**Current Smart Contracts Landscape:**

**Features of Smart Contracts:**

Smart contracts come with various features that distinguish them from traditional agreements.

**Decentralization This is edited:**

The first feature is decentralization; smart contracts do not rely on any centralized intermediary. Instead, they run on a blockchain which is maintained by thousands of individuals known as node operators. It’s the collective effort of these node operators running the smart contracts that make the network decentralized. This aspect will be discussed more in-depth later.

**Transparency and Flexibility:**

Transparency is inherent to blockchain networks. Since all node operators can see everything happening on-chain, there is no room for unfair or hidden deals. This transparency ensures that everyone has access to the same information and plays by the same rules.

It Is important to note that this transparency does not necessarily compromise privacy. Blockchain is pseudo-anonymous, meaning that your transactions are not directly tied to your real-world identity.

**Speed and Efficiency:**

Smart contracts and blockchain transactions are incredibly fast and efficient compared to traditional banking systems. For example, bank transfers, especially international ones, can take up to several weeks, whereas blockchain transactions happen almost instantly. This speed is not only convenient but also allows for more efficient interactions between parties.

**Security and Immutability:**

Once a smart contract is deployed, it cannot be altered or tampered with. This immutability ensures that the terms of the contract are set In stone. This is a stark contrast to centralized systems where a server or database can be hacked, and data can be altered. The decentralized nature of blockchain makes hacking nearly impossible since an attacker would have to take control of more than half the nodes, which is significantly more challenging than compromising a single centralized server.

Additionally, the data on a blockchain is resilient. In a traditional system, if your computer and backups fail, you lose all your data. In contrast, in a blockchain, your data is replicated across thousands of nodes. Even if several nodes were to go down, your data would remain secure as long as there is at least one copy of the blockchain.

**Elimination of Counterparty Risk:**

Smart contracts eliminate the need for trust in transactions. Once a smart contract is deployed, its terms cannot be changed. This means that parties cannot alter the agreement based on greed or any other factors. This ensures that the agreement is enforced as originally intended.

In traditional systems, there is always a risk that the other party might not fulfill their end of the bargain. With smart contracts, this risk is eliminated, and agreements are enforced programmatically.

**Applications of Smart Contracts:**

Smart contracts have given rise to new industries and revolutionized existing ones.

**Decentralized Finance (DeFi):**

DeFi, or Decentralized Finance, allows users to engage with financial markets without relying on centralized intermediaries. With smart contracts, users have transparent access to financial markets and can engage with sophisticated financial products efficiently and securely. We will provide practical examples of how to build and interact with DeFi protocols in upcoming lessons.

**Decentralized Autonomous Organizations (DAOs):**

DAOs are governed entirely by smart contracts and operate in a decentralized manner. This structure offers benefits such as transparent governance, efficient engagement, and clear rules. DAOs are an evolution in politics and governance, and we will cover how to build and work with DAOs in future lessons.

**Non-Fungible Tokens (NFTs):**

NFTs, or Non-Fungible Tokens, can be thought of as digital art or unique assets. NFTs have created new avenues for artists and creators to monetize their work. We will also cover how to create and interact with NFTs in this course.

**Other Applications:**

And then, maybe you’ll be the one to discover the next iteration of smart contract applications!