



Blockchain

- **Blockchain**
 - The record-keeping technology
 - An open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way
 - A distributed, decentralized, public ledger
 - Digital information stored in a public database
 - The goal: to allow digital information to be recorded and distributed, but not edited
 - **Blocks:**
 - Blocks store information about transactions like the date, time, and dollar amount of your most recent purchases
 - Blocks store information about who is participating in transactions
 - Blocks store information that distinguishes them from other blocks
 - A single block on the blockchain can actually store up to 1 MB of data
 - **How it works:**
 - A transaction occurs and is verified
 - The transaction is then automatically stored on a block: the purchaser's digital signature, the seller's digital signature, and the dollar amount
 - The block must be given a hash
 - A unique, identifying code
 - **Security:**
 - Personal information about users is limited to their digital signature or username
 - It is very difficult to manipulate the information on blockchain
- **Blockchain in Cryptocurrency**
 - Currencies issued by governments are regulated and verified by those governments
 - Cryptocurrencies have no government backing and rely on the security of blockchain to regulate and protect their worth
 - By using blockchain cryptocurrency's operations are spread across a vast network of computers
 - Traditional currencies will fail if their government fails, but by eliminating a central authority cryptocurrencies can reduce this risk
 - Using blockchain also allows cryptocurrencies to reduce processing and transaction fees compared to traditional banks
- **Blockchain in Supply**

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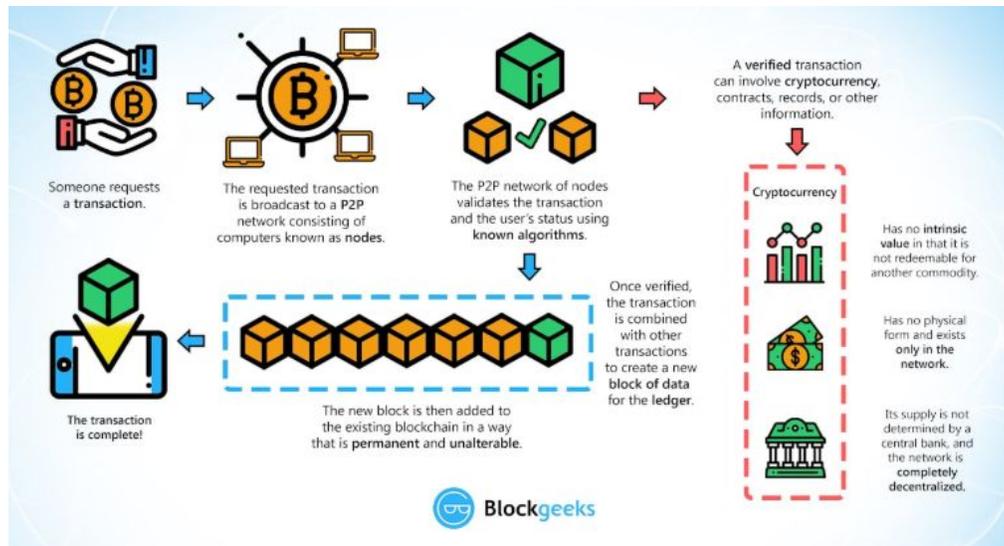


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- Suppliers can use blockchain to record and track their materials through their supply chain
- This allows companies to verify the authenticity of their products
- Reduces costs compared to traditional record-keeping strategies
- **Blockchain in Voting (Secure Records)**
 - Many public and private documents are currently stored within government facilities, like the local county recorder's office. It can take as long as 90 days to process and verify these documents under current methods.
 - Blockchain would allow these records to be stored electronically while still verifying their accuracy
 - By storing individual votes as blocks on the blockchain the technology could eliminate voter fraud, election tampering, and provide instant results
- **Blockchain in Banking**
 - Currently, banks are only open on certain days during certain times and may close for holidays.
 - Blockchain is constantly operating, so while it may take a bank 1-3 days to clear a transaction due to their hours and the volume of transactions, blockchain can execute this transaction in minutes
 - Blockchain allows banks to transfer funds between individuals and corporations quickly and securely.
 - Blockchain also requires little oversight and minimal fees to operate which can save banks millions of dollars
 - A European bank, Santander estimated that blockchain technology could save them up to \$20 billion a year
- **Blockchain in Contracts**
 - Blockchain technology allows for the use of "smart contracts"
 - A smart contract can be built into the blockchain to facilitate, verify, and negotiate a contract agreement.
 - A smart contract would work like this: two parties would agree on terms beforehand and input them into the contract. If one party is renting out their apartment then they could input the door code, lease, or any other requirements they have into the contract. Information like the door code would not be released until payment has been received and the lease has been signed by the other party. The payment does not go directly to the first party but it is held in the smart contract until the second party has verified the door code.

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