CRYPTOCURRENCIES:
Cardano, Algorand and more
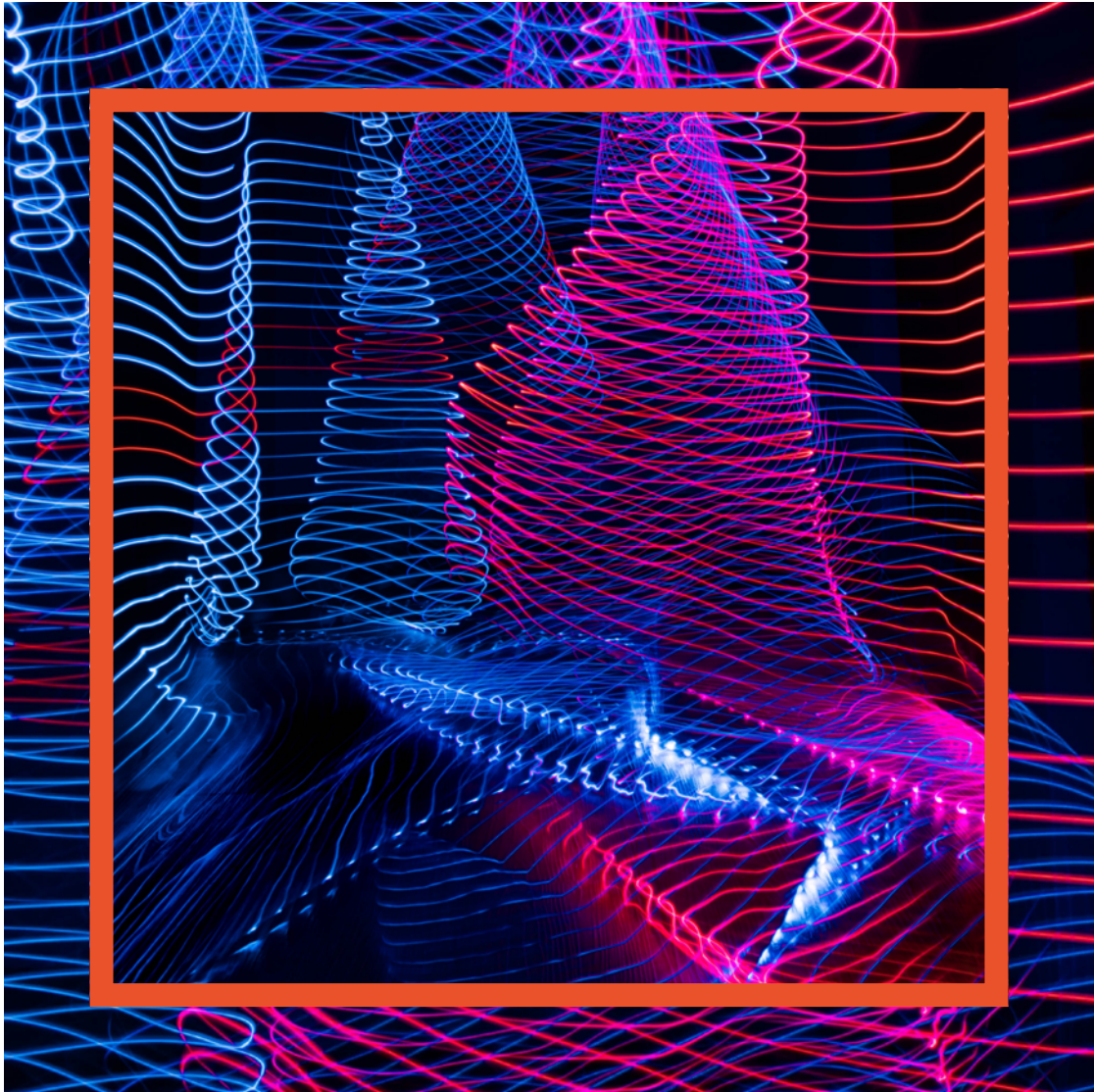
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Content

CARDANO

The concept behind Cardano

An open-sourced, decentralized blockchain

Cardano is a project created in 2015 with the idea to change the way cryptocurrencies' ecosystem is organized and developed.

