



IMD0293

HISTÓRIA: DO BITCOIN AO BLOCKCHAIN

CYPHERPUNKS E CRIPTOANARQUISTAS

"Privacy is necessary for an open society in the electronic age. Privacy is not secrecy. A private matter is something one doesn't want the whole world to know, but a secret matter is something one doesn't want anybody to know. Privacy is the power to selectively reveal oneself to the world."

A Cypherpunk's Manifesto - Eric Hughes (1993)

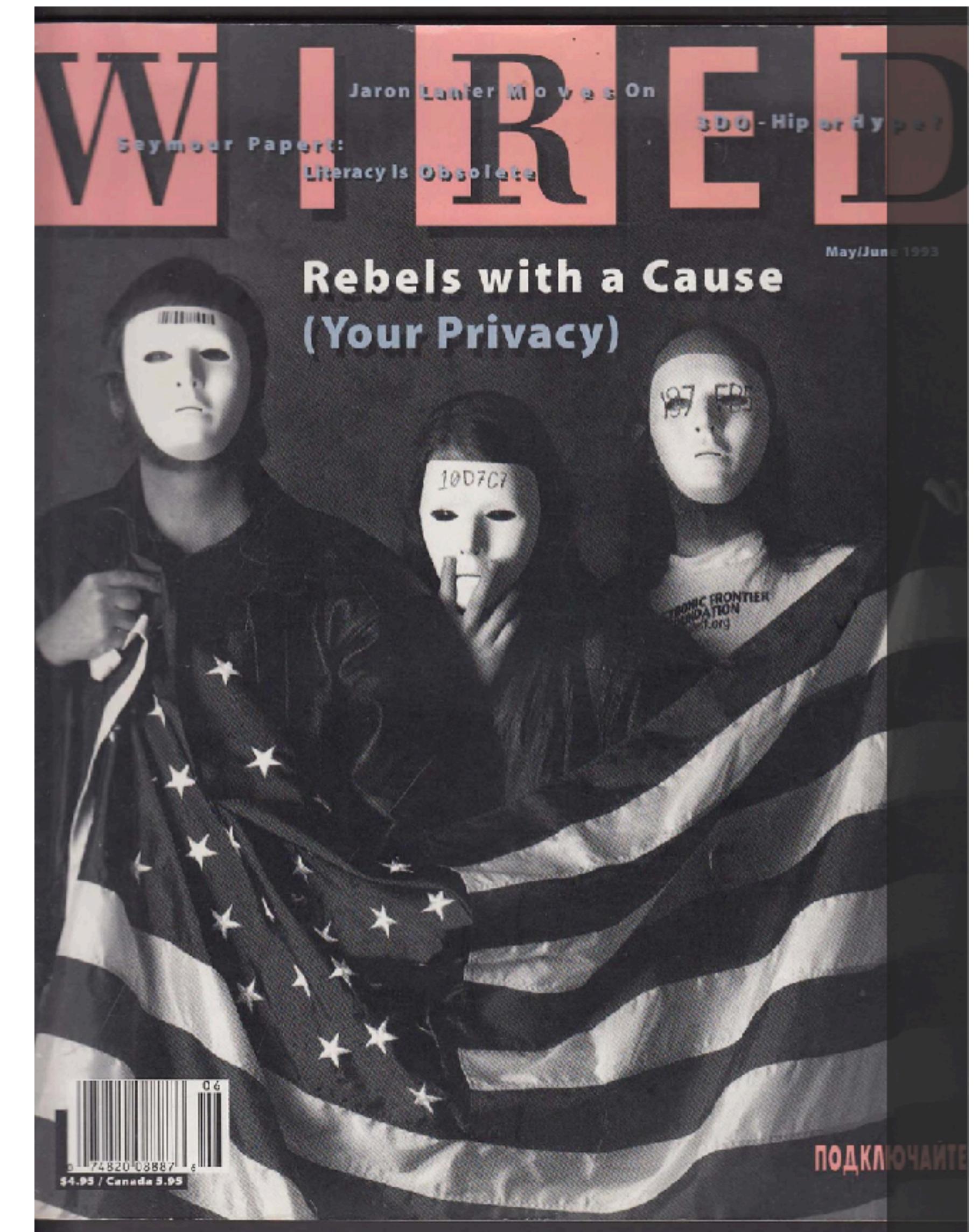
CYPHERPUNKS E CRIPTOANARQUISTAS

Cypherpunks e Criptoanarquistas: Grupos libertários preocupados com privacidade, defendendo a criptografia como uma ferramenta importante:

"Privacy is the power to selectively reveal oneself to the world."

*"... We cannot expect governments, corporations, or other large, faceless organizations to grant us **privacy** ... We must defend our own privacy if we expect to have any. ... Cypherpunks write code. We know that someone has to write software to defend privacy, and ... we're going to write it."*

"Privacy in an open society requires anonymous transaction systems"



PRIMEIRAS TENTATIVAS...

