Crypto Playbook

Rohas Nagpal

Money is the most universal and
most efficient system of mutual trust
ever devised.

Even people who do not believe in the
same god or obey the same king
are more than willing to use
the same money.

Yuval Harari

Rohas Nagpal

Rohas Nagpal is an author, amateur boxer, Blockchain architect, and retired hacker.

To add more logic and math to crypto price predictions, he has developed the Crypto Asset Valuation Engine (CAVE).

Currently, he is the Chief Blockchain Architect of the **Hybrid Finance (HyFi) Blockchain**.

He writes weekly columns for **NDTV** and **Mint**.

He also conducts the free **Blockchain ADDS** (Administration, Design, Development and Security) course.

Legal stuff

I have to tell you this. My scary lawyers insist….

Images courtesy: Unsplash, Pixabay.com, Freepik.com

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Part A
The Basics

1. What are blockchains?

A blockchain is typically a bunch of computers (nodes) connected to each other. All of these computers contain the same information (e.g. a ledger of transactions).

Let's say Svetlana borrows 10,000 rupees from me. She is supposed to return it in a week but doesn't. I remind her but she has conveniently "forgotten" about it. What can I do? Nothing, except never lending her anything ever again!

Now suppose, at the time of lending the money, a few friends are present. They all clicked a pic or shot a video of me lending Svetlana the money and her promising to return it in a week. And each of these friends posts the pic / video on Instagram, Facebook, etc. Now that is solid evidence. And Svetlana can't really delete all these videos / pics from the Internet.

Now that's something like a blockchain.

A blockchain is typically a bunch of computers (nodes) connected to each other. All of these computers contain the same information (e.g. a ledger of transactions). To "hack" this information, you will need to "hack" most of these computers at the same time. And that's a pretty tough thing to do!

There are many blockchains in the world. The Bitcoin Blockchain is the first and oldest one. It records all transactions of the bitcoin cryptocurrency. Anyone can run a node of this blockchain. All you need is a computer with enough storage space and a strong Internet connection.

Some of the most popular blockchains are:
1. Algorand
2. Avalanche
3. Binance Smart Chain
4. Cardano
5. Celo
6. Ethereum (Mainnet)
7. Fantom

8. Flow
9. Polkadot
10. Polygon
11. Solana
12. Stacks
13. Stellar
14. Terra
15. Tezos
16. Waves

For more on each of these blockchains, see:
https://rohas.substack.com/p/introduction-to-16-public-blockchains

Algorand ALGO	Avalanche AVAX	Binance Coin BNB	Cardano ADA
Celo CELO	Ether ETH	Fantom FTM	Flow FLOW
Polkadot DOT	Polygon MATIC	Solana SOL	Stacks STX
Stellar XLM	Terra LUNA	Tezos XTZ	Waves WAVES

For a deep-dive into Blockchain technology, you may find these resources useful:

Video on "Blockchain Basics":
https://youtu.be/O535GIscUxo

Video on "Introduction to Ethereum":
https://youtu.be/cF-Io_SmSj0?t=84

Video on "Introduction to 15 Public Blockchains":
https://youtu.be/oSGOfcePjKw?t=73

"How to send an email to an Ethereum address":
https://rohas.substack.com/p/how-to-send-an-email-to-an-ethereum

2. What Are Cryptos?

A Blockchain can have 1 or more "smart assets". Calling these assets cryptocurrencies is not accurate because all blockchain smart assets do NOT work as currencies.

The Indian law calls them "virtual digital assets". I prefer to simply call them "Cryptos".

There are 9000+ Cryptos being actively traded in 450+ exchanges across 50,000+ market pairs.

Based on my analysis, Cryptos can be divided into 11 categories:

R = Ready money e.g. Bitcoin (BTC)
O = Open Blockchain Tokens e.g. Wrapped Asset Token (WRAP)
H = Hush / privacy coins e.g. Monero (XMR)
A = Application coins e.g. Filecoin (FIL)
S = Security tokens e.g. Exodus
N = Non-Fungible Tokens (NFTs) e.g. Crypto Kitties
A = Algorithmic stablecoins e.g. Frax (FRAX)
G = Governance tokens e.g. Uniswap (UNI)
P = Public Blockchain natives e.g. Ether (ETH)
A = Asset-backed tokens e.g. Tether (USDT)
L = Lending / Borrowing cryptos e.g. Aave (AAVE)

I will go deeper into these 11 categories in the next lesson.

For now, let's understand how Cryptos are created. There are 2 common ways of creating Cryptos. One is the style used by Bitcoin and the other is the style used by Ethereum tokens.

Bitcoin-style Cryptos

In the Bitcoin-style, there are a bunch of computers / entities called miners who are constantly trying to solve mathematical puzzles. Roughly every 10 minutes, one of these miners wins this race to solve the puzzle.

This miner wins a reward which is currently 6.25 bitcoins. That's about $240,000. Yes, you read that right. Every 10 minutes there is someone getting $240,000 worth of bitcoin.

But don't get too jealous. Mining is a very expensive operation and requires tons of money to be spent on computers and electricity. And you can never be sure how much you will actually end up earning.

Many years ago anyone could mine or create bitcoins using a laptop! Well, not anymore. Today you need a ton of computing power for this.

Another thing to remember is that in most Bitcoin-style Cryptos, there is no "pre-mining". This means that no Cryptos are created upfront and distributed to the project founders. The blockchain starts with 0 Cryptos and new Cryptos are "created" and earned by miners.

Ethereum-token style Cryptos

In the Ethereum-token style, you can create your own Crypto in minutes.

My daughters were quite fed up hearing about dog-themed Cryptos. So they decided to create their own cat-themed Crypto. All they needed to do was customize a smart contract and 'publish' it to the Ethereum blockchain.

That's it! In a few minutes, they had created a new Crypto with a supply of 7 billion - roughly one for each human on Earth. True story.

There are some other styles of Cryptos also, but that's a story for another day.

3. The 11 types of Cryptos

There are 9000+ Cryptos being actively traded in 450+ exchanges across 50,000+ market pairs.

Based on my analysis, Cryptos can be divided into 11 categories:

1. Ready money

Ready money Cryptos are those that can be used to buy and sell stuff or which can be quickly converted to 'cash'.

Examples: Bitcoin (BTC), Bitcoin Cash (BCH), Litecoin (LTC), and fiat-pegged stablecoins such as Tether (USDT).

2. Open Blockchain Tokens

An Open Blockchain Token (OBT) is a unique form of crypto recognized under the laws of Wyoming, US. An OBT must be exchangeable for specified consumptive purposes services e.g. software, content, or real/tangible personal property.

Example: Wrapped Asset Token (WRAP)

3. Hush coins

Did you know that Bitcoin isn't 100% anonymous? All its transactions are recorded on its publicly available Blockchain. That's what led to the birth of hush coins or privacy coins - some of which are private by default, while others let the users decide if they want to activate the functionality or not.

Example: Monero (XMR)

4. Application coins

Application coins are those which are part of a specific use case. Example: Filecoin (FIL) is the native Crypto of the Filecoin network. It can be used to pay miners to store/distribute data and to retrieve information. Storage providers guarantee a minimum service level by providing FIL as collateral.

5. Security tokens

Security tokens are like equity shares and represent ownership of a company.

Example: Exodus

6. Non-Fungible Tokens (NFTs)

Non-Fungible Tokens (NFT) are the Crypto versions of things like art and real estate. They are used as digital proof-of-ownership of the underlying asset. NFTs can be of many types, including art, collectibles (trading cards, sneakers), domains, virtual game items (avatars, skins, weapons, etc).

Example: CryptoKitties

7. Algorithmic stablecoins

Algorithmic stablecoins are Cryptos whose price stability is maintained by an algorithm. They are different from fiat-pegged stablecoins whose stability is maintained by the fiat currency they are pegged to.

Example: Frax (FRAX)

8. Governance tokens

Governance tokens give holders a vote in a project's development.
Example: Uniswap (UNI)

9. Public Blockchain natives

Using a public blockchain involves the payment of gas fees or transaction fees. This fee is payable in the native Crypto of that blockchain.

Example: Ether (ETH)

10. Asset-backed tokens

An asset-backed token or a Wrapped Asset is a blockchain token pegged to or collateralized by an asset such as art, gold, fiat currency, debt, equity shares, trade invoices, real estate, etc. It's called a "wrapped" asset or token because the original asset is put in a "wrapper" or "digital vault" that enables the wrapped version to be traded on a blockchain.

Example: Coffee coin

11. Lending / Borrowing Cryptos

These tokens make it easy for investors to borrow and lend funds in a Decentralised Finance market.

Example: Aave (AAVE)

4. Crypto addresses, keys, and wallets

The first thing to know is that cryptos are very different from other stuff that you invest in.

When you buy gold, you actually get coins (or bricks) of the shiny metal. You can keep these coins safe in… a safe!

When you buy a house, you actually get physical possession of it.

Crypto is very different. You don't really get anything physical. Your Crypto journey starts with a 'wallet'.

This is what a typical Bitcoin wallet looks like:

[private] =>
fa9af8856397ab2fcd0546cd248791ad9a3046aa3d49fddbdc380ccbce4a5527

[public] =>
03c3948b65fc5c86e74af384cd5ef965dc5bf0e940d7ecafd98dc75517a9d45efc

[address] => 1Mk13r5uu51F5jQ6yGuBPxkuZw91nM4MeY

[wif] => L5crYHJ3wP1KF88guJChXPDaqNJ6dS3WBv56JN1o491K7FdMtXdd

If you write this down on a piece of paper, it would be called a… paper wallet.

The **address** is similar to your bank account or UPI ID. Anyone can send crypto to your address. If you send crypto to the "wrong" address, it's gone forever!

Also, remember that the same address doesn't work for all cryptos e.g. a Bitcoin address won't work for Dogecoin.

The private key is what you would need to "sign" transactions i.e. to send crypto to someone else. If someone gets hold of your private key, they can transfer all your crypto to another address. This is what happens in most crypto 'hacks'.

Anything signed with your private key can be verified using your **public key**. The **Wallet Import Format (WIF)** is a shorter version of the private key. A crypto wallet is designed to:
1.   store your public and private keys,
2.   send and receive cryptos,
3.   Monitor 'balances', and
4.   interact with supported blockchains.

Usually, people store their crypto in **a mobile or web wallet**. That's a mobile app or web service that stores your keys and addresses.

A **hot wallet** is one that is connected to the Internet and is considered the most vulnerable to hacking. Examples include mobile wallets and crypto exchanges.

Metamask is a popular **browser-based** crypto wallet.

A **cold wallet**, on the other hand, is not connected to the Internet and is considered more secure. Examples include hardware wallets and paper wallets. There are many free services for generating paper wallets e.g. Future Money Wallet.

Paper wallets are inconvenient to use but are the safest option. Consider using them if you have a large amount of crypto to keep for a long period of time.

Hardware wallets are a little pricey and there's always the risk of losing or breaking them. I am speaking from experience!

Software wallets are free and very easy to use. But if you accidentally delete them, your crypto is gone forever. Again, I am speaking from experience! So remember to back up the seed phrase - a bunch of words that you can write down.

An example of a seed phrase is:
history lumber quote board young dove robust kit invite plastic regular skull
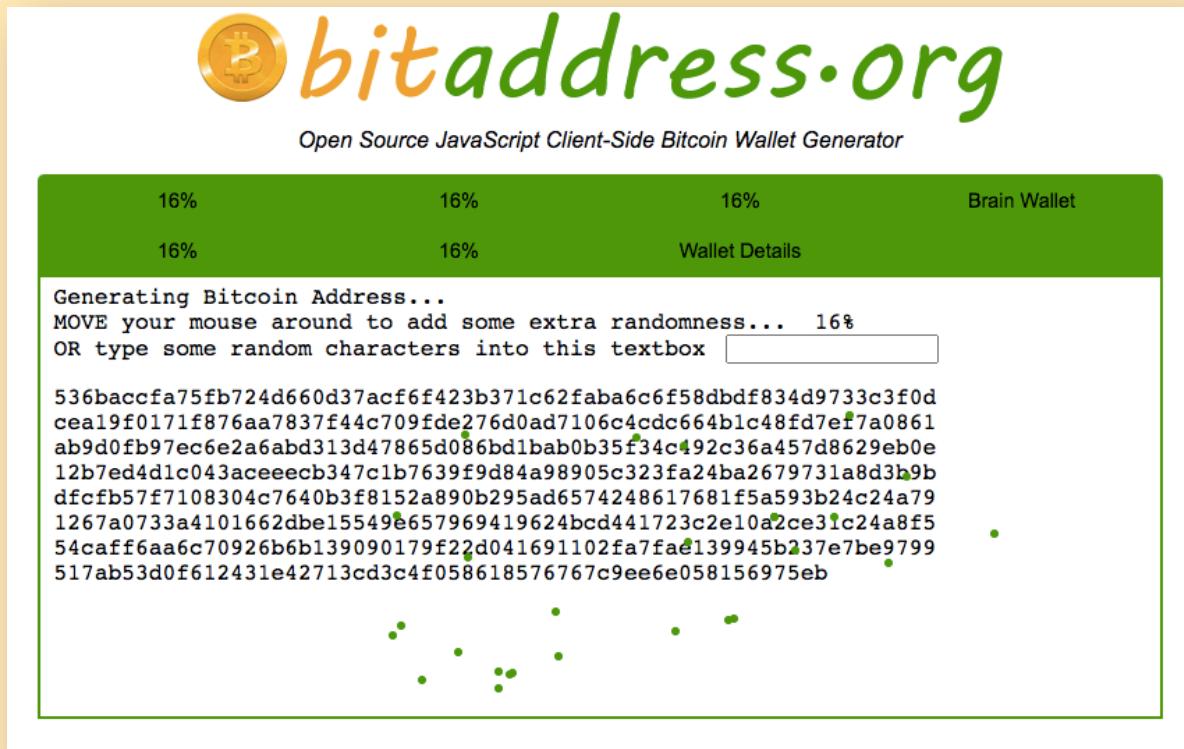
bitaddress

www.bitaddress.org is a JavaScript Client-Side Bitcoin Wallet Generator. It enables Bitcoin addresses and their corresponding private keys to be conveniently generated in a web browser.

Live site: https://www.bitaddress.org

To generate a Bitcoin wallet (which is a Bitcoin address and its corresponding Bitcoin private key), simply move your mouse randomly on the bitaddress page.

A wallet will be generated in your web browser. It will look something like this:

In the example above, your **bitcoin address** is:
1AHr3RDJS7v8ruFLbVoxXsgVeGqYqALqQ8

and your **private key** is:
Kytj7WpTKxtV7XnVLzv72BPpFRTwDi82NTmjUEKc9x1o8ctVHhrT

Together they constitute your wallet.

Things to remember:
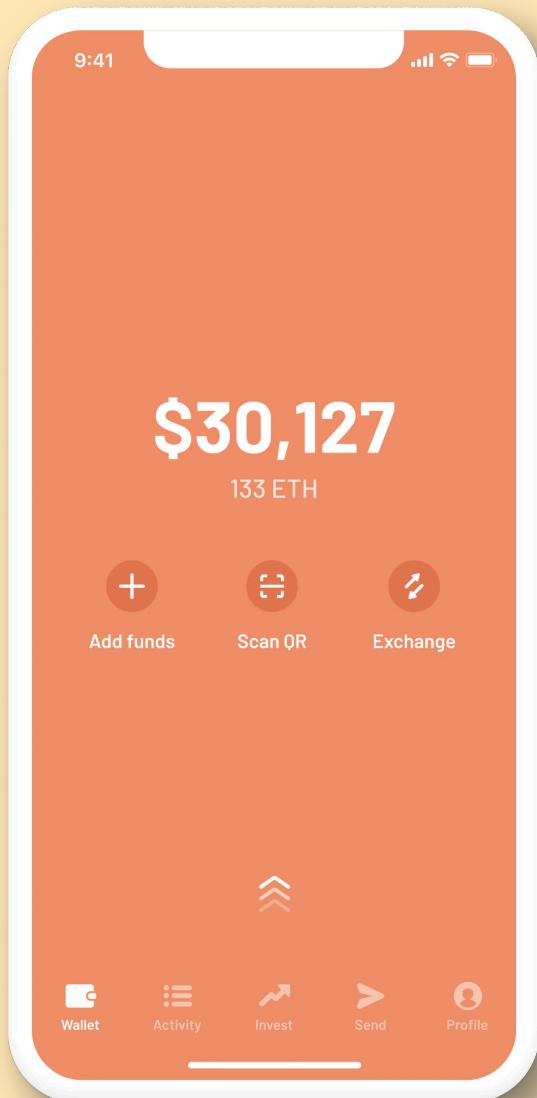
❑ To safeguard your wallet, you can print the Bitcoin address and private key.

❑ Remember to keep a backup copy of the private key in a safe location. If you print your wallet then store it in a zip lock bag to keep it safe from water. Treat a paper wallet like cash.

❑ If you leave/refresh the site or press the "Generate New Address" button then a new private key will be generated and the previously displayed private key will not be retrievable.

❑ Your Bitcoin private key should be kept a secret. Whomever you share the private key with has access to spend all the bitcoins associated with that address.

❑ You can add funds to this wallet by instructing others to send bitcoins to your Bitcoin address.

❑ You can check your balance by going to www.blockchain.com/explorer and entering your Bitcoin address.

❑ You can spend your bitcoins by downloading and using a bitcoin p2p client and importing your private key to the p2p client wallet.

Open source project

The bitaddress.org project provides an all-in-one HTML document with embedded JavaScript/CSS/Images. The JavaScript is readable not minified and contains no XMLHttpRequest's (no AJAX). The benefit of this technique is you can load the JavaScript locally and trust that the JavaScript did not change after being loaded.

