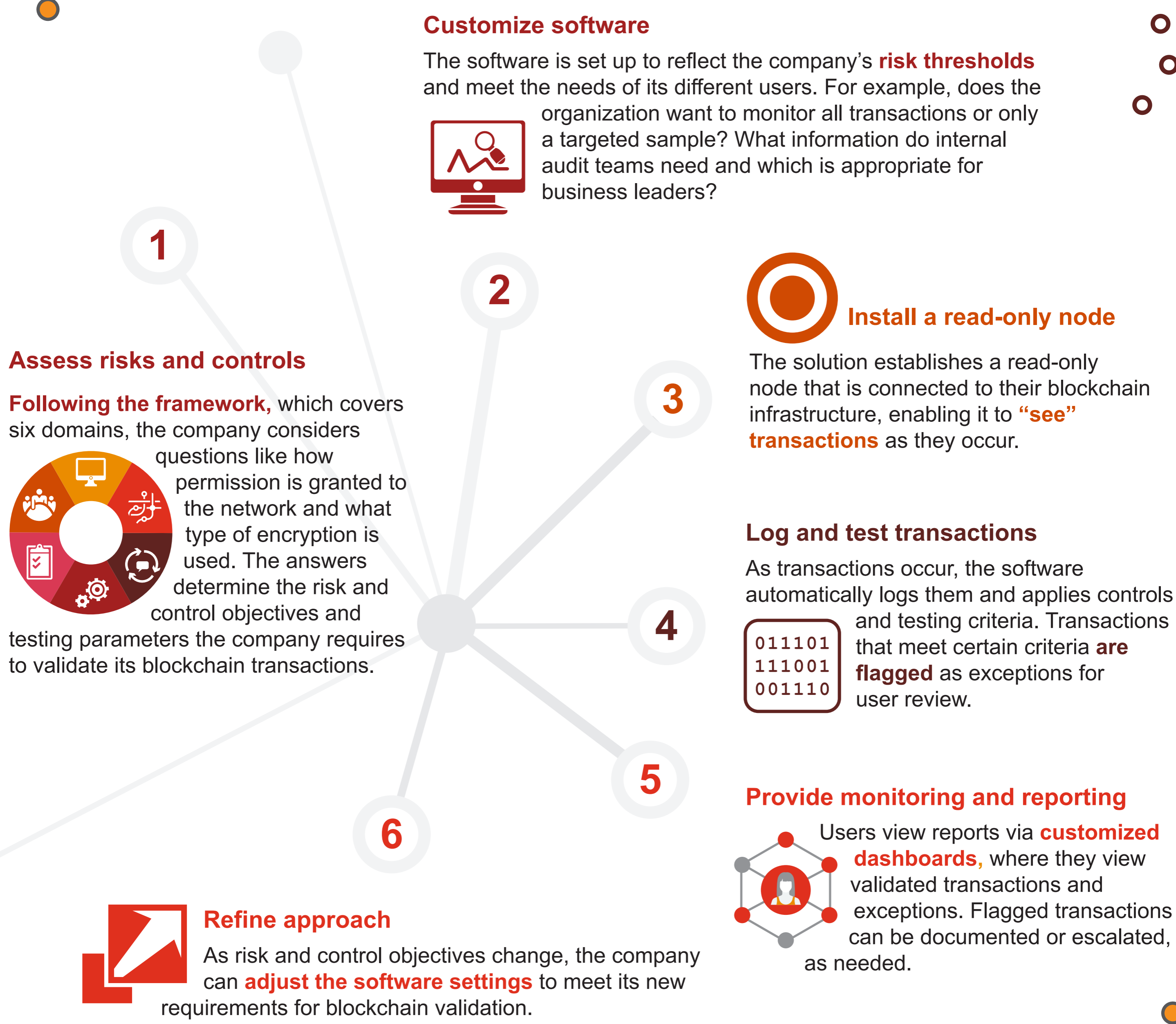
## How a blockchain works

A blockchain is a decentralized virtual ledger of transactions. Blockchain validates and records transactions that are then organized into blocks and arranged in a chain, which is linked and validated with cryptography. This method makes it possible to prove that a file existed in a particular version at a given time without having to reveal the data in the file. This also means that a blockchain will log and timestamp every single change to the ledger.



## How to validate blockchain transactions

While individual transactions are validated by the blockchain itself, until now there has been no practical or efficient way for businesses to validate transactions processed on a blockchain. Now, the **PwC Blockchain Validation** solution makes it possible to do so, giving internal audit teams and business executives real-time access to view and test transactions on their blockchains. The solution is made up of two components: continuous auditing software and a blockchain risk and control framework. **Here's how it works.**



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