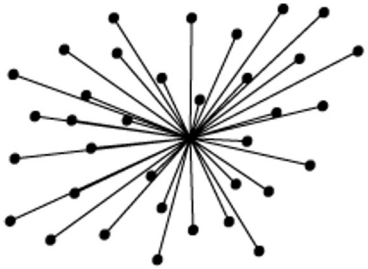
“Quale tipo di blockchain scegliere: permissionless, permissioned, o nessuna blockchain?”

Andrea.vitaletti@diag.uniroma1.it

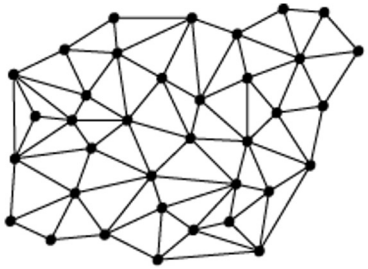
Perché usate la blockchain?

Qual’è la tipica assunzione nella stragrande maggioranza dei sistemi informatici che gestiscono l’informazione?

fiducia



centralised



distributed

Una definizione minimale di blockchain: un libro mastro distribuito ed immutabile delle transazioni

un libro mastro ~~distribuito~~ ed immutabile delle transazioni

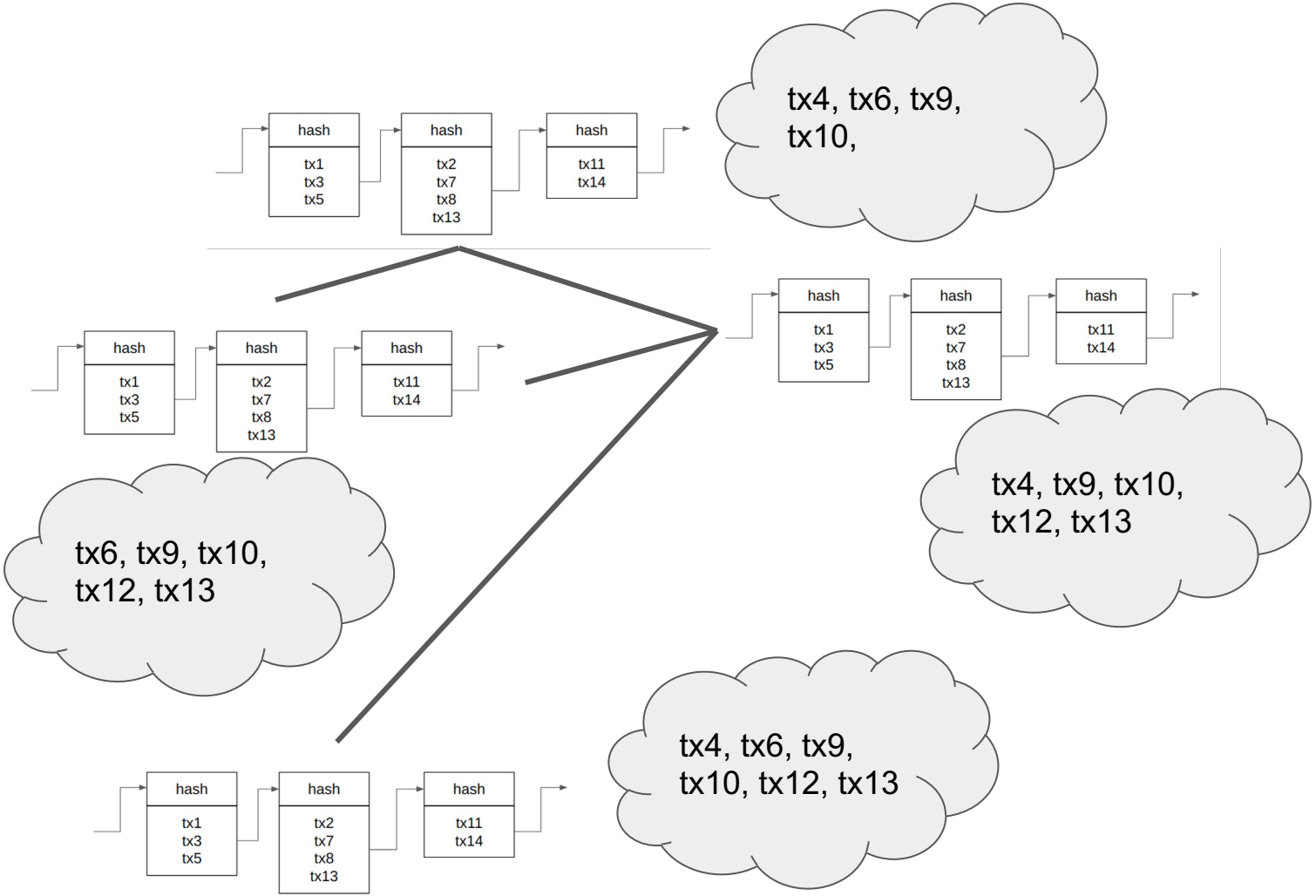
centralizzato funziona benone!