Github repo
https://github.com/pointbiz/bitaddress.org
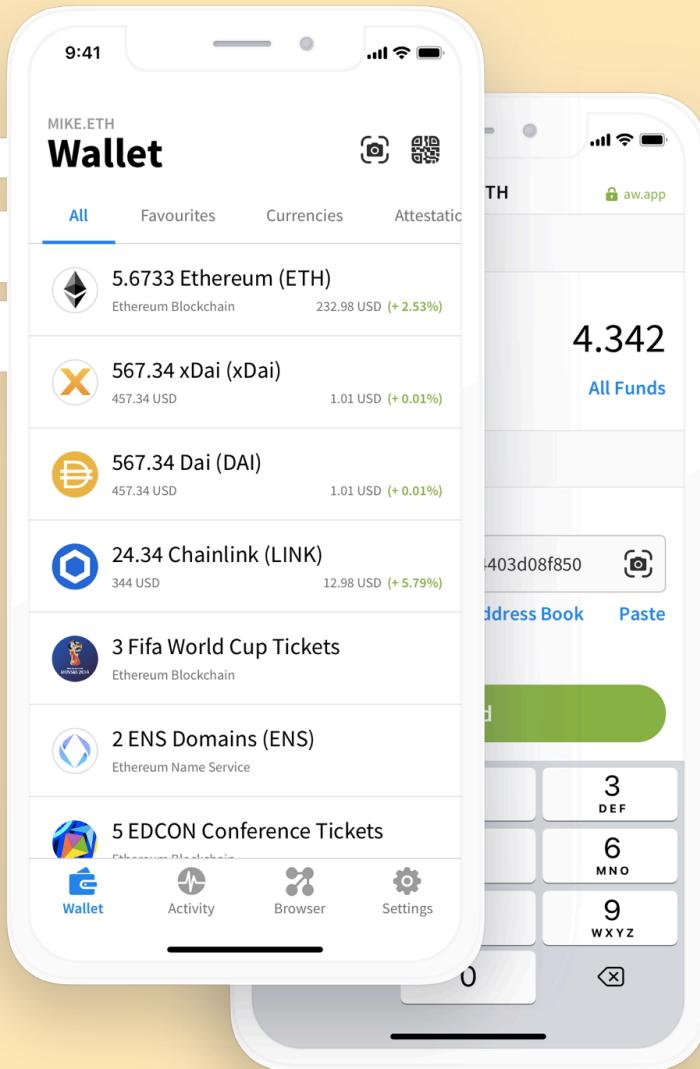
Argent

Argent is a crypto wallet that can be used to:
- store and send crypto,
- borrow crypto,
- earn interest, and
- invest.

https://www.argent.xyz
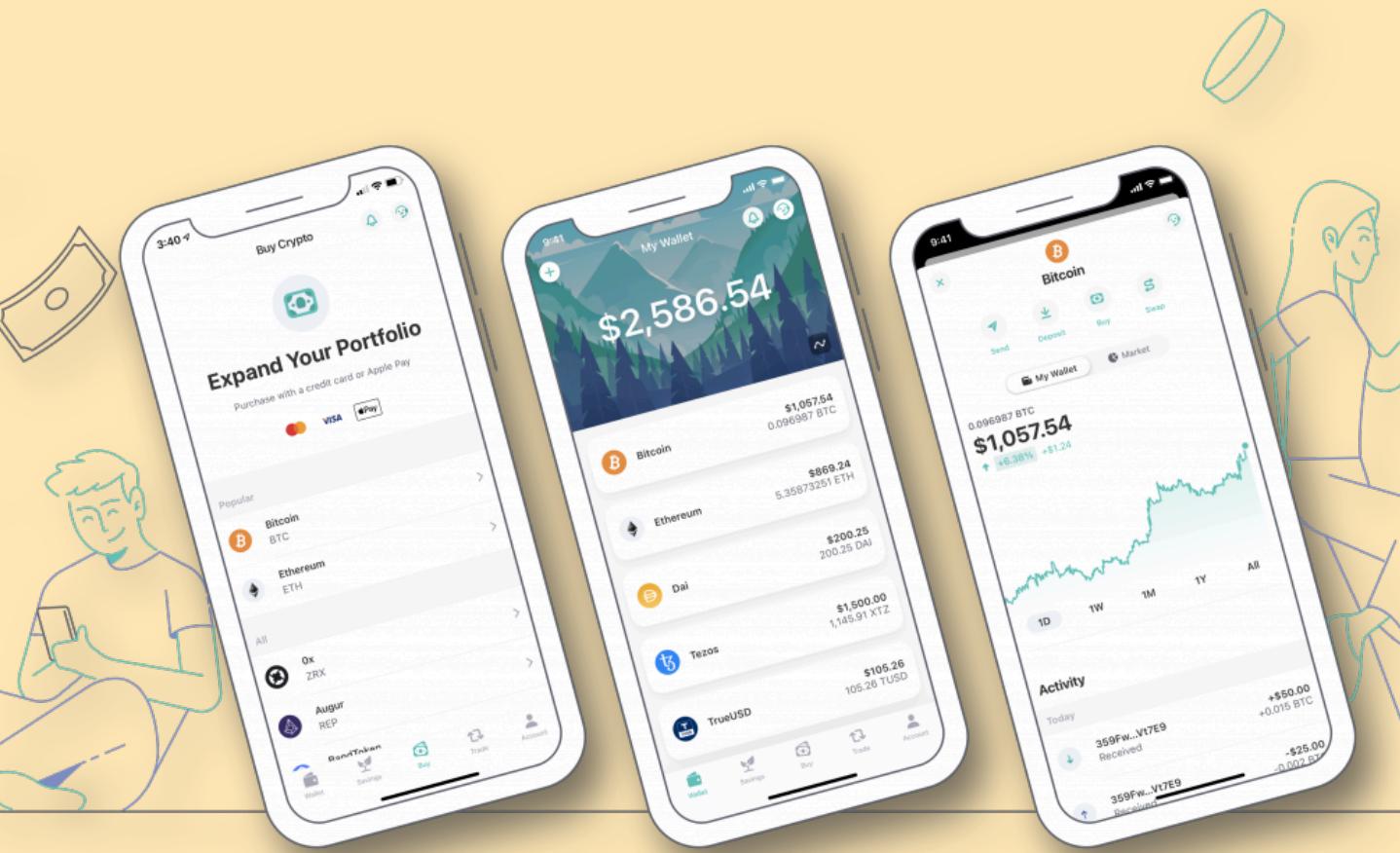
AlphaWallet

AlphaWallet is an open-source, production-ready and easy-to-customise white-label wallet.

https://alphawallet.com

ZenGo

ZenGo is the first keyless crypto wallet.

It uses facial biometrics instead of passwords, private keys and seed phrases. It also acts like a 'savings account' by making it easy to earn interest on your crypto holdings.

https://zengo.com
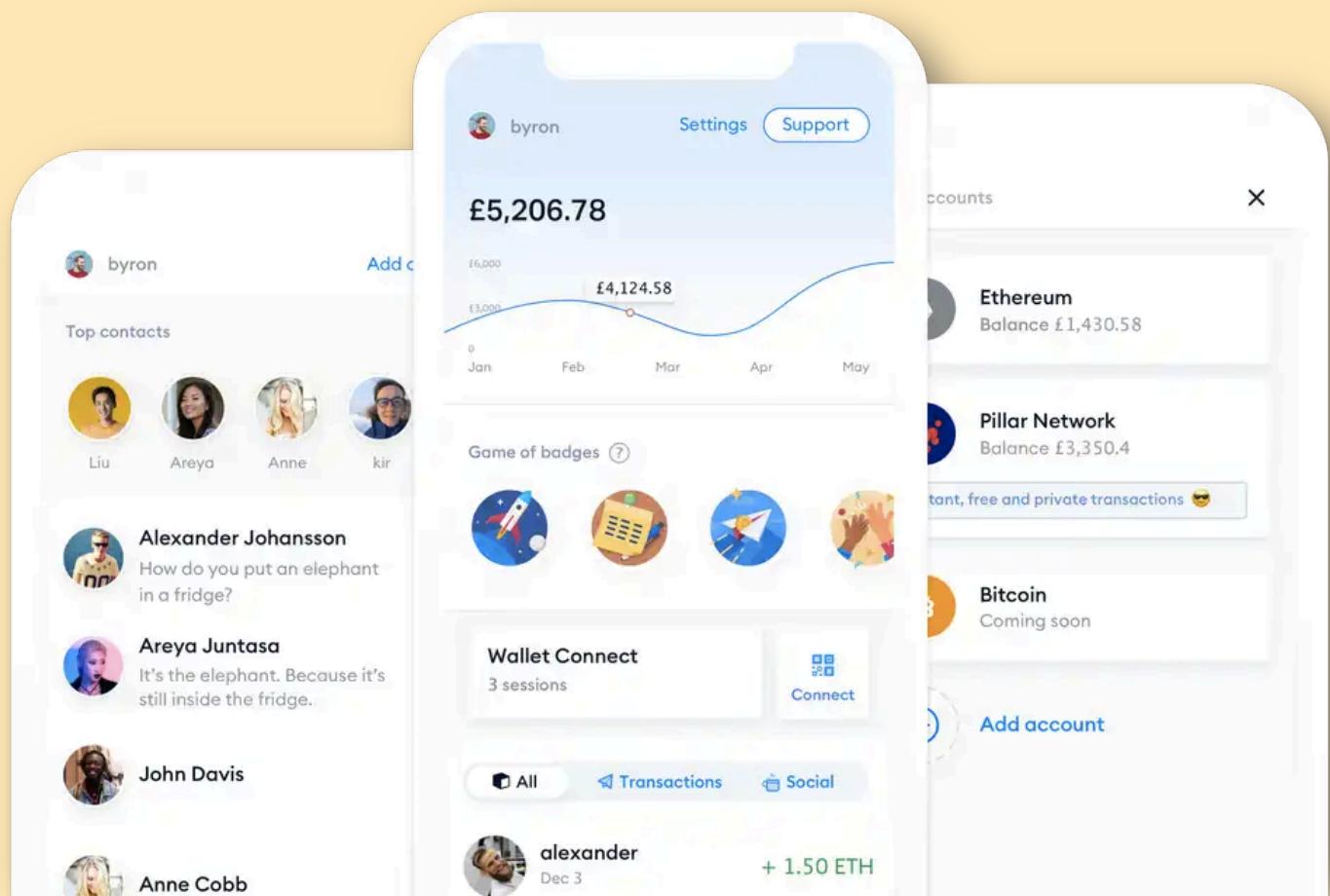
Pillar

Pillar is a non-custodial, community-owned wallet with its own L2 Payment Network.

Core features include:

❑ 100% encrypted chats with your contacts.

❑ Unlimited transactions without fees in any token.

❑ Buy crypto directly - USD, GBP and EUR available in the app.

❑ Pillar replaces alpha-numeric addresses with simple usernames.

❑ Pillar Offers Engine enables you to find the best deals to swap your Tokens, all in one place.

https://pillarproject.io

MyEtherWallet (MEW) is a free, client-side interface
for interacting with the Ethereum blockchain.

It can be used for generating wallets,
and interacting with smart contracts.
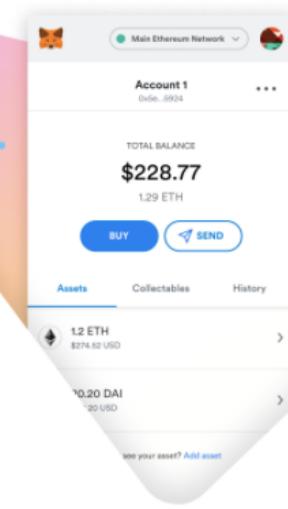
https://www.myetherwallet.com

MetaMask is a crypto wallet that is available as a browser extension and an app for Android and iOS. It can be used to buy Ethereum with a debit card or Apple Pay.

Key features include a key vault, secure login, token wallet, and token exchange.

https://metamask.io

Some of the features of Trust Wallet are:
- Buy Bitcoin in under 5 minutes.
- Easily earn interest on the crypto in your wallet.
- See your collectibles, art & non-fungible digital assets in one place.
- Exchange your crypto within the app.
- Track charts and prices within the wallet.

https://trustwallet.com

5. Common crypto scams

1. Blackmail
Victims receive an email claiming that their computer has been 'hacked' and the hacker has hijacked their web camera and recorded 'intimate' moments. The scammers then threaten to release the video online unless some Bitcoin is paid to them.

2. Fake Exchanges
A 'fake' exchange tricks investors by offering Bitcoin or other cryptos for a very low price. And then they steal your money!

3. Free Giveaways
Scammers offer free cryptos in exchange for a small 'registration fee'. Once you pay the fees, they vanish!

4. Impersonation
Scammers create fake social media accounts that impersonate famous people. These accounts are used to carry out a variety of frauds.

5. Malware
Many victims end up downloading malicious software and apps. These apps can change crypto addresses when they're copy-pasted from the victim's clipboard. The result - you end up sending crypto to the scammer's address instead of the actual person you want to pay.

6. Meet-in-person attacks
Never meet anyone in person to buy crypto. You could get robbed and even murdered! Scammers may also pay you in counterfeit currency in exchange for your crypto.

7. Phishing emails
Never engage with emails that ask for your seed phrase, private keys, or passwords. These emails may look authentic but remember that there is no legitimate reason for anyone to ask for your seed phrase, private keys, or passwords.

8. Phishing websites

People land up on phishing websites by clicking on links in fake emails and sometimes even through search engine results. These websites can steal your passwords and even fool you into installing malware.

9. Ponzi Schemes

Beware of schemes where you are offered a large guaranteed return in exchange for a small deposit.

10. Pyramid Schemes

Beware of 'pyramid schemes' which promise you high returns based on the number of people you invite into the crypto network.

11. Pump-and-Dumps

In a pump-and-dump scheme, scammers artificially 'pump' up the price of a crypto and sell it to unsuspecting victims. Once enough people have bought the crypto, the scammers disappear and the value of the crypto crashes to near-zero.

12. Scam coins and rug-pulls

While there are many great cryptos, there are also many scam coins. Be careful while investing in new cryptos. Check out the team, whitepaper, website, and other available information carefully before investing.

6. Don't invest in stuff you don't understand

This happened recently...

A crypto investor lost $500,000 after sending wrapped Ether (wETH) directly into a wETH wrapping smart contract address.

wETH came into existence as a way for Ether (ETH) to conform to the ERC-20 token standard so that it can be traded directly with altcoins minted on the Ethereum blockchain.

To wrap Ether, users first send ETH to the wETH smart contract address and receive an equivalent token in return.

However, to unwrap wETH, users must either swap for ETH on a decentralized exchange like Uniswap (UNI) or call the withdrawal function in the wETH smart contract.

Instead, the investor sent the wETH directly back into the wETH smart contract address in the hopes of receiving ETH back.

Unfortunately for the investor, this process is the equivalent of "token burning" and results in an irreversible loss of crypto. You read that right - the investor lost half a million dollars!!

How much of this did you understand?

If you said "Everything!", you are good to go and I wish you the best on your Crypto journey.

If not, please don't start investing just yet. Wait for a few more lessons :-)

7. Crypto Tax

This is an India-specific post. Please skip if it doesn't apply to you.

Many of you have asked me these questions on Crypto Tax:

1. How will Crypto profits be taxed?
2. Will free Cryptos from airdrops, L&E, P2E games be taxed?
3. Will I be taxed even if I don't sell my Crypto?
4. How will Crypto mining be taxed?
5. How will Crypto staking and lending be taxed?
6. Will Crypto exchanges deduct TDS?
7. Will salaries paid in Crypto be taxed?
8. Do I have to pay tax even if I use a DEX?
9. Do I have to pay tax even if I use a foreign Crypto exchange?
10. Do I have to pay tax even if I use a P2P marketplace?
11. What if I gift crypto to a friend?

I have answered these questions in my podcast:
https://omny.fm/shows/cut-the-cryp/how-will-your-crypto-be-taxed

8. Crypto Metrics

Crypto Metrics are numbers that investors use to decide whether to buy, sell or hold a crypto.

There are 9,000+ cryptos being actively traded across 400+ exchanges! This makes it hard to decide whether a cryptocurrency is worth investing in.

If you are a serious investor, you must know about the important crypto metrics.

The Basic Crypto Metrics are:

1. Supply metrics (Circulating, Maximum & Total)
2. Capitalization metrics (Market Capitalization & Fully Diluted Market Capitalization)
3. Volume
4. Price metrics (OHLC, ATH, ATL)
5. Holders' Statistics
6. Return on Investment
7. Total Value Locked (TVL)

1. Supply Metrics

Circulating Supply is the number of coins/tokens that are circulating in the market and are in public hands. Usually, the lower this number, the higher the prices are likely to be.

Examples: The circulating supply of Bitcoin (BTC) increases approx every 10 minutes as new bitcoins are generated with every block that is mined. The crypto with one of the highest circulating supplies is SHIBA INU with 394,796,000,000,000 SHIB.

Maximum supply is the maximum number of coins/tokens that will ever exist in the lifetime of a Crypto.

Examples: The maximum supply of Bitcoin (BTC) is 21 million while that of Ether (ETH) is unlimited!

Total supply is the number of coins/tokens that have been already created, minus coins/tokens that have been 'burned'.

Examples: In the case of Bitcoin (BTC), the circulating supply is equal to the total supply. Binance Coin (BNB) regularly 'burns' coins and this helps maintain its price.

2. Capitalization metrics

Market Capitalization is the total market value of a Crypto's circulating supply.

Market Capitalization = Circulating Supply x Current Price

Historically, Bitcoin (BTC) has always had the highest market capitalization and Ethereum the second highest. If this were reversed, it would be called the Flippening.

Fully Diluted Market Capitalization (FDMC) is the market capitalization if the maximum supply was in circulation.

FDMC = Price x Max Supply

If the maximum supply is unknown or unlimited, like in ETH, then:

FDMC = Price x Total Supply

If the maximum supply and total supply are both unlimited, then we can't calculate the FDMC.

3. Volume

Volume measures how much of a crypto was traded in the last 24 hours.

4. Price Metrics

Open-High-Low-Close prices (OHLC) means the open, high, low, and closing prices for a crypto for a particular time period - an hour, a day, or even a year.

All-time-high (ATH) is the highest price a crypto has ever reached.

All-time-low (ATL) is the lowest price a crypto has ever reached.

You should also check out the high & low prices over the last 24 hours, 7 days, 30 days, 90 days, and 52 weeks.

5. Holders' Statistics

You've probably heard of the term "whales". They are addresses that own more than 1% of the circulating supply of a crypto.