While digital currencies and smart contracts, respectively introduced by Bitcoin and Ethereum, are disrupting our economy and the way we make business across industries, those two technologies have nonetheless drawbacks: massive energy consumption and an increase in transaction costs as network became congested to name a few.

This is where Cardano make the difference and explain why it is called the third-generation cryptocurrency. **Based on two principles, peer-review and High Assurance Code, Cardano ecosystem tackle Scalability, Interoperability, Sustainability issues and aspire to build global sustainable solutions to face global problems.**

Proof of Stake

Proof of Stake (PoS) is one of the most common blockchain consensus mechanisms along with Proof of Work. **Proof of Stake is positioned as an alternative to Proof of Work to avoid energy overconsumption and associated environmental issues, but also the risk of a progressive centralization of the network.**

While in Proof of Work, the miner must invest in hardware in order to have the computing power to solve a complex mathematical problem, to participate in securing the network of a PoS blockchain, generally one only needs to hold a certain quantity of the native token to participate in the safeguarding of the network. This process is called «staking».

ADA token

ADA token is the cryptocurrency of Cardano project. Named after Ada Lovelace, a mathematician considered as the father of computer programming. **It shows the strong desire of Cardano team's to be considered as a technical and scientific project.**

ADA's holders have a stake in the network, meaning they can earn rewards through stake pools and moreover enables a more fluid network. In the long run, holders will be integrated in different services and applications build above Cardano blockchain.

Daedalus Wallet

Developed by Cardano's teams, the Daedalus Wallet is a full-node wallet, totally decentralized that enable trusted operations and maximize the security. It also downloads a copy of the blockchain to validate every transaction made on the network. Other hardware wallet solutions support the custody of ADA tokens like Ledger and Trezor solutions.

ADA vs Ethereum?

Most of Cardano supporters believe that ADA is an advanced version of ETH, in the technology point of view, and that, in the future, it will displace the second market capitalization technology.

Yet, despite the strong team and ambitious projects, Cardano seems to be a bit late compared to its competitor since Ethereum is a wide ecosystem with various projects above its technology such as DeFi or NFT.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)			
Crypto	**Rank**	**Market Cap**	**Current Price**
Cardano	#7	EUR 39.3bn	EUR 1.23

Price chart

Source: CoinMarketCap

The concept behind Algorand

An ambitious team

ALGO's founder is a well-known mathematician and MIT professor which received various research awards including the **Turing Award for its work on computer science and cryptocurrency scene** such as Verifiable Random Functions and Zero-Knowledge Proofs.

How it works?

Algorand use Pure Proof of Stake, a consensus algorithm, which means that the Algorand network is secured by an honest majority of users. Two steps are required to create a block in the Algorand network.

During the proposal phase, a cryptographic algorithm randomly selects a token, whose owner can propose the next block. The identity of this person is revealed only when the information is propagated on the network. This implies that the selection has already been made before anyone can even consider interfering.

The voting phase requires a committee of 1'000 randomly selected token owners whose role is to approve the block. This committee is replaced each time - unlike PoW or PoS protocols - which makes targeted attacks impossible.

Thanks to this system, energy-intensive mining farms are not necessary. Truly innovative, Algorand guarantees scalability and decentralization of networks by using a very large group of randomly selected validators and a protocol that is adaptable to the needs of the community.

Algorand 2.0 developments

Algorand teams disclosed an updated version in November 2019 with significant updates on their project such as the introduction of Algorand Standard Assets (ASA), Atomic Transfers and Algorand Smart Contracts in layer one.

Algorand Standard Assets

ASA is a step forward for Algorand since it enables to digitize every kind of assets including certificates, securities or fungible assets. **This development allows the creation of fungible, NFT and other assets based on Algorand blockchain.**
This advance is quite different from Ethereum smart contracts, since Ethereum smart contracts lack of clear guidance about semantics on the various events related to ERC-20.

Atomic Transfer

Atomic Transfer is the fact that multiple transactions are either not at all executed or all at the same time. **Algorand's Atomic Transfer improves the way those transactions are executed mainly faster, less expensive and applicable to the new ASA technology.**

Smart Contracts

Thanks to Algorand high-performance and Pure Proof of Stake protocol, smart contracts are executed nearly instantly and at a reduced cost.
A strong advantage against the current state of Ethereum protocol, which is overloaded.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)			
Crypto	**Rank**	**Market Cap**	**Current Price**
Algorand	#40	EUR 3.6bn	EUR 1.22

Price chart

Source: CoinMarketCap

AAVE

The story behind Aave

Aave is one of the leading DeFi project whose objective is to disrupted the actual financing environment by allowing their users to borrow, lend and earn interests on crypto assets without intermediaries.

