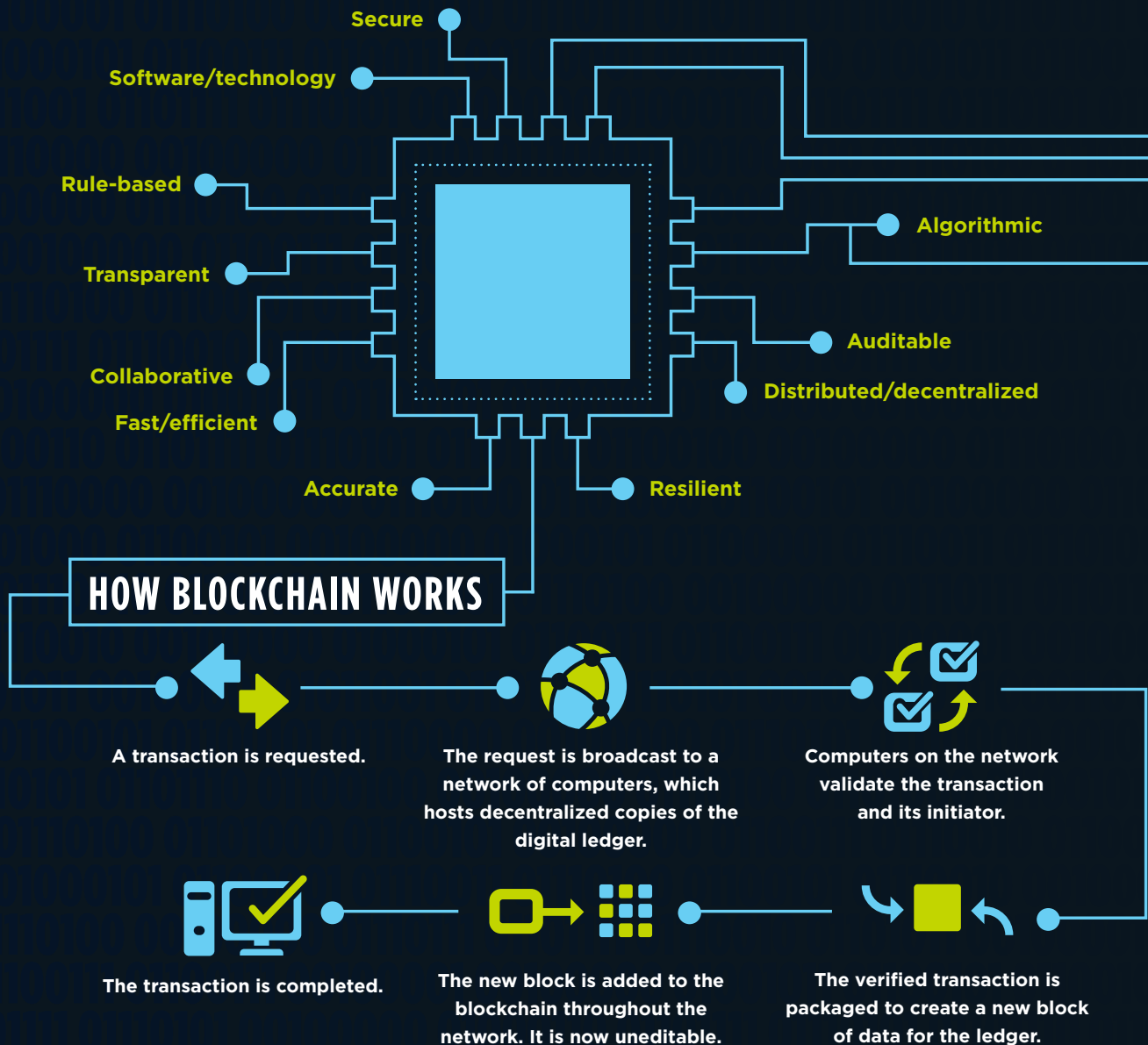# HOW **BLOCKCHAIN** CAN RESET EXPECTATIONS

Cryptocurrencies like Bitcoin have brought blockchain into mainstream conversation, but this digital technology has applications that stretch far beyond that. Also known as distributed ledger technology, it uses complex algorithmic computations performed across a decentralized network to provide fast, secure transactions that are transparent and unalterable.

Only a decade old and still finding new use cases, blockchain has the potential to disrupt and transform a wide range of commercial and industrial fields. The opportunities extend far beyond its original 2008 development in Bitcoin and banking applications.

Secure
Software/technology
Rule-based
Transparent
Collaborative
Fast/efficient
Accurate
Resilient
Algorithmic
Auditable
Distributed/decentralized

HOW BLOCKCHAIN WORKS

A transaction is requested.

The request is broadcast to a network of computers, which hosts decentralized copies of the digital ledger.

Computers on the network validate the transaction and its initiator.

The transaction is completed.

The new block is added to the blockchain throughout the network. It is now uneditable.

The verified transaction is packaged to create a new block of data for the ledger.

POTENTIAL USE CASES BEYOND BANKING

Automotive supply chain: The potential to unify all records of inspections, parts sourcing, servicing and ownership offers significant transparency gains.

Cybersecurity: The uneditable nature of records within the blockchain defeats efforts to hack and alter critical documentation. Verification protocols protect the integrity of data.

Education: Digitized records of academic information are secured and verifiable when encoded into blockchain.

Public transportation: Blockchain enables speedy and accurate payment in the desired currency.

Real estate: Transparent contracts and an integrated record of property details and ownership help streamline complex transactions.

Peer-to-peer energy trading: Blockchain's support for smart contracts that execute automatically under specified circumstances could pair well with the increasing deployment of a two-way electrical grid.

Cloud storage: Data security is enhanced when files are not all stored in a single, centralized location, making them harder to damage. Blockchain reliably maintains the file map.

Medical records: Supply chain integrity protects patients against inferior medication or medical devices. Patient records can be secured and protected through blockchain-supported indexing.

Evidence chain: Documentation of materials in a time-stamped, verifiable record helps protect the integrity of the legal process.

Voting: Recording this data into auditable, unalterable reports enhances trust and reduces the possibility of fraud. Similarly, identities and voting rights could be quickly verified against a common, decentralized database.

Civil aviation: The secure aspect of the blockchain could support efficiencies for ticketing and proof of identification. Similar to the automotive supply chain applications, it could also be used to maintain comprehensive maintenance records.

UNANSWERED QUESTIONS

How do blockchain platform providers get compensated or incentivized?

Who owns the data in the blockchain, if anyone?

Will contracts executed via blockchain be recognized under current regulations and contract law?

Learn more about how blockchain technology is transforming business for electric and gas utilities at **burnsmcd.com/BlockchainChanges**