Some of the important metrics related to holders of crypto are:

1. The total number of unique addresses that hold assets in the network
2. Addresses that have been active over the last 24 hours and 7 days
3. Transactions carried out by the top addresses by balance

6. Return on Investment

Return on Investment (ROI) measures the amount of return on a crypto investment, relative to its cost.

ROI = Profit / Cost

7. Total value locked (TVL)

Total value locked (TVL) represents the total of all assets deposited in a Decentralised Finance protocol earning rewards, interest, new coins / tokens, fixed income, etc.

https://youtu.be/R_AkwnQQz1M?t=56

https://coinmarketcap.com

Defi Llama

Search DeFi protocols...

Total Value Locked (USD)
$194.44b

Total TVL
$194.44b +1.16%

	$360b
	$320b
	$280b
	$240b
	$194.44b
	$160b
	$120b
	$80b
	$40b

Jun   2021   Jun   2022

Change (24h)
1.16%

Curve Dominance
9.12%

Staking ⊗   Pool2 ⊗   Borrows ⊗   Offers ⊗   Treasury ⊗   ✓ Double Count ⊗

TVL Rankings   All   Ethereum   Terra   Fantom   BSC   Avalanche   Solana   Tron   Others ⌄

	Name		Chains ⓘ	1d Change	7d Change	1m Ch
	1	Curve (CRV)	🔘🔴🔵🔵🔘🔘🔘🔴	+0.41%	-3.06%	-8
	2	MakerDAO (MKR)	🔘	+1.11%	-7.47%	-14
	3	Lido (LDO)	🔘🔘⬛🟠	+5.08%	-6.79%	+32
	4	Convex Finance (CVX)	🔘	-0.08%	-0.69%	-8
	5	Anchor (ANC)	🔵	+2.36%	+3.05%	+45
	6	AAVE (AAVE)	🔘🔴🟣	+1.71%	-7.23%	-15
	7	WBTC (WBTC)	🔘	+2.81%	-8.34%	-9
	8	Uniswap (UNI)	🔘🟣🔵🔴			-1
	9	Multichain (MULTI)	🔵🔴🔘🔘🔘🔘🟣➕🔘🔘+4	-0.74%	-16.70%	-11
	10	Compound (COMP)	🔘	+1.03%	-11.44%	-13
	11	PancakeSwap (CAKE)	🔘	+0.86%	-7.85%	-11
	12	Instadapp (INST)	🔘	-0.29%	-4.27%	-41

https://defillama.com

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Crypto Marketcap ($ billion)

1742   0.40% ↑

$ 1742 billion
Market Cap

$ 89 billion
Total 24h Volume

Markets   Fear & Greed   ☆ Learn

Crypto Velocity
As on 8-March, 09:59 UTC

BCH	GALA	SUSHI	BAL	SAND	CRV
67	47	37	16	20	22

HyFi Nodes
Location of active Haddock nodes

Dominance
As on 8-March, 09:59 UTC

Others   BTC   ETH

1   1

FUTURE Indexes
Over the last 2 hours (PDT / PST)

Future Indexes

— Currency   — DAO   — DeFi   — GaMe   — Web3

HyFi Tokens

HyFi Tokens provide liquidity on the HyFi network of Blockchains.

↻ Details

FUTURE Currency Index

DATE	TIME	VALUE
7-March	23:10	107.22
7-March	23:20	107.08
7-March	23:30	107.26
7-March	23:40	107.60
7-March	23:50	108.33
8-March	00:00	107.98
8-March	00:10	108.18
8-March	00:20	108.37
8-March	00:30	108.51
8-March	00:40	109.19
8-March	00:50	109.11
8-March	01:00	108.69
8-March	01:10	108.72
8-March	01:20	108.74
8-March	01:30	108.98
8-March	01:40	109.17
8-March	01:50	109.01
8-March	02:00	109.16
8-March	02:10	108.88
8-March	02:20	108.82

FUTURE DAO Index

DATE	TIME	VALUE
7-March	23:10	105.99
7-March	23:20	105.79
7-March	23:30	106.05
7-March	23:40	106.39
7-March	23:50	106.96
8-March	00:00	106.76
8-March	00:10	106.84
8-March	00:20	107.08
8-March	00:30	107.52
8-March	00:40	108.32
8-March	00:50	108.35
8-March	01:00	107.83
8-March	01:10	107.83
8-March	01:20	107.89

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Messari provides reliable data and market intelligence for crypto investors and professionals.

| ROI | ⚙ | Top Assets | DeFi | Smart Contract Platforms | Currencies | Stablecoins | > |

Mcap: $1.71T   ROI: +1.34%   BTC dominance: 42.93%

#	NAME	PRICE	▼ MCAP	24H
1	Bitcoin	$38,810.49	$735B	+1.66%
2	Ethereum	$2,573.16	$308B	+1.80%
3	Tether	$1.00	$79.72B	-0.10%
4	BNB	$384.37	$63.38B	+3.01%
5	USD Coin	$1.00	$52.83B	-0.03%
6	XRP	$0.724	$34.67B	-2.39%
7	Terra	$81.31	$29.80B	+1.13%
8	Cardano	$0.806	$27.09B	-0.81%
9	Solana	$83.45	$26.73B	+1.48%
10	Avalanche	$72.07	$19.16B	-1.63%
11	Binance USD	$1.00	$17.95B	-0.02%
12	Polkadot	$16.75	$16.53B	+2.50%
13	Dogecoin	$0.119	$15.75B	-0.67%
14	TerraUSD	$1.00	$13.75B	+0.07%
15	Shiba Inu	$0.0000233	$12.74B	+1.23%

https://messari.io

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9. The myth of Crypto decentralization

A lot of people swear by the importance of decentralization in the blockchain & Crypto world. But how decentralized is Crypto?

As of mid-February 2022, there are over 17,500 cryptos and the total market capitalization of Cryptos is around $1.9 trillion. Of this, the share of the top 5 cryptos by market capitalization is:

- Bitcoin (BTC): 41.8%
- Ethereum (ETH): 18.8%
- Tether (USDT): 4.1%
- BNB (BNB): 3.6%
- USD Coin (USDC): 2.8%

The top 5 cryptos account for more than 71% of the entire crypto market!

Now, let's see how decentralized the top 5 Cryptos are.

1. Bitcoin

Bitcoin transactions are "confirmed" by miners using a process called 'proof of work'.

Bitcoin's 'hash rate' is the amount of computing and processing power in the network. If malicious miners get 51% of the hashing power, they could cause devastating problems such as:

- double-spending coins, and
- preventing certain transactions from being verified.

According to statistics from btc.com, over the last 1 year, this is the hash rate share of the top 5 mining pools:

- AntPool: 15.16%
- F2Pool: 14.86%
- Poolin: 11.81%
- ViaBTC: 11.10%
- Binance Pool: 10.18%

The top 5 mining pools control 63.11% of the hash rate!

2. Ethereum

Ethereum also runs on proof-of-work and the top 2 mining pools control over 51% of Ethereum's hash rate! Source: https://www.avax.network

3. Tether (USDT)

Tether (USDT) is a 100% centralized fiat-backed stablecoin issued by a Hong Kong-based company called Tether. The company keeps commercial paper and other reserves that are equal in USD value to the number of USDT in circulation.

4. BNB (BNB)

BNB is the native token of the popular Binance Smart Chain which chooses the top 21 highest-stake nodes as validators. The minimum amount for self-delegation is 10,000 BNB. That's over $4 million! This makes the Chain highly centralized. (Source: https://docs.binance.org/faq/bsc/val.html)

5. USD Coin (USDC)

USD Coin (USDC) is a 100% centralized fiat-backed stablecoin issued by the Centre Consortium which has 2 founding members - peer-to-peer payment services company Circle, and the Coinbase cryptocurrency exchange.

10. Currency Cryptos

Currency Cryptos are those that can be used to buy and sell stuff (physical or virtual) or which can quickly be converted to 'cash'. These cryptos usually have a higher Volume / Market Capitalization Ratio ratio (VMR) as compared to other Cryptos.

According to me, the most important Currency Cryptos for 2022, in alphabetical order, are:

1.   Bitcoin (BTC)
2.   Bitcoin Cash (BCH)
3.   Dash (DASH)
4.   Litecoin (LTC)
5.   Monero (XMR)
6.   ZCash (ZEC)

Note: Fiat-pegged stablecoins, e.g. Tether (USDT), are also used as currencies but have been excluded from this list.

You can learn more about these Cryptos in Part B of this Playbook.

11. DAO Cryptos

A Decentralized Autonomous Organization (DAO) is like 'an Internet-based community with a shared bank account'. You can think of it as a mutual fund where instead of a central manager, the participants decide on the investment and other decisions.

DAOs exist only on a blockchain and their rules are coded in smart contracts. Since DAOs run on public blockchains, anyone can check and verify all the financial transactions made by the DAO. Members of a DAO don't have to trust each other - they have to trust the code.

My favorite DAOs are:
1. Aave
2. Compound
3. Decred
4. Maker
5. Uniswap

You can learn more about these Cryptos in Part B of this Playbook.

The DAO hack

DAOs did not start off too well. The first-ever DAO was "hacked" and ultimately led to the original Ethereum network splitting into two.

Surprised? Let's go back to 2016.

The first DAO raised about $150 million worth of ether (ETH) through a token sale. But a hacker exploited a bug in the smart contract and siphoned out all the money!

Now, logically nothing should have been done about this. Blockchains are 'immutable' and 'censorship-resistant', right? But a 'hard fork' was implemented. This rolled back Ethereum's history to before the hack.

This reallocated the hacked ETH to a different smart contract and allowed investors to withdraw their funds. The 'purists' hated this and that's what led to Ethereum splitting into 2 blockchains: Ethereum and Ethereum Classic.

12. DeFi (Decentralized Finance) Cryptos

DeFi (Decentralized Finance) is an umbrella term for financial applications powered by blockchain technology.
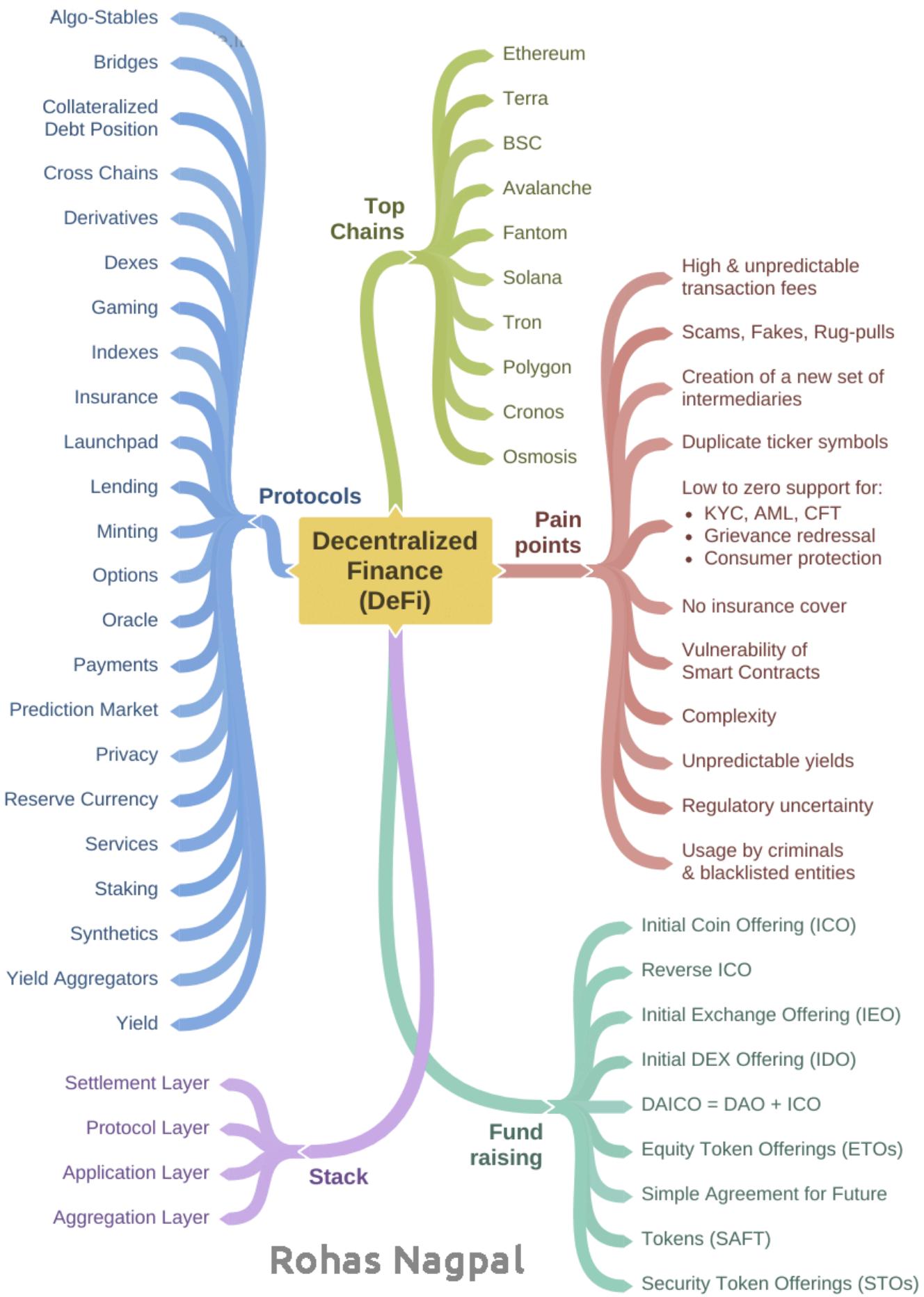
The most popular DeFi Blockchains include:
1. Ethereum,
2. Terra,
3. Binance Smart Chain,
4. Avalanche, and
5. Fantom.

Types of DeFi protocols

1. Algo-Stables: This includes algorithmic coins & stablecoins.

2. Bridges: These are protocols that bridge cryptos from one blockchain network to another.

3. Collateralized Debt Position (CDP): These are protocols that mint their own stablecoins using collateral.

4. Cross Chains: These are protocols that enable interoperability between different blockchains.

5. Derivatives: These are Smart Contracts that get their value, risk, and basic structure from an underlying asset.

6. Dexes: These are protocols that enable users to swap / trade cryptos without the need for KYC.

7. Gaming: These are protocols that have gaming components.

8. Indexes: These are protocols that track the performance of a group of related assets.

9. Insurance: These are protocols that provide monetary protection in case an event occurs or does not occur.

10. Launchpad: These are protocols that launch new projects and cryptos.

11. Lending: These are protocols that enable users to borrow and lend cryptos.

12. Minting: These are protocols that enable the minting or creation of Non-Fungible Tokens (NFT).

13. Options: These are protocols that give you the right to buy or sell crypto at a pre-decided price.

14. Oracle: These are protocols that bring information from the outside to the blockchain and vice versa.

15. Payments: These are protocols that enable the payment / sending / receiving of cryptos.

16. Prediction Market: These are protocols that enable the wagering / betting in future events.

17. Privacy: These are protocols that enable the hiding of information about crypto transactions.

18. Reserve Currency: These are protocols that use a reserve of assets to issue and back their native cryptos.

19. Services: These are protocols that provide services to DeFi users.

20. Staking: These are protocols that reward users for staking their cryptos.

21. Synthetics: These are protocols that create tokenized derivatives that mimic the value of other assets.

22. Yield Aggregators: These are protocols that aggregate yield from multiple DeFi protocols.

23. Yield: These are protocols that reward users for staking or providing liquidity.

Decentralized Finance (DeFi)

Protocols
- Algo-Stables
- Bridges
- Collateralized Debt Position
- Cross Chains
- Derivatives
- Dexes
- Gaming
- Indexes
- Insurance
- Launchpad
- Lending
- Minting
- Options
- Oracle
- Payments
- Prediction Market
- Privacy
- Reserve Currency
- Services
- Staking
- Synthetics
- Yield Aggregators
- Yield

Top Chains
- Ethereum
- Terra
- BSC
- Avalanche
- Fantom
- Solana
- Tron
- Polygon
- Cronos
- Osmosis

Pain points
- High & unpredictable transaction fees
- Scams, Fakes, Rug-pulls
- Creation of a new set of intermediaries
- Duplicate ticker symbols
- Low to zero support for:
  - KYC, AML, CFT
  - Grievance redressal
  - Consumer protection
- No insurance cover
- Vulnerability of Smart Contracts
- Complexity
- Unpredictable yields
- Regulatory uncertainty
- Usage by criminals & blacklisted entities

Stack
- Settlement Layer
- Protocol Layer
- Application Layer
- Aggregation Layer

Fund raising
- Initial Coin Offering (ICO)
- Reverse ICO
- Initial Exchange Offering (IEO)
- Initial DEX Offering (IDO)
- DAICO = DAO + ICO
- Equity Token Offerings (ETOs)
- Simple Agreement for Future Tokens (SAFT)
- Security Token Offerings (STOs)

Rohas Nagpal

According to me, the most important DeFi Cryptos for 2022, in alphabetical order, are:

1. Aave (AAVE)
2. Balancer (BAL)
3. PancakeSwap (CAKE)
4. Compound (COMP)
5. Curve DAO Token (CRV)
6. Maker (MKR)
7. SushiSwap (SUSHI)
8. Uniswap (UNI)

You can learn more about these Cryptos in Part B of this Playbook.

13. Gaming & Metaverse cryptos

The metaverse is a 'parallel digital universe' where you can create your own digital avatar and work, travel, learn, play, and party!

The best way to understand the Metaverse is by watching these movies - Ready Player One, Avatar, and Wreck-it Ralph.

The Metaverse is actually quite an old concept. My first experience with it was using 'Second Life' in the early 2000s. The band 'Duran Duran' performed a concert in the Second Life virtual world in 2006.

According to me, the most important Gaming & Metaverse Cryptos for 2022, in alphabetical order, are:

1.	Axie Infinity (AXS)
2.	Enjin Coin (ENJ)
3.	Gala (GALA)
4.	Decentraland (MANA)
5.	The Sandbox (SAND)

You can learn more about these Cryptos in Part B of this Playbook.