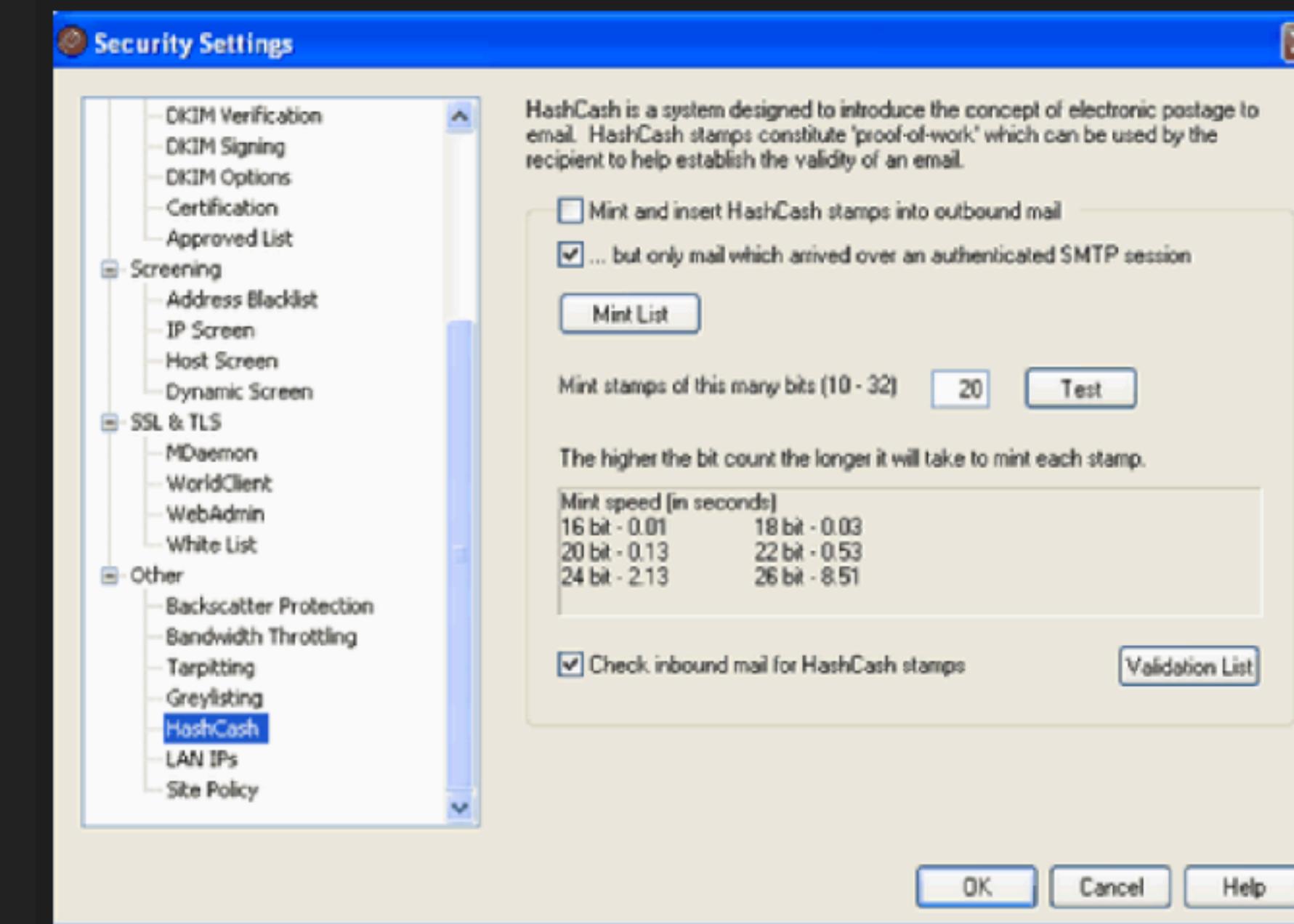
- ▶ DigiCash
- ▶ 1989 por David Chaum
- ▶ *Blind Signatures*
- ▶ Fracassou devido a centralização



PRIMEIRAS TENTATIVAS...

▶ HashCash

- ▶ 1997 por Adam Back
- ▶ Objetivo de limitar SPAM
- ▶ Sistema baseado em *proof-of-work*
- ▶ Resolver enigma criptográfico baseado em *hash* para enviar um e-mail



PRIMEIRAS TENTATIVAS...

- ▶ b-money
- ▶ 1998 por Wei Dai
- ▶ *an anonymous, distributed electronic cash system*
- ▶ Todos mantinham uma cópia do conjunto de transações assinadas
- ▶ Não resolia o ataque de gasto duplo



SATOSHI NAKAMOTO

- ▶ Criador **anônimo** do Bitcoin
- ▶ Escreveu o *paper* em 2008
- ▶ Sistema de pagamento eletrônico baseado em prova criptográfica ao invés de confiança
- ▶ Consenso baseado em *proof-of-work*
- ▶ Realizou a primeira transação na rede Bitcoin em 2009
- ▶ Estimativa de 980.000 BTC



BLOCO GENESIS

- ▶ Bloco #0 Genesis
- ▶ 03/01/2009

The Times 03/Jan/2009 Chancellor on brink of second bailout for banks

- ▶ Hash do bloco #0:
00000000019d6689c085ae165831e934ff
763ae46a2a6c172b3f1b60a8ce26f
- ▶ Coinbase (50BTC) para:
1A1zP1eP5QGefi2DMPTfTL5SLmv7DivfNa



PRIMEIRA TRANSAÇÃO

- ▶ Bloco #170
- ▶ 12/01/2009
- ▶ Entre Satoshi Nakamoto e **Hal Finney**
- ▶ Transação de 10 BTC

- ▶ Hash do bloco #170:
0000000d1145790a8694403d4063f32
3d499e655c83426834d4ce2f8dd4a2ee



Block #170

Summary	
Number Of Transactions	2
Output Total	100 BTC
Estimated Transaction Volume	10 BTC
Transaction Fees	0 BTC
Height	170 (Main Chain)
Timestamp	2009-01-12 03:30:25
Received Time	2009-01-12 03:30:25
Relayed By	Unknown
Difficulty	1
Bits	486604799
Size	0.49 kB
Weight	1.716 kWU
Version	1
Nonce	1889418792
Block Reward	50 BTC

Hashes	
Hash	00000000d1145790a8694403d4063f323d499e655c83426834d4ce2f8dd4a2ee
Previous Block	000000002a22cf1f2c846adbd12b3e183d4f97683f85dad08a79780a84bd55
Next Block(s)	00000000c9ec538cab7f38ef9c87a95742f58ab07b0a37c5be8b02808dbfb4e0
Merkle Root	7dac2c5666815c17a3b36427de37bb9d2e2c5cc3f8633eb91a4205cb4c10ff

Transactions

b1fea52488ce0c82bb442b530a3f0132b826c74e473d1f2c220bfa78111c5082		2009-01-12 03:30:25
No Inputs (Newly Generated Coins)	→	1PSSGeFHDnKNxiEyFrD1wcEaHr9hrQDDWc 50 BTC
		50 BTC
f4184fc596403b9d638783cf57adfe4c75c605f6356fbc91338530e9831e9e16		2009-01-12 03:30:25
12cbQLTFMXRnSzktFkuoG3eHoMeFtpTu3S	→	1Q2TWHE3GMdB6BZKafqwxXtWAwgFt5Jvm3 10 BTC
		40 BTC
		50 BTC

TRANSAÇÕES HISTÓRICAS

Author Topic: Pizza for bitcoins? (Read 774776 times)

laszlo
Full Member


Activity: 199
Merit: 149

Pizza for bitcoins?
May 18, 2010, 12:35:20 AM
Merited by alani123 (12), OgNasty (10), d5000 (5), EFS (1), vapourminer (1), iluvbitcoins (1), jacktheking (1), LoyceV (1), coolcoinz (1), Kda2018 (1), TheQuin (1), Toxic2040 (1), Toughtit (1), nullius (1), alia_armelle (1) #1

I'll pay 10,000 bitcoins for a couple of pizzas.. like maybe 2 large ones so I have some left over for the next day. I like having left over pizza to nibble on later. You can make the pizza yourself and bring it to my house or order it for me from a delivery place, but what I'm aiming for is getting food delivered in exchange for bitcoins where I don't have to order or prepare it myself, kind of like ordering a 'breakfast platter' at a hotel or something, they just bring you something to eat and you're happy!

