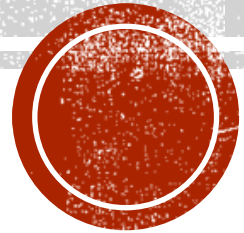
WHERE FINANCE MEETS TECHNOLOGY



Silvana Debonis – ATA 2022

What is FinTech?

Technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of services.

Enabling technologies

- Artificial intelligence
- Big Data
- Machine Learning
- Distributed computing
- Cloud
- Criptography
- Distributed Ledgers Technology (DLT)

Distributed ledgers use independent computers (referred to as nodes) to record, share and synchronize transactions in their respective electronic ledgers (instead of keeping data centralized as in a traditional ledger).

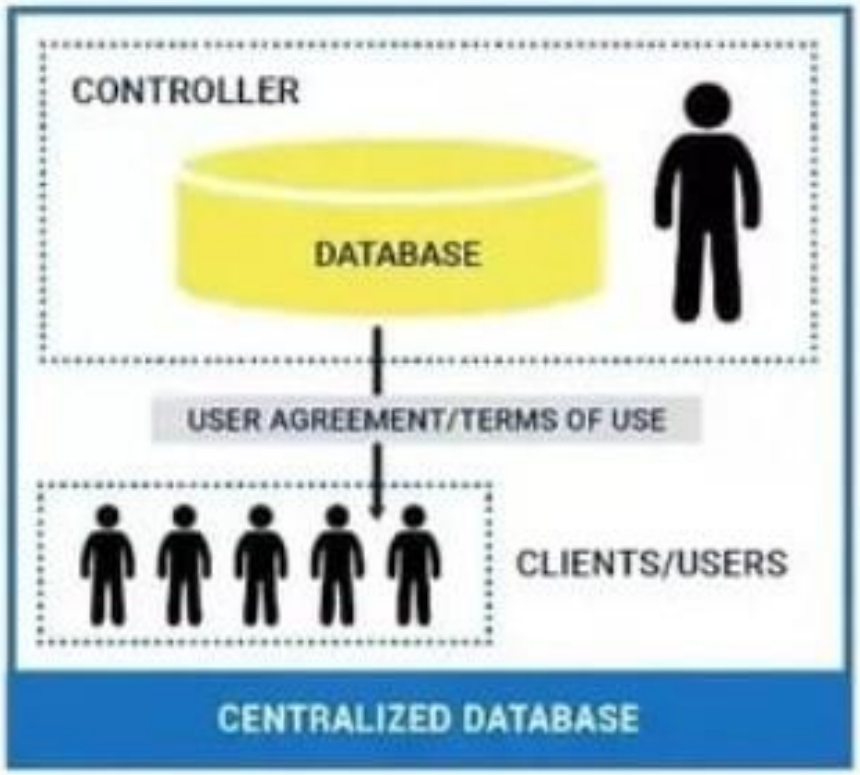
Distributed ledgers

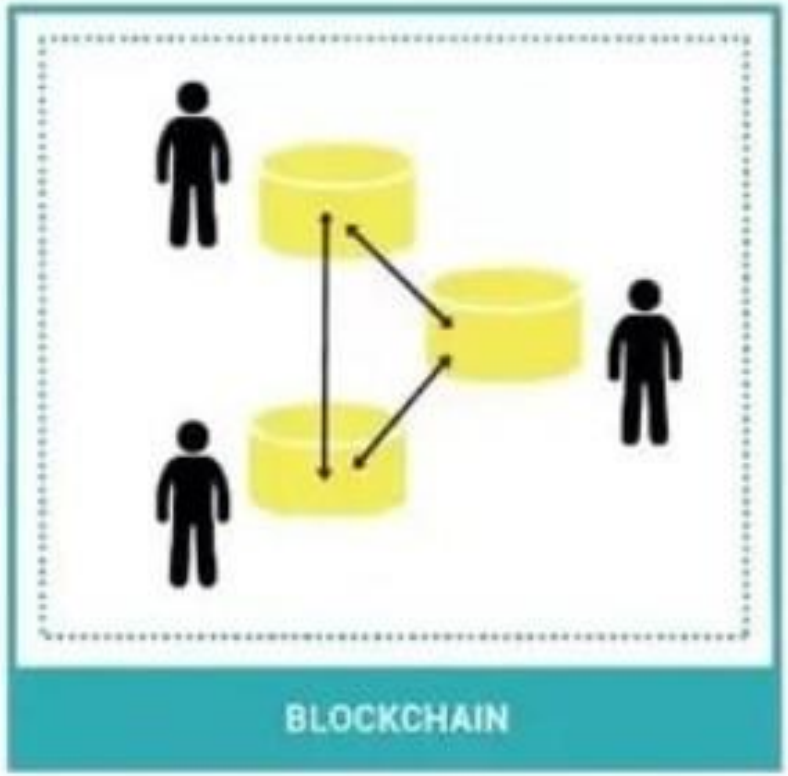
- Distributed ledger
- Consensus on data