Metaverse

Standards
- ISO/IEC 23005-4:2011
- OpenXR
- Virtual World Region Agent Protocol (VWRAP)

Technology
- Augmented reality
- Blockchain
- Gaming headsets
- Mixed reality
- Non-Fungible Tokens
- Smart glasses
- Virtual reality
- Virtual world

Cryptos
- Axie Infinity (AXS)
- Decentraland (MANA)
- Enjin Coin (ENJ)
- Gala (GALA)
- The Sandbox (SAND)

Movies
- Avatar
- Inception
- Iron Man
- Matrix
- Minority Report
- Ready Player One
- Wreck-it Ralph

Companies
- Amazon
- Autodesk
- Facebook
- Microsoft
- Nvidia
- Roblox
- Unity Software

Timeline
- **1978**: Multi-user Dungeons (MUD): text-based multiplayer real-time virtual world.
- **1995**: Active Worlds (distributed virtual-reality worlds) based on Snow Crash.
- **2003**: Second Life launched by Linden Lab.
- **2004**: X3D open standard approved by ISO as the successor to Virtual Reality Modeling Language (VRML).
- **2006**: Roblox published.
- **2018**: NeosVR Metaverse launched.
- **2019**: Facebook Horizon announced.
- **2020**: Decentraland launched.
- **2021**: Epic Games raises $1 billion for building the metaverse.
- **2021**: Microsoft Mesh announced.
- **2021**: South Korea announces national metaverse alliance.
- **2021**: Facebook, Inc. renamed to "Meta Platforms".
- **2021**: Gucci collaborates with Roblox to sell a collection of digital-only accessories.
- **2022**: First sexual assault reported.

Use cases
- Commerce
- Education
- Entertainment
- Fitness
- Gaming
- Social interaction
- Work environment
- Virtual Tourism

Rohas Nagpal

14. Web 3.0 cryptos

Web 1.0 was the first generation of the World Wide Web from the early 1990s to around 2004. During this stage, most websites were static. These websites were created by businesses and "consumed" by users like you and me.

Web 2.0 is the current second generation of the World Wide Web. A large amount of content is user-generated e.g. social media content, blogs, vlogs, etc. Most of this data is controlled and monetized by large companies like Google, and Meta (Facebook).

Web 3.0 is the latest generation of the World Wide Web and its focus is on decentralization. Web 3.0 applications and services would increasingly be powered by blockchains, crypto-assets (fungible and non-fungible), artificial intelligence, and metaverses.

Web 3.0 is expected to provide personalized content and also enable people to control their own data.

The top Web 3.0 cryptos

According to me, the most important Web 3.0 Cryptos for 2022, in alphabetical order, are:

1. Arweave (AR)
2. Audius (AUDIO)
3. Basic Attention Token (BAT)
4. Chainlink (LINK)
5. Filecoin (FIL)
6. Helium (HNT)
7. Livepeer (LPT)
8. Siacoin (SC)
9. The Graph (GRT)
10. Theta (THETA)

https://youtu.be/OneR11sPwig?t=170

15. Decentralized Exchanges (DEXs)

There are 2 easy ways to trade crypto - Centralized Exchanges (CEX) and Decentralized Exchanges (DEX).

Centralized Exchanges (CEX)

A CEX requires users to complete a KYC process. It authenticates you using your username, password, and email / SMS OTP (one time password). Once you are logged into your account, you can transfer fiat (rupees, dollars, etc.) to your account and use it to buy crypto. Similarly, you can sell the crypto and get the fiat into your bank account.

Remember that in a CEX, the crypto is not in your 'wallet'. It's in the exchange's wallet.

Decentralized Exchanges (DEX)

A DEX, on the other hand, doesn't require KYC completion. You can connect using your wallet (e.g. Metamask) and swap / trade crypto. The crypto remains in your wallet.

According to me, the most important DEXs, in alphabetical order, are:
1.   Balancer (BAL)
2.   Curve (CRV)
3.   PancakeSwap (CAKE)
4.   SushiSwap (SUSHI)
5.   Uniswap (UNI)

You can learn more about these Cryptos in Part B of this Playbook.

16. Non-Fungible Tokens (NFTs)

Consider the balance in your mobile wallet (say Rs. 10,000). Is there any difference between each of these rupees? No, there isn't. So we can say that this digital money is "fungible" - every rupee is exactly the same as another rupee.

Is every 500-rupee note identical in value? Most people would say yes. But it's not! An older 500-rupee note is worth zero – remember demonetization? So, we can say that physical currency notes are "non-fungible".

To understand what a non-fungible token (NFT) is, let's take an example. Sanya is an artist who creates a bunch of manga ink on paper drawings. She sells them online as well as at a physical art gallery. But she can sell each drawing only once because, hey, it's a physical drawing.

She can also create multiple reprints and sell them. Each reprint is identical. So if there are very few official reprints, the price can be high. If there are many reprints the price will be very low. That's the law of scarcity at work. We are usually ready to pay more for things that are rare.

But how would a buyer know how many reprints are in existence?

That's where NFTs come in. Sanya can release digital copies of her drawings on the blockchain in the form of non-fungible cryptocurrencies. Because of the blockchain's inherent transparency, any buyer can see how many digital copies are actually in circulation. And anyone can see who owns how many digital copies.

Wait, there's more. When you "buy" a digital version of a manga from an artist you only get the right to use it for personal viewing. That's because the artist holds the copyright over the manga. But in an NFT, the artist can grant you special licenses e.g. the right to print the manga on t-shirts and make money by selling those t-shirts. Now, isn't that cool?

Non-Fungible Tokens (NFTs) started off with CryptoKitties - a game centered around breedable, collectible, virtual cats. According to the official project website, "Each cat is one-of-a-kind and 100% owned by you; it cannot be replicated, taken away, or destroyed".

NFTs can be divided into these 5 categories:

Category 1: Digital art such as images, videos, and GIFs.

Category 2: Collectibles such as NFTs Stamps from Austria, Switzerland and Gibralter.

Category 3: In-game / Metaverse assets such as avatars, skins, weapons, and virtual real estate.

Category 4: NFT Domains such as .crypto, .nft, .dao

Category 5: Wrapped NFTs backed by assets like IP licenses, private equity, unlisted debt, real estate.

Category 1: Digital art

A number of NFTs in Category 1 are plagiarized works, fake collections, spam, and frauds. And then there are rug-pulls. And wash trading - illegally inflated trade volumes by constant buying & selling within a group.

OpenSea, the most popular NFT marketplace has a tool for free minting of NFTs. The platform has admitted that 80% of these NFTs are plagiarized works, fake collections, and spam.

Another platform called DeviantArt has issued 80,000 fraud alerts in a few months.

Another platform called LooksRare is plagued with wash trading. That's when people illegally inflate trade volume and value by buying & selling NFTs within a group.

Do you remember the $69 million Beeple NFT that started off the NFT hype cycle? The buyer, MetaKovan is actually a business partner of Beeple.

A research study recently analyzed 6.1 million trades of 4.7 million NFTs since 2017. They found that 10% of traders accounted for 90% of all NFT transactions. This group trades 97% of all NFTs at least once.

Many NFT projects turn out to be multi-million dollar "rug pulls". That's when anonymous founders vanish with the investors' money. Examples include the Evolved Apes NFT project, the Big Daddy Ape Club, and Blockverse.

Then there are ridiculous projects that promise to give you ownership of a color. You read that right. Ownership of a color. They even promise you royalties every time someone uses your color.

I think Digital Art NFTs are heading for a massive crash in 2022.

Category 2: Collectibles

Austria was the first country to offer "Crypto stamps" - physical postage stamps that have a "digital twin" or NFT on the blockchain. The stamp comes with an NFC chip that contains a cryptographic key. The chip can be read with a NFC-enabled smartphone.

Other countries working on such collectibles are Switzerland and Gibralter.

I am very bullish on this category of NFTs.

Category 3: In-game / Metaverse assets

This category relates to in-game assets, metaverse assets such as avatars, skins, weapons, and virtual real estate.. Many top brands such as Gucci and Nike, are also issuing NFTs in this category.

Some of the best Crypto projects in this category are - Axie Infinity (AXS), Decentraland (MANA), Enjin Coin (ENJ), Gala (GALA), and The Sandbox (SAND). You can learn more about them in my article on the Top Gaming and Metaverse Cryptos for 2022.

I am bullish on this category of NFTs.

Category 4: NFT Domains

Blockchain or NFT domains look like regular domains but are very different. They are smart contracts written on a public blockchain. The biggest advantage is the fact that they are 'owned' and not 'rented'.

What I like best about NFT domains is that there is no renewal fees. Regular domains have to be renewed every year. Blockchain domains can be purchased with a one-time registration fee and you never have to pay for renewals again.

The disadvantage is that they cannot be used directly in a regular browser. This causes a huge level of friction and that is why they are not very popular as of now.

These domains can be used as universal usernames across apps and websites, website URLs, and payment address for wallets.

Some of the popular domains include .crypto, .coin, .bitcoin, .nft, and .dao

I am bullish on this category of NFTs.

Category 5: Wrapped NFTs

Wrapped NFTs are also called Wrapped Assets and are blockchain tokens pegged to or collateralized by assets such as coffee, gold, fiat currency, debt instruments, real estate, etc.

They are called 'wrapped' assets or tokens because the original asset is put in a 'wrapper' or 'digital vault' that enables the wrapped version to be traded on a blockchain.

I am very bullish on this category of NFTs.

17. How to value Cryptos

Valuation of Cryptos is my absolute favorite area of study and research.

There are 11 types of Crypto Assets and you must not use the same valuation method for all of them.

To understand the subjective and mathematical models that I use, watch this 23-minute video that covers:

- The 11 types of Crypto Assets
- Valuing Ready Money Cryptos
- Valuing Hush / Privacy Coins
- Valuing Application / Security / Governance Cryptos
- Valuing Public Blockchain natives

https://youtu.be/er0g6e29mew?t=20

Valuation of DeFi Blockchains

Let's dive a little deeper into valuation of DeFi Blockchains.

I think that the most important metric for a DeFi Blockchain is **Total Value Locked (TVL)**. This is the total amount of assets 'locked' or secured in a DeFi blockchain.

To get the **Mcap / TVL Ratio (MTR)**, we start with the Circulating Supply of the native token of the Blockchain e.g. ETH in the case of the Ethereum Mainnet. The Circulating Supply is the number of coins/tokens in public hands.

Multiplying the Circulating Supply with the Current Price gives us the Market Capitalization (Mcap).

Mcap / TVL Ratio (MTR) is calculated by dividing the Mcap by the TVL.

I consider 3 to be the ideal MTR for a DeFi blockchain. If a blockchain's MTR is above 3, it is overvalued and if it is below 3, it is undervalued.

Valuing the native token of a DeFi Blockchain is a 2-step process.

Step 1: Multiply the TVL of the Blockchain by 3. This is the ideal market capitalization of the blockchain.

Step 2: Divide the market capitalization by the circulating supply of the native token of the blockchain. This is the ideal price.

Let's take an example.

As of today (15 February 2022), the TVL of the Ethereum Mainnet is $ 124.84 billion. So its ideal Mcap would be
= $124.84 billion x 3 = $ 374.52 billion

The circulating supply of ETH is 119,586,846 ETH. So the ideal price of ETH would be
= 374.52 billion / 119,586,846
= $ 3131.78

That means at the current price of $3,041.60, ETH is slightly undervalued.

To Do

Here's an assignment for you. Calculate the ideal price for:

- Terra (LUNA),
- Binance Smart Chain (BNB), and
- Avalanche (AVAX).

You can get the latest TVL data from https://defillama.com/chains and the other metrics from https://coinmarketcap.com

Part B
FUTURE 50 Cryptos

1. Aave (AAVE)

Aave (AAVE) is 2 things - a decentralized non-custodial liquidity market protocol as well as a crypto token.

As a protocol, Aave enables the lending and borrowing of crypto.

Lenders deposit funds in a smart contract. These funds can be withdrawn on-demand. These funds can also be exported as aTokens which can be moved and traded as an Ethereum token.

Borrowers can borrow in 2 ways:
*   in an overcollateralized manner, or
*   in an undercollateralized manner using 'flash loans'.

Flash loans allow anyone to borrow any amount of assets without the need to provide any collateral. But the loan and interest must be repaid within one 'block transaction'. The Aave Protocol is very popular since it is open source and enables anyone to interact with it using:
*   a user interface client,
*   Application Programming Interface (API), and
*   directly with Ethereum smart contracts.
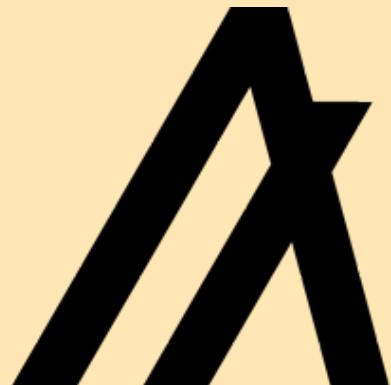
One challenge is that interacting with Aave requires Ethereum transaction fees to be paid.

As a token, AAVE gives holders discounted fees and also serves as a governance token by giving holders a vote in the protocol's development. AAVE can also be staked.

For updated information on Aave (AAVE), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=AAVE

2. Algorand (ALGO)

Algorand is a new-gen blockchain that is bridging the decentralized and centralized world of finance.

Algorand Standard Assets run on the blockchain's 'Layer-1' and include fungible, non-fungible, restricted fungible, and restricted non-fungible assets.

Here's what I like the best about Algorand Standard Assets:

1. Role-based asset controls are supported for business, compliance, and regulatory requirements.
2. Asset accounts can be 'quarantined' for investigations.
3. 'Forced' asset transfers can be done for legal compliance.
4. Permissions can be configured so that only 'whitelisted' addresses can transact.
5. Off-chain asset documentation can be included in the on-chain asset definition.
6. Users can 'opt-in' to accept new assets.

Another feature I like in Algorand is 'Rekeying in Layer-1', which enables a user to change their private key without changing the public address.

Wallets
Algorand's Official Wallet enables holders to earn rewards simply by holding ALGOs.

For updated information on Algorand (ALGO), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=ALGO

3. Arweave (AR)

Arweave is "a collectively owned hard drive that never forgets. It allows the permanent storage of data with a single upfront fee.

Arweave is a decentralized storage network for the indefinite storage of data. At its core is "permaweb" - a "permanent, decentralized web with applications and platforms like UI hosting, database writes & queries, and smart contracts.

Miners are paid in Arweave's native cryptocurrency, AR, to indefinitely store information.

Wallets
Arweave Web Extension Wallet is the official wallet.

For updated information on Arweave (AR), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=AR

4. Audius (AUDIO)

Audius is a decentralized music streaming protocol that aims to give "everyone the freedom to distribute, monetize, and stream any audio content". Audius is built on both Ethereum and Solana.

$AUDIO is the native token that enables network security, exclusive feature access, and community-owned governance.

$AUDIO can be staked to run discovery or content nodes. Artists can also stake $AUDIO to unlock artist tokens and badges, and to "receive voting power from fans who want to share in their success".

Wallets
FreeWallet is a popular wallet for Audius (AUDIO).

For updated information on Audius (AUDIO), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=AUDIO

5. Avalanche (AVAX)

Avalanche is a popular Decentralised Finance (DeFi) blockchain.

What I like the most about Avalanche is that it lets us launch customized private & public blockchains.

Avalanche, with a transactional throughput of more than 4500 tps, performs phenomenally faster than:
• Bitcoin (7 tps),
• Ethereum (14 tps), and
• Polkadot (1500 tps).

In terms of transactional finality, Avalanche (less than 2 seconds) leads as compared to:
• Bitcoin (60 mins),
• Ethereum (6 min), and
• Polkadot (60 seconds).

AVAX is Avalanche's native token and it can be used for staking, paying fees, and providing a unit of account between the multiple subnetworks created on Avalanche.

Wallets
The officially recommended wallets are Avalanche Wallet, Ledger, Frontier, and D'Cent.

For updated information on Avalanche (AVAX), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=AVAX

6. Axie Infinity (AXS)

Axie Infinity is a blockchain-based trading and battling game. Axies are 'digital pets' that can be raised, battled, and traded.

The Axie ecosystem has multiple cryptos including:
- Axies which are NFTs
- Smooth Love Potions (SLP) which are fungible tokens
- Axie Infinity Shards (AXS) which are fungible tokens

Each Axie is a unique ERC-721 non-fungible token (NFT) and:
- Has 4 stats: Health, Morale, Skill, and Speed.
- Comes in a class: 6 normal classes (Aquatic, Beast, Bird, Bug, Plant, or Reptile) or 3 secret classes (Dawn, Dusk, or Mech).
- Comprises 6 body parts: back, ears, eyes, horns, mouth, and tail.

Axies can also be bred (at a cost) to create rare and powerful combinations. Each body part has 3 genes associated with it and has different chances of being passed down to offspring.

Axie Infinity Shards (AXS) are ERC20 governance tokens in the Axie universe. AXS holders can claim rewards by staking tokens, playing the game, and participating in governance. Players can also earn AXS by playing games and generating content.

Smooth Love Potions (SLP) are ERC20 tokens that can be earned by playing and can be used to breed new Axies.

Wallet
Metamask is one of the best wallets for Axie Infinity.

For updated information on Axie Infinity (AXS), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=AXS

7. Balancer (BAL)

Balancer (BAL) is a non-custodial automated portfolio manager and trading platform.
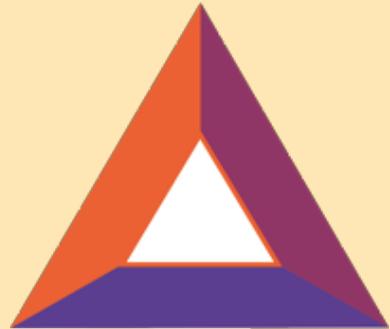
In a conventional index fund, the investor pays fees to a portfolio manager for rebalancing the portfolio.

In Balancer, the investor collects fees from traders who rebalance their portfolio by following arbitrage opportunities.

For updated information on Balancer (BAL), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=BAL

8. Basic Attention Token (BAT)

Basic Attention Token (BAT) is disrupting the $330 billion digital advertising industry.

Here's how the BAT ecosystem works:

- Users can earn BAT for viewing ads while maintaining privacy.
- Content creators earn ad revenue, user contributions, and tips.
- Advertisers get a better return on investment and know their ads' effectiveness without violating the privacy of users.