A growing DeFi environment

Borrowing and lending assets are core activities to every modern financials environment since it enables growth and create opportunity. **Lending creates opportunity to earn safe and regular return on their capital, while borrowing enables the access to leverage to realize bigger projects.**

Developers in the crypto environment acknowledged this need for such products and created «crypto money markets». Aave is a main player of these marketplaces either in term of success and size.

Difficult beginnings

Aave's project is born in 2017 under ETHLend name. Despite an innovative idea and a functional platform, the project lost traction through 2018-2020 bear market. **Facing a lack of liquidity resulting in difficulties to meet loan demand, the team decide to improve their project through the bear market, improving the overall service and switching names from ETHLend to Aave.**

Aave projects has grown within the actual bull market from one of the few DeFi projects to one of the largest platform, in size and success, with currently more than 20+ cryptocurrencies available and lending APY reaching 22%.

The concept behind Aave

A decentralized platform

Aave is now a fully decentralized protocol that operates as a money markets algorithm, meaning credit came from a pool of investors as opposed to a centralized lender.

Interest rate charged vary depending on the «utilization rate» of the currency in the pool (the supply and demand law). If almost every assets in a pool are used in loan contracts, the interest will increase to attract liquidity investors to deposit more capital. On the other hand, if a pool is mainly not used, the interest rate will decrease to entice borrower on those cryptocurrencies.

Using collaterals to protect the lender

Like what was done in the past with ETHLend, Aave apply overcollateralized principle to protect lenders in downturns. In other words, when someone want to borrow USD 200 of a crypto asset (i.e., ETH or LINK) through Aave protocol, they need to deposit more than this amount.

Facing 2021 crypto volatility, Aave create a liquidation procedure. If the collateral provided, to borrow an amount of crypto currency, falls below the collateralization ratio, the collateral will be liquidated, and a fee is charged.

Therefore, unrelated to your ability to pay back your loan, you can lose your collateral due to market movements.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)

Crypto	Rank	Market Cap	Current Price
Aave	#30	EUR 4.8bn	EUR 382.72

Price chart

Source: CoinMarketCap

COMPOUND

The story behind Compound

A Ethereum based protocol

Lend, borrow and earn interest on cryptocurrencies is possible thanks to Compound protocol, your ETH wallet and some cryptos.

With around USD 15bn worth assets through their protocol, Compound enables value creation through interest earning for investors in 10 markets and everything without intermediaries.

Without any doubts, Compound protocol has been built to become the new way of financing in the growing DeFi environment.
More specifically, Compound is a money market protocol that uses smart contracts to automatize the management and storage of capital added in the platform.

Through a simplification of their access, Compound enables anyone with an internet connection and a crypto wallet, such as Metamask, to access their platform and earn interests.

Why Compound is worth looking at?

Thanks to their algorithm and protocol Compound adjust borrowing and landing depending on the supply and demand on the platform. In addition, COMP holders have the power to adjust the interest rates based on votes.

Moreover, suppliers and borrowers of funds face directly the protocol which manages both the need of collateral and the interest rate. Everything is done without intermediaries as assets are gathered in liquidity pools.

The concept behind Compound

Tracking supply with cTokens

To follow every supplied assets and every individual that has supply the protocol, Compound use an ERC-20 token with the form cTokens (i.e., cETH, cDAI). Those tokens represent the portion of an asset pool an investor supplied the protocol.

For example, when you deposit ETH, you will receive cETH representing the same proportion that you invested in the pool. Then you will earn interests based on the cETH interest rate. As the borrowing demand increase, your cETH earn more interest and you can then convert it into more underlying asset in our example ETH.

Lending - How it works?

To lend some crypto assets you just have to supply your tokens on the Compound platform. You will receive, in exchange, your converted cTokens and started immediately to earn interests. You just have to lend a specific asset to earn its specific interest rate.

Borrowing - How it works?