I like things like onions, peppers, sausage, mushrooms, tomatoes, pepperoni, etc.. just standard stuff no weird fish topping or anything like that. I also like regular cheese pizzas which may be cheaper to prepare or otherwise acquire.

If you're interested please let me know and we can work out a deal.

Thanks,
Laszlo

BC: 157fRrqAKrDyGHR1Bx3yDxeMv8Rh45aUet

<https://bitcointalk.org/index.php?topic=137.0>

TRANSAÇÕES HISTÓRICAS



Re: Pizza for bitcoins?
May 22, 2010, 07:17:26 PM

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

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

Thanks jercos!

TRANSAÇÕES HISTÓRICAS

Transaction

Transaction [a1075db55d416d3ca199f55b6084e2115b9345e16c5cf302fc80e9d5fbf5d48d](https://www.blockchain.com/btc/tx/a1075db55d416d3ca199f55b6084e2115b9345e16c5cf302fc80e9d5fbf5d48d) 

Summary

Size	23620 (bytes)
Fee Rate	0.04191363251481795 BTC per kB
Received Time	May 22, 2010 3:16:31 PM
Mined Time	May 22, 2010 3:16:31 PM
Included in Block	0000000152340ca42227603908689183edc47355204e7aca59383b0aac1fd8

Details

⊕ [a1075db55d416d3ca199f55b6084e2115b9345e16c5cf302fc80e9d5fbf5d48d](https://www.blockchain.com/btc/tx/a1075db55d416d3ca199f55b6084e2115b9345e16c5cf302fc80e9d5fbf5d48d)  mined May 22, 2010 3:16:31 PM

1XPTgDRhN8RFnzniWCddobD9iKZatrVH4	10000.99 BTC	→	17SkEw2md5avVNyYgj6RiXuQKNwkXaxFyQ	10000 BTC 
FEE: 0.99 BTC			530538 CONFIRMATIONS	10000 BTC

TRANSAÇÕES HISTÓRICAS

22/05/2010: 1 BTC = U\$ 0,0041

U\$ 41,00

21/10/2021: 1 BTC = U\$ \$66.625,91

U\$ 666.259.100,00



Bitcoin Pizza Index

The Bitcoin Pizza Index is now at

\$658,692,101!

What is the Bitcoin Pizza Index?

The Bitcoin Pizza Index is derived from the first documented purchase using Bitcoins.

On May 18th 2010 Laszlo Hanyecz made known on a forum at bitcointalk.org that he was willing to buy 2 pizzas for a price of 10,000 Bitcoins. At the time this was worth \$41. Four days later on May 22nd the transaction took place. Forum member Jeremy Sturdivant from California took him up on the deal and had two Papa John's pizzas delivered to Laszlo in Florida. This date has become known as Bitcoin Pizza Day.

The index is the value of 10,000 Bitcoins at today's market price. The index illustrates the deflationary properties of Bitcoin.

212 days to go till the next Bitcoin Pizza Day on Sunday May 22nd 2022!