Brave Browser is at the heart of the BAT ecosystem. Brave blocks ads and trackers. This makes your browsing 3 times faster and very private.

Brave Wallet is the first crypto wallet that is built directly into a browser. This is unlike Metamask which is a browser extension. Because of this, Brave wallet is less vulnerable to faked versions and phishing.
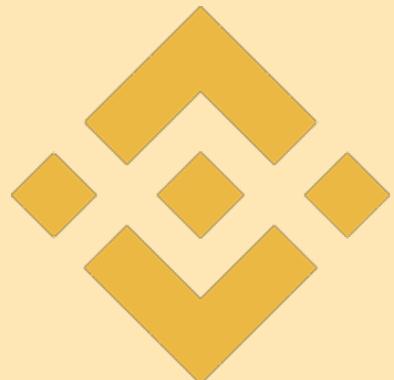
Wallet
Brave Wallet is one of the best wallets for BAT.

For updated information on Basic Attention Token (BAT), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=BAT

9. Binance Coin (BNB)

The Binance Ecosystem

Binance started off as a crypto exchange in 2017. Today, it is one of the biggest players in the crypto industry.

The Binance ecosystem includes:
- multiple crypto exchanges,
- multiple cryptos - Binance Coin (BNB), Binance USD (BUSD), Bitcoin BEP2 (BTCB)
- Trust Wallet and its TWT token,
- Token Launchpad, and more.
- Binance also operates some cryptos - BNB and BUSD.

Binance Coin (BNB) was issued as part of Binance's initial coin offering (ICO). Its first use case was discounted trading fees on the Binance exchange. Did you know that 90% of Binance employees earn a portion of their income in BNB?

BUSD is a US dollar-backed stablecoin issued jointly by Binance and Paxos. BUSD is one of the few stablecoins approved by the New York State Department of Financial Services (NYDFS).

I am a fan of Trust Wallet, a popular mobile wallet that supports 53 blockchains and more than a million digital assets. It was acquired by Binance in 2018.

Binance Blockchains

Binance Chain, the first blockchain from Binance, is optimized for fast decentralized trading but lacks smart contracts and strong programmability.

That's why Binance Smart Chain (BSC) was created. It runs parallel to the original Binance Chain, has smart contract functionality, and is compatible with the Ethereum Virtual Machine (EVM).

BSC is an independent blockchain and is not a layer two or off-chain scalability solution. BSC is a hard fork of the Go Ethereum (Geth) protocol,

Binance Smart Chain has a block time of around 3 seconds. The native token of both blockchains is BNB.

Validators stake BNB and can receive transaction fees. Unlike Bitcoin, there is no block reward by way of newly minted BNB. This is because BNB is not inflationary. Instead, the supply of BNB decreases over time, because the Binance team regularly "burns" coins.

BSC has 11 validators on the testnest and 21 validators on the mainnet. These Validators are selected every 24 hours and must stake a minimum of 10,000 BNB.

Interestingly, BEP-2 and BEP-8 tokens from Binance Chain can be swapped for BEP-20 tokens on BSC. This can be easily done using the Binance Chain Wallet.

What I hate about Binance

Binance has 3 crypto exchanges:
- Binance.com - the original and largest crypto exchange by volume.
- Binance.us - which was created after Binance was banned in the US in 2019 on regulatory grounds.
- Binance DEX - a decentralized exchange built on Binance Chain.

Of late, I have come to hate the Binance.com crypto exchange due to its glitches and outages.

In fact, a group of derivative traders is suing Binance for trading losses suffered due to outages of the platform. This case could set a global precedent on the liability of exchanges.

What I fear about Binance

Binance is facing legal troubles across the world - Canada, Cayman Islands, Italy, Japan, Malaysia, Singapore, South Africa, Thailand, the UK, and the USA.

It's not just problems with regulators. Hundreds of investors are expected to take part in proceedings against Binance, seeking damages for money they lost during a major outage.

Binance says it has no official headquarters. That has made it difficult for investors to figure out how, and where, to take the company to court. Swiss private equity firm Liti Capital has promised to provide a minimum of $5 million in funding for the case.

Binance is probably the most important part of the crypto ecosystem and its legal problems could have a massive negative impact on crypto prices.

For updated information on Binance Coin (BNB), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=BNB

10. Bitcoin (BTC)

You can love Bitcoin or you can hate Bitcoin, but you can't ignore Bitcoin.

Bitcoin is the world's first cryptocurrency and has always been the largest by market capitalization.

1. Bitcoin payments are maturing

Bitcoin is slow. Its transactional throughput is 7 transactions / second and its transactional finality is 60 minutes! But you can still use Bitcoin to pay for a burger in El Salvador! Confused?

That's the magic of the Lightning Network which uses its own native smart-contract scripting language along with real Bitcoin transactions to enable secure, high volume, and high-speed Bitcoin transactions.

On 7 September 2021, El Salvador became the world's first country to recognize Bitcoin as a legal tender.

And in March 2022, the Swiss City of Lugano made Bitcoin 'De Facto' legal tender. Lugano, in addition to allowing crypto for taxes, is aiming to have all of its businesses seamlessly use crypto for everyday transactions.

2. Smart contracts, NFT, DeFi, and DApps on Bitcoin

Many people don't know that you can run smart contracts, non-fungible tokens (NFT), and decentralized applications (DApps) on Bitcoin!

That's the magic of:
•   Liquid Network
•   Omni Layer
•   Stacks
•   Merged mining blockchains

Liquid Network is a sidechain-based settlement network that enables faster, more confidential Bitcoin transactions & digital assets issuance.

Omni Layer is a software layer on top of the Bitcoin blockchain for creating & trading custom digital assets & currencies.

Stacks is an open-source blockchain that leverages Bitcoin for decentralized apps and smart contracts. Since Stacks uses Bitcoin as a base layer, everything that happens on Stacks is settled on the Bitcoin Blockchain. Stacks connects directly to the Bitcoin blockchain through its proof-of-transfer (PoX) consensus mechanism.

Merged mining (technically called auxiliary proof of work) is the process of mining two or more blockchains at the same time. Essentially the same proof of work can be used on multiple chains.

Bitcoin merged mining blockchains include:
•   RSK,
•   Elastos (ELA),
•   Myriad (XMY),
•   Unobtanium (UNO),
•   Syscoin (SYS),
•   Terracoin (TRC), and
•   Blast (BLAST).
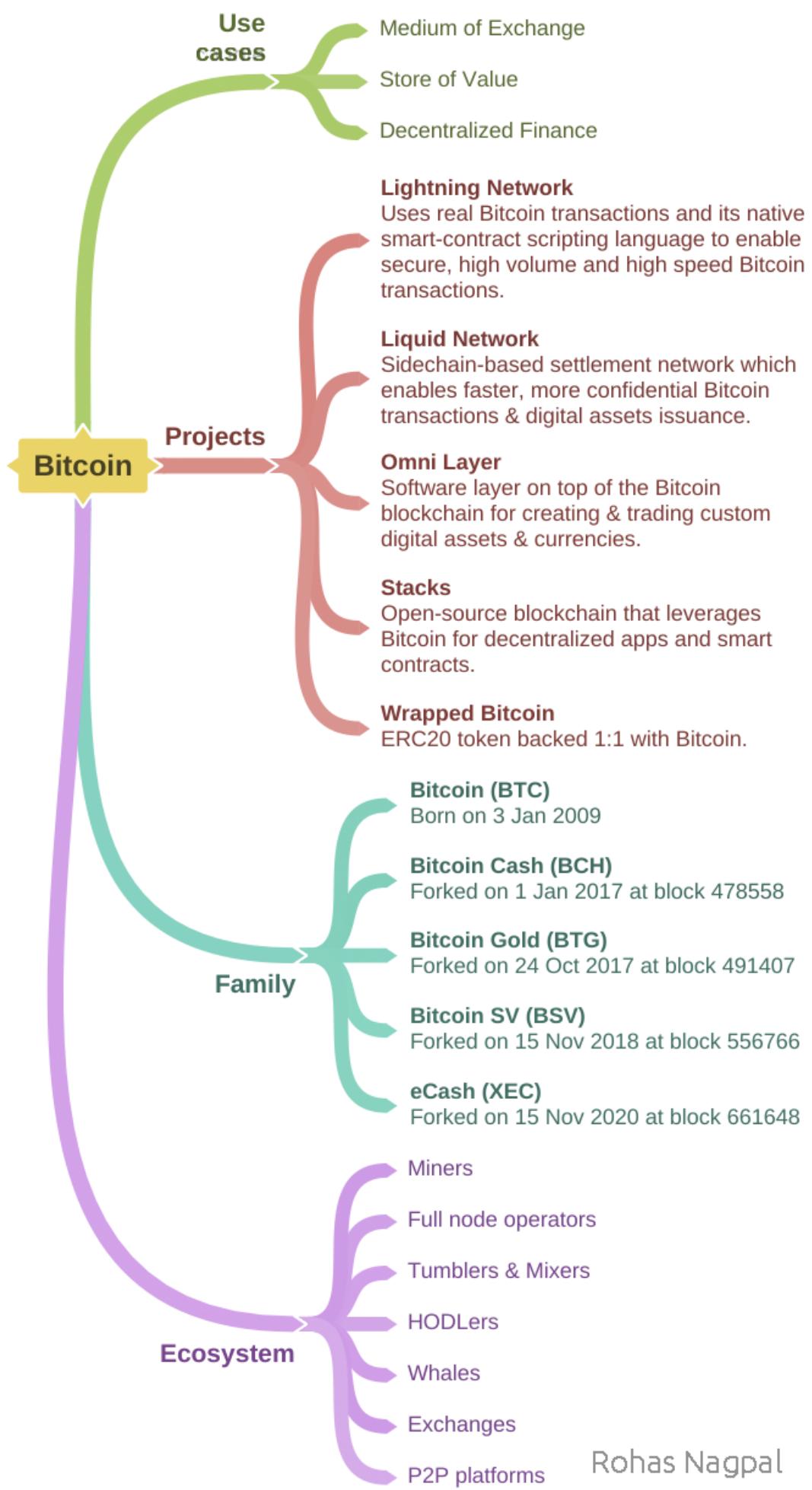
RSK enables:
•   smart contracts on top of Bitcoin,
•   near-instant payments through RIF Lumino, and
•   greater scalability for Bitcoin.

3. Crypto trading pairs

Trading pairs are cryptos that can be traded for each other on an exchange e.g. Bitcoin / Ether (BTC/ETH). Many cryptocurrencies can only be bought with Bitcoin. This helps maintain the importance of Bitcoin in the crypto world.

For updated information on Bitcoin (BTC), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=BTC

Bitcoin

Use cases
- Medium of Exchange
- Store of Value
- Decentralized Finance

Projects

Lightning Network
Uses real Bitcoin transactions and its native smart-contract scripting language to enable secure, high volume and high speed Bitcoin transactions.

Liquid Network
Sidechain-based settlement network which enables faster, more confidential Bitcoin transactions & digital assets issuance.

Omni Layer
Software layer on top of the Bitcoin blockchain for creating & trading custom digital assets & currencies.

Stacks
Open-source blockchain that leverages Bitcoin for decentralized apps and smart contracts.

Wrapped Bitcoin
ERC20 token backed 1:1 with Bitcoin.

Family

Bitcoin (BTC)
Born on 3 Jan 2009

Bitcoin Cash (BCH)
Forked on 1 Jan 2017 at block 478558

Bitcoin Gold (BTG)
Forked on 24 Oct 2017 at block 491407

Bitcoin SV (BSV)
Forked on 15 Nov 2018 at block 556766

eCash (XEC)
Forked on 15 Nov 2020 at block 661648

Ecosystem
- Miners
- Full node operators
- Tumblers & Mixers
- HODLers
- Whales
- Exchanges
- P2P platforms

Rohas Nagpal

9 pages that disrupted money forever

Given our assumption that $p > q$, the probability drops exponentially as the number of blocks the attacker has to catch up with increases. With the odds against him, if he doesn't make a lucky lunge forward early on, his chances become vanishingly small as he falls further behind.

We now consider how long the recipient of a new transaction needs to wait before being sufficiently certain the sender can't change the transaction. We assume the sender is an attacker who wants to make the recipient believe he paid him for a while, then switch it to pay back to himself after some time has passed. The receiver will be alerted when that happens, but the sender hopes it will be too late.

The receiver generates a new key pair and gives the public key to the sender shortly before signing. This prevents the sender from preparing a chain of blocks ahead of time by working on it continuously until he is lucky enough to get far enough ahead, then executing the transaction at that moment. Once the transaction is sent, the dishonest sender starts working in secret on a parallel chain containing an alternate version of his transaction.

The recipient waits until the transaction has been added to a block and z blocks have been linked after it. He doesn't know the exact amount of progress the attacker has made, but assuming the honest blocks took the average expected time per block, the attacker's potential progress will be a Poisson distribution with expected value:

$$\lambda = z \frac{q}{p}$$

To get the probability the attacker could still catch up now, we multiply the Poisson density for each amount of progress he could have made by the probability he could catch up from that point:

$$\sum_{k=0}^{\infty} \frac{\lambda^k e^{-\lambda}}{k!} \cdot \begin{cases} (q/p)^{(z-k)} & \text{if } k \le z \\ 1 & \text{if } k > z \end{cases}$$

Rearranging to avoid summing the infinite tail of the distribution...

$$1 - \sum_{k=0}^{z} \frac{\lambda^k e^{-\lambda}}{k!} \left(1 - (q/p)^{(z-k)} \right)$$

The original whitepaper titled "Bitcoin: A Peer-to-Peer Electronic Cash System" can be downloaded from:
https://bitcoin.org/bitcoin.pdf

Bitcoin earned a lot of notoriety primarily because of its use by members of the now shut-down Silk Road - an illegal online marketplace that facilitated the sale of hundreds of millions of dollars worth of drugs, guns, stolen financial information, counterfeit documents and more.

All Silk Road transactions were conducted exclusively in bitcoin.

Silk Road creator Ross Ulbricht is currently serving two life sentences in prison after being found guilty of money laundering, computer hacking, and conspiracy to traffic narcotics.

The first Bitcoin real-world transaction took place on 22nd May, 2010 and involved 10,000 bitcoins being exchanged for $25 worth of pizza.

laszlo
Full Member

Activity: 199
Merit: 487

Re: Pizza for bitcoins?
May 22, 2010, 07:17:26 PM
Merited by *vizique (10), vapourminer (1), Searing (1), BitcoinFX (1), 600watt (1), Aricoin (1), dektox (1)*

I just want to report that I successfully traded 10,000 bitcoins for pizza.

Pictures: http://heliacal.net/~solar/bitcoin/pizza/

Thanks jercos!

BC: 157fRrqAKrDyGHr1Bx3yDxeMv8Rh45aUet

5184x3456 (1/60) f/5.6 f(35)=78mm (flash)
2010-05-22 15:01:08 -0400

Download: IMG_0984.jpg

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2010-05-22 15:01:22 -0400

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5184x3456 (1/60) f/5.6 f(35)=78mm (flash)
2010-05-22 15:01:29 -0400

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2010-05-22 15:01:56 -0400

Download: IMG_0988.jpg

5184x3456 (1/60) f/5.6 f(35)=78mm (flash)
2010-05-22 15:02:07 -0400

Download: IMG_0989.jpg

NewLibertyStandard
Sr. Member

Re: Pizza for bitcoins?
May 23, 2010, 12:59:26 AM

That pizza looks delicious! Adorable kid. 😊

11. Bitcoin Cash (BCH)

In July 2017, Bitcoin (BTC) miners representing more than 80% of the Bitcoin computing power voted to incorporate the SegWit2x (segregated witness) technology to improve Bitcoin.
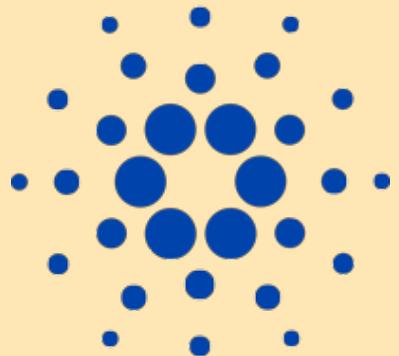
Many miners and developers, who did not want SegWit2x to be introduced, initiated a hard fork and created a new currency - Bitcoin Cash (BCH).

BCH has its own blockchain and processes transactions faster and cheaper than BTC.

For updated information on Bitcoin Cash (BCH), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=BCH

12. Cardano (ADA)

Cardano is a blockchain network which is being developed into a decentralized application (DApp) development platform with a multi-asset ledger and verifiable smart contracts. Cardano hopes to become the platform of choice for large-scale enterprise use.

ADA is the native token of Cardano. It can be 'staked' and in the future will also be usable for services on Cardano.

There are 3 organizations behind Cardano - IOHK develops the technology, the Cardano Foundation supervises development and promotions and Emurgo drives commercial adoption.

Cardano's full launch consists of 5 phases:

1. Byron (Sep 2017): mainnet launch of the Cardano blockchain
2. Shelley (Jul 2020): Ouroboros Proof-of-Stake (PoS) protocol went live
3. Goguen (2021): smart contracts and native token issuance features to go live
4. Basho: scalability and interoperability
5. Voltaire: voting, treasury system and governance by ADA holders

**Consensus mechanism:** Proof-of-Stake (PoS) consensus mechanism called Ouroboros.

Wallets
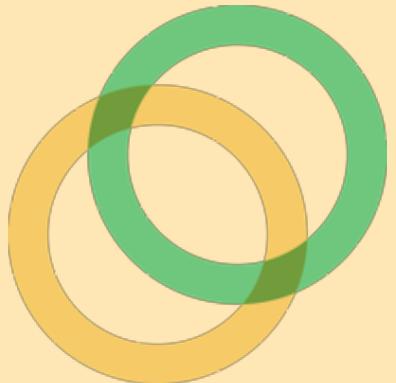
Daedalus is a full-node desktop wallet for Cardano. It downloads a full copy of the Cardano blockchain and independently validates every transaction in its history. This provides maximum security and a trustless operation that does not rely on third-party servers.