https://concerned.tech

We strongly disagree with the narrative—peddled by those with a financial stake in the crypto-asset industry—that these technologies represent a positive financial innovation and are in any way suited to solving the financial problems facing ordinary Americans.

despite far better solutions to these issues already in use. Despite more than thirteen years of development, it has severe limitations and design flaws that preclude almost all applications that deal with public customer data and regulated financial transactions and are not an improvement on existing non-blockchain solutions.

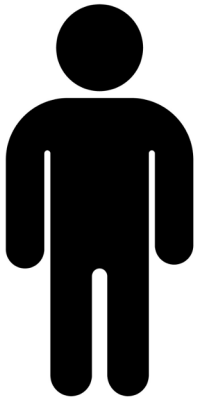
Finally, blockchain technologies facilitate few, if any, real-economy uses. On the other hand, the underlying crypto-assets have been the vehicle for unsound and highly volatile speculative investment schemes that are being actively promoted to retail investors who may be unable to understand their nature and risk. Other significant externalities include threats to national security through money laundering and ransomware attacks, financial stability risks from high price volatility, speculation and susceptibility to run risk, massive climate emissions from the proof-of-work

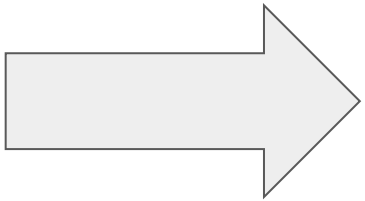

hash
tx1
tx3
tx5
hash
tx2
tx7
tx8
tx13
hash
tx11
tx14
tx4, tx6, tx9,
tx10,
hash
tx1
tx3
tx5
hash
tx2
tx7
tx8
tx13
hash
tx11
tx14
tx4, tx9, tx10,
tx12, tx13
hash
tx1
tx3
tx5
hash
tx2
tx7
tx8
tx13
hash
tx11
tx14
tx6, tx9, tx10,
tx12, tx13
hash
tx1
tx3
tx5
hash
tx2
tx7
tx8
tx13
hash
tx11
tx14
tx4, tx6, tx9,
tx10, tx12, tx13

consenso (Algoritmico)