<https://bitcoinpizzaindex.net/>

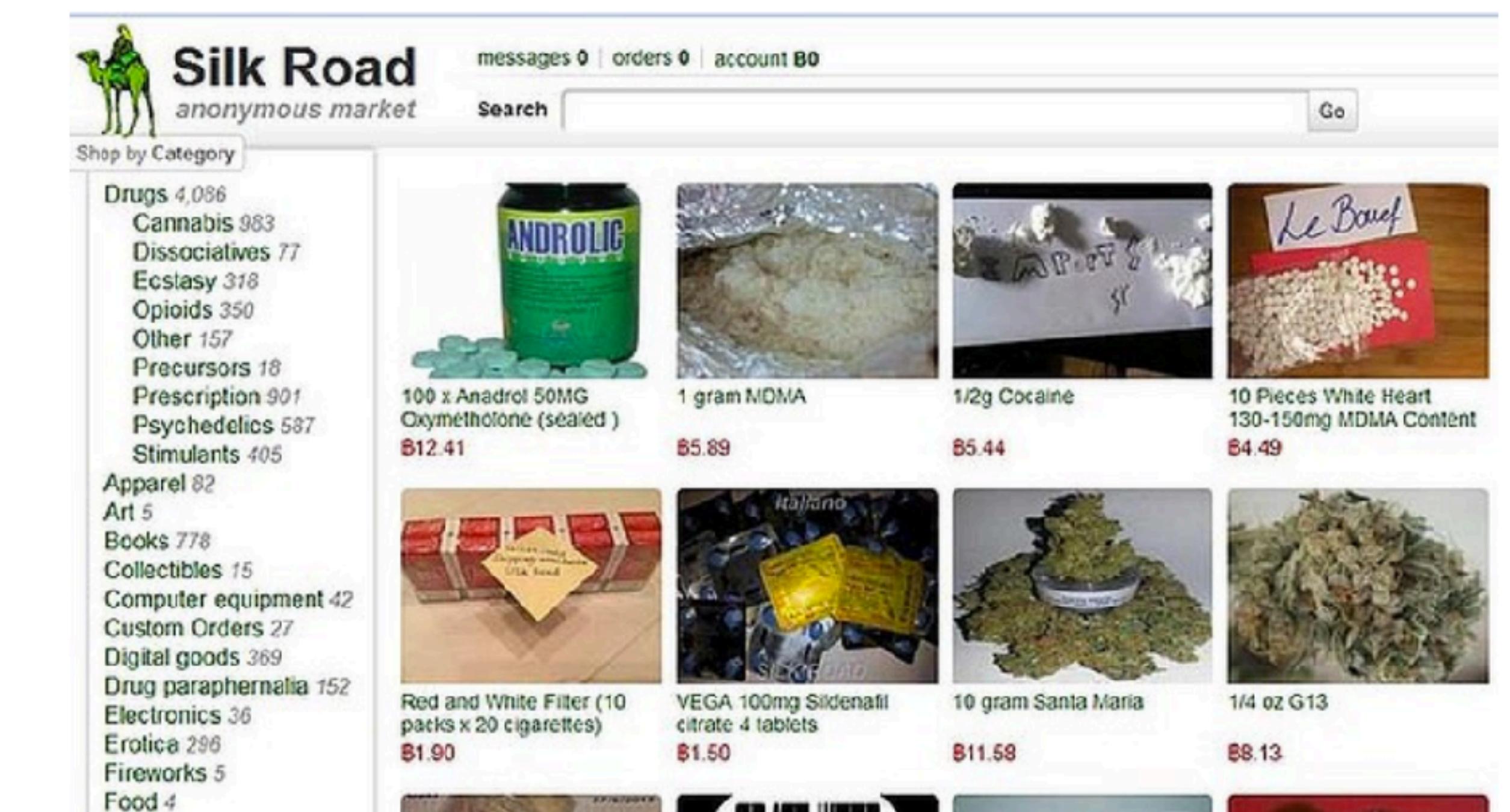
CASOS NOTÁVEIS: MT. GOX



- ▶ **2010** Mt. Gox, empresa de câmbio de bitcoin é fundada por Jed McCaleb
- ▶ **2011** Mt. Gox sofre uma brecha de segurança que permite trocas fraudulentas
- ▶ **2014** Mt. Gox responsável por 70% de todas as transações BTC
- ▶ **2014** Mt. Gox perde **744.408 bitcoins** em um roubo que não foi identificado por anos
- ▶ **2014** Mt. Gox declara falência

CASOS NOTÁVEIS: SILK ROAD

- ▶ **2011** Silk Road é fundada como o Mercado Livre anônimo das drogas, usando tecnologias como Tor e Bitcoin
- ▶ **2011-2013** Drogas e mercado negro se tornam o caso de uso do Bitcoin
- ▶ **2013** FBI fecha a Silk Road, confiscando U\$3,5 milhões em BTC
- ▶ **2013** Criador Ross Ulbricht (Dread Pirate Roberts) está servindo prisão perpétua



CASOS NOTÁVEIS: SILK ROAD

- ▶ Jan/2011 Um usuário chamado **altoid** posta mensagens promocionais da Silk Road no shroomery.org e bitcointalk.org

ShadowOfHarbringer
Hero Member
Activity: 1050
Bringing Har® to you since 1952

Re: A Heroin Store
January 30, 2011, 08:09:37 PM

Quote from: Nefario on January 30, 2011, 06:30:07 AM
(probably buried in the desert or in a forest)

Somehow, I'm seeing tremendous increase of popularity of forest sightseeing 😊

Quote from: altoid on January 29, 2011, 07:44:51 PM
What an awesome thread! You guys have a ton of great ideas. Has anyone seen Silk Road yet? It's kind of like an anonymous amazon.com. I don't think they have heroin on there, but they are selling other stuff. They basically use bitcoin and tor to broker anonymous transactions. It's at <http://tydgcckixpbuGuz.onion>. Those not familiar with Tor can go to silkroad420.wordpress.com for instructions on how to access the .onion site.

Let me know what you guys think

Jump to first unread post.
altoid
Stranger
UNRATED
Registered: 01/27/11
Posts: 1
Last seen: 2 years, 7 months

an anonymous market online? NEW
#13860995 - 01/27/11 04:28 PM (2 years, 8 months ago)

I came across this website called Silk Road. It's a Tor hidden service that claims to allow you to buy and sell anything online anonymously. I'm thinking of buying off it, but wanted to see if anyone here had heard of it and could recommend it.

I found it through silkroad420.wordpress.com, which, if you have a tor browser, directs you to the real site at <http://tydgcckixpbu6uz.onion>.

Let me know what you think...

Post Extras:

CASOS NOTÁVEIS: SILK ROAD

- ▶ Set/2011 O mesmo usuário, **altoid**, posta no *bitcointalk.org* procurando por desenvolvedores para auxiliarem na sua startup de Bitcoin
- ▶ Ele deixa seu e-mail pessoal: *rossulbricht@gmail.com*
- ▶ <https://bitcointalk.org/index.php?topic=47811.0>
- ▶ 2013 FBI monta as peças e começa a investigar Ross Ulbricht



WIKILEAKS E SUMIÇO DE SATOSHI NAKAMOTO

satoshi
Founder
Sr. Member

Activity: 364
Merit: 2679

Re: PC World Article on Bitcoin
December 11, 2010, 11:39:16 PM
Merited by [mindrust](#) (20), [Bitman86](#) (4), [roslinpl](#) (1), [johhnyUA](#) (1), [ETFBTC](#) (1), [frankenmint](#) (1), [xraelv](#) (1), [Husna QA](#) (1), [taserz](#) (1), [BlackHatCointer](#) (1), [dawoodkhan97](#) (1), [Jumperman4](#) (1) #5

It would have been nice to get this attention in any other context. WikiLeaks has kicked the hornet's nest, and the swarm is headed towards us.

11/12/2010

satoshi
Founder
Sr. Member

Activity: 364
Merit: 2679

Added some DoS limits, removed safe mode (0.3.19)
December 12, 2010, 06:22:33 PM
Merited by [bumbacoin](#) (50), [sukamasoto](#) (30), [yahoo62278](#) (25), [notaek](#) (25), [mindrust](#) (20), [legendster](#) (10), [aTriz](#) (7), [Lauda](#) (5), [Betwron](#) (5), [MrPumperitus](#) (5), [TMAN](#) (5), [minorman](#) (5), [FrueGreadz](#) (4), [EFS](#) (3), [Danslip](#) (3), [Anon136](#) (2), [Yaunfitda](#) (2), [cinnamon_carter](#) (2), [casperBGD](#) (2), [edgycorner](#) (2), [Searing](#) (1), [LFC_Bitcoin](#) (1), [HI-TEC99](#) (1), [ralle14](#) (1), [hatshepsut93](#) (1), [finist4x](#) (1), [bill_gator](#) (1), [lx001](#) (1), [denzklim](#) (1), [Bardman](#) (1), [Woshib](#) (1), [akirasendo17](#) (1), [crypto_trader#43xzEXrP](#) (1), [ImHash](#) (1), [Rooster101](#) (1), [dark08](#) (1), [lesom](#) (1), [Scorpion](#) (1), [CoolWave](#) (1), [glerant](#) (1), [domoy77](#) (1), [ritaconscience](#) (1), [murrayrothbard](#) (1), [akopjpuge](#) (1), [IDq](#) (1), [TheArchaeologist](#) (1), [OWZ1337](#) (1), [zantezu](#) (1) #1

There's more work to do on DoS, but I'm doing a quick build of what I have so far in case it's needed, before venturing into more complex ideas. The build for this is version 0.3.19.