Yoroi is a light wallet for Cardano that does not require downloading the blockchain. It is available as a web-based extension and a downloadable app.

For updated information on Cardano (ADA), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=ADA

13. Celo (CELO)

Celo is a proof-of-stake mobile-first blockchain that "makes financial dApps and crypto payments accessible to anyone with a mobile phone".

It has an average block time of 5 seconds and is Ethereum Virtual Machine (EVM) compatible. Celo uses mobile phone number mapping to public keys. Celo transactions are fast & light because the block headers are optimized for fast mobile phone synchronization.

Celo has two native tokens CELO and CUSD.

CELO is a "utility coin" that enables users to:
• participate in the Proof-of-Stake consensus
• pay for on-chain transactions, and
• vote on governance decisions.

Celo Dollar (CUSD) is a US-dollar pegged stablecoin.

The network supports the development of smart contracts and decentralized applications. Its first application, Celo Wallet, intends to be a social-payments system centered around mobile phones.
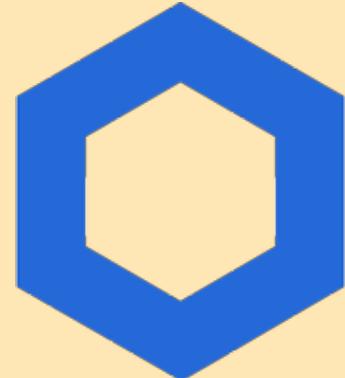
Wallet
Valora is a mobile wallet that supports the Celo Identity Protocol. This maps hashes of phones numbers to public keys and makes it easy for anyone with a mobile phone to send and receive crypto.

For updated information on Celo (CELO), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=CELO

14. Chainlink (LINK)

How can a smart contract get data from the outside world? That's the problem that Oracles solve. They act as middleware between smart contracts and external sources of data.

Software Oracles handle data that originates from online sources e.g. temperature, prices of commodities and goods, flight delays. **Hardware Oracles** get data from the physical world (e.g. from IoT devices) and are popular in the supply chain industry.

Inbound Oracles provide data from the external world to the blockchain while **Outbound Oracles** enable smart contracts to send data to the outside world.

Consensus-based Oracles get their data from human consensus and prediction markets e.g. Augur, Gnosis, etc.

Chainlink is a decentralized network of independent oracle node operators.

It provides:

- price feeds of financial market data,
- verifiable randomness that is needed for on-chain gaming,
- proof of reserve for asset-backed cryptos such as stablecoins.

Chainlink is NOT a blockchain.

Each Chainlink oracle network comprises multiple independent oracle nodes. These nodes fetch data from multiple independent data providers.

This data is then aggregated into a single data point and delivered "on-chain" for consumption by smart contracts.

LINK is the crypto token that is used for paying Chainlink node operators for providing oracle services.

Consensus mechanism: LINK is an ERC-20 token.

Wallets
The popular wallets include Trust Wallet and Metamask.

For updated information on Chainlink (LINK), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=LINK

15. Chiliz (CHZ)

Socios is a "sports fan engagement platform" that enables sports & esports fans to "crowd-manage" their favorite teams. Chiliz (CHZ) is the cryptocurrency that powers the Socios platform.

Sports fans can buy "fan tokens" from teams like FC Barcelona, Juventus, Paris Saint-Germain, AS Roma, Galatasaray, Atlético de Madrid, OG, CAI & UFC. Fan tokens are minted on the Socios sidechain which uses a proof-of-authority consensus mechanism.

CHZ is available on Ethereum, Binance Smart Chain, and Tron.

Wallets
The officially recommended wallets are ZenGo and Trust Wallet.

For updated information on Chiliz (CHZ), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=CHZ

16. Compound (COMP)

Compound (COMP) enables users to deposit crypto into pools and earn interest. Borrowers take secured loans from Compound pools by depositing collateral. If this collateral falls below a threshold, the loan is automatically liquidated.

The protocol distributes 2,312 COMP daily as rewards to active lenders and borrowers. In essence, users tend to accrue COMP tokens as they participate in the lending and borrowing economy of the Compound ecosystem.

Anyone can autonomously create proposals by locking 100 COMP in an address.

The proposal can relate to changes in:
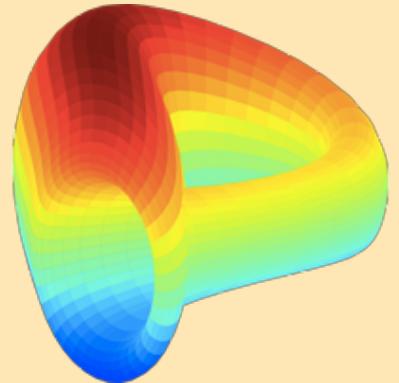
• The assets' collateral factor
• Interest rate models
• Addition or removal of markets
• Other parameters used by the Compound protocol

A proposal is considered for voting if the proposer's address is delegated 65,000 COMP. After a 3-day voting process, proposals with at least 400,000 positive votes are queued for 2 days before being implemented.

For updated information on Compound (COMP), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=COMP

17. Curve DAO Token (CRV)

Curve (CRV) is a decentralized exchange liquidity pool on Ethereum. It is specially designed for:

- extremely efficient, low slippage stablecoin trading, and
- low risk, fee income for liquidity providers.
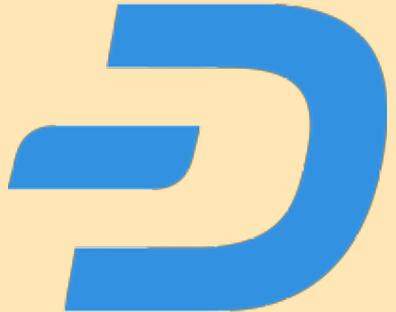
Slippage is the difference between the expected price of a trade and the price at which the trade is executed.

The fees and other parameters are decided by the Curve Decentralised Autonomous Organization (DAO). The fee on all the pools is 0.04%. Half of the fee goes to the liquidity providers and the other half to the members of the DAO.

For updated information on Curve DAO Token (CRV), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=CRV

18. Dash (DASH)

Dash (digital cash) is one of the earliest cryptocurrencies (born in 2014) and is a fork of Litecoin (LTC). It was created to be an "improved version of Bitcoin" by providing stronger privacy and faster transactions.

Some of the unique features of Dash are:

- Masternodes - these improve the availability & efficiency of the network. They also handle governance, secure storage of user data, and instant & private transactions.
- InstantSend - which enables instant payments.
- ChainLocks - which make the blockchain instantly immutable.
- PrivateSend - which enables additional optional privacy for transactions.

For updated information on Dash (DASH), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=DASH

19. Decentraland (MANA)

Decentraland is an Ethereum-based virtual world. It uses two tokens, LAND and MANA:

- LAND tokens are non-fungible tokens that represent individual land parcels.

- MANA tokens are fungible ERC20 tokens. MANA tokens can be used to acquire LAND and also used for the purchase of in-game goods and services.

The Decentraland DAO owns the most important smart contracts and assets of Decentraland. This includes the LAND Contract, the Estates Contract, Wearables, Content Servers, and the Marketplace. The DAO also owns a substantial chunk of MANA.
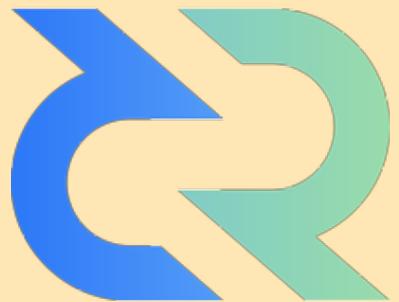
Wallet
Metamask is one of the best wallets for Decentraland.

For updated information on Decentraland (MANA), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=MANA

20. Decred (DCR)

Decred (DCR) is the governance token of the Decred blockchain. It also facilitates open community interaction and sustainable funding policies.

Decred is a blockchain that uses a hybrid consensus mechanism. To vote, users "timelock" their DCR to purchase tickets which can be used both for on-chain and off-chain voting.

For on-chain voting, the protocol randomly selects 5 tickets to review the latest block created by the miners. A block is finalized if at least 3 of the 5 tickets vote that the block is valid. After the voting, the DCR is unlocked and returned along with the reward.

Off-chain voting is done on the Politeia platform. This can relate to spending the platform's treasury funds and changes to the constitutions and policies. The records, proposals, and activities are periodically anchored to the Decred blockchain.

For updated information on Decred (DCR), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=DCR

21. Dogecoin (DOGE)

According to its official website, Dogecoin (DOGE) is "an open-source peer-to-peer digital currency, favored by Shiba Inus worldwide". If you are not much of a dog lover, Shiba Inu is a breed of hunting dog from Japan.

Dogecoin is often described as a "playful" cryptocurrency that uses the Shiba Inu internet meme as its mascot.

DOGE has an interesting history. In 2013, Jackson Palmer, an Adobe Australia employee, tweeted that he is "investing" in an imaginary crypto called Dogecoin. Some of his friends actually encouraged him to create it as a real crypto. Jackson booked the domain name dogecoin.com and partnered with Billy Markus to make the crypto.

This was around the time when Bitcoin was being highly criticized for being favored by criminals and dark-web platforms like Silk Road. The creators felt that a light-hearted cryptocurrency around a meme dog would be a good contrast to the negative image of bitcoin.

The co-founders left the project several years ago.

Dogecoin starting picking up in 2020 primarily because of TikTok influencers. Then in 2021, it got a lot of attention from the Reddit community and Elon Musk.

For updated information on Dogecoin (DOGE), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=DOGE

22. Enjin Coin (ENJ)

Enjin Platform is a service that enables game developers to issue fungible and non-fungible assets as in-game Ethereum tokens. The Enjin marketplace enables the buying and selling of ERC-1155 assets.

Enjin Coin (ENJ) is an Ethereum-based cryptocurrency that backs the value of next-gen fungibles and NFTs.

For updated information on Enjin Coin (ENJ), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=ENJ

23. Ether (ETH)

Ethereum is NOT a blockchain. It's NOT a cryptocurrency either! It's actually a **protocol** (a set of rules or procedures) like "HTTP" or "HTTPS".

Multiple independent blockchains run on the Ethereum protocol. When most people talk about Ethereum, they are talking about **Mainnet** - the primary public Ethereum production blockchain. This is where actual-value transactions occur on the blockchain. The native crypto of this Ethereum is Ether (ETH).

One of the greatest blockchain innovations is **the Ethereum Virtual Machine** (EVM).

EVM is "the environment in which all 'Ethereum' accounts and smart contracts live". Smart contracts are programs that run automatically when some pre-defined conditions are met.

The sole purpose of the Ethereum protocol is to keep "the continuous, uninterrupted, and immutable operation" of the EVM. At any given block, Ethereum has only one "canonical" or unique state. EVM defines the rules for computing new valid states from one block to another.

EVM exists as a single entity maintained by a large number of connected computers (nodes) running an Ethereum client e.g. Geth or OpenEthereum. A client is a software that enables nodes to read blocks on the blockchain and smart contracts.

The most popular Ethereum standards are **ERC-20** (for fungible tokens like stablecoins) and **ERC-721** (for non-fungible tokens). Then there are **ERC-777** (improving ERC-20) and **ERC-1155** (which contains both fungible and non-fungible assets).

Gas refers to the unit that measures the amount of computational effort required to execute specific operations on the Ethereum network.

Each Ethereum transaction requires a fee called "**gas**" because each transaction consumes computational resources. The gas fee is paid in ETH and denoted in gwei (0.000000001 ETH).

Block time is the time it takes to mine a new block (a bunch of transactions). The average Ethereum block time is 12 to 14 seconds.

Ethereum started the concept of decentralized finance (DeFi) and today an amazing multi-billion dollar ecosystem has evolved around it:
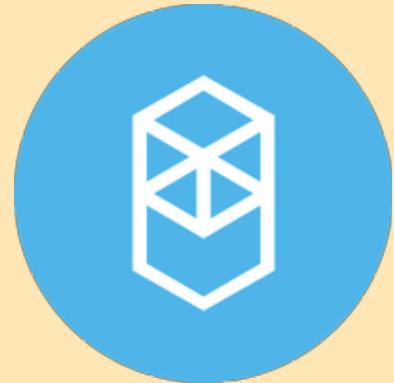
• $100+ billion of fiat pegged & algorithmic stablecoins.
• Innovative projects like Uniswap, Chainlink, Aave, Unstoppable Domains, Basic Attention Token, Polygon, and OpenSea.
• Asset-backed cryptos like tokenized stocks.

Consensus mechanism: Proof of work

For updated information on Ether (ETH), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=ETH

24. Fantom (FTM)

Fantom is a network of blockchains where transactions are finalized in a second and cost a fraction of a cent. Its main use cases include payments, digital identity, and medical records.

Fantom uses a leaderless Proof-of-Stake consensus mechanism called Lachesis. The Lachesis consensus can be plugged into any blockchain and also powers Fantom's Opera mainnet which is compatible with Ethereum.

Here are some of the things I love about Fantom:

1. It conquers the blockchain trilemma. According to the trilemma, a blockchain can have only 2 of these 3 features - scalability, security, and decentralization. Fantom achieves all 3 - scalability, security, and decentralization.

2. Fantom has a modular architecture that makes it highly customizable. Ethereum-based dApps can be ported easily to Fantom Opera mainnet.

3. In Fantom, each application has its own blockchain and its performance and stability are not affected by traffic or congestion. In many blockchains including Ethereum, all dApps use the same infrastructure. This reduces scalability.

4. Each blockchain on Fantom can have its own custom tokens, tokenomics, and governance rules. Since all these blockchains use Lachesis, they can interact with each other.

Fantom's native token is FTM, which can be staked. Delegated FTM gives investors sFTM, a synthetic asset that can be used in the Fantom ecosystem.

While anyone can run validator nodes on Fantom, there is a huge cost to this - you need to stake a minimum of 1 million FTM. This is what we hate about Fantom.

Wallet
fWallet is the Fantom Official wallet. Other popular wallets include Metamask, Ledger, Trust Wallet, and Math Wallet.

For updated information on Fantom (FTM), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=FTM

25. Filecoin (FIL)

Filecoin is the Airbnb for data.

It is a decentralized data storage network where excess storage can be bought and sold. It is also the incentive & security layer for InterPlanetary File System (IPFS). In simple words, it is a marketplace for unused storage - in consumer hardware and data centers.

In the conventional world, cloud service providers like Amazon Web Services (AWS) and Microsoft Azure provide centralized servers and IP addresses for user data. In the blockchain world, Filecoin uses hash-addressed content structures to reduce redundancy and increase efficiency.

Filecoin is integrated with Ethereum. This enables developers to access Ethereum blockchain data and interact with Ethereum smart contracts.

Filecoin (FIL) is the native crypto of the Filecoin network. It can be used to pay miners to store/distribute data and to retrieve information. Storage providers guarantee a minimum service level by providing FIL as collateral.

Consensus mechanism:
Proof-of-replication (PoRep) and Proof-of-spacetime (PoSt).

PoRep enables storage miners to prove that they are physically storing a unique copy of client data. PoSt proves that storage miners are continuing to dedicate storage space to client data over time

Wallets
The recommended Filecoin wallet implementations are Lotus and Glif wallet.

For updated information on Filecoin (FIL), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=FIL

26. Flow (FLOW)

Flow is a proof-of-stake public blockchain conceived by the team behind CryptoKitties.

Flow's speed and throughput is a result of separating validators into 4 different roles:

- Collector nodes that increase efficiency
- Execution nodes that enable speed and scale
- Verifier nodes that guarantee correctness
- Consensus nodes that ensure decentralization
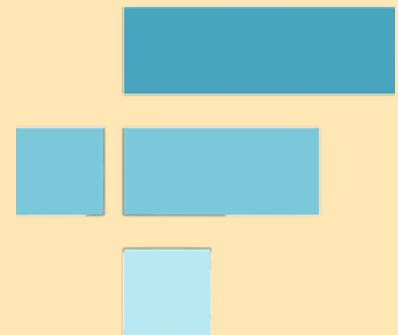
FLOW is the native token of the Flow blockchain. Its use cases are:

- staking and payment of staking rewards
- transaction fees
- storage fees

For updated information on Flow (FLOW), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=FLOW

27. FTX Token (FTT)

FTX is a popular crypto derivatives trading platform. Its native token is FTT.

An interesting feature of the exchange is leveraged tokens. These allow traders to put leveraged positions without the need to trade on margin e.g. a trader who wants to short Bitcoin with a 3x leverage can buy a 3x short Bitcoin leveraged token on the FTX exchange.

These tokens are ERC20-compatible and can be listed on spot exchanges.
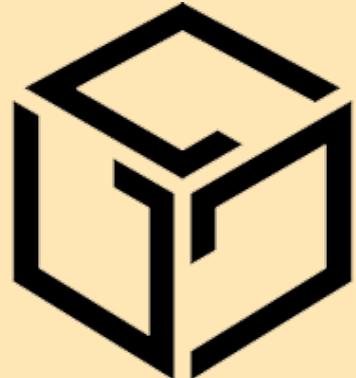
All FTX derivatives are stablecoin-settled and require one universal margin wallet.

FTT holders get fee rebates and can also stake their holding.

For updated information on FTX Token (FTT), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=FTT

28. Gala (GALA)

Gala is a gaming platform. Players can use the GALA crypto as a medium of exchange for payment of digital goods or in-game items.

GALA can also be used to influence what games Gala should develop. GALA can be earned by playing games and by running nodes.

There are 3 types of nodes:

1. **Proof-of-work (PoW) Founder Nodes** that validate in-game transactions and secure the network. There can be a maximum of 50,000 Founder's Nodes.

2. **Proof-of-stake (PoS) paid nodes** that operate for specific games.

3. **Proof-of-Storage free nodes** that allow the games to be fully hosted on the node ecosystem.

Gala Games was founded by Eric Schiermeyer, the co-founder of Zynga, a popular social and mobile games company.

Wallet
Metamask and Trust Wallet are popular wallets for GALA.

For updated information on Gala (GALA), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=GALA

29. Helium (HNT)

The Helium network is a decentralized wireless network. It enables Internet of Things (IoT) devices to wirelessly connect to the Internet and geolocate themselves without satellite location hardware or cellular plans.

The network is powered by a blockchain whose native token is HNT. This token incentivizes a two-sided marketplace between coverage providers and consumers.

