



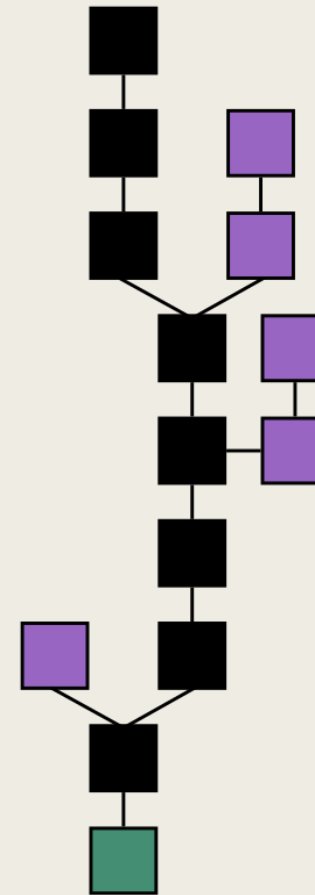
BLOCKCHAIN AND THE SUSTAINABLE DEVELOPMENT GOALS

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What is Blockchain?

Blockchain formation. The main chain (black) consists of the longest series of blocks from the genesis block (green) to the current block. Orphan blocks (purple) exist outside of the main chain. (Wikipedia, 2017)

It is a decentralized ledger that may be continuously growing as a list of records, transactions, value, and/or programs.



What is Bitcoin?

The Bitcoin blockchain tracks a single asset: bitcoin. The blockchain has rules, one of which states that there will only ever be 21M bitcoin. All participants must agree to Bitcoin's rules in order to use it.

It is essentially a currency backed virtual asset on blockchain. Asset backed currencies being traded on blockchain can also be generated.

It can both improve and replace banking processes



What is Ethereum?

- Bitcoin is, effectively, a decentralized application for payments.
- Ethereum adds another layer by allowing users to put code on its blockchain that executes automatically.
- This code is called a “smart contract.”
- Ethereum’s goal is to create a decentralized computing platform — a global supercomputer.
- Another way to think about it is connected, decentralized applications.

What are Smart Contracts

To illustrate a smart contract, let's say Alice and Bob enter into a bet.

Alice thinks that the temperature tomorrow morning will reach 70 degrees. Bob thinks that it will stay lower. They wager 10 bitcoin on the outcome. If Alice and Bob don't trust each other, they will have to use a trusted third party as an escrow agent. In other words, they will each have to give the agent that amount of bitcoin, and the agent will distribute the winnings and the amount staked to the winner.

- There's no way around using a middleman in this scenario.
- Ethereum offers a decentralized solution. Alice and Bob could agree to use some basic code — a contract — to alert the system to what the temperature ended up being and pay out based on who was correct. If the temperature goes higher than 70 degrees, the code pays Alice, otherwise, it pays Bob. Alice and Bob could then place this code (their bet) on Ethereum's blockchain.
- This looks like a “contract,” because all participants in the Ethereum blockchain hold a copy of this agreement and the contract is self-enforcing.
- Smart contracts like these are what make Ethereum compelling.
- Because Ethereum is a blockchain, it's very hard to attack, change, or forge these smart contracts.

What are some uses for Blockchain and sustainability?

- **Health SDG 3 Good Health and Well-Being** - Blockchain technology enables more rapid and secure sharing of data across platforms. Better data collaboration means higher probability of accurate diagnoses, higher likelihood of effective and continued treatments, and the overall cost-effectiveness of care. There is an ability – to create a secure universal data infrastructure. Both well resourced healthcare systems and those serving our most vulnerable are able to

Voting (SDG 10 on Reduced Inequalities)

Example: Voter Turnout in Brazil is just under 80%, almost 10% higher than LatAm average numbers. Blockchain can lower barriers to voting by allowing secure remote authentication of voters' identity, secure record keeping for vote tracking on the blockchain audit trail. Lowers potential voter-fraud, lost records, and tampering. Also further enables underresourced voters to be able to cast votes faster and easier due to time constraints being lowered, for women who may face additional sociopersonal barriers it liberates their voice and accessibility.

Charity (SDG 1 No Poverty)

For philanthropy projects and donor tracking - blockchain securitization is able to track where your donations are going, when they arrived, and where they ultimately were used limiting concerns for organizational inefficiency and corruption, allowing for greater transparency and accountability. Blockchain also makes tampering more difficult and facilitates transactions at lower fees than those usually associated with money transfer middlemen or larger charitable organizations.

Hack 4 Climate – COP23 (SDG 13 Climate Action)

- Identification & Tracking of Emissions
- Carbon Pricing
- Distributed Energy
- Sustainable Land Use
- Sustainable Transport
- Crypto-Futures Trading of Carbon Emissions in Growing Offset Markets

WHERE IS IT GOING IN THE FUTURE?

- All Transactions, legal and marketplaces have the potential to be affected. Land Title and Identity are the lowest hanging fruit.
- Digital businesses are inherently globalized.
- Startups are uniquely positioned as sociocultural ambassadors, with the opportunity to learn new markets in rapidly ethnographic ways and learn unique positioning for navigating cultural synthesis and shared economic development potentials.
- Any private sector company can additionally influence SDGs, whether vertical based or specific to job/infrastructure creation. We have seen considerable dialogues about the big tech cos as commerce ambassadors, but this opportunity exists bottom up for every entrepreneur in the world.

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