

## Blockchain Course

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# Introduction



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`https://github.com/spoto/blockchain-course`

# The mainstream view of blockchain

## How a 26-Year-Old College Dropout Makes \$15,000 a Month With Bitcoin and Cryptocurrency Without Breaking a Sweat

By Marc Thomson Published on February 16, 2021, [FinanceIndex.co](https://www.financeindex.co)



## Meet the bitcoin investors who got insanely rich off crypto

By Suzy Weiss

January 13, 2021 | 7:23pm | Updated



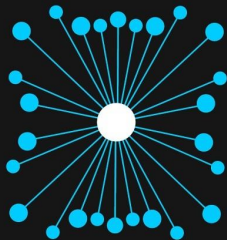
## **Bitcoin, i conti shock di Tesla: la plusvalenza potrebbe superare l'utile 2020**

In attesa dei conti ufficiali, alcune proiezioni indicano che l'azienda di Elon Musk potrebbe aver investito in Bitcoin 1,5 miliardi di dollari a un prezzo medio di 37mila. Se così fosse oggi si troverebbe una plusvalenza potenziale superiore ai profitti dell'ultimo bilancio (721 milioni)

# History

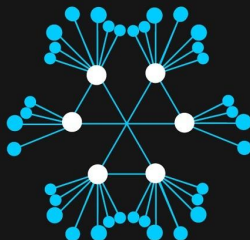
- 1988 proof-of-work (Dwork & Naor)
- 1991 a cryptographically secure chain of blocks (Haber & Stornetta)
- 199x smart contracts (Szabo)
- 2008 Bitcoin (Nakamoto)
- 2012 proof-of-stake (Peercoin)
- 2013 Ethereum (Buterin & Wood)
- 2014 Tendermint generic proof-of-stake engine (Kwon)
- 2020 Ethereum 2.0 adopts the proof-of-stake

## Centralized vs Decentralized vs Distributed Network: An Overview



### Centralized Network

All the nodes are connected under a single authority



### Decentralized Network





















No single authority server controls the nodes, they all have individual entity



### Distributed Network

Every node is independent and interconnected with each other

# Cryptocurrencies

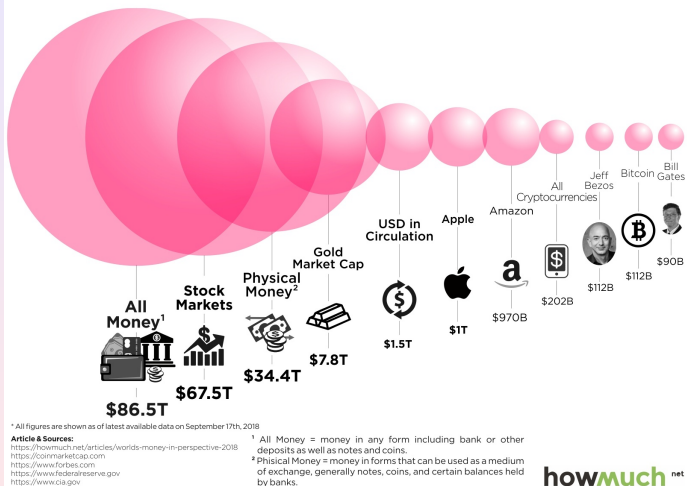
☆ 1	 Bitcoin BTC	€43,439.39	▲ 1.78%	▲ 11.96%	€811,654,732,050	€45,070,079,455 1,034,656 BTC	18,632,831 BTC	
☆ 2	 Ethereum ETH	€1,590.21	▲ 1.60%	▲ 9.73%	€182,490,495,147	€21,692,262,865 13,638,149 ETH	114,733,656 ETH	
☆ 3	 Binance Coin BNB	€215.69	▲ 39.28%	▲ 106.89%	€32,922,693,592	€9,229,311,959 43,320,613 BNB	154,532,785 BNB	
☆ 4	 Tether USDT	€0.8232	▼ 0.04%	▼ 0.10%	€27,608,853,121	€86,517,646,829 105,076,438,643 USDT	33,531,193,546 USDT	
☆ 5	 Polkadot DOT	€26.79	▲ 3.52%	▲ 28.14%	€24,343,111,959	€2,126,956,641 79,458,749 DOT	909,408,867 DOT	
☆ 6	 Cardano ADA	€0.7630	▼ 1.70%	▲ 0.49%	€23,662,518,973	€3,853,459,801 5,066,692,562 ADA	31,112,484,646 ADA	
☆ 7	 XRP XRP	€0.4433	▼ 0.87%	▼ 7.31%	€20,123,554,344	€4,449,941,491 10,040,237,796 XRP	45,404,028,640 XRP	
☆ 8	 Litecoin LTC	€191.53	▼ 0.24%	▲ 26.86%	€12,730,944,343	€6,268,248,742 32,751,917 LTC	66,519,829 LTC	
☆ 9	 Chainlink LINK	€28.05	▲ 4.58%	▲ 23.29%	€11,386,121,071	€1,672,730,305 59,793,604 LINK	407,009,556 LINK	
☆ 10	 Bitcoin Cash BCH	€591.11	▲ 0.26%	▲ 34.87%	€11,009,352,859	€3,793,957,459 6,430,233 BCH	18,659,331 BCH	