- Added some DoS controls
As Gavin and I have said clearly before, the software is not at all resistant to DoS attack. This is one improvement, but there are still more ways to attack than I can count.

I'm leaving the -limitfreerelay part as a switch for now and it's there if you need it.

- Removed "safe mode" alerts
"safe mode" alerts was a temporary measure after the 0.3.9 overflow bug. We can say all we want that users can just run with "-disablesafemode", but it's better just not to have it for the sake of appearances. It was never intended as a long term feature. Safe mode can still be triggered by seeing a longer (greater total PoW) invalid block chain.

Builds:
<http://sourceforge.net/projects/bitcoin/files/Bitcoin/bitcoin-0.3.19/>

12/12/2010

EXPLOSÃO DAS ALTCOINS



Litecoin



ZCash



Stellar



Peercoin



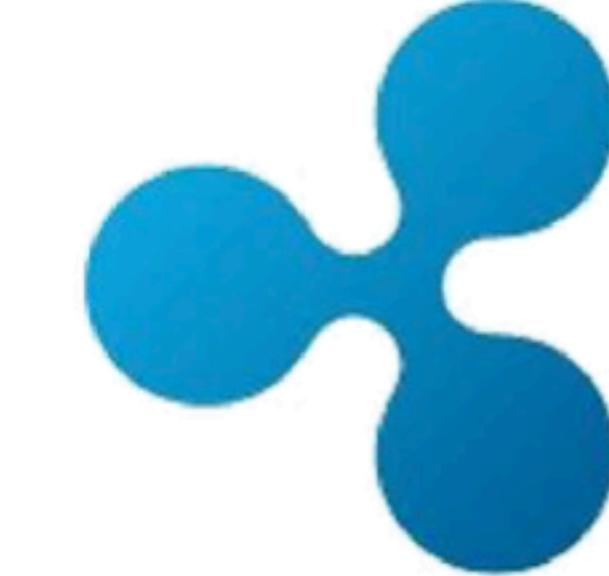
Dogecoin



DASH



Monero



Ripple

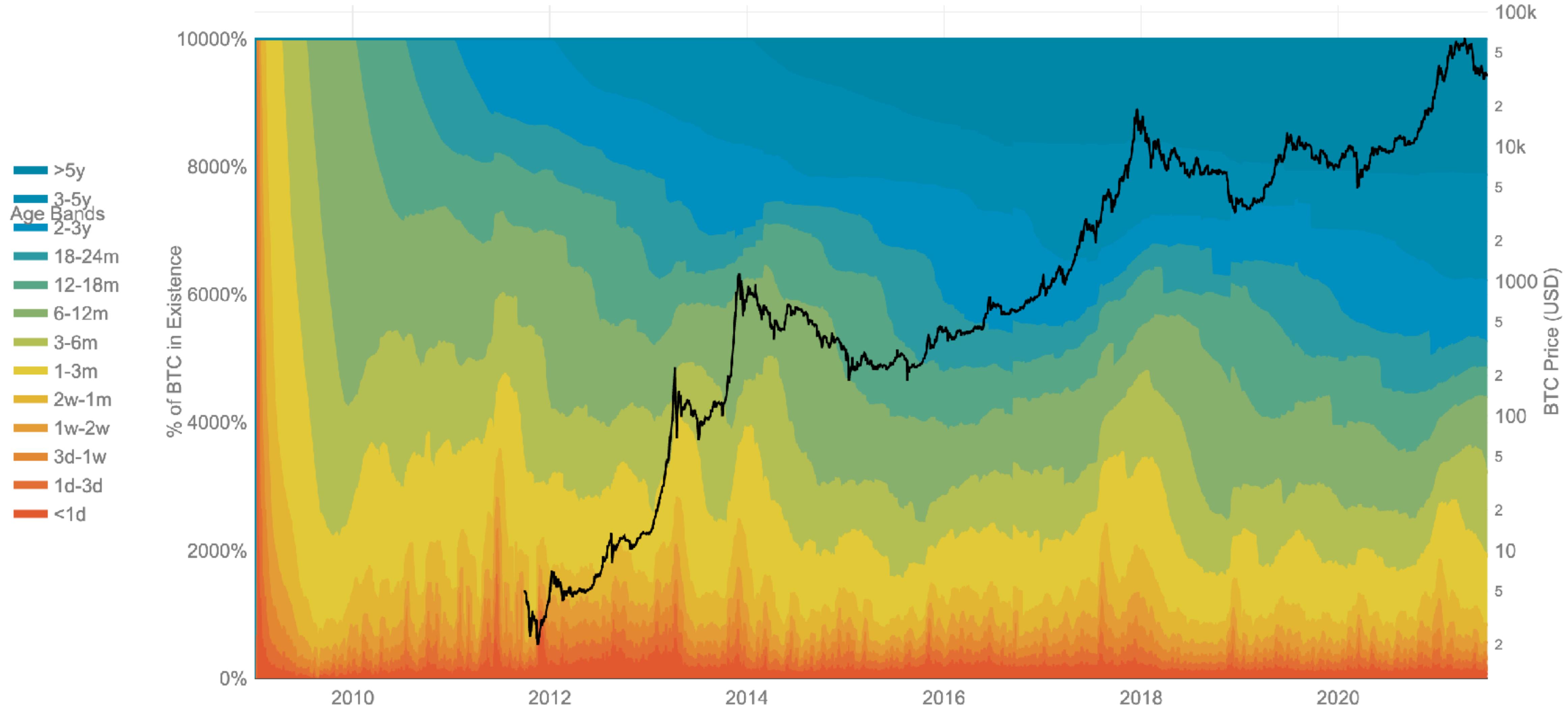
BITCOIN STARTUPS



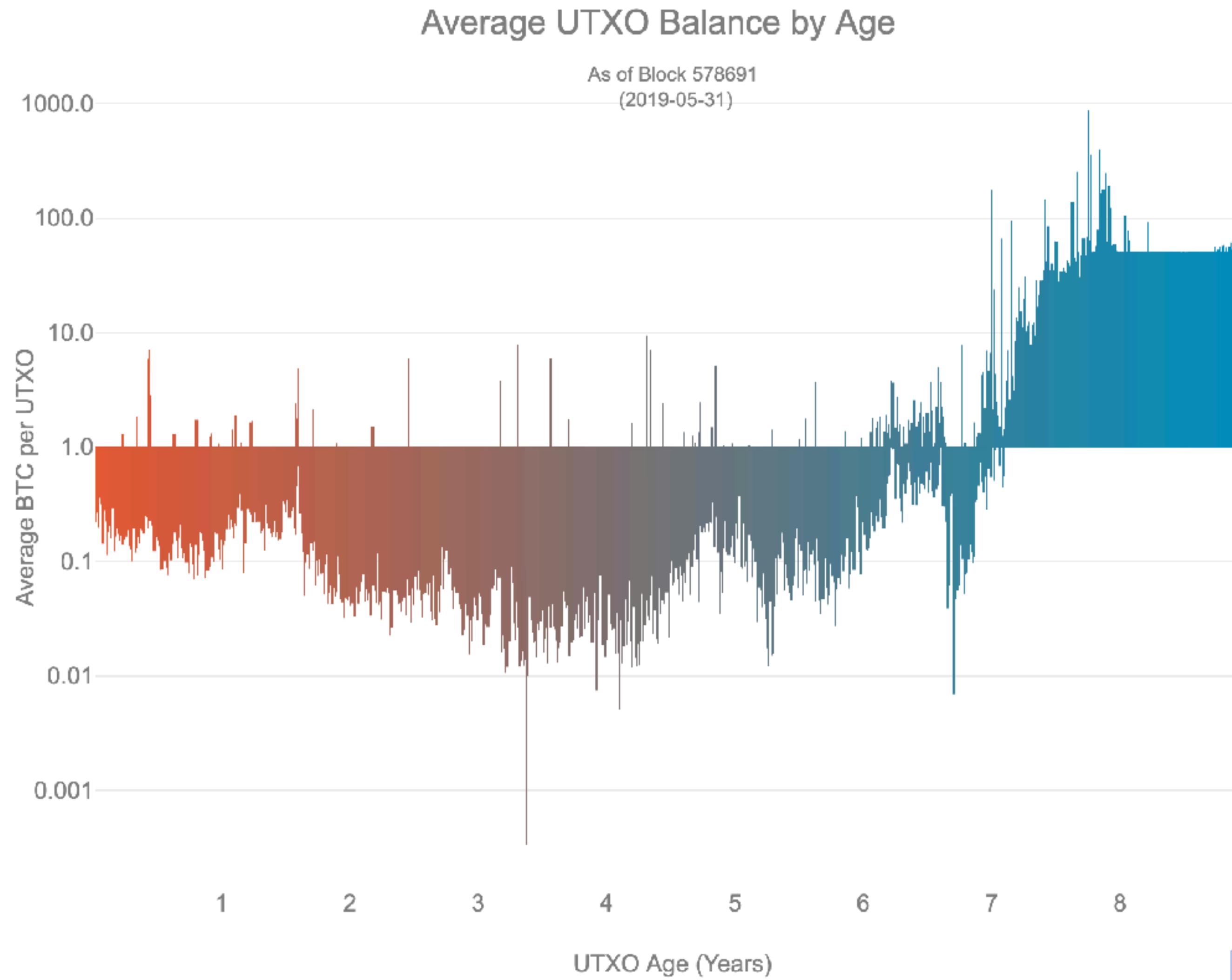
BITCOIN X TEMPO



IDADE DOS UTXOS: O QUE PODEMOS CONCLUIR?



IDADE DOS UTXOS: O QUE PODEMOS CONCLUIR?



MAIOR TRANSAÇÃO EM BTC

The screenshot shows the Blockchair website interface. At the top, there is a navigation bar with the Blockchair logo, language selection (En), and a search bar. Below the header, the URL is /Bitcoin / Transaction / 29a3ef04f9153d47a990bd7b048a4b. To the right, there is a 'Permalink' button with the URL https://blockchair.com/bit.

/ Bitcoin ▾ / Transaction ▾ / 29a3ef04f9153d47a990bd7b048a4b

Permalink <https://blockchair.com/bit>

General info

Hash (txid)	29a3ef04f9153d47a990bd7b048a4b 2d213daaa5fb8ed670fb85f13bdbcf
Block Id	153509