In order to borrow a specific asset, you have, first, to deposit a certain amount of funds which will stands as your collateral. Then you will receive «Borrowing Power» which represent the amount of crypto assets you can borrow.

The more you will deposit as collateral the more Borrowing Power you will receive and the more crypto asset you can borrow.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)

Crypto	Rank	Market Cap	Current Price
Compound	#45	EUR 3.2bn	EUR 630.16

Price chart

Source: CoinMarketCap

⋀⋀ MAKER

The concept behind Maker

Between DAI and MKR, a DeFi ecosystem

MakerDAO is the organization above DAI, a new stablecoin and MKR, the ecosystem's governance token.

Build on Ethereum protocol, Maker's protocol aims to lend and borrow crypto assets through smart contracts using their stablecoin and managing the value of loans thanks to MKR token.

Due to high price volatility in the cryptocurrency environment the borrowing of crypto with crypto was tricky since the price borrowed was fixed but the amount to pay back can be different over the short term.
Hence MakerDAO create their protocol using a stablecoin to let anyone borrow money and have a clear view of how much borrower will have to pay.

Clear success in the DeFi environment , MakerDAO protocol has attracted more than 2% of ETH supply as collateral for their loans.

How it works?

Using some ETH, a Metamask wallet and MakerDAO protocol, investors can lend themselves money as a loan of DAI.

By stacking some ETH in Maker's smart contracts, anyone can create several DAI tokens (more ETH staked, more DAI created), representing the loan amount. When users want to unlock their ETH (collateral), they only pay back the loan and some additional fees.

How Maker is different?

How to ensure borrowers will pay back?

MakerDAO use the liquidation system to align interests and in a way force borrowers to pay back their loans. When the collateral value drop bellow the DAI amount borrowed, ETH tokens, considered as collateral are sold to repay the loan, fees and penalties.

The liquidation threat ensure a stable system since it prevents borrowers to take too high loans compared to their collateral.

MKR token, governance and last resort actors

MKR is a standard ERC-20 token, with a price subject to market volatility. It is used to manage the fluctuation of the Dai price, as well as to pay the platform's user fees.

It has also the role to define the weight that some users will have during the votes set up. The more MKR tokens you have, the more your choice will weigh in the balance.

Last, MKR token enters in action when collateral prices, especially ETH, crashes and a large amount of loans are liquidated. When this situation occurs, MKR are created and sold to payback the loans liquidated. **Fees and liquidation penalties are then paid in MKR, and the protocol uses those proceed to buyback MKR, which are burned and then destroyed.**

According to MakerDAO organization, there should be always enough value hold in MKR to face those kind of events.

Current trading

Crypto	Rank	Market Cap	Current Price
Maker	#34	EUR 4.3bn	EUR 4'295.62

Price chart

Source: CoinMarketCap

COSMOS

The story behind Cosmos

2017

Cosmos and its token ATOM go live with USD 17 million raised in less than half an hour after its listing.

The large-scale cryptocurrency project goes live during the 2017's bull run, thus taking advantage of the boiling market at the time. The potential scalability and use of Cosmos' blockchain is seen by investors.

2019

Cosmos mainnet is officially launched in March 2019.

The first project «Kava Labs» is also built on the Cosmos blockchain, a foundation stone for the Cosmos ecosystem since it will drive other developers.

2020-2021

Cosmos organize its growth thanks to partnerships with Nym, a new generation privacy infrastructure provider, to have more anonymous credentials on the ecosystem.

Beginning of 2021, Cosmos launched Stargate, a set of upgrades to improve their project. Cosmos blockchains will start connecting each other thanks to inter-blockchain communication (IBC)

The concept behind Cosmos

Internet of blockchains

Cosmos project aims to develop an «Internet of Blockchains» through an improvement of interoperability (ability to exchange and make use of information).

Currently, a blockchain acts as an isolated world without any communication and interaction between the various ecosystems. This lack of communication have result in tribalism, bickering and «protectionism» within the supporters of different projects.

Cosmos project want to change this by uniting all ecosystems thus becoming the «Internet of blockchains».

Advanced technology

Cosmos project is based on 3 technologies which are Tendermint, Cosmos SDK and Inter-Blockchain Communication protocol.

Tendermint is the open-source software that enables to achieve the Byzantine Fault Tolerance (BFT), while being decentralized at the same time. BFT principle is that a network will continue to operate securely and will achieve consensus despite some actors involved have failed the process.