- Appended only
- Distributed
- Decentralized
- Cryptographic verification and authentication
- Resilience increases with node counts

Traditional networks

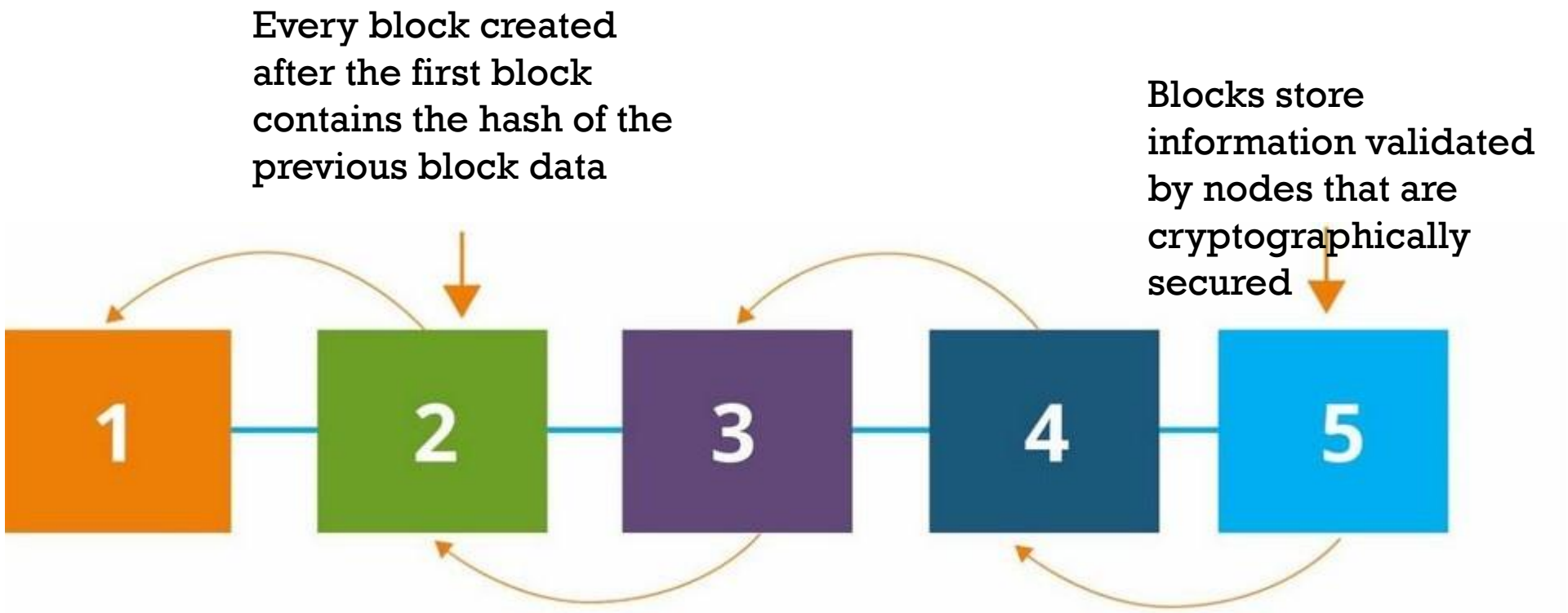
- Centralized databases
- Internal/External reconciliation is required
- No restrictions changing data
- There is a single point of failure
- Single point of control
- Many gateways and middlemen
- Actions completed on behalf of others
- Backup Is required