Time (UTC)	2011-11-16 05:59 (8 years ago)
Coin days destroyed	36,078,560.76
Input count	11
Output count	2
Input total	550,000.0000000 BTC
Output total	550,000.0000000 BTC
Fee	0.0000000 BTC
Fee per kB	0.0000000 BTC
Fee per kWU	0.0000000 BTC
Fee per kVB	0.0000000 BTC

Technical details

Is it a coinbase transaction?	NO
Has witness data?	NO
Size (bytes)	2,055
Weight (weight units)	8,220
Lock time	0
Version	110

Other blockchain explorers

- <https://btc.com/29a3ef04f9153d47a990bd7b048a4b2d21...>
- <https://www.blockchain.com/btc/tx/29a3ef04f9153d47a99...>
- <https://explorer.bitcoin.com/btc/tx/29a3ef04f9153d47a99...>
- <https://explorer.viabtc.com/btc/tx/29a3ef04f9153d47a99...>

Raw transaction

PDF receipt

Inputs: Outputs:

Time	Value (BTC)	Value (USD)	Recipient
2011-09-11 15:42	50,000.00000000	251,500.00	1QF76AaXFWmMqeikSQRQvQNnz4AhJ91tkwB
2011-09-11 15:34	50,000.00000000	251,500.00	1H8PAUxZti5fwzbbeK5gwDdXvEZouSsNuV
2011-09-11 15:42	50,000.00000000	251,500.00	1LIV4ev9EVKQuedaDr84sdZDXLy5o8nEDY

#	Recipient	Value (USD)	Value (BTC)	Times
0	1P3S1grZYmcqYDuaEDVDYobJ5Fx85E9fE9	115,000.00	50,000.00000000	2014-03-07 05:34
1	1M8s2S5bgAzSSzVTeL7zruvMPLvzSkEAuv	1,150,000.00	500,000.00000000	2011-11-16 09:17

MAIOR TRANSAÇÃO EM USD

The screenshot shows the Blockchair website interface. At the top left is the Blockchair logo. To its right are language selection buttons ('En') and a search bar with placeholder text 'Search BTC, ETH, BCH, LTC, BSV, DASH, XRP, GRS, DOGE blockchain' and a magnifying glass icon. Below the header, the URL path is displayed as '/Bitcoin / Transaction / 1e...9c'. To the right of the path is a 'Permalink' button with the URL 'https://blockchair.com/bit...'.

