

Noelia Iglesias Cuesta - UO269652

Luis Vijande González - UO275739

Óscar Pérez Arruñada - UO265488

# Web3 and NFTs

Web3.....	2
Blockchain.....	2
Web3 Architecture.....	2
Blockchain generations (Bitcoin, Ethereum...)	2
Proof-of-Work vs Proof-of-Stake: .....	2
Web3 is not centralized .....	3
NFTs are worthless .....	3
Art theft .....	3
Rug pulls and pyramid schemes. ....	3

### Web3

Defined as the idea of a new internet service built by using decentralized blockchains, like some shared register systems that cryptocurrencies as Bitcoin and Ethereum use. Web3 gets rid of the necessity and the functionalities that are carried out by the principal search engines and the social network platforms.

### Blockchain

It was intended to timestamp digital documents so that it's not possible to backdate or modify them. It was unused until 2009 when it was adapted to create the digital cryptocurrency Bitcoin.

Each block in the blockchain contains data, a hash which is like a fingerprint and the hash of the previous block which is what creates the chain of blocks.

Altering one block will make all the following ones invalid due to the one that has been altered, its hash also changed, and the next block doesn't have it.

### Web3 Architecture

The point of the web 3 architecture is to create a decentralized network using networks owned by different partners which are controlled together.

Different providers form the blockchain network, they all share the same information but the way they can show the information to the user can be different, so they can build their own backend and their own User Interface which can retrieve data from the same blockchain network and then they can show that to the user.

In the same way they can write it back to the blockchain network and that gets synchronized to all the users in the network.

### Blockchain generations (Bitcoin, Ethereum...)

The Blockchain technology has evolved through different generations:

1<sup>st</sup> generation: it is born with the creation of Bitcoin, a payment system P2P (peer to peer) based on blockchain. This first generation is based on a validation system Proof-of-Work. The main problem of Bitcoin is that it failed on giving efficiency to its operations.

2<sup>nd</sup> generation: Ethereum was the responsible of introducing us in this new era. They introduced the concept of Smart Contracts. Ethereum also considered the idea of Proof of Stake, creating the basis of the development of decentralised applications thanks to the use of a standard token. Despite of this Ethereum had the same problem as Bitcoin: scalability and the efficiency of operations. Nowadays, Google, Amazon or Microsoft are trying to solve those problems.

3<sup>rd</sup> generation: currently, we are starting in this generation, where the main goal is to improve scalability and efficiency of operations. An example of this generation is Cardano. Some governments are adopting this type of technology such as Georgia, Estonia, Pakistan...

4<sup>th</sup> generation: we are on a development phase of this technology. The leading project of this generation is Metahash, which is trying to change the previously mentioned systems Proof-of-Work and Proof-of-Stake.

### Proof-of-Work vs Proof-of-Stake:

Proof-of-work is the older of the two, used by Bitcoin, Ethereum 1.0 and many others. The network needs a huge amount of processing power. Proof-of-work blockchains are secured and verified by

## Web3 and NFTs

virtual miners around the world to be the first to solve a math puzzle. The winner gets to update the blockchain with the latest verified transactions and is rewarded by the network with a predetermined amount of crypto. This puzzle must be difficult for the miner to solve and easy for the network to verify. The difficulty of this puzzle increases proportionally to the amount of computing power. The more miners there are, the more difficult it is for the network to verify transactions. This is what is called mining. Once verified the transactions are put into a block and appended to the public blockchain.

Proof-of-stake is the newer consensus mechanism, and it powers Ethereum 2.0. It is still an algorithm, and the purpose is the same as Proof-of-Work, but the process is quite different. The creator is chosen between a pool of users that have staked a certain amount of cryptocurrency. That means that in Proof-of-stake system there is no puzzle to complete and so no reward for doing so. Instead, the miners take a feat from every transaction. This also means that because of nobody is competing to solve any block there is no massive energy requirement. The penalty for trying to ham the network is the possibility of losing the money you have staked.

### Web3 is not centralized

The claim that web3 is centralized is nothing but lies, yes, its centralized in the sense that the blockchain is separated in different nodes, but most of these nodes are owned by private companies like Alchemy or Infura, also, OpenSea is responsible for more than 87% of all nft transactions and can decide to delete any NFT at any time.

### NFTs are worthless

When you buy an NFT you are buying the ownership of an item, that ownership is a link to that something you buy, a link that can decay at any moment or change depending on the machine hosting that item, also, all NFTs lose all value in months, and a week ago basically the bubble popped and 99.9% of NFTs are less valuable than the energy used to produce them.

### Art theft

One of the early claims in favour of NFTs was that it would help artists to sell art online, but, ever since the boom of NFTs back in 2021, DeviantArt protect has detected more than 80.000 cases of art being stolen and minted in the blockchain.

### Rug pulls and pyramid schemes.

There has been a shocking amount of new NTF drops that promise to deliver something, getting the money and then disappearing. The first tweet ever was sold as an NFT for 2.8 million \$, that tweet today is sold by less than 10 thousand \$, this shows us that in order to make money in this, you need to scam people that would fall in the same scam as you, thus creating a pyramid scheme.