CONTROLLER
DATABASE
USER AGREEMENT/TERMS OF USE
CLIENTS/USERS
CENTRALIZED DATABASE

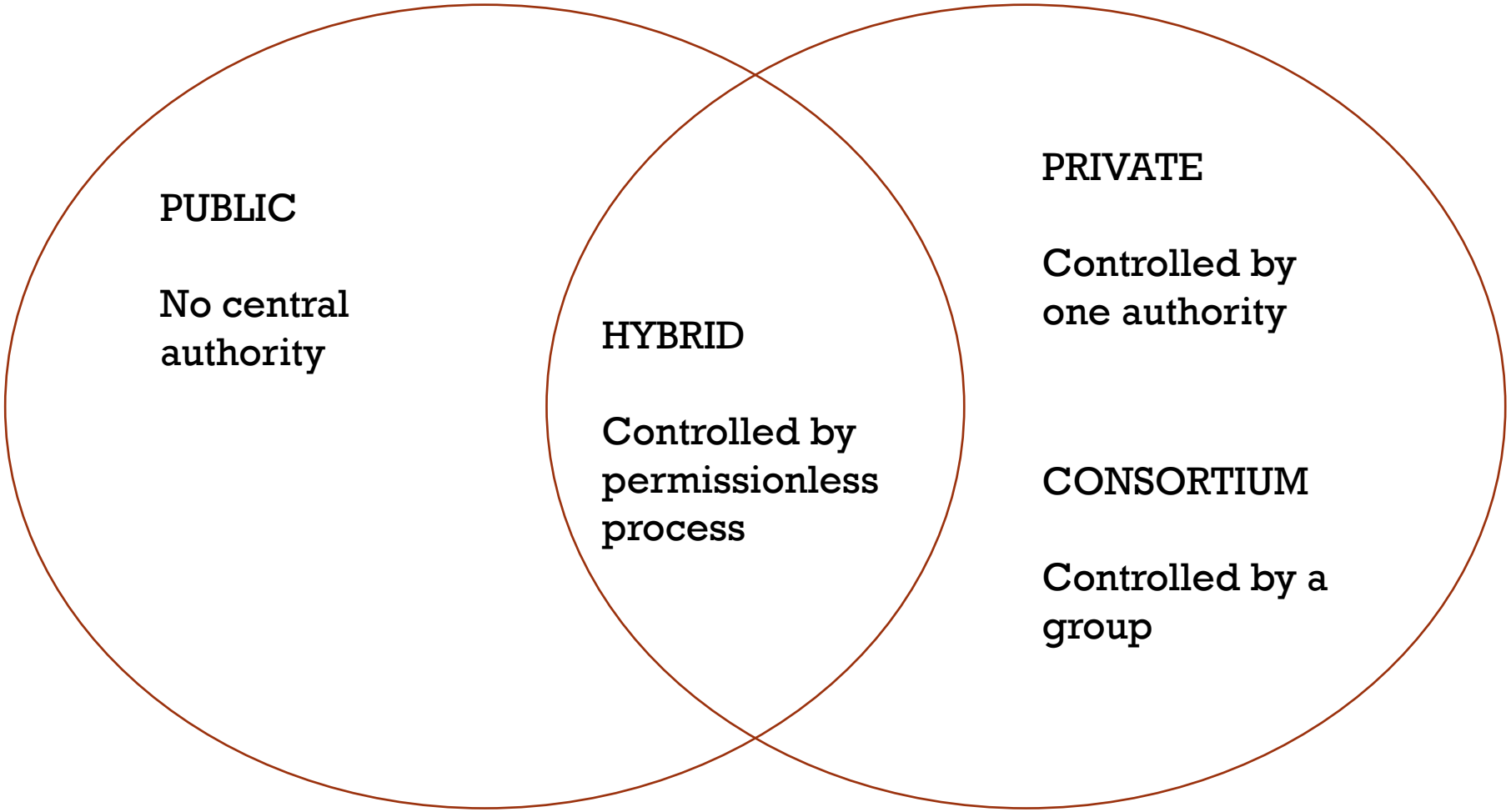

BLOCKCHAIN

Blockchain is one type of **distributed ledger**.

Blockchain organizes data into **blocks**, which are chained together in an append only mode.