# Bitcoin chart



# Bitcoin capitalization (2018)

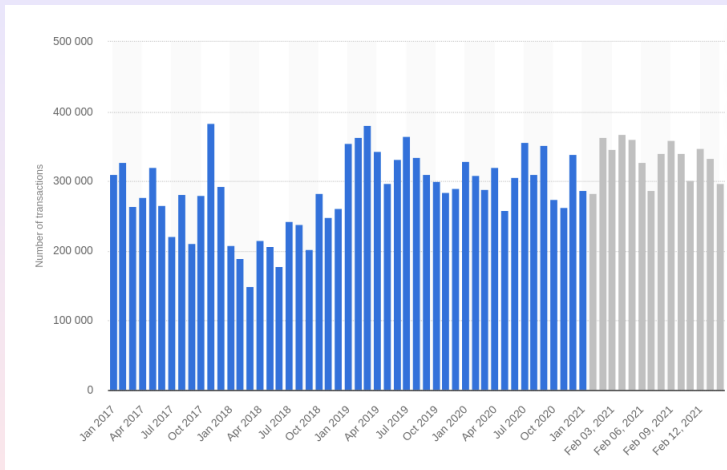
## Putting the World's Money into Perspective



source: HowMuch.net, a financial literacy website

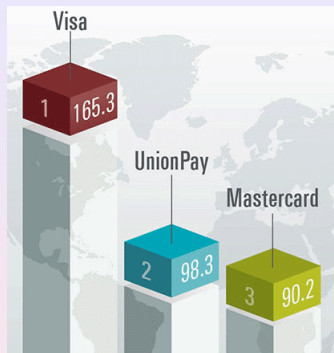


# Bitcoin transactions



Around 300,000 transactions per day

# Credit cards transactions (billions, 2018)



Visa: around 451,639,000 transactions per day  
UnionPay: around 268,579,000 transactions per day  
Mastercard: around 246,448,000 transactions per day  
Bitcoin: around 300,000 transactions per day

# Bitcoin transaction fees

## Bitcoin Average Transaction Fee

23.45 USD/tx for Feb 18 2021

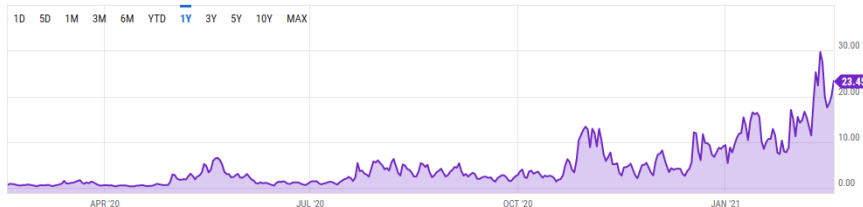
Overview

Interactive Chart

Level Chart

[VIEW FULL CHART](#)

