



# THE LAW OF THE BLOCKCHAIN

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# AGENDA

- Brief Overview of Blockchain Technology
- Summary of the Sources of U.S. Laws and Regulations
- Q & A

# WHAT IS A BLOCKCHAIN?

- A vast, global ledger or database running on millions of devices
  - Accessible to anyone, but insulated from hacking or alteration by its redundancy on myriad devices
  - Provides an accounting and repository of currency, titles, deeds, identities
  - Votes can be verified, moved, stored, and managed securely and privately
- Trust is assured through mass collaboration and clever coding, rather than through intermediaries susceptible to intrusion and corruption, e.g., governments and banks
  - All parties have a copy of the ledger in a blockchain and can confirm the status and authenticity of the transaction in real time



# HOW IT WORKS

- Blockchain = distributed ledger + consensus
- A list of transactions between accounts (a **ledger**) is stored on **distributed** “nodes”
- New transactions are periodically added into a **block**
- Nodes use an agreed upon protocol to reach **consensus** on when a new block is appended to the **chain** of previous blocks, thus completing the transaction
- The consensus rules vary based on the cryptocurrency
- In the case of bitcoin, the nodes will typically reach consensus on adding a block only after the **miners** have included certain transactions in a new block and **verified** those transactions

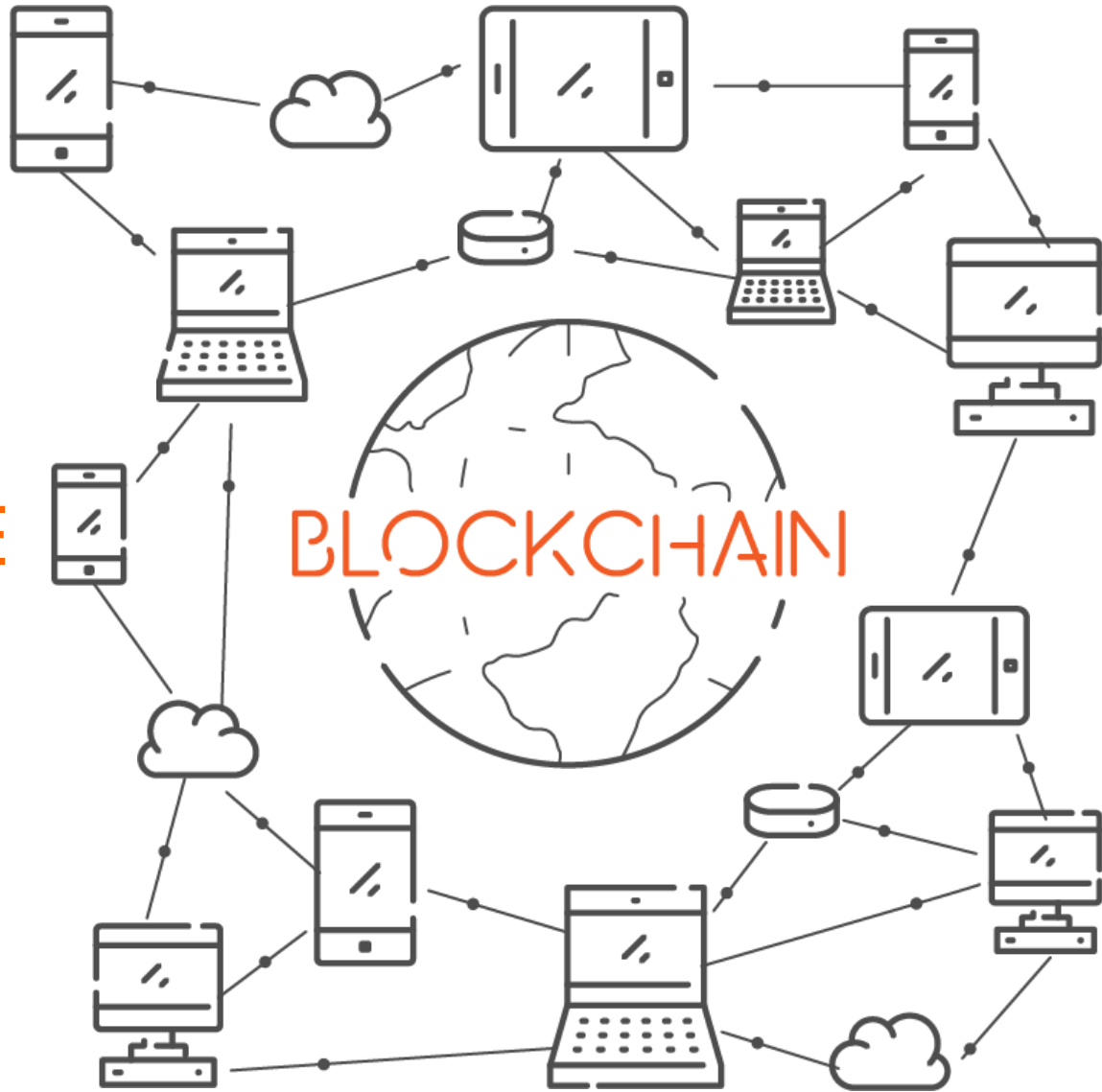
# VISUALIZING THE BLOCKCHAIN

The ledger is a **chain of blocks**! Each block is created with a pointer to the previous block creating a blockchain.



