Ethereum vs Bitcoin

1. **Primary Purpose:**
    - **Bitcoin:** Bitcoin was created primarily as a digital currency and store of value. Its main use case is as a decentralized, peer-to-peer electronic cash system.
    - **Ethereum EVM:** Ethereum, specifically its EVM, is designed to be a platform for decentralized applications (DApps) and smart contracts. While it has its native cryptocurrency called Ether (ETH), Ethereum's primary focus is on enabling a wide range of blockchain-based applications beyond simple transactions.
2. **Blockchain Technology:**
    - **Bitcoin:** Bitcoin employs a straightforward blockchain technology primarily for recording transactions and securing the Bitcoin network.
    - **Ethereum EVM:** Ethereum utilizes a more versatile blockchain technology, primarily for executing smart contracts and hosting decentralized applications. The EVM allows for programmable logic and complex computations.
3. **Smart Contracts:**
    - **Bitcoin:** Bitcoin has limited support for scripting, mainly used for simple transaction conditions, but it doesn't natively support complex smart contracts like Ethereum does.
    - **Ethereum EVM:** Ethereum's EVM is specifically designed to support smart contracts, which are self-executing contracts with the terms of the agreement directly written into code. This enables a wide range of decentralized applications and use cases beyond simple payments.
4. **Consensus Mechanism:**
    - **Bitcoin:** Bitcoin primarily uses the Proof-of-Work (PoW) consensus mechanism, where miners solve complex mathematical puzzles to validate transactions and create new blocks.
    - **Ethereum EVM:** Ethereum also initially relied on PoW but has been transitioning to Proof-of-Stake (PoS) through the Ethereum 2.0 upgrade. PoS is considered more energy-efficient and aims to enhance network scalability.

5. **Cryptocurrency Supply and Monetary Policy:**
    - **Bitcoin:** Bitcoin has a fixed supply cap of 21 million coins, making it deflationary. The issuance of new bitcoins decreases over time.
    - **Ethereum EVM:** Ethereum does not have a fixed supply cap. While there is an issuance limit, it's not fixed, and the network can adapt its monetary policy. This difference in supply dynamics affects Ethereum's economic model.

Ethereum improvements

Ethereum is a very popular blockchain thus it has very high gas fee. On of the possible direction for improvement is development aproaches for fee reduction.

Scalability Solutions:

- Continue efforts to scale the Ethereum network through initiatives like Ethereum 2.0 and sharding, which can increase transaction throughput and reduce congestion, ultimately leading to lower gas fees.

Also possible:

Dynamic Gas Fee Adjustment:

- Implement more dynamic fee adjustment algorithms that automatically adjust gas prices based on network congestion. This would allow users to set a target fee and have it automatically adjusted to match current network conditions.
- Explore adaptive fee structures that balance speed and cost, allowing users to choose between faster confirmation times and lower fees based on their preferences.