1D 5D 1M 3M 6M YTD 1Y 3Y 5Y 10Y MAX



Independent from the transacted value

# Credit cards transaction fees

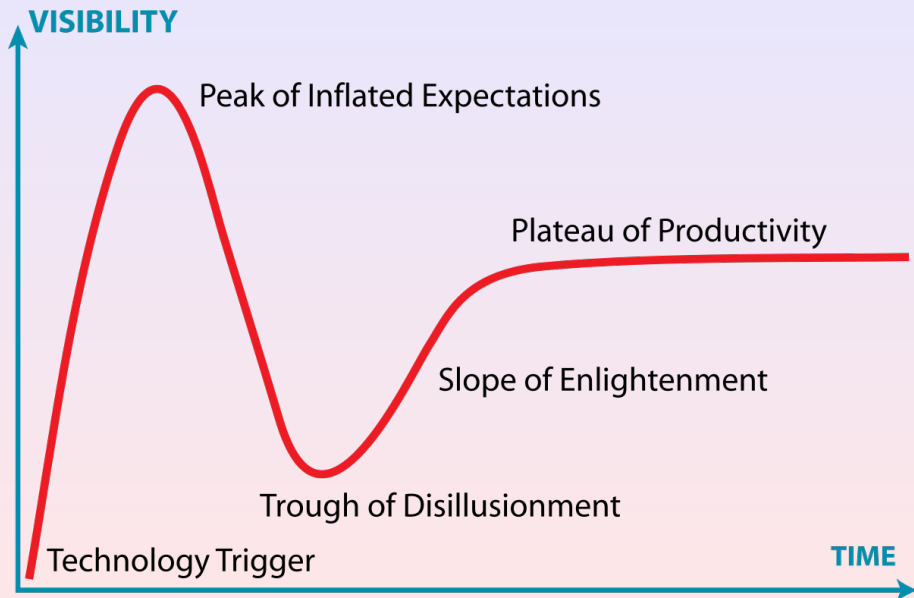
## Average credit card interchange fees

Payment network	Interchange fee range
Visa	1.15% + \$0.05 to 2.40% + \$0.10
Mastercard	1.15% + \$0.05 to 2.50% + \$0.10
Discover	1.40% + \$0.05 to 2.40% + \$0.10
American Express	1.43% + \$0.10 to 3.15% + \$0.10

*Sources: Visa USA Interchange Reimbursement Fees published on April 13, 2019, Mastercard 2019-2020 U.S. Region Interchange Program and Rates, and Wells Fargo Payment Network*

Proportional to the transacted value

# The hype cycle





## Applications Of Blockchain



Digital IDs



Bitcoin



Real estate



Voting



Payment and  
Transfers



Health Care

Internet of Things



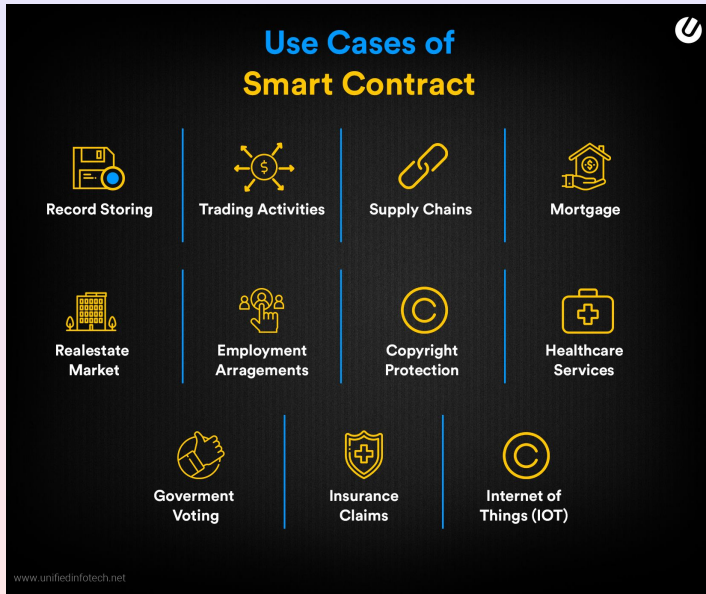
Online music



Banking



Law Enforcement



# Future trends

- <https://ipfs.io>: decentralized file storage
- <https://identity.foundation>: decentralized identity
- <https://defipulse.com>: decentralized finance (DeFi)
- <https://pkt.cash>: decentralized internet service providers
- integration with the internet of things