Cosmos SDK and IBC are respectively tools to build application on top of the cosmos blockchains (created thanks to Tendermint) and the system to communicate between different blockchain.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)			
Crypto	**Rank**	**Market Cap**	**Current Price**
Cosmos	#33	EUR 4.4bn	EUR 20.81

Price chart

Source: CoinMarketCap

UNISWAP

The story behind Uniswap

A leading Defi project

Ethereum-based decentralized exchange, Uniswap aims to swap (exchange) ERC20 tokens with other cryptocurrencies.
The UNI tokens has been launched in September 2020, through a massive airdrop to people that had used the protocol before September 2020.

Like what Compound and Aave offer, Uniswap is a decentralized exchange meaning that they offer liquidity to borrower thanks to crypto money deposited by lenders. **They also offer insurance and derivates as well as a various other products on nearly 50 cryptocurrencies.**

Fixing issues ... but creating new ones

As every DeFi protocol, Uniswap aims to solve centralized exchange issues, such as Binance or Coinbase, with for example the risk of counterparts holds by the centralized exchanges or the risk of hacking and then the potential lost of tokens.

On the other hand, a Decentralized exchange create its own problems. Indeed, since there isn't central third part between the borrower and the lender, the lack of liquidity is the key problem of Uniswap since the offer of crypto asset (lenders) does not meet the demand of loans.

Uniswap has developed a solution by enabling their exchange to swap tokens without needing buyers and seller's liquidity.

The concept behind Uniswap

What is so special about Uniswap?

Uniswap main difference with other DeFi exchange is their pricing mechanism. Indeed, Uniswap uses the as called «Constant Product Market Maker Model».

Every fund, whatever their token, can be added to Uniswap, and will be considered as an equivalent value of ETH. For example. If you need to swap an unknown altcoin, let's say James Token, you will create a new Uniswap smart contract for James Token and a liquidity pool will be created with EUR 10 worth James Token and EUR 10 worth of ETH.
The main difference with other DeFi protocol is that Uniswap uses a constant equation explain as $x * y = k$ (with x the quantity of ETH, y the quantity of our specific token and k a constant).

When someone buys James Tokens with ETH, the supply of James token decrease and the supply of ETH increase, therefore the price of our specific token increase.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)

Crypto	Rank	Market Cap	Current Price
Uniswap	#11	EUR 18.2bn	EUR 34.74

Price chart

Source: CoinMarketCap

YEARN.FINANCE

The story behind yearn.finance

A robot to find the best investment yields

year.finance is a DeFi projected developed on the Ethereum protocol and applicable to every ETH-based token.
The protocol aims to automate yield farming strategies and enables investor to find the best yield available on the Ethereum DeFi world.

Despite only few months of existence, the protocol made its marks and has become one of the most efficient protocol on its market. In other words, YFI protocol can be considered as the robot that allows to find the best yield in DeFi projects.

YFI (yearn.finance's governance token) has experienced an incredible success as it rallied from a USD 3 token to more than USD 30'000 in less than a month.

New products, using Vaults to yield farm

The protocol began with products named Vaults. It enable investor, whatever their size to deposit crypto assets and earn yields, defined as the most interesting on the market.

When launched in last July, YFI protocols only offered Vaults on stablecoins but with the increase in demand, it moved to other crypto assets such as tokenized Bitcoin, Chainlink and other well-known cryptocurrencies.

Use of Vaults is quite interesting since it avoids the issue of high-cost transaction linked to the Ethereum protocol. With this idea, only one account pays the gas to yield farm (vs every investors paying the gas).

The concept behind yearn.finance

Building other services

Along Vaults, yearn.finance has built other services like what is done in the Defi ecosystem:

Earn service, provide a similar service such as Vaults but a bit slimmed-down and only supports tokenized Bitcoin and stablecoins.

Zap, on the other hand, provide a swapping services as it is done with Uniswap or Aave between traditional stablecoins and liquidity providers.

yearn.finance also works currently in two services which are quite innovative: A decentralized insurance protocol to protect DeFi users, named yInsure and a facilitated and decentralized lending and borrowing protocol name StableCredit.

DeFi but still centralized

YFI protocol is part of the DeFi ecosystem and aims to become a financial provider protocol that is totally decentralized.