fiducia

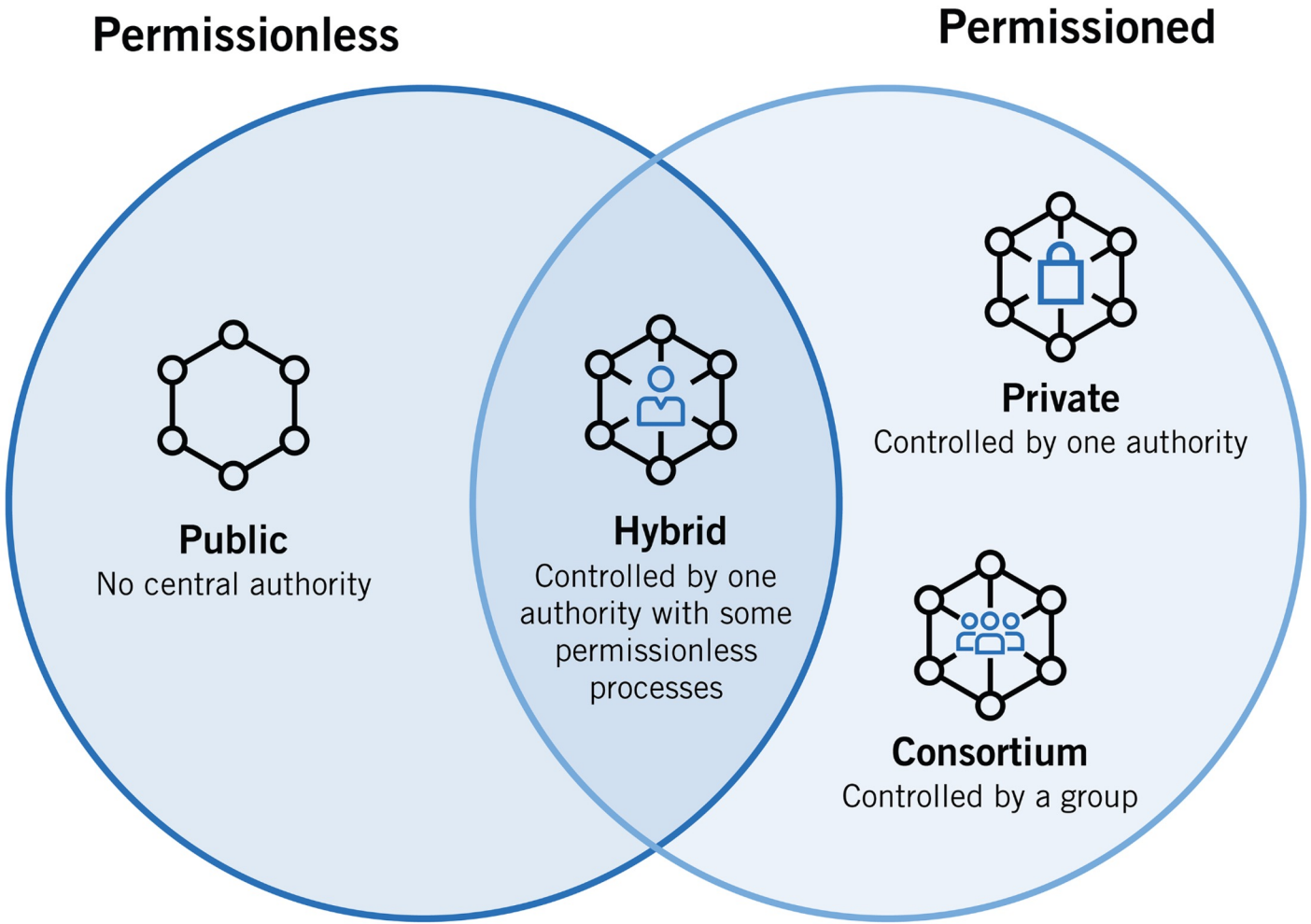
consenso

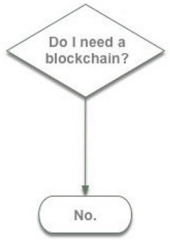


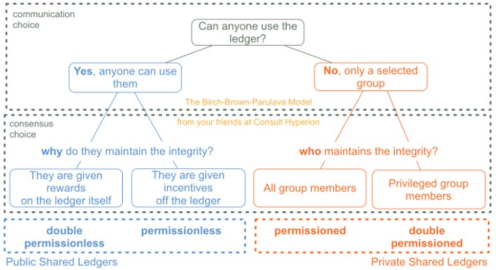


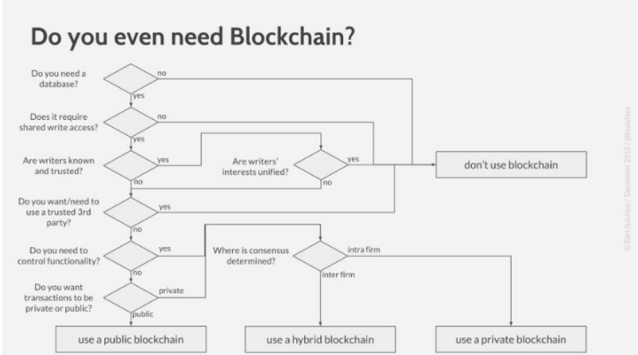
consenso

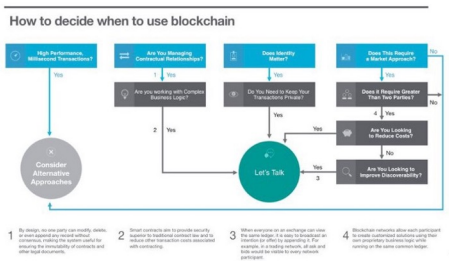
Accesso alle TXs

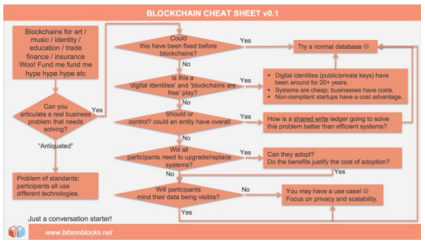


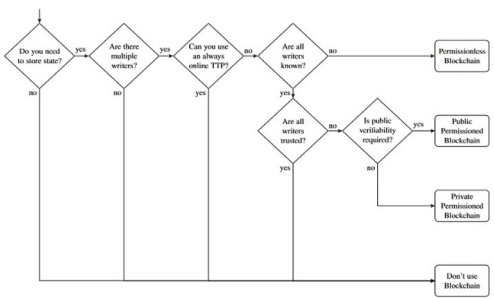


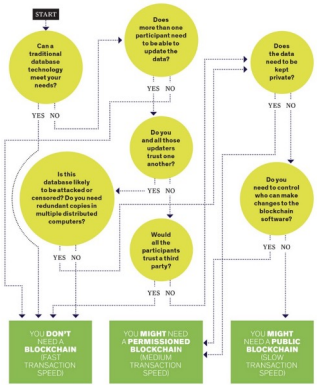






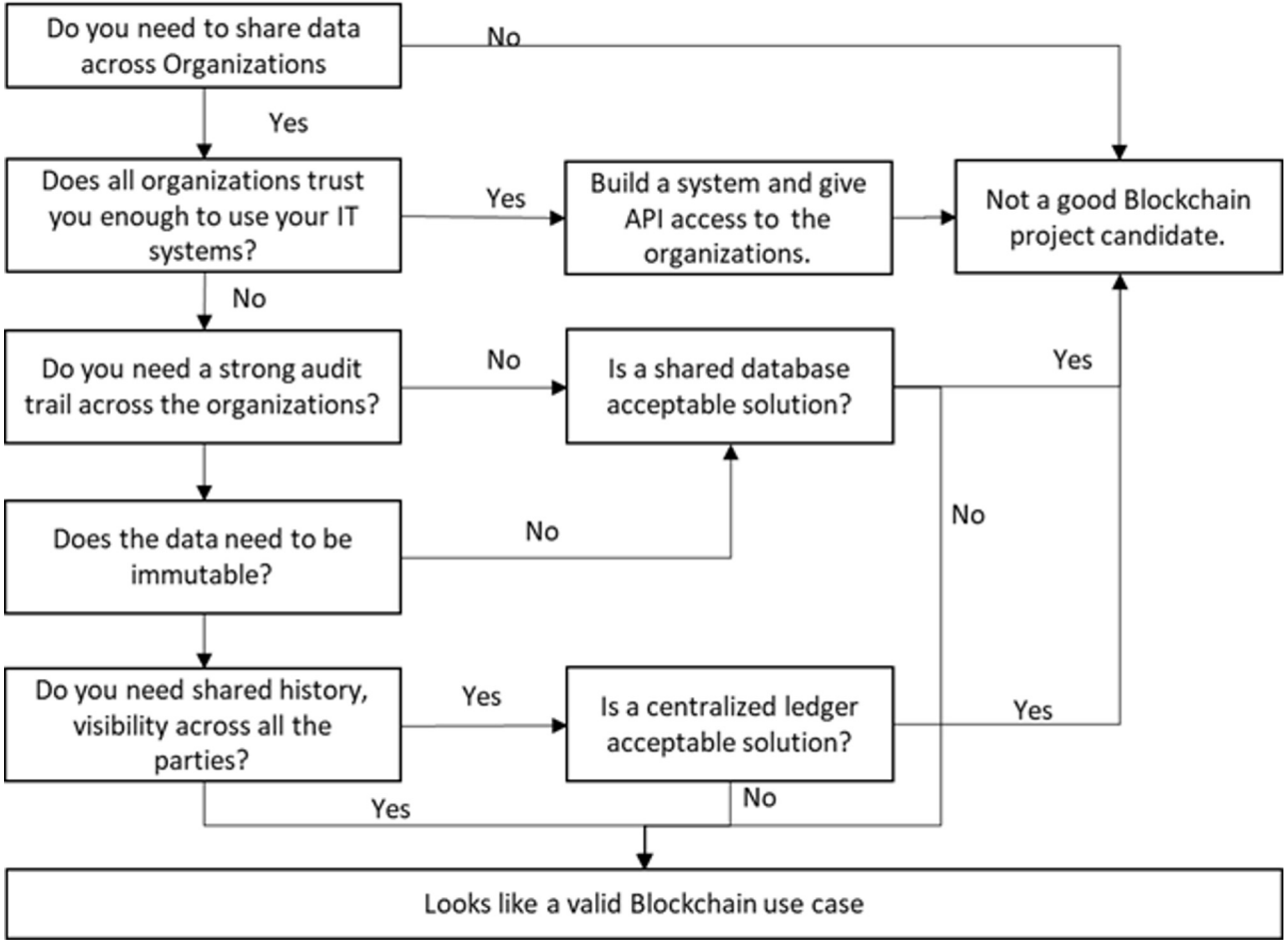






	Assertion	Answer
Network	A significant number of participants will be transacting on the network (>100)	Agree/Yes ☐
	You don't trust the participants in the network and don't need/want to know them	Agree/Yes ☐