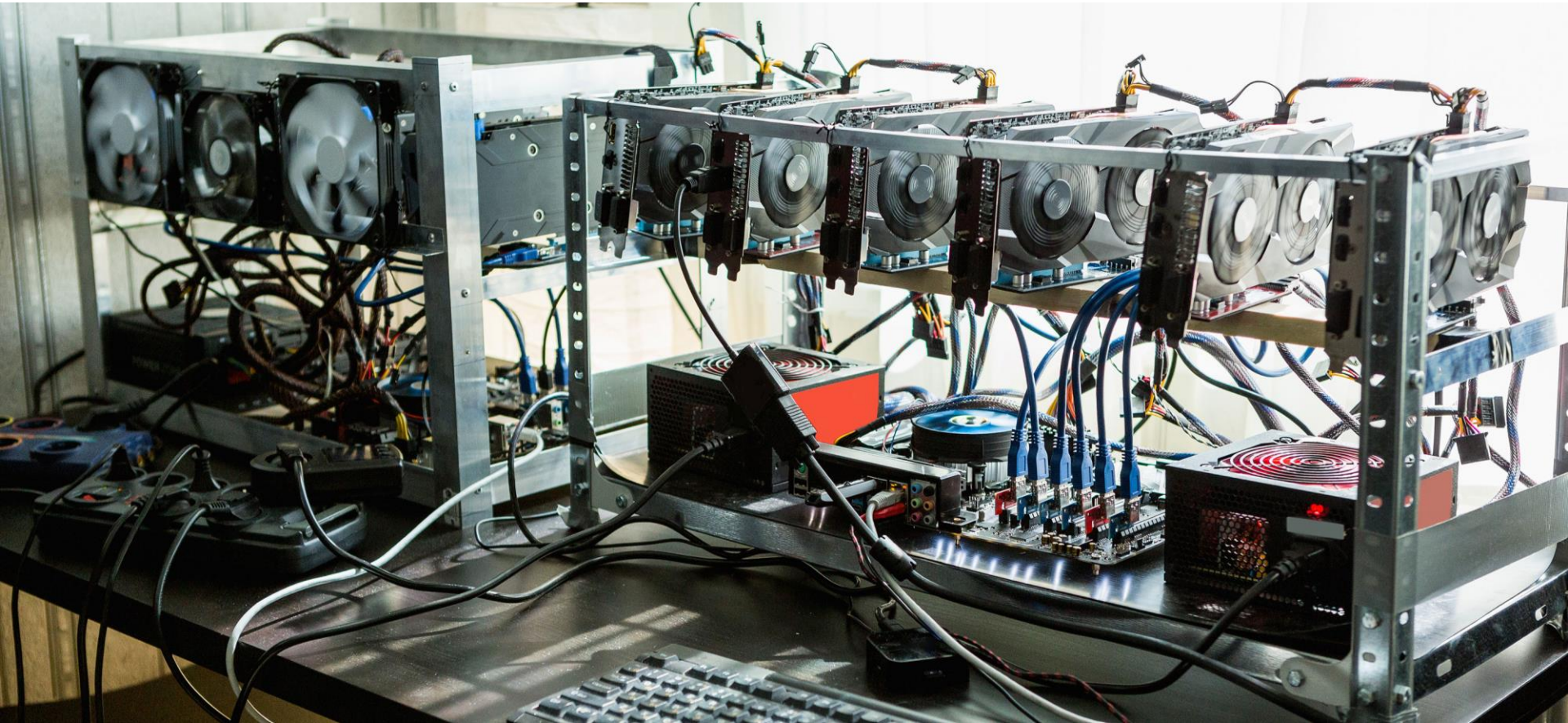
# VISUALIZING THE

The ledger is copied and distributed amongst nodes.



# VISUALIZING THE BLOCKCHAIN

The nodes reach consensus on a new block after the **miners** verify the validity of a new set of transactions and include those transactions in a **new block**.



# WHY SHOULD WE CARE?

A blockchain allows for **trustworthy transactions** among multiple parties.

Or, more importantly, it allows transactions without trust of a third-party intermediary.



# WHAT CAN BLOCKCHAINS DO?



- Be applied to any multi-step transaction that requires traceability and visibility.
- Build supply-chain networks to govern all phases of trade transactions.
- Take the friction out of settling securities transactions.
- Reduce financial services industry compliance costs by providing hack-resistant means to self-verify and authenticate transactions.
- Address the piracy, control, and monetization issues that plague the music industry in the digital age.
- Record real estate deeds securely, executing and recording financial transactions over the internet.