Hotspots are a combination of a wireless gateway and a miner and provide network coverage over a certain radius. Hotspots also mine HNT. Helium runs on the proof-of-coverage consensus algorithm.

For updated information on Helium (HNT), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=HNT

30. Litecoin (LTC)

Litecoin is a fork of the Bitcoin Core source code and is also called Bitcoin's younger brother and even Bitcoin Lite,

Litecoin (LTC) was founded by Charlie Lee - an early Bitcoin miner, a computer scientist, and an ex-Google engineer. Litecoin started off in October 2011 but came into the limelight in November 2013 after a sudden huge price surge.

Some of the differences between Litecoin and Bitcoin are:

- Faster block generation time (LTC: 2.5 mins, BTC: 10 mins).
- Larger total coin supply (LTC: 84 million, BTC: 21 million).
- Hash algorithm (LTC: Scrypt, BTC: SHA-256).

Litecoin also undergoes **block reward halving** every 840,000 blocks (approximately 4 years).

Litecoin uses the **Nakamoto Consensus** in which the valid chain is the longest chain with the most accumulated proof-of-work.

This type of consensus is "probabilistic" because there is always a probability or chance that a new, longer chain could emerge with more accumulated proof-of-work.

This chain would invalidate the current chain.
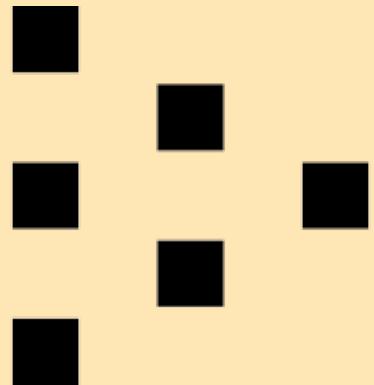
Litecoin has implemented several technological upgrades including:

- Segregated Witness (Segwit),
- Lightning Network (for layer 2 scaling), and
- OmniLite (for layer 2 smart contracts).

The popular meme coin **Dogecoin (DOGE)** is a fork of the Luckycoin blockchain which is a fork of Litecoin. Since Litecoin and Dogecoin use the same Scrypt-based mining system, they are used in merge-mining.

Merged mining (technically called auxiliary proof of work) is the process of mining two or more blockchains at the same time. Essentially the same proof of work can be used on multiple chains.

31. Livepeer (LPT)

Livepeer is a decentralized video streaming network built on Ethereum. Its native token is LPT.

Developers can build and scale streaming platforms and services through API access to the Livepeer network.

Token holders help improve and secure the Livepeer network by acquiring and staking LPT and earning ETH and LPT rewards.

Video Miners run Livepeer nodes and transcode video on their GPUs in exchange for ETH and LPT rewards.

For updated information on Livepeer (LPT), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=LPT

32. Maker (MKR)

MakerDAO is a decentralized organization while Maker Protocol is a software platform, that allows users to issue and manage the DAI stablecoin.

Maker (MKR) is the governance token of the MakerDAO and Maker Protocol.

Maker Protocol enables over-collateralized loans by locking ETH in a smart contract and minting Dai, a USD-pegged stablecoin. Dai can be traded and used for payments.

MKR is minted & burnt depending on the debt status of MakerDAO. If the financial resources of the protocol cannot cover its debt, new tokens are minted. If there is a surplus, tokens are burned.

To vote on proposals users need to own MKR, or have it delegated to themselves. Then you need to create a voting contract and lock MKR tokens in it.

For updated information on Maker (MKR), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=MKR

33. Monero (XMR)

Bitcoin transactions are considered pseudo-anonymous since the Bitcoin blockchain is transparent - anyone who knows your address can view details of all the transactions you have ever made. That's where privacy coins like Monero come in.

Monero (XMR) enables private and anonymous transactions and is one of the most widely used darknet currencies in the world. It obscures senders and recipients. Unlike Bitcoin, XMR is completely fungible.

It is rumored that one of the co-inventors of XMR was Bitcoin-inventor Satoshi Nakamoto.

The sender, receiver, and amount of every single Monero transaction are hidden through the use of 3 important technologies:
• Stealth Addresses
• Ring Signatures
• RingCT

Stealth Addresses are automatic one-time addresses for every transaction.

Ring Signatures are a group of cryptographic signatures with at least 1 real participant. There is no way to tell which in the group is the real one as they all appear valid.

RingCT (Ring Confidential Transactions) is a way to hide the amount sent in a Monero transaction.

For updated information on Monero (XMR), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=XMR

34. PancakeSwap (CAKE)

PancakeSwap is a popular decentralized exchange (DEX) on the Binance Smart Chain. It is an automated market maker (AMM). Consider it to be the Uniswap of the Binance world.

You can use it to trade BEP-20 tokens without a centralized exchange and while keeping control of your private key. You must have heard about ERC-20 tokens which are fungible tokens on the Ethereum blockchain. BEP-20 tokens are fungible tokens on the Binance blockchain.

The PancakeSwap team is anonymous, but the platform is open source and its code has been audited by respected security firms.

The native crypto of PancakeSwap is CAKE. It can be used for:

• Yield farming by staking supported liquidity provider (LP) tokens,
• Staking BEP-20 tokens and earning yields on "Syrup" pools,
• Buying PancakeSwap Lottery tickets,
• Creating Pancake Profiles and minting NFTs,
• Participating in IFOs (Initial Farm Offerings) and buying tokens of new projects before their public launch,
• Making governance proposals,
• Voting on governance proposals,
• Gambling by predicting whether the price of Binance Coin (BNB) will rise or fall in a 5-minute period.
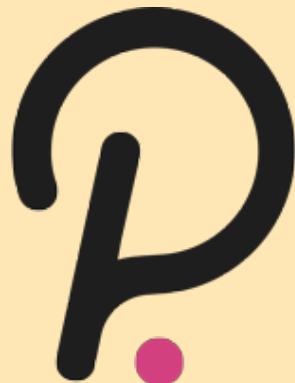
Wallet

To use PancakeSwap, you will need to connect a Web3 wallet (e.g. Trust Wallet or Metamask) to the PancakeSwap front-end.

For updated information on PancakeSwap (CAKE), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=CAKE

35. Polkadot (DOT)

Polkadot is not a conventional blockchain. It is actually an ecosystem of interconnected blockchains called parallelized chains (parachains). Parachains are application-specific and they plug into a single base platform called Relay Chain.

The Relay Chain does 2 main things:

*   It secures the parachains.
*   It contains Polkadot's consensus and voting logic.

Polkadot was conceptualized by Ethereum co-founder Dr. Gavin Wood. He is also the inventor of the Solidity smart contract programming language.

Polkadot has an interesting history. It raised funds through an ICO in 2017. A hacker "froze" 66% of these funds within a few days of the raise!

What I like best about Polkadot is that its network has a common set of validators for securing multiple blockchains. And that transactions are spread across multiple parallel blockchains.

DOT is the native token of the Polkadot network. DOT helps in operating and governing the network, and in creating parachains.

Consensus mechanism:

GRANDPA (GHOST-based Recursive ANcestor Deriving Prefix Agreement) and BABE (Blind Assignment for Blockchain Extension)
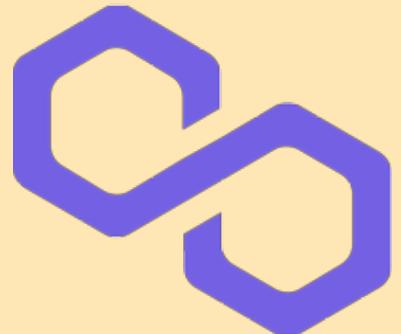
Wallets
The popular wallets include Fearless Wallet, Klever, Polkawallet, and Stylo.

For updated information on Polkadot (DOT), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=DOT

36. Polygon (MATIC)

The Ethereum blockchain is slow and costly. Polygon has a bunch of products and services to solve this problem.

Polygon's software development kit enables the building of Ethereum sidechains - blockchains linked to Ethereum via a two-way peg.

These sidechains are of multiple types:

- Bundling transactions into blocks which are batched into a single submission to the Ethereum blockchain (Plasma Chains)
- Allowing multiple transfers to be bundled into a single transaction (zk-Rollups)
- Plasma Chains which also scale Ethereum smart contracts (Optimistic Rollups)

MATIC is Polygon's native token and has the following uses:

- pay for transaction fees in the network,
- be the unit of payment and settlement in the Polygon ecosystem,
- power the Polygon proof-of-stake sidechain

Consensus mechanism:

MATIC is an Ethereum ERC-20 token. Polygon sidechains are Proof-of-Stake.
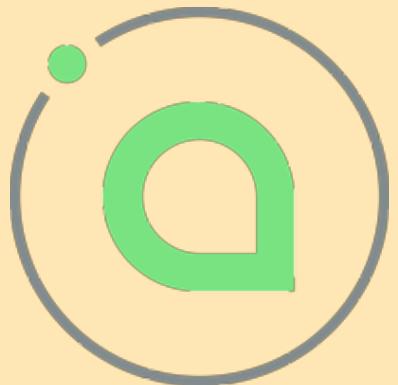
Wallets
The popular wallets include Trust Wallet and Metamask.

For updated information on Polygon (MATIC), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=MATIC

37. Siacoin (SC)

Sia is a decentralized cloud storage platform and a data storage marketplace.
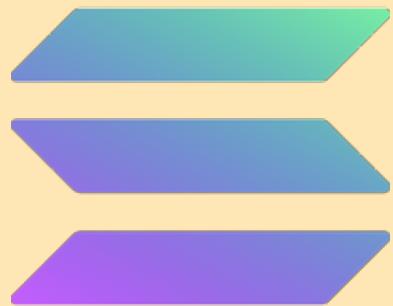
It encrypts and distributes files across a decentralized network. Users control their private encryption keys and own their data. This is unlike traditional cloud storage providers.

Sia's storage can cost upto 90% less than leading traditional cloud storage providers. These charges are paid using the native token Siacoin (SC).

For updated information on Siacoin (SC), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=SC

38. Solana (SOL)

Solana is one of the world's cheapest and fastest public blockchains.

It has a block time of 400 milliseconds and transaction fees of less than $0.01. Solana's native token is SOL.

SOL can be:

•   staked directly on the network
•   delegated to validators in return for inflation rewards
•   used to pay for fees for sending transactions
•   used to pay for running smart contracts

The Solana Foundation is a non-profit organization headquartered in Zug, Switzerland, dedicated to the decentralization, growth, and security of the Solana network.

Solana has a very vibrant ecosystem with more than 400 DeFi, NFTs, Web3 projects.

Consensus mechanism: Solana uses Proof of History (PoH) and Tower BFT.

Wallets
There are several mobile, web, and command-line wallets for SOL.

For updated information on Solana (SOL), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=SOL

39. Stacks (STX)

Stacks is a blockchain that brings smart contracts, non-fungible tokens (NFT), and decentralized applications (DApps) to Bitcoin.

Since Stacks uses Bitcoin as a base layer, everything that happens on Stacks is settled on the Bitcoin Blockchain. Stacks connects directly to the Bitcoin blockchain through its proof-of-transfer (PoX) consensus mechanism.

To understand the proof-of-transfer (PoX) consensus mechanism used by Stacks, let's do a quick recap of some of the basic mechanisms.

Proof-of-work, used by Bitcoin, requires miners to dedicate computing resources. In proof-of-stake blockchains, validators dedicate financial resources to secure the network. **Proof-of-bur**n is a consensus mechanism in which miners compete by "burning" or "destroying" a proof-of-work crypto as a proxy for computing resources.

Proof-of-transfer (PoX) is an extension of proof-of-burn. PoX uses the proof-of-work crypto of a credible blockchain to secure a new blockchain. But instead of "burning the crypto", miners transfer the committed crypto to some other participants in the network.

Stacks also operates the .BTC top-level domain. You can get a domain name at a cost of $5 USD for 5 years. To register a .BTC name, you need to send a transaction to the Blockchain Name System (BNS) smart contract on the Stacks blockchain. This transaction gets finalized on Bitcoin. This makes .BTC names censor-proof.

The Stacks token (STX) fuels the:

- execution of smart contracts,
- processing of transactions, and
- registration of new digital assets.

Stacking rewards Stacks (STX) token holders with bitcoin for temporarily locking up their tokens.
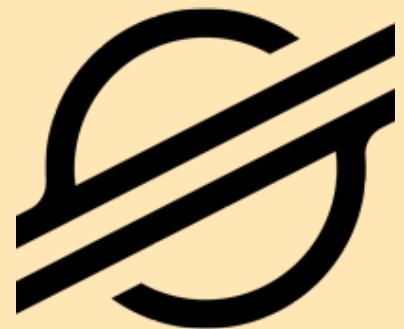
Wallets
Popular Stacks wallets include Hiro Wallet, Xcerse, D'Cent, Boom Wallet, Cerebro, and Neptune.

For updated information on Stacks (STX), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=STX

40. Stellar (XLM)

Stellar is a blockchain payments network. Its native token is Stellar Lumens (XLM). Stellar is a fork of the Ripple protocol.

Assets on the Stellar network are issued and redeemed by trusted entities called anchors.

Anchors leverage a distributed exchange (DEX) to enable real world assets to be exchanged on Stellar. The DEX maintains an order book for every asset pair.

For updated information on Stellar (XLM), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=XLM

41. SushiSwap (SUSHI)

SushiSwap (SUSHI) is a decentralized protocol for providing automated liquidity on Ethereum.

It is a decentralized exchange and a decentralized lending market. It also enables yield instruments and staking derivatives.

In late 2020, Yearn.finance and SushiSwap announced a merger under which they would share development resources, but maintain separate tokens and governance systems.

For updated information on SushiSwap (SUSHI), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=SUSHI

42. Terra (LUNA)

Terra is one of the largest Decentralised Finance (DeFi) blockchains.

The top DeFi protocols that run on Terra are:

- Anchor (ANC)
- Lido (LDO)
- Mirror (MIR)
- Terraswap
- Pylon Protocol (MINE)

Terra is an open-source public blockchain protocol for algorithmic stablecoins. It enables the creation of fiat-pegged stablecoins that can be spent, saved, traded, or exchanged on the Terra blockchain.

The protocol consists of 2 main tokens:

1. Terra stablecoins: These are stablecoins that are minted by burning Luna.

2. Luna: This is the protocol's native staking token that is used for governance and in mining.

Wallets
Trust Wallet is popularly used for Terra (LUNA).

For updated information on Terra (LUNA), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=LUNA

43. Tezos (XTZ)

Tezos is a smart contract enabled blockchain similar to Ethereum.

It offers peer-to-peer (P2P) transactions via its native token XTZ (called Tezzie).

Tezos has a unique type of staking process. Holders stake 8,000 XTZ and are then vote on proposed changes to the blockchain's code in a multi-step process that takes around 23 days.

For updated information on Tezos (XTZ), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=XTZ

44. The Graph (GRT)

The Graph is a decentralized protocol for indexing and querying data from blockchains. Developers can build and publish open APIs (subgraphs) that make data easily accessible.

The Graph is currently used by many projects including Uniswap, Synthetix, and Decentraland.

GRT is a token that is locked-up by protocol participants to provide services to the network.

For updated information on The Graph (GRT), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=GRT

45. The Sandbox (SAND)

The Sandbox is a blockchain-based metaverse (virtual world) with a "play-to-earn" model. Its native utility token is $SAND. The metaverse is made up of parcels of digital real-estate called LAND.

Players can build, own, and monetize gaming experiences using non-fungible tokens (NFTs) and $SAND. The digital assets created by players as NFTs can be integrated into games with The Sandbox Game Maker.

For updated information on The Sandbox (SAND), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=SAND

46. Theta (THETA)

Theta is like Airbnb for video streaming - viewers earn rewards for sharing excess bandwidth and computing resources.

Theta's benefits are:
- Users earn rewards for sharing excess bandwidth & computing resources.
- Viewers get better quality streaming services.
- Content creators improve their earnings.
- Video platforms don't have to build expensive infrastructure.
- Video platforms can increase revenues.

Theta also has smart contract capability for fully digitized item ownership, payment-consumption models, transparent royalty distributions, etc. Theta Enterprise Validators include Google, Binance, Sony Europe, and Samsung.

The Theta blockchain has two native tokens:
- Theta (THETA) for governance, and
- Theta Fuel (TFUEL) for powering transactions.

Consensus mechanism: Proof of Stake

Wallets
Theta has its own wallet.

For updated information on Theta (THETA), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=THETA

47. Uniswap (UNI)

Uniswap (UNI) is a decentralized protocol for automated liquidity provision on Ethereum.

One major problem with illiquid assets on regular exchanges is "high spreads".

Uniswap solves this problem by enabling everyone to become a market maker. Uniswap suffers from high slippage for large orders because the price paid increases with the increase in the quantity.

UNI holders collectively control:

*   Uniswap governance
*   UNI community treasury
*   The protocol fee switch
*   Uniswap.eth ENS name
*   Uniswap Default List (tokens.uniswap.eth)
*   SOCKS liquidity tokens

For updated information on Uniswap (UNI), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=UNI

48. VeChain (VET)

VeChain is an enterprise blockchain for supply chain management and Internet of Things (IoT).
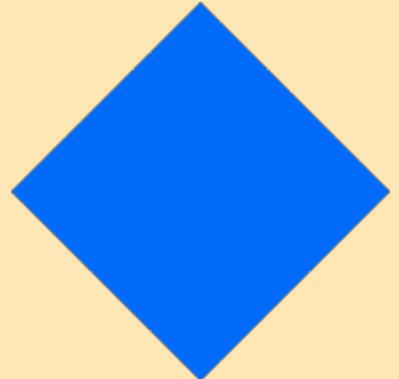
There are 2 tokens on VeChain - VeChain Token (VET) and VeChainThor Energy (VTHO).

VeChain Token (VET) is used to relay value across the VeChains network. VeChainThor Energy (VTHO) powers smart contract transactions as energy or "gas".

For updated information on VeChain (VET), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=VET

49. Waves (WAVES)

Waves is a blockchain protocol and development toolset for Web 3.0 applications. Issuing custom tokens on Waves is very easy. Ride is the native language of Wave for smart contract creation.

Waves transactions have fixed fees and no variable gas fees.