Performance	A limited amount of data needs to be stored for every transaction (a few fields)	Agree/Yes ☐
	The business process doesn't requires a high throughput (scalability)	Agree/Yes ☐
Business logic	The business logic is simple	Agree/Yes ☐
	Privacy of transactions is not an important feature	Agree/Yes ☐
	The system will be standalone, it doesn't need to access external data or be integrated in the IT legacy	Agree/Yes ☐
Consensus	No arbitrator shall be involved in case of a dispute	Agree/Yes ☐
	All participants can be involved in the validation of transactions (Vs only a group of known validators)	Agree/Yes ☐
	You need strict immutability of the record (no amend & cancel, even by admin)	Agree/Yes ☐

https://medium.com/@sbmeunier/when-do-you-need-blockchain-decision-models-a5c40e7c9ba1

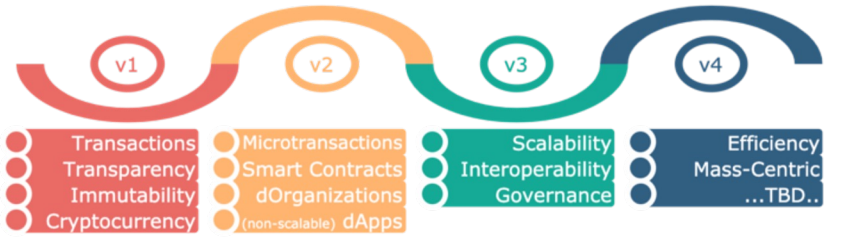


https://medium.com/swlh/how-do-i-select-a-blockchain-platform-d7e0dd5a27ad

BLOCKCHAIN PERFORMANCE COMPARISON

	Permissionless Blockchain	Permissioned Blockchain	Central Database
Throughput	Low	High	Very High
Latency	Slow	Medium	Fast
Number of readers	High	High	High
Number of writers	High	Low	High
Number of untrusted writers	High	Low	0
Consensus mechanism	PoW, PoS	BFT Protocols	None
Centrally managed	No	Yes	Yes

Blockchain Generations



by Martin Holovsky (CC BY-SA)