# WHY IS IT IMPORTANT?

- Healthcare – manage patient medical data



- Finance – effectuate stock trading



- Estate Planning – manage ownership of assets and wills



- Voting – reduce and possibly eliminate voter fraud



# WHY IS IT IMPORTANT?

- Hacking a blockchain is computationally (and therefore economically) prohibitive.
- By current estimates, to hack the bitcoin blockchain, you would have to purchase over \$1.5B of computer hardware.
- Cost to run it perpetually would be \$2.8M per day.
- Redundancy is created because the transaction ledger is stored across a distributed network of computers.
- There is no central point vulnerable to failure.

# SOURCE OF U.S. LEGAL CONCERNS

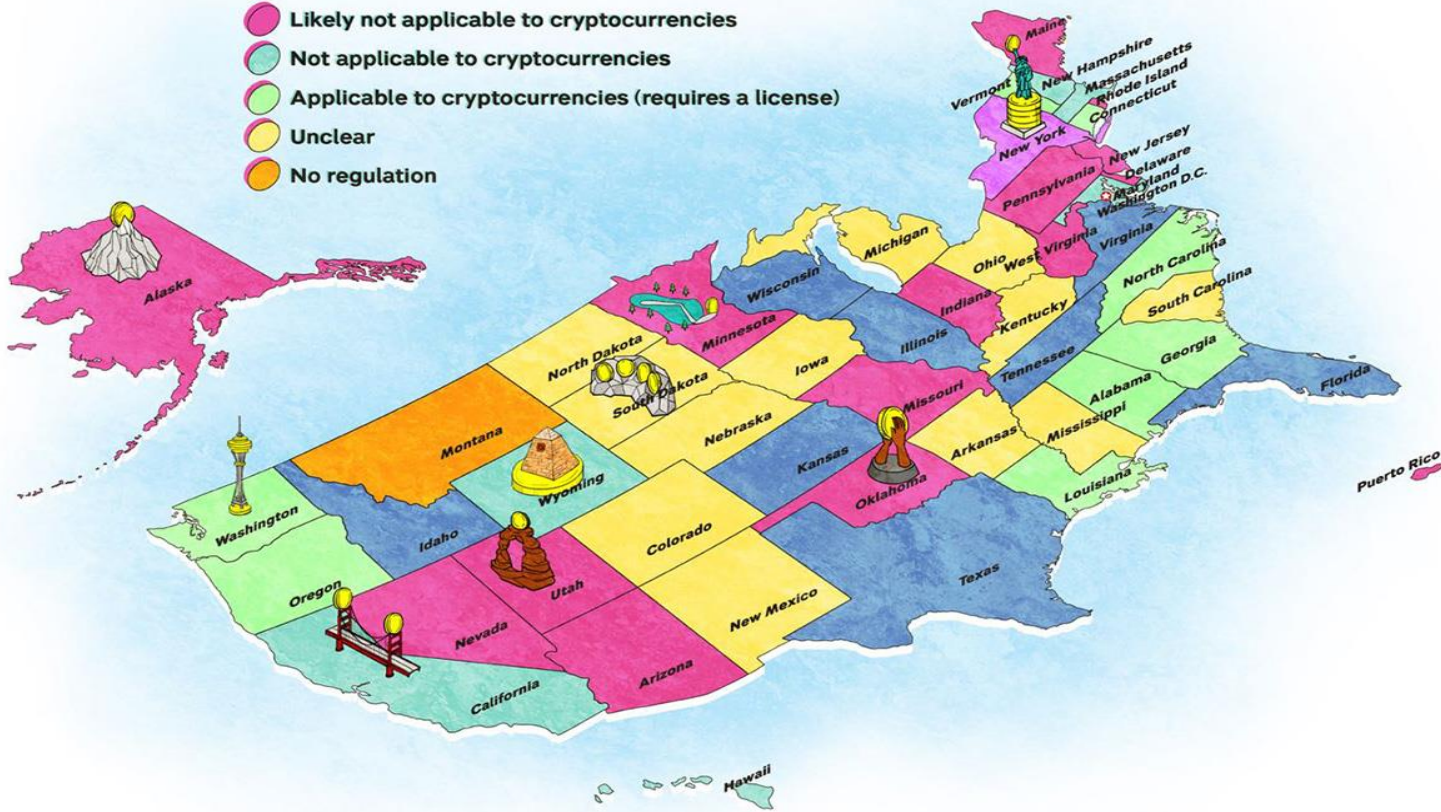
- **Federal Laws & Regulations**
  - Securities & Exchange Commission
  - Commodities Futures Trading Commission
  - Internal Revenue Service
  - Financial Crimes Enforcement Network
- **State Laws & Regulations**
  - State money transmission regulations
  - State frameworks – i.e., New York’s Bitlicense

# STATE MONEY TRANSMISSION LAWS



## Applicability of Money Transmission Laws

- Applicable only to intermediaries that hold fiat currency
- Specific Applicable Virtual Currency Regulations
- Likely not applicable to cryptocurrencies
- Not applicable to cryptocurrencies
- Applicable to cryptocurrencies (requires a license)
- Unclear
- No regulation





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**Q & A**

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