Waves is an open Leased-Proof-of-Stake (LPoS) blockchain focused on speed, scalability, security, and user experience. It uses the Waves-NG protocol.

For updated information on Waves (WAVES), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=WAVES

50. Zcash (ZEC)

Zcash is a "privacy coin" and by default, its transactions do not reveal the sending & receiving addresses or the amount being sent. Optionally, this data can be revealed for auditing or regulatory compliance.

Zcash uses the zk-SNARK zero-knowledge proof technology. This enables allows nodes to verify transactions without revealing any sensitive information about the transactions.

For updated information on Zcash (ZEC), see:
https://www.futuremoneywallet.com/crypto_details.php?symbol=ZEC

Part C
Start your crypto journey

1. The 11 ways to profit from Crypto

1. Airdrops

An airdrop is a marketing activity by a new crypto project. A small amount of crypto is sent out for "free" to increase awareness. It's not entirely "free" as you may need to do some promotional work like retweeting a post, sharing a link with your network, etc. If you want to bypass this work, you can signup for automated services.

You can use sites like https://airdropalert.com to find the best airdrops.

2. Crypto Affiliate Programs

Most Crypto exchanges, trading platforms, and wallet services offer commissions if you refer new customers to them. All you need to do is signup for a referral code and then share links to your social networks.

3. Learn Crypto - Earn Crypto

Some Cryptos pay you to learn about them. This is great because you are getting paid to learn interesting stuff! All you need to do is watch some videos, take a quiz, and get rewarded in the crypto you have just learned about. A great place to start is https://coinmarketcap.com/earn

4. Play to Earn games

Did you know that you can get free Crypto just by playing blockchain-based games? Some of the top Play to Earn games are Decentraland (MANA), The Sandbox (SAND), Axie Infinity (AXS), and Gala (GALA).

5. HODL

HODL is an acronym for 'Hold on for Dear Life'. Most bitcoin investors I know fall under this category. So while they don't 'book' profits, their net worth can skyrocket or crash depending upon crypto prices. You really need to be a 'believer' and a long-term player for this.

6. Dividends

Some crypto exchanges pay dividends similar to how companies pay dividends to shareholders. An example is KuCoin, a crypto exchange that pays 50% of all trading fees as dividends to Kucoin Shares (KCS) holders.

7. Staking

Bitcoin uses 'mining' to validate transactions. This costs a huge amount of electricity and computational power. Many other cryptos e.g. Solana, Terra, Cardano use a more eco-friendly way of validating transactions - proof of stake. This requires you to temporarily 'lock' your crypto in a wallet or exchange.

Example: You could earn an annual return of 92.25% by staking The Graph (GRT). You can check out the staking rewards for various cryptos at StakingRewards.

8. Lend cryptos

You can lend your crypto and earn interest. Examples: The annual interest on Bitcoin is currently 4.75% while that on Tether (USDT) is 12.51%.

9. Provide liquidity

Providing liquidity on Decentralised Finance (DeFi) platforms is an excellent, though slightly complex, way of profiting from crypto. You can get started with Uniswap, an automated liquidity protocol for Ethereum tokens. Each liquidity pool has a smart contract to enable swapping tokens and adding liquidity.

10. Bug bounties

Many projects pay serious money if you find bugs in their platform/code. This requires a ton of 'hacking' talent.

11. Day trading

People gamble on a lot of things - horse races, dog races, lotteries, and even cockroach races! In fact, there are many 'prediction markets' out there for gamblers. Well, day traders gamble on cryptos. This is probably the riskiest and most stressful way to try to make money.

2. Building your Crypto portfolio

Now that you have almost completed the course, it's time to start your crypto journey!

Stage 1: Starting off with a zero budget

If I was just starting out with crypto and had a zero budget, I would earn free cryptos. There are 3 ways of doing this:

1. Airdrops
New crypto startups use airdrops as a marketing strategy. They give free cryptos in return for promoting their website and social media accounts. You can get a list of the latest airdrops from coinmarketcap.com and airdropalert.com

2. Learn & Earn programs
Many cryptos run small courses to build awareness about their project. You need to watch a small video and take a small quiz and you get free cryptos. There is an earn section on coinmarketcap.com and coinbase.com

3. Play to Earn games
As the name suggests, these are blockchain-based games that give you free cryptos for playing them. Some of these games are Decentraland, Sandbox, Axie Infinity, Gala

Stage 2: $100 budget

If I was buying my first crypto, it would be Bitcoin (BTC). Bitcoin is the big daddy of crypto and whenever it dips, the entire crypto market dips and whenever it zooms up, the entire market goes with it.

Stage 3 - $1,000 budget

If I had a budget up to $1000, I would stick to the big boys:
*   Bitcoin (BTC)
*   Ether (ETH)
*   Binance Coin (BNB)

Stage 4 - $10,000 budget

If I was in this bracket, I would spread my money on the top cryptos in some of these 4 sectors:

1. DAO
The top cryptos include Aave (AAVE), Compound (COMP), Curve DAO Token (CRV), Dash (DASH), Decred (DCR), Maker (MKR), SushiSwap (SUSHI), and Uniswap (UNI).

2. DeFi
The top cryptos include Aave (AAVE), Curve DAO Token (CRV), PancakeSwap (CAKE), SushiSwap (SUSHI), and Uniswap (UNI).

3. Gaming & Metaverse
The top cryptos include Axie Infinity (AXS), Decentraland (MANA), Enjin Coin (ENJ), Gala (GALA), and The Sandbox (SAND).

4. Web 3.0
The top cryptos include Arweave (AR), Basic Attention Token (BAT), Filecoin (FIL), Chainlink (LINK), and Theta (THETA)

Stage 5 - Over $10,000 budget

Now the game gets serious. Anyone in this bracket should take advice from someone who knows their way around crypto. You will need solid advice around Yield Farming, Liquidity Pools, DeFi protocols & more.

All the best! I hope you have an awesome Crypto journey.

3. FUTURE Indexes

A crypto index is a mathematical method for tracking the performance of a group of crypto assets. Sophisticated investors use Indexes to make better decisions.

1. FUTURE Currency Index

The FUTURE Currency Index is a market capitalization index based on Bitcoin Cash (BCH), Bitcoin (BTC), Dash (DASH), Litecoin (LTC), Monero (XMR), and Zcash (ZEC). Its base date is 24th February 2022.

2. FUTURE DAO Index

The FUTURE DAO Index is a market capitalization index based on Aave (AAVE), Compound (COMP), Curve DAO Token (CRV), Dash (DASH), Decred (DCR), Maker (MKR), SushiSwap (SUSHI), and Uniswap (UNI). Its base date is 24th February 2022.

3. FUTURE DeFi Index

The FUTURE DeFi Index is a market capitalization index based on Aave (AAVE), Balancer (BAL), PancakeSwap (CAKE), Compound (COMP), Curve DAO Token (CRV), Maker (MKR), SushiSwap (SUSHI), and Uniswap (UNI). Its base date is 24th February 2022.

4. FUTURE Gaming & Metaverse Index

The FUTURE Gaming & Metaverse Index is a market capitalization index based on Axie Infinity (AXS), Decentraland (MANA), Enjin Coin (ENJ), Gala (GALA), and The Sandbox (SAND). Its base date is 24th February 2022.

5. FUTURE Web3 Index

The FUTURE Web3 Index is a market capitalization index based on Arweave (AR), Audius (AUDIO), Basic Attention Token (BAT), Chainlink (LINK), Filecoin (FIL), Helium (HNT), Livepeer (LPT), Siacoin (SC), The Graph (GRT), and Theta (THETA). Its base date is 24th February 2022.

4. Useful resources

The latest version of the *Crypto Playbook* is at:
https://www.rohasnagpal.com/crypto-playbook.php

For Crypto Metrics, you can use:

- CoinMarketCap: https://coinmarketcap.com/
- Messari: https://messari.io
- DeFiLlama: https://defillama.com
- Future Money Wallet: https://www.futuremoneywallet.com

Cryptocurrency dividends calculators
https://www.bestcryptodividends.com

Detailed resources for staking cryptos:
www.stakingrewards.com

My podcast – Cut the Cryp
https://www.rohasnagpal.com/podcast-cut-the-cryp.php

Bisq is a peer-to-peer bitcoin trading network which you run on your own hardware. It's open-source and community-driven.
https://bisq.network

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- Facebook: https://www.facebook.com/rohasnagpal
- Quora: https://www.quora.com/profile/Rohas-Nagpal

5. Glossary of crypto terms

1. Address
A crypto address represents a "destination" on a blockchain. Consider it as a bank account number. You can generate unlimited addresses on your own.

This is an example of a Bitcoin address:
1AHr3RDJS7v8ruFLbVoxXsgVeGqYqALqQ8

In most blockchains, the addresses are public and anyone can see the transactions and balances relating to an address using a blockchain explorer. You won't be able to do this on 'privacy-based' blockchains like Monero.

2. Airdrop
An airdrop is a marketing activity by a new crypto project. A small amount of crypto is sent out for 'free' to increase awareness. It's not entirely 'free' as you may need to do some promotional work like re-tweeting a post, sharing a link with your network, etc.

3. Algorithm
An algorithm is a set of steps or actions to be followed. In the Crypto world, some of the most famous algorithms are:

• Advanced Encryption Standard (AES), used for the encryption of electronic data.

• Elliptic Curve Digital Signature Algorithm (ECDSA), used for electronic signatures.

• Secure Hash Algorithm 2 (SHA-2), a cryptographic hash function.

4. All-Time-High (ATH)
'All-Time High' (ATH) is the highest price or market capitalization that a crypto has reached since its listing or creation. It shows the 'theoretical potential' of the crypto. Remember that there is no guarantee that the Crypto will ever hit that high again.

5. All-Time-Low (ATL)
All-Time Low (ATL) is the lowest price or market capitalization that a Crypto has reached since its listing or creation.

6. Altcoin
Bitcoin, the big daddy of Crypto, is the world's first Cryptocurrency. All other Cryptocurrencies are called "alternative coins" or "altcoins". There are more than 8,000 altcoins!

7. Anti-Fragile
An anti-fragile asset performs better when there is risk and uncertainty. This concept was created by the famous author Nassim Nicholas Taleb.

He says that "some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, and stressors and love adventure, risk, and uncertainty".

A classic example is Bitcoin (BTC). It has become stronger with every hit it has suffered.

8. Arbitrage
Arbitrage is when you quickly buy and sell the same asset in different markets to take advantage of price differences between the markets.

Almost all markets (the cryptocurrency markets, stock markets, gold markets, etc.) are inefficient. That's what gives rise to arbitrage opportunities.

9. Ashdraked
Ashdraking is the complete loss of a crypto investor's capital as a result of shorting Bitcoin.

The term is named after 'Lord Ashdrake', a pseudonymous Romanian Bitcoin trader who used to short Bitcoin - betting that its value would decline.

Initially, he made large profits as Bitcoin declined in 2014 - 2015. Then he shorted Bitcoin at $300. Prices went to $600 in a few weeks and he lost all his money.

10. ASIC

Application-specific integrated circuits (ASICs) are 'crypto mining machines'. They maximize computing power while keeping energy costs low.

While calculating the profitability of an ASIC, you need to consider:
1. The number of hashes per second it can generate.
2. The total hash rate across the crypto network.
3. The value of the crypto being mined.
4. The energy cost per hash generated.
5. The cost of the ASIC.

11. Ask / Bid price

The ask price is the amount a seller is willing to sell a crypto for. The bid price is the amount a buyer is willing to pay for a crypto.

The difference between the bid and ask price is the bid-ask spread. The spread is a measure of the demand and supply for a crypto. The higher the spread, the more the profit for market makers.

12. Asset class

An asset class is a group of investments that have similar characteristics and are subject to the same laws.

The main asset classes are:
• Equities
• Bonds
• Money market instruments
• Real estate
• Commodities
• Derivatives
• Cryptocurrencies

There is very little (or even negative) correlation between different asset classes.

13. Astroturfing

Astroturfing is an illegal activity in which someone tries to gain credibility by making marketing messages appear to come from real people.

This happened a lot during the ICO boom. Crypto companies used to create fake Twitter, Telegram and Discord accounts and then post positive messages from these accounts.

There are several online tools which you can use to check the authenticity of social media profiles.

14. Atomic Swap
An atomic swap enables direct wallet-to-wallet trading between crypto investors using a smart contract instead of a crypto exchange.

Example: A sends 10 dollars to B and simultaneously B sends 700 rupees to A.

Because this happens in a single transaction, it guarantees atomicity. This means that either both the transfers will take place simultaneously, or none will take place. This is also called delivery-versus-payment (DvP).

15. Attestation Ledger
An attestation ledger is an account book that provides evidence of individual transactions. It is used to 'attest' that a financial transaction has taken place. It can prove the authenticity of transactions.

16. Automated Market Maker (AMM)
An automated market maker (AMM) is a system that provides liquidity through automated trading. AMM-based decentralized exchanges do not have order books and centralized parties.

Each liquidity pool is defined by a smart contract that includes functions to enable swapping tokens and adding liquidity.

Example: Uniswap is a protocol for creating liquidity and trading ERC-20 tokens on Ethereum. It enables its users to earn by supplying liquidity and to exchange between various assets.

17. Balancer Pool
An index fund is one whose portfolio matches / tracks a financial market index like BSE SENSEX or S&P 500.

Index funds charge investors a fee for managing and holding their funds.

Now imagine an index fund where the investor collects fees from traders who rebalance the investor's portfolio by following arbitrage opportunities.

That's a Balancer Pool - an automated market maker that functions as a self-balancing weighted portfolio and price sensor.

18. Bear Trap
A bear trap starts with a group of crypto traders selling a large number of cryptos. This makes other traders sell since they suspect a price correction. This causes the price to fall further.

That's when the bear trap is released when the earlier sellers buy back the crypto at a lower price. Bear traps can happen over hours or days.

19. Bear
A bear is a crypto trader who excepts the crypto market prices to go down over a particular period. A bear market is one that is experiencing significant fall in prices. The most famous crypto bear market was the Bitcoin decline in 2013 - 2015.

20. Block Explorer
All the transactions in a blockchain are stored in blocks of data. A block explorer (also called a blockchain browser) enables anyone to view the data in individual blocks. That's what makes blockchains so transparent.

21. Block reward
A blockchain is a sequence of individual blocks. Each block contains the record of transactions that were completed in a given period.

In a proof-of-work blockchain like Bitcoin, each block has a mathematical problem that must be solved before it is added to the blockchain. The miner who first solves it gets paid a block reward.

The Bitcoin block reward started at 50 BTC and halves every 210,000 blocks (approx. 4 years).

22. Block
A blockchain is a sequence of individual blocks. In the bitcoin blockchain, every block contains the timestamp, transaction record, hash reference of the previous block and nonce (solution to the mathematical puzzle).

23. Blockchain Trilemma

The blockchain trilemma is the challenge in achieving a balance between:

- Scalability - the speed and volume of transactions.
- Decentralization - the distribution of network nodes.
- Security - the integrity of the system from compromise.

It is believed that an equal prioritization of all 3 factors at once is not possible.

24. Blockchain

Today, the Internet enables the movement of data (videos, text, photos and more) globally in milliseconds. But try moving value (money, loyalty points etc.) and you will be surprised by the costs, inefficiencies and time delays.

Blockchain is a revolutionary technology that enables 'internets of value' that can move value in seconds - money, loyalty points, equity shares, bonds, coupons, votes, intellectual property and much more.

25. Bollinger Band

A Bollinger band is a technical analysis tool that consists of three lines: a simple moving average, an upper band, and a lower band. A bollinger band is used as a visual indicator for estimating the volatility of a crypto.

26. Bonding Curve

A bonding curve is a mathematical concept describing the relationship between the price and the supply of a crypto coin / token. The underlying logic is that when someone buys a crypto with limited supply (e.g. BTC), the next buyer will have to pay more for it. Why? Because the number of available units decreases with each purchase. A bonding curve contract issues its own tokens through buy and sell functions.

27. Coinbase

In mineable cryptos like BTC, miners do 4 things:

1. collect the most recent transactions
2. package them into blocks
3. secure the blocks with cryptographic hashes
4. add the blocks to the end of the blockchain

This costs electricity and computational power.

Their incentive is a special transaction in every new block – newly "mined" coins - called the coinbase of the block.

28. UTXO

Unspent Transaction Output (UTXO) is a record-keeping model used by Bitcoin and some other cryptos.

These cryptos do not use accounts or balances. Individual coins (UTXOs) are transferred between users. This is similar to physical coins or cash. Your wallet keeps track of the unspent transactions associated with all your addresses. The wallet balance is the sum of all the unspent transactions.

Ethereum uses the Account / Balance model and not UTXO. This keeps track of the balance of each account.

Crypto

Services

- Automated Liquidity Protocols
- Blockchain-as-a-Service
- Consortium Blockchains
- Decentralized Autonomous Organizations (DAO)
- Exchanges (CEX & DEX)
- Faucets
- Full node operators
- Liquidity Providers
- Masternode operators
- Miners & Mining pools
- Mixers
- Oracles
- Wallets

Types

- **Ready money**
  e.g. Bitcoin
- **Open Blockchain Tokens**
  e.g. WRAP Tokens
- **Hush / privacy coins**
  e.g. Monero
- **Application coins**
  e.g. Filecoin
- **Security tokens**
  e.g. Exodus
- **Non-Fungible Tokens (NFTs)**
  e.g. Crypto Kitties
- **Algorithmic stablecoins**
  e.g. Frax
- **Governance tokens**
  e.g. Uniswap
- **Public Blockchain natives**
  e.g. Ether
- **Asset-backed tokens**
  e.g. Tether
- **Lending / Borrowing cryptos**
  e.g. Aave

Metrics

- Return on investment
- Volatility
- Sharpe ratios
- Open-High-Low-Close prices
- Holders Stats
- Circulating, Maximum & Total Supply
- Market Capitalization
- Fully Diluted Market Capitalization
- Volume
- Velocity
- Total Value Locked

How to profit

- Airdrops
- Crypto Affiliate Programs
- Bug bounties
- Learn Crypto - Earn Crypto
- HODL
- Dividends
- Staking
- Day trading
- Lend cryptos
- Provide liquidity