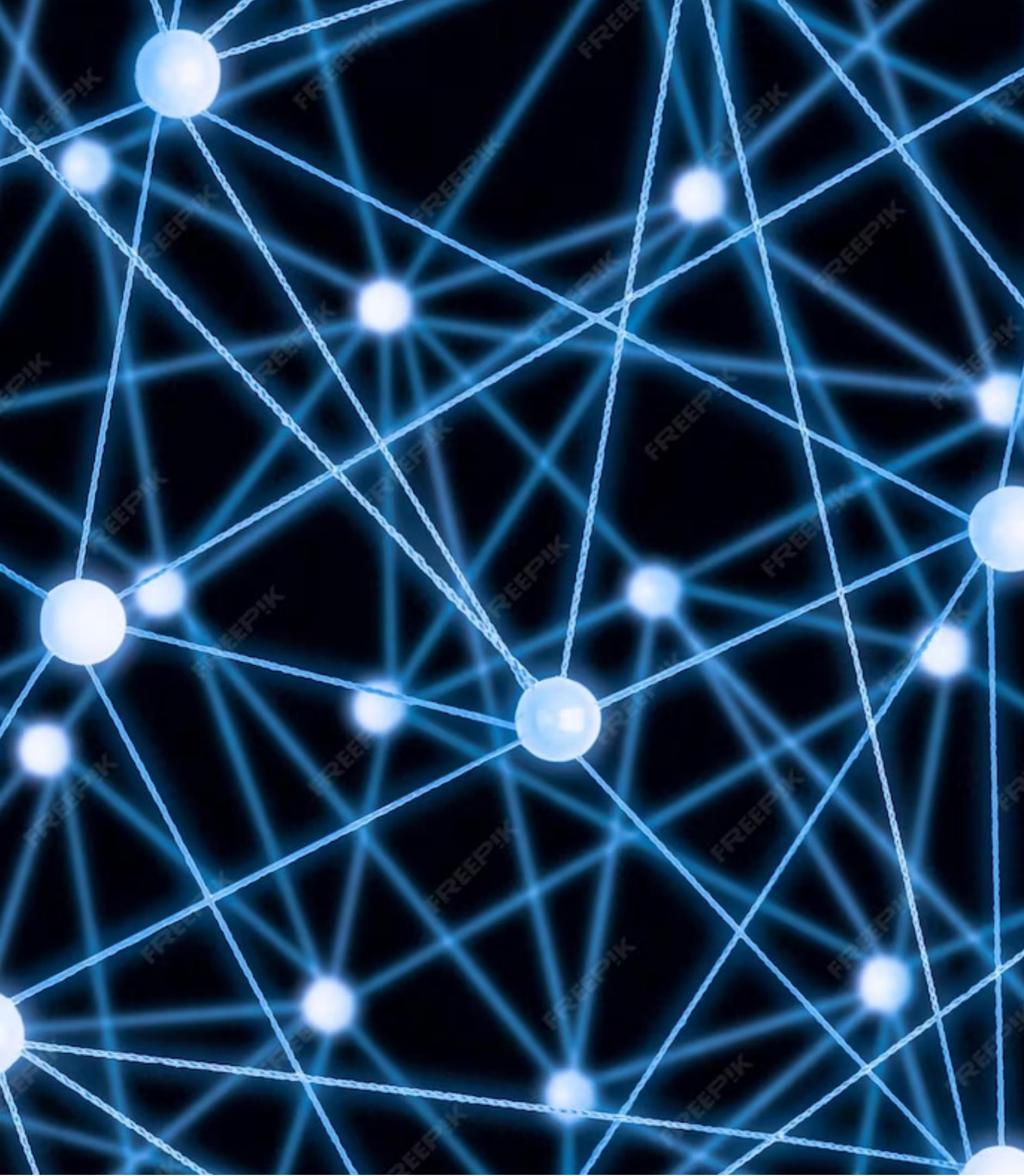




Transaction Models in Blockchain: **UTXO-Based and Accounting-Based Approaches**

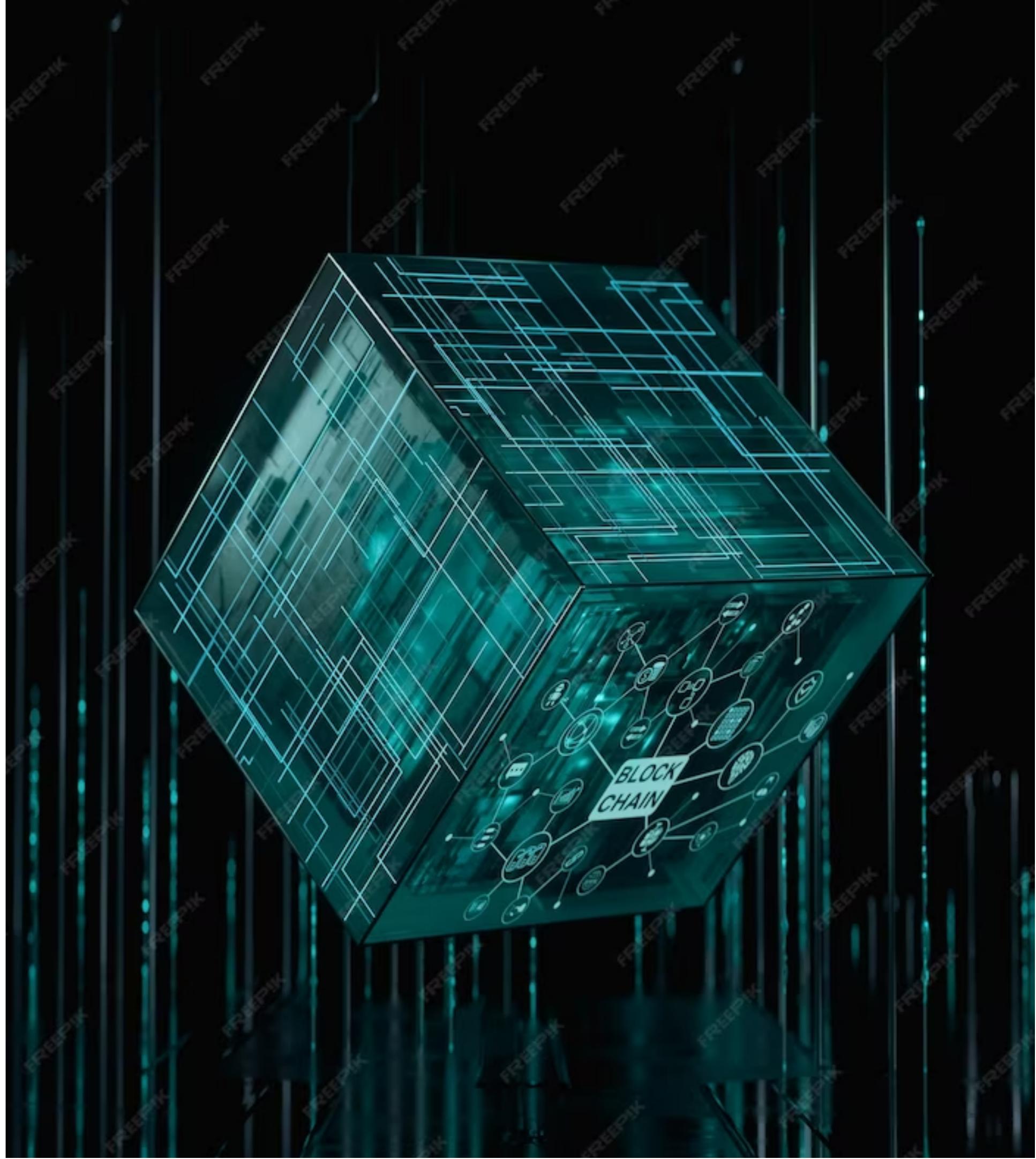


Introduction

An overview of **transaction models** in blockchain, including UTXO-based and *accounting-based* approaches. We will explore their differences and applications in the blockchain ecosystem.

UTXO-Based Model

- A utxo is the output of previous transaction, which can be spent in the future.
- utxo chains have no accounts. Instead, coins are stored as a list of utxos, and transactions are created by consuming existing utxos and producing new ones in their place.
- Balance is the sum of utxos controlled by given address.
- Utxos resemble cash in that they use changes, and are indivisible(utxos are used whole).





Accounting-Based Model

- Accounting model resembles how a bank operates.
- Users have accounts that hold their coin balances.
- It is possible to spent partial balances.
- The concept of change does not apply.



The EUTXO Model

EUTXO(Extended Unspent Transaction Output) is an enhanced model for blockchain transactions that allows for the execution of complex smart contracts and scripts, with Cardano Utilizing it for its secure and programmable transaction capabilities.



The EUTXO Model (Contd.)

How does the EUTXO model extend UTXO?

- It generalizes the concept of address by using the lock-and key analogy. Instead of restricting locks to public key and keys to signatures, address in eutxo model can contain arbitrary logic in the form of scripts.
- The second difference between utxo and eutxo is the outputs can carry almost arbitrary data in addition to an address and value.

Thanks!