Blockchain Platforms Comparison (BPC) by technology Capabilities

Last update: 30-Dec-2021

	Bitcoin BTC	Ethereum ETH	XRPL (Ripple) XRP	Cardano ADA	Cosmos ATOM	Polkadot DOT	Elrond EGLD	Avalanche AVAX	Solana SOL	
Main Website	bitcoin.org	ethereum.org	xrpl.org	cardano.org	cosmos.network	polkadot.network	elrond.com	avax.network	solana.com	**Main Website**
Blockchain Generation	1st gen	2nd gen	1st gen	2nd gen	3rd gen	3rd gen	2nd gen	2nd gen	2nd gen	**Blockchain Generation**
Consensus Mechanism	PoW	PoW	RPCA	PoS	BPoS	NPoS	SPoS	DPoS, DAG	DPoS	**Consensus Mechanism**
Consensus energy consumption	High (small state)	High (half of Bitcoin)	Low	Low	Low	Low	Low	Low	Low	**Consensus energy consumption**
Block Time	600s	14s	4s	20s	7s	6s	6s	3s	8s	**Block Time**
Transactions Per Block/Second ~	2 700 4,5 TPS	70 5 TPS	6 000 1 500 TPS	5 000 250 TPS	10 000 (per Chain) 1 420 TPS	6 000 (per Chain) 1 000 TPS	30 000 (per Shard) 5 000 TPS	4 500 (X-Chain) ~1 000 (C-Chain)	(20% of 65 000) * 13 000 TPS	**Transactions Per Block/Second ~**
Deposit Times (by Kraken)	40 minutes	5 minutes	near-instant	10 minutes	near-instant	2 minutes	near-instant	1 minute	near-instant	**Deposit Times (by Kraken)**
Transaction Fee ~ (as of Jan 2021)	$ 8	$ 4	$ 0.0X	$ 0.0X	$ 0.0X	$ 0.0X	$ 0.0X	$ 0.0X	$ 0.0X	**Transaction Fee ~** (as of Jan 2021)
Level of Decentralization	High	High	Medium (Negative score: 2)	High	High	High	High	Medium (Negative score: 3)	Low (Negative score: 4)	**Level of Decentralization**
Smart Contracts	Yes (Script)	Yes (EVM)	No	Yes (KEVM)	Yes (CosmWasm, EVM, JS)	Only parachains (Wasm, EVM)	Yes (Arwen Wasm)	Yes (EVM on C-Chain)	Yes (Solana BPF)	**Smart Contracts**
Decentralized Apps (dApps)	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	**Decentralized Apps (dApps)**
Decentralized Exchange (DEX)	No	Yes	Yes (in codebase)	Yes	Yes	Yes	Yes	Yes	Yes	**Decentralized Exchange (DEX)**
Decentralized Finance (DeFi)	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	**Decentralized Finance (DeFi)**
On-chain Governance	No	No	Yes (amendments)	No	Yes	Yes	No (planned)	No (planned)	No (only for programs)	**On-chain Governance**
Human Readable Addresses	No	Yes	No	No	Yes	No	Yes	No	Yes	**Human Readable Addresses**
Digital Identity Management	No	Yes	No	No	Yes	No	Yes	No	No	**Digital Identity Management**
Data Oracles	No	Yes	No	No	Yes	No	No	Yes	Yes	**Data Oracles**
Data Privacy	No	No	No	No	Yes	No	No	No	No	**Data Privacy**
Distributed Cloud Storage	No	Yes	No	No	Yes	No	No	No	No	**Distributed Cloud Storage**
Distributed Cloud Computing	No	Yes	No	No	Yes	No	No	No	No	**Distributed Cloud Computing**
Interoperability	No	No	No	No	Yes (IBC)	Yes (XCMP)	No	No	No	**Interoperability**
Cross / Interchain communication	No	No	No	No	Yes (IBC peg zones)	No (XCMP bridges)	No	No	No	**Cross / Interchain communication**
Scalability Options	No (only off-chain)	No (planned in ETH 2.0)	No (only by channels)	No (planned Hydra)	Unlimited Zones (horizontal and vertical)	Parachains (Max 100, shards-like)	Sharding	Unlimited Subnets (shards-like)	Horizontal PoH	**Scalability Options**
Chains Security Model	N/A	N/A	N/A	N/A	Chain sovereignty	Relay Chain sovereignty	N/A	N/A	N/A	**Chains Security Model**
Automated Slashing	N/A	N/A	N/A	No	Yes (by protocol)	Yes (fisherman)	Yes (fisherman)	No	No	**Automated Slashing**
Chain connection to Hub/Rclayer	N/A	N/A	N/A	N/A	Permissionless	Candle auction buying slot for 6-24 months	N/A	N/A	N/A	**Chain connection to Hub/Rclayer**
Related chains or chain services	Litecoin, BitCoin Cash, Dogecoin	Tether, Chainlink, Maker, Uniswap, Compound, 0x	N/A (no contracts)	Ergo, Empowa, Meld, SundaeSwap	Terra, Binance, Crypto.com, Akash, Osmosis, Secret	Moonbeam, Acala, Astar, Clover, Parallel, Efinity	Maiar - Wallet, DEX, Launchpad	Trader Joe, Avalaunch, BENQI, SpookySwap	Raydium, Serum, Audius, Star Atlas	**Related chains or chain services**

