RIPPLE: REVOLUTIONIZING TRANSACTIONS

Eric Copeland
Matthew Carrie

PITT

SWANSON ENGINEERING

CRYPTOCURRENCIES

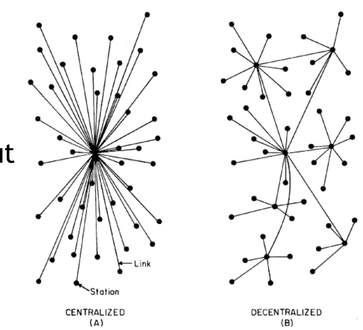
- The cryptocurrency market compares similarly to the stock market
- Both stocks and cryptocurrencies have a:
  - price, the current value of the asset
  - market cap, the total evaluation of all assets
  - circulating supply, the amount of assets moved within the past 24 hours

	PRICE	MARKET CAP	SUPPLY
BAC	$29.99	$306.618B	65.678M
GE	$13.48	$117.054B	74.514M
FB	$159.79	$464.19B	59.343M

	PRICE	MARKET CAP	SUPPLY
BTC	$6865.00	$116.375B	16.952M
ETH	$378.84	$37.336B	98.552M
XRP	$0.4853	$18.59B	39.094B

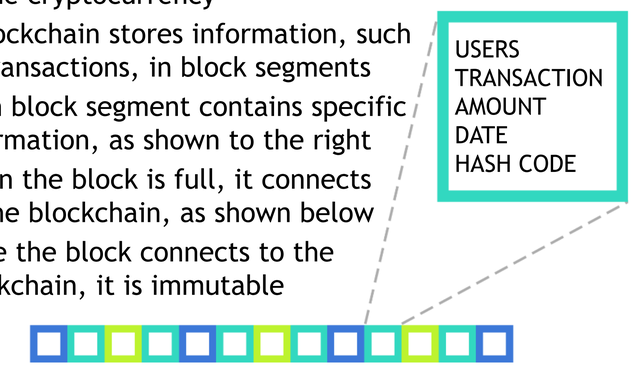
BITCOIN

- Bitcoin was the first cryptocurrency on the market
- The coin was released in early 2009 by an unknown group or individual under the name Satoshi Nakamoto
- Nakamoto designed Bitcoin to operate on a decentralized network, as shown to the right
- The decentralized network allowed Bitcoin to work without a central processing station
- This allowed anyone with internet to connect to Bitcoin
- Therefore, Bitcoin was accessible across the world



BLOCKCHAIN

- Bitcoin's success relied heavily on its blockchain technology, which is the major functioning component of the cryptocurrency
- A blockchain stores information, such as transactions, in block segments
- Each block segment contains specific information, as shown to the right
- When the block is full, it connects to the blockchain, as shown below
- Once the block connects to the blockchain, it is immutable



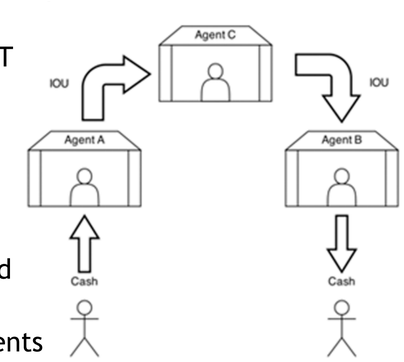
RIPPLE

- In 2012, founders Chris Larsen and Jed McCaleb released Ripple
- Ripple is an application of blockchain technology, similar to Bitcoin, but Ripple does not use miners
- Ripple was designed for banks, and over 75 banks worldwide currently use Ripple
- In 2017, Ripple saw a 36,000% increase in value, from $0.006410 to nearly $4.00
- Ripple processes transactions in 5-10 seconds, compared to Bitcoin's 10 minutes

ripple

FUNCTIONALITY

- Instead of using miners to verify transactions, Ripple verifies transactions using a consensus protocol with gateways and IOUs
- Currently, most banks use the SWIFT system to process transactions
- SWIFT can take up to four days to process a transactions, or longer if the transaction is international
- Since Ripple does not use miners, the transaction fees are low, around .00001 Ripple per transaction
- Comparatively, international payments through SWIFT may cost users $20-30



SUSTAINABILITY

- The Ripple network holds the power to process over 1,000 transactions per second with little to no transaction errors
- Modern SWIFT technology has a 4% failure rate on all transactions, and over 12% of SWIFT transactions contain errors
- Ripple acts as an intermediate currency, such that a payment can originate as USD, transfer into Ripple, then convert to CAD or other currencies
- With improvements to transaction speed, reliability, and cost, Ripple provides economic sustainability for current and future generations