DIFFERENT TYPES OF BLOCKCHAIN



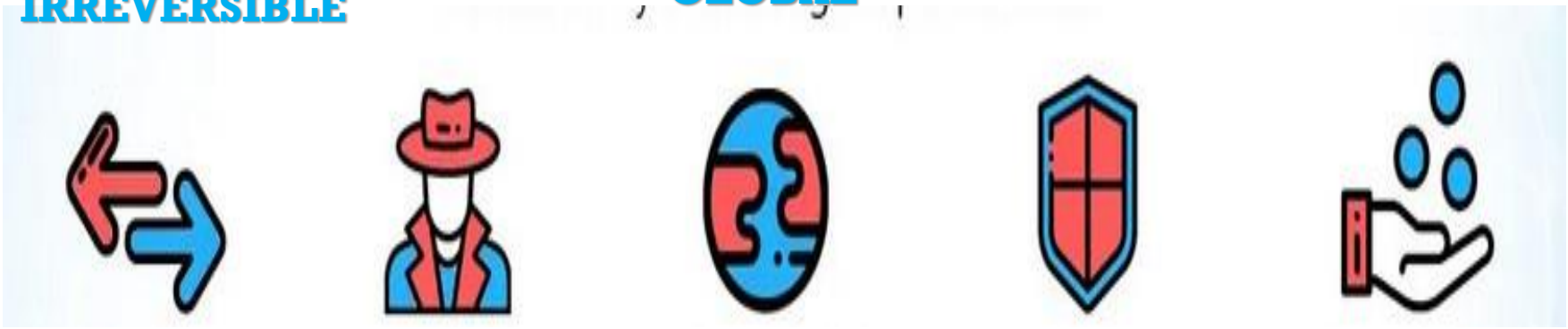
CRYPTOCURRENCY:

A DIGITAL OR VIRTUAL CURRENCY SECURED BY CRYPTOGRAPHY AND BASED ON A NETWORK THAT IS DECENTRALIZED.

IRREVERSIBLE

GLOBAL

PERMISSIONLESS



ANONYMOUS

SECURE

Bitcoin

Every user has a **private and a public key**

Public key generated by applying a cryptographic method called "**hash function**" to the private key

When a user wants to send some of their bitcoins to another user, they will use their private key **to sign the transaction**.

The signing of the transaction creates **an identifier** for the transaction **without revealing the private key**.

Bitcoin

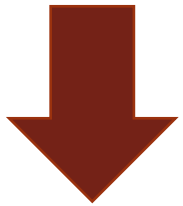
Everyone in the network can authenticate the veracity of a transaction

Transaction is sent to the network

It is placed with other transactions **in a block**

If all transactions in this block are authentic, then that block will be added to the blockchain

Who does the authentication?



The MINERS

CRYPTOCURRENCIES VS TOKENS

Cryptocurrencies

- Digital representation of money
- Units of account
- Store of value
- Means of payment
- Operate on its own blockchain
- Can be mined

Tokens

- They can represent any asset that is fungible and negotiable
- Have broader functions than currency/coins
- Do not have their own blockchain
- Operate on other cryptocurrencies' blockchains

ASSET TOKENIZATION ON A BLOCKCHAIN

The tokenization of assets is the process of issuing security tokens (a type of blockchain token) representing real digital tradable assets.