* Solana - 80% of transactions is consensus vote overhead (https://bit.ly/3eafM28)

The blockchain comparison table is:

- NOT investment, nor speculation advice
- NOT comparing crypto coins/currency
- NOT evaluating capabilities that are in a development phase
- NOT taking into consideration popularity (hype factor)
- NOT showing platforms that are only forks of those already visible
- NOT showing ERC-20 tokens (all based on Ethereum)
- Based on the availability of capabilities is assigned blockchain generation
- Showing which services are available per blockchain platform
- Comparing blockchains from a technology perspective

In case you spot wrong or outdated information please let me know and provide evidence.

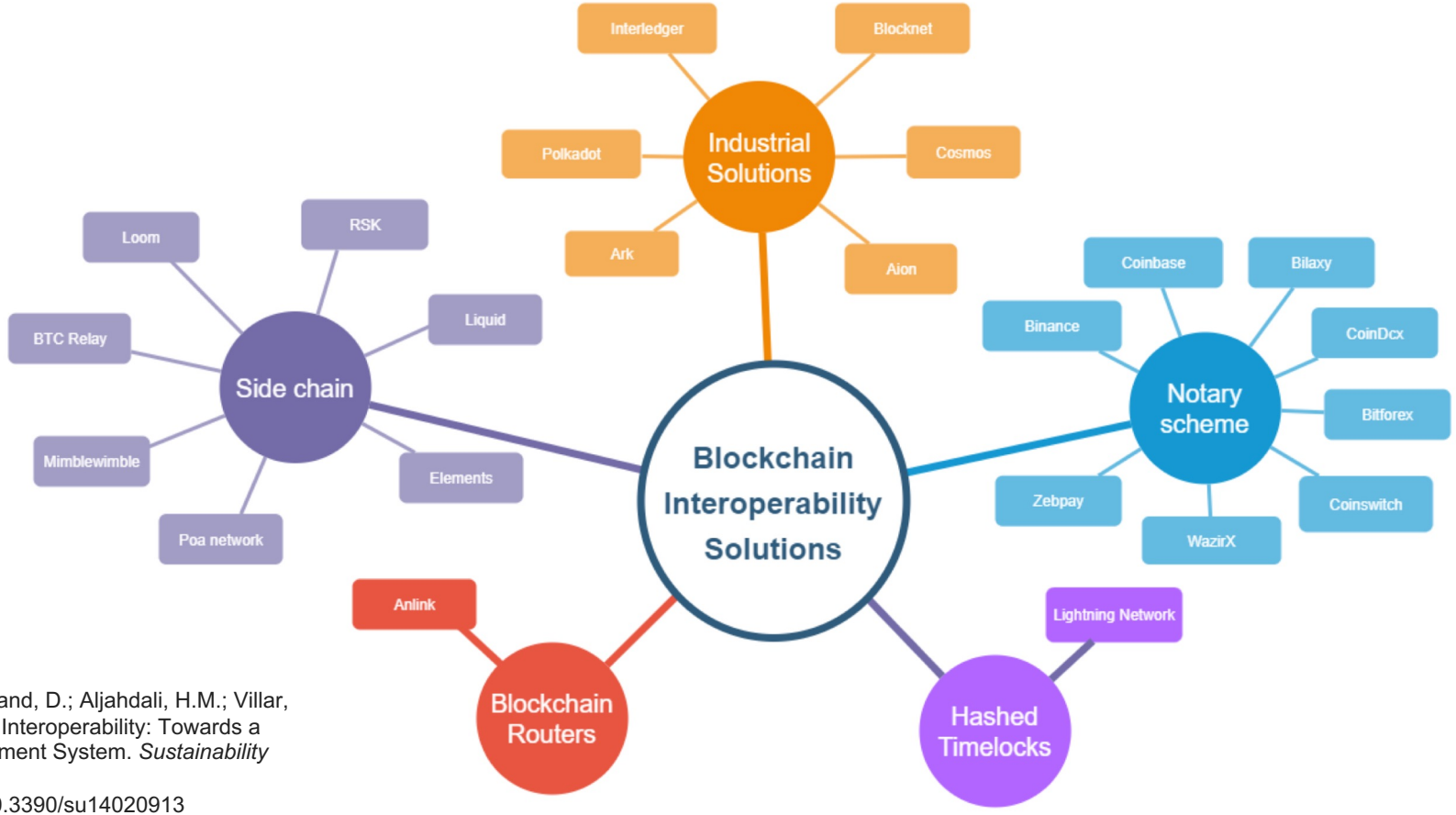
You can vote for additional chain in poll. Link is included in the article.

