Blockchain Bootcamp Day 18(33 minutes)

Types of blockchain you can work with

* The three types of blockchains
* Public Blockchain -> Bitcoin, Ethereum 🡪 Anyone can read code, read transactions, joining on consensus. Open source, not closed software.
* Consortium Blockchain -> R3 -> preselected nodes, not everyone can get involved in consensus process like public blockchain. Each user would manage one node. Would be restricted to nodes on blockchain.
* Private Blockchains -> Multichain -> All permissions kept centralized to one organization. Read permissions restricted. In cases when information is private such as confidential information to that company. That is a reason you would use a private blockchain

Potential Use Cases for Blockchain Technology

* Stock market -> issue colored coins rather than shares -> can send and trade them with little friction. No time consumption or little man.
* Makes it more efficient, ShapeShift.
* Smart Contract -> RSK -> Smart contract technology to bitcoin.
* Smart contract offer automatic execution contractual obligations after certain terms are meant
* Perfect in situations such as sending property deeds, contracts.
* Cloud Storage -> Storj -> renting unused storage out, in return you would retrieve storjcoin x.
* People would pay to store files on network.
* Storj has the ability to eliminate storage costs by 80%.

Let me Highlight How Powerful the Ethereum blockchain is

* Built upon Ethereum -> Augur -> A prediction market -> Predict the outcome of certain events.
* That crypto would be used to predict events on market.
* Slock.it -> It is combining blockchain + Iot -> Allowing user to sell and share anything.
* Ujo Music -> combat copyright, and allow artists to get paid directly by user, decentralized version of spotify
* Akasha -> Social platform built upon ethereum blockchain. You get ether everytime someone up votes your content.

Let me Explain what smart contracts are

* Exchange things of value in a transparent & secure way.
* Key features of smart contracts -> autonomy -> No need to relay on middle man to process smart contract. Such as relying lawyers for legal matter. Can’t be manipulated due to it being managed by network nodes.
* Docs on top of blockchain, on top of encrypted ledger
* Smart contract are always backedup.
* The smart contract would be duplicated across all nodes.
* Safety -> they are secured by cryptography.
* Speed ->
* Saving -> It would protect savings.
* Accuracy -> ensures not errors occurs when retrieving contract

An example of cryptocurrency contract code

* Head to <https://www.ethereum.org/token>
* It will provide anything you need using Ethereum to create own cryptocurrency.   
  it can be any type of currency.
* The token would be compatible with any wallet that is compatible with Ethereum.

The Pros and Cons of Smart Contract technology.

* One Key advantage is that has the potential to reduce costs and increase speed in seconds.
* One Key disadvantage is that issues of how it works with physical products. Still early stage technology.
* Know your customer regulation is part of the disadvantage in financial services. Smart contract doesn’t require this which is a issue. Since smart contracts are run by algorithms to hard to help anyone accountable in a court of law.
* Companies to follow for smart contract technology
* RSK
* Balance
* Monax

The differences between accounts and wallets

* Accounts store ether, Ethereum contract wallets ->
* Accounts -> store ether and other purposes are not controlled by code.
* Sole purpose of contract wallet is send and store ether. More user friendly to account
* Contract wallets are controlled by code, the master is the account.
* The account are owners of contract wallets and store ether.
* Accounts can’t list incoming transactions, while contract wallets can do this.
* Contract wallets can be multi-signature wallet.
* Multi-signature wallets are additional layer security must be added to enable transactions.
* Require another user to sign transaction.
* Contract wallets cost gas to create.
* Accounts don’t cost any gas to set up.
* In order process transactions, will incurred ether. Self-sufficient blockchain in that case.

Introduction to Decentralization.

* Decentralized network, it eliminates risks storing data in centralized network.
* There is no central point of exploit.
* Data stored in decentralized network is considered not corruptible.
* Five steps of a decentralized blockchain how a transaction is processed
* 1. Transaction process begins(it’s digitally signed)
* 2. Transaction sent through miner
* 3. Transaction broadcast to other nodes in network as a block
* 4. Transaction is added to the chain as long it’s considered legitimate
* 5. The recipients received what you sent through decentralized blockchain. It takes 10 minutes to send it.

**HELPFUL RESOURCE -> Medium -> The Meaning of Decentralization -> Vitalik Buterin**

Positive Uses of Decentralization.

* 1. Reduce likelihood of failure.
* It has many nodes.
* Very unlikely to have a system failure.
* Results in no downtime.
* 2. Not as prone to hacking attacks compared to centralized systems.
* There isn’t a central source to attach.
* It takes a huge amount of computing power to attack decentralized system.
* 3. All nodes are contributing, discusses among bitcoin forks.
* Down to all nodes in network.