

Distributed knowledge

- In the same way that members of the crowd are widely dispersed, so is the knowledge that the crowd holds. Each person holds some bit of knowledge that, alone, may not seem like much, but leads to valuable insights when aggregated.
- Hayek's insight into distributed knowledge in physical markets can now be applied online. As individuals, groups, and the crowd go online, their individual knowledge can be harvested through what are called prediction markets.
- As with the other crowd examples, prediction markets attract diverse outside expertise. It's inevitable that the crowd will have many ways of predicting the future that the core has never imagined.
- A company could use a prediction market to ask for simple feedback such as a vote, rating, or estimated number for some future event, quantity, or outcome.
- Example of a company called Quantopian: founded on the principle of using the crowd to take on the core. Traditional hedge funds hire and cultivate extremely skilled in-house experts who write the proprietary trading algorithms that make the fund's investment decisions. Quantopian, by contrast, decided to reach out to the crowd to find people anywhere in the world who could develop such algorithms.
- Concerns around using the crowd
 - 1) Sharing proprietary knowledge
 - 2) Setting up the process
 - 3) The effect of using the crowd on core morale

Cryptoeconomics

- All processes and systems will not be (or should not be) decentralized, but companies do have opportunities for decentralization that can be beneficial within current systems.
- Big governments create currencies, national central banks manage them, and huge global banks process transactions through their proprietary systems and ledgers.
- In contrast, a cryptocurrency uses cryptographic algorithms and a distributed ledger (called a blockchain) to perform all the functions typically done by governments, central banks, and the banking system.
- This system is entirely decentralized and managed by the crowd. It is a true peer-to-peer system, both for transferring money and for managing all the records required to support a currency in a decentralized way.
- The classic definitions and functions of money in any economics textbook are that it is a medium of exchange, it can serve as some kind of store value, and it is a unit of account.

- We could argue about whether Bitcoin truly meets the definition of money, but it certainly is not meeting our classic economics definition of money.
- We can define Bitcoin as an alternative currency. And an alternative currency is any instrument, which operates as a legal medium of exchange, but it is not minted by a central government, and it is also not recognized as legal tender.
- Centralized currencies have some kind of central issuer who controls the governance and rules and issuance of those currencies. Bitcoin does not have any such corporation or CEO or legal entity at the center of it that really runs and controls Bitcoin.
- Alternative currencies come into existence because there's always some entrepreneur or person or group that initiates it; economic instability is another common driver; and some kind of technology advance often times plays a role.
- Bitcoin relies on a peer-to-peer ledger that lists all transactions. And the reason Bitcoin has value is because it is both scarce and it is useful. And that has led people to be willing to trade dollars or euros for Bitcoin for an exchange rate. But, the only reason Bitcoin has value is because we believe it has value.
- Three key ingredients to running Bitcoin software profitably: cheap electricity, reliable Internet, and ideally, cold temperatures.
- Compare Bitcoin and blockchain technology against the everyday financial system. First, In the financial system currencies and assets are typically distinct and separate from the networks, or ledgers. Bitcoin and the other cryptocurrency systems represent an integrated system where the asset in the case of Bitcoin is actually fully integrated into the network or ledger, which we can call the blockchain. This integration allows for some powerful capabilities and features such as smart contracts.
- Second, in the world of traditional banking and finance, banks know who we are. Bitcoin is pseudonymous.
- Third, the transactions in the traditional financial services system of banks, Visa and so on are private, different with Bitcoin where the transaction ledger, the blockchain is public.
- Fourth, chargebacks are available in the banking system, but transactions cannot easily be reversed with cryptocurrency systems (here are some exceptions to that).
- And then last, banks kind of act as a gatekeeper in order to move value through the traditional financial services system, whereas in something like Bitcoin no third party can really block you, very easily at least.
- What the future potentially holds for cryptocurrencies such as Bitcoin? Look back on history to see what's happened with previous alternative currencies: they die mostly due to lack of adoption or lack of demand.