The table is updated on a yearly basis.

^ Latest Version ^

by Martin Holovsky (CC BY-SA)
linkedin.com/in/martinholovsky

inter-blockchain



Mohanty, D.; Anand, D.; Aljahdali, H.M.; Villar, S.G. Blockchain Interoperability: Towards a Sustainable Payment System. *Sustainability* **2022**, *14*, 913. https://doi.org/10.3390/su14020913

Domande Pervenute

Quali fattori incentivanti determinano il successo di una blockchain? (Rewards per block, fees, struttura infla/deflattiva, ecc...)

dappradar.com/rankings/protocol/ethereum

necting wi... mrbombmusic... Sonic Pi Onlin... Gephi tutorial.... Formats - jrnl GitHub - meha... GitHub - Mube... Microsoft for... RANDAO | Kel...

DappRadar

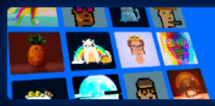
Rankings Portfolio NFTs DeFi RADAR Blog CONNECT

Top Ethereum Dapps

All ETH EOS TRON ONT ThunderCore WAX Steem Hive BNB Chain
Polygon Flow NEAR Avalanche Telos Tezos IoTeX Vulcan Forged Harmony
Solana Ronin Klaytn Everscale Heco DEP Immutable X Fuse Algorand
TelosEVM Cronos Moonriver Moonbeam Fantom Oasis Network Shiden Celo
KardiaChain Hedera Optimism Astar Stacks Zilliqa Aurora Theta SX Network
Cardano Arbitrum NEW Other

All Categories Games DeFi Gambling Exchanges Collectibles Marketplaces Social Other High Risk

New | Filter | Show only Boosted | 24h 7d 30d



Ethereum Portfolio Tracker

Get real-time token prices, liquidity pools and staked tokens

#	Name	Category	Balance	UAW	Volume	Activity
Ad	Transit Swap +3	DeFi	$9.13k	1.3k -	$6.13M	
1	OpenSea	Marketplaces	$67.36k	229.95k -11.32%	$234.14M	
2	Uniswap V2 ETH	Exchanges	$944.35M	133.93k +4.81%	$2.27B	

We use cookies to improve your browsing quality. If you agree, please click AGREE. Otherwise, you can disable cookies in your browser. Privacy Policy

Agree

Applicazioni industriali su conservazione documentale

- La Blockchain non può garantire la veridicità dell’informazione
- La conformità con GDPR è ancora un problema
- Trasparenza vs Privatezza
- Regulatory sandbox