/ Bitcoin ▾ / Transaction ▾ / 1e...9c

Permalink <https://blockchair.com/bit...>

General info

Hash (txid)	1e4968cac36d91c4a4294810e9d384e4b 52bb73695dc23feb9459c5d89ab6e9c	
Block Id	578328	
Time (UTC)	2019-05-29 09:12 (2 months ago)	
Coin days destroyed	6,331,120.06	
Input count	85	
Output count	2	
Input total	157,457.61155560 BTC	1,369,170,000.00 USD
Output total	157,457.59930808 BTC	1,369,170,000.00 USD
Fee	0.01224752 BTC	106.50 USD
Fee per kB	0.00083589 BTC	7.27 USD
Fee per kWU	0.00039260 BTC	3.41 USD
Fee per kVb	0.00157040 BTC	13.66 USD

Technical details

Is it a coinbase transaction?	NO
Has witness data?	YES
Size (bytes)	14,652
Weight (weight units)	31,196
Lock time	0
Version	1_10

Other blockchain explorers

- <https://btc.com/1e4968cac36d91c4a4294810e9d384e4b52bb7...>
- <https://www.blockchain.com/btc/tx/1e4968cac36d91c4a42948...>
- <https://explorer.bitcoin.com/btc/tx/1e4968cac36d91c4a429481...>
- <https://explorer.viabtc.com/btc/tx/1e4968cac36d91c4a429481...>

Raw transaction

PDF receipt

Inputs:

Time	Value (BTC)	Value (USD)	Recipient
2019-01-15 06:49	391.81757105	1,412,620.00	34xp4vRoCGJym3xR7yCVPFHoCNxv4Twseo
2019-01-15 06:49	2,000.00000000	7,210,620.00	34xp4vRoCGJym3xR7yCVPFHoCNxv4Twseo
2019-01-15 06:49	2,000.00000000	7,210,620.00	34xp4vRoCGJym3xR7yCVPFHoCNxv4Twseo

Outputs:

#	Recipient	Value (USD)	Value (BTC)	Times
0	3QjvmQSvufx54RDAoZdXzkj2WZG7xdvv3i	772,926,000.00	88,888.00000000	2019-07-10 12:50
1	32MHMmE5iEYaBeZrCbpMu6UF7LKDLdBPX	596,247,000.00	68,569.59930808	Unspent

BITCOIN E ESCALABILIDADE

- ▶ Blocos na rede Bitcoin são criados a **cada 10 minutos**
- ▶ Cada bloco pode armazenar **1 MB de transações**
- ▶ Em 2015, transações começam a ficar não-confirmadas
- ▶ Debate sobre o **tamanho do bloco** levanta questões sobre governança descentralizada

ETHEREUM



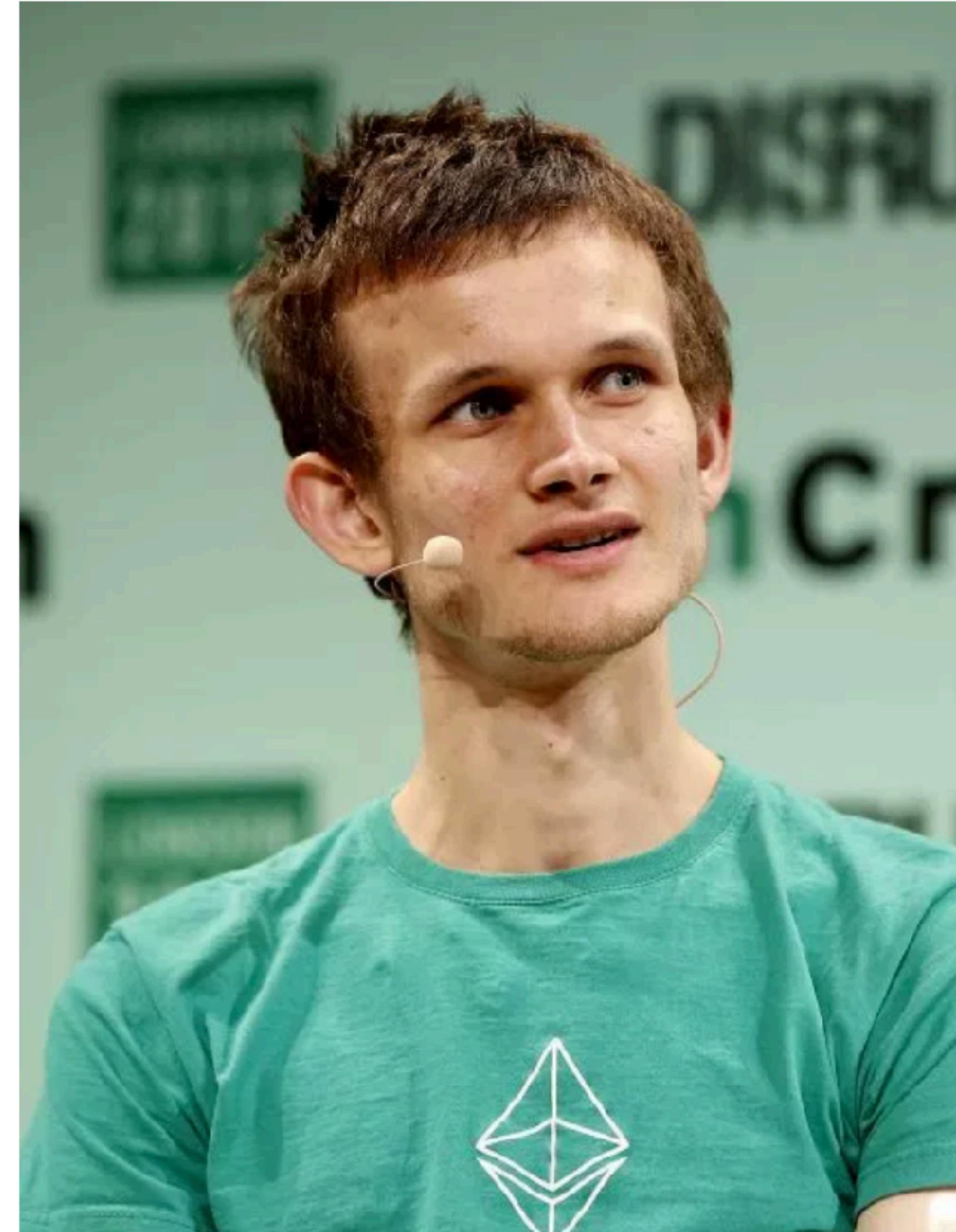
Bitcoin é *coin-centric*
Propósito principal: moeda alternativa



Ethereum é Turing-completo
Sua moeda (ether) é usado como
"combustível"
Propósito principal: Plataforma para
DApps + Smart Contracts

TIMELINE DO ETHEREUM

- ▶ **2013** Ethereum descrito em *whitepaper* por Vitalik Buterin
- ▶ **2014** Ethereum financiado por *crowdsale*
- ▶ **2015** Blockchain do Ethereum lançado
- ▶ **2016** Tokens do Ethereum valem mais de U\$1B
- ▶ **2020** Ethereum 2.0 (Eth2)



ETHEREUM HYPE



CryptoKitties

Collect and breed furrever friends!