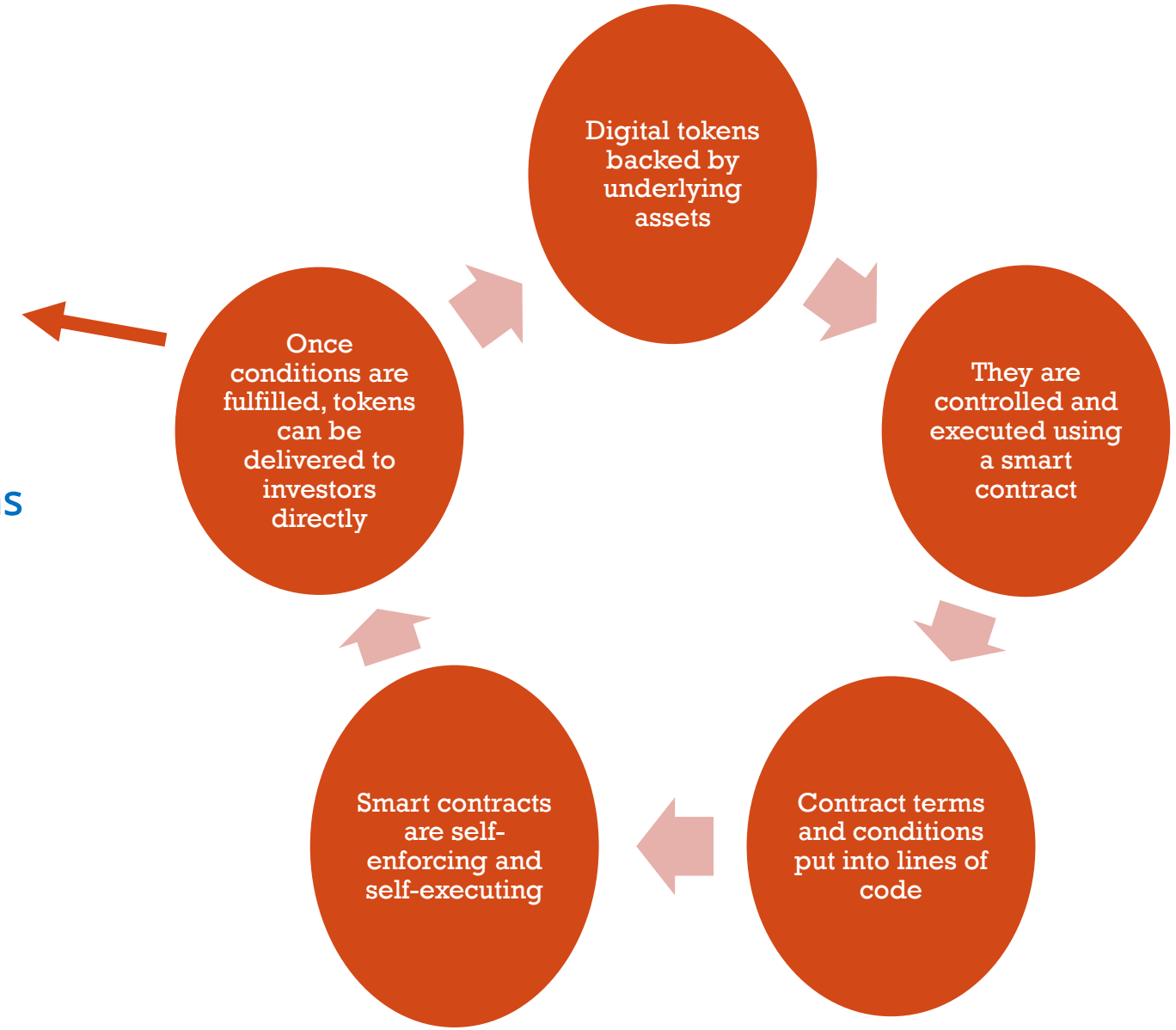
It is an extended use case of blockchain technology that enables the purchase, sale and exchange of digital assets on the distributed ledger

New terminology

- ✓Security Token Offering (STO)
- ✓To tokenize an asset
- ✓Smart contracts
- ✓Token standard

SMART CONTRACTS

IMPORTANT:
They offer transparency, accuracy and efficiency by making contractual terms and historical data publicly available



INITIAL COIN OFFERING (ICO)

- It is a new method of financing for start-ups in which new digital coins are issued
- It is a fundraising tool.
- A company creates a new cryptocurrency through the existing platforms and goes for the ICO.
- Retail investors can buy the newly created coins / digital tokens and pay for them with other cryptos or fiat currency.

SOUNDS SIMILAR TO AN IPO?

Issuance and distribution of of newly issued shares to investors through investment banks which are the underwriters	Creation of a new digital currency on a blockchain: NO INTERMEDIARIES
IPOs are available only to companies with an established financial performance	ICOs easily available to every kind of startup (MVP) – Crowdfunding 2.0
Expensive process	Not expensive
Investor buys part of the company itself (the shares)	Investor may buy a utility token or a security token

UTILITY TOKENS

- can buy access to a company's product or service
- main purpose is to be utilized, with investment a secondary use
- are not regulated


SECURITY TOKENS
Can buy a stake in the company itself
Main purpose is investment, with utility as a secondary purpose
are regulated

GOVERNANCE TOKENS

- Decentralised finance does not confer all decision-making power to a small board.
- Decentralized Autonomous Organizations(DAOs) distribute some of the power to token holders.

On-Chain Governance: The process of directing a project's future via decentralised voting measures

What are they used for?

- To make decisions collectively
- To influence decisions
- To propose changes