However, in practice its success have been driven by a well known DeFi architect, named Andre Cronje, who became a mastermind behind the project. To that extent, investor are focus on every move Cronje could do and say, making the project centralized around a key player.

This effect has mainly impacted the project when Cronje said he wanted to move out the DeFi space, with YFI price crumbling down behind fears of shutting down the project.

Current trading

KEY FIGURES (AS OF MAY 6TH, 2021)			
Crypto	**Rank**	**Market Cap**	**Current Price**
yearn.finance	#72	EUR 1.6bn	EUR 44'958.02

Price chart

Source: CoinMarketCap

![FILECOIN logo] **FILECOIN**

The story behind Filecoin

A peer-to-peer cloud marketplace

Filecoin is a digital infrastructure provider, which built its technology on a blockchain to compete with centralized platform such as Amazon S3 or DropBox.

Filecoin enables anyone having a computer to sell and buy storage on the FIL network with their own prices and contracts. It changes the way digital infrastructure are made since you do not need to trust one company with a lot of centralized data, creating a data default risk.

Willing a more decentralized world, Juan Benet, Filecoin's founder, created this project using the blockchain technology to store data in every network participants.

With USD 250M raised during their ICO in 2017, Filecoin was for sure one of the rising project in the decentralized world. Their mainnet was launched in 2020.

Filecoin success will appear as its cloud storage capacity grow. Often considered as the Airbnb for cloud storage, the project grow fast, indeed one month after the launched of their mainnet, more that 1.1 million terabytes of storage was available on their platform, representing more than 300 millions HD movies.

The concept behind Filecoin

How it works?
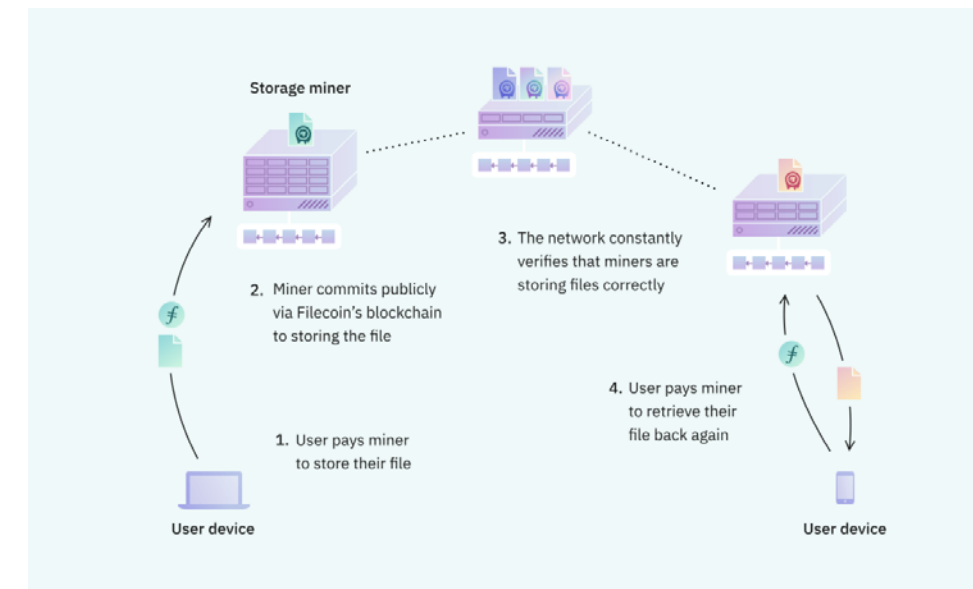
Source: CoinMarketCap

Everyone with free storage available on their computer can become a storage miners, who will be responsible for storing someone else data on the network.

Filecoin has a highly-secured encryption, and storage providers do not have access to any information they may store. As the Bitcoin's blockchain, the information in the Filecoin blockchain is distributed in multiple storage locations.

The fact that Filecoin use peer-to-peer cloud storage is a clear differentiator for customers. Indeed, it reduces the risk of loosing data if there is an unfortunate event and the price vary depending on the storage space available.

Current trading

Crypto	Rank	Market Cap	Current Price
Filecoin	#18	EUR 9.1bn	EUR 131.08

Price chart

Source: CoinMarketCap

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