Get your own Kitty

Buy & sell cats with our community

Create collections & earn rewards

Breed adorable cats & unlock rare traits

Crack puzzles alongside other players

Chase limited edition Fancy cats

Play games in the KittyVerse

ETHEREUM X TEMPO



BANCOS E BLOCKCHAIN

- ▶ Blockchains privados / permissionados
 - ▶ Fechados
 - ▶ Não trustless
 - ▶ Sem incentivos econômicos
 - ▶ Separar blockchain de bitcoin



BLOCKCHAINS PERMISSIONADOS



Quorum

c·rda



HYPERLEDGER

JAMIE DIMON DA J.P.MORGAN

Jan/2014:

"It's a terrible store of value. It could be replicated over and over."

Out/2014:

"[Bitcoin developers] are going to try and eat our lunch. And that's fine. That's called competition, and we'll be competing."



JAMIE DIMON DA J.P.MORGAN

Nov/2015:

“Virtual currency, where it’s called a that’s going to be stopped... a virtual currency that goes around, bitcoin vs. a U.S. dollar borders and doesn’t have the same controls. It’s not going to happen.”

Out/2017:

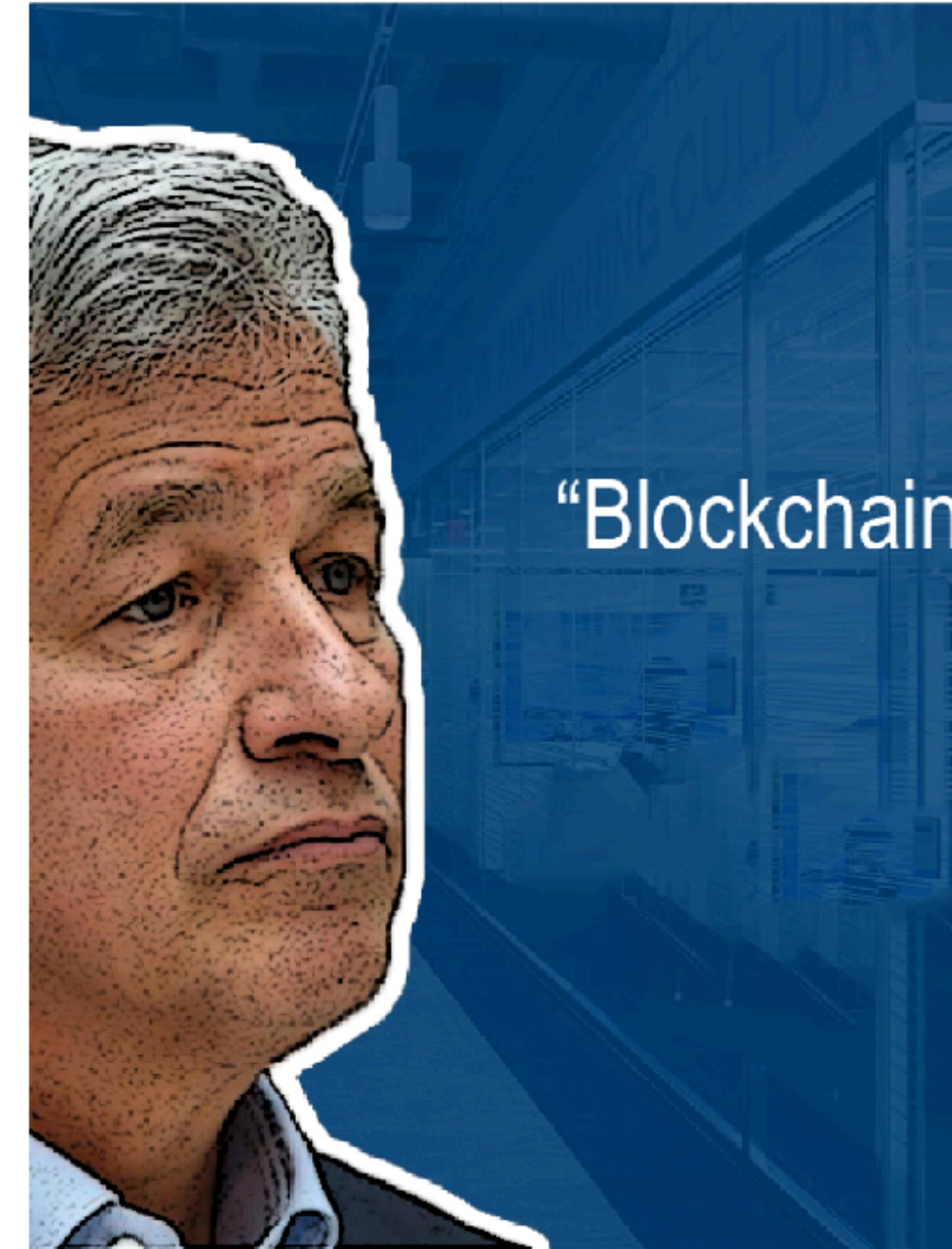
“Bitcoin is a “fraud” that won’t end well. If you’re stupid enough to buy [bitcoin], you’ll pay the price for it one day. The blockchain is a technology which is a good technology. We actually use it... God bless the blockchain.”



JAMIE DIMON DA J.P.MORGAN

Jan/2018:

“The blockchain is real. You can have crypto yen and dollars and stuff like that... The bitcoin to me was always what the governments are gonna feel about bitcoin as it gets really big, and I just have a different opinion than other people”



JAMIE DIMON DA J.P.MORGAN

J.P.Morgan

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[Solutions](#) > Corporate & Investment Banking

Published - February 14, 2019

J.P. Morgan this month became the first U.S. bank to create and successfully test a digital coin representing a fiat currency. The JPM Coin is based on blockchain-based technology enabling the instantaneous transfer of payments between institutional clients. We sat down with Umar Farooq, head of Digital Treasury Services and Blockchain, to find out more about the announcement and what it means for the future of payments.

JAMIE DIMON DA J.P.MORGAN



FINANCE

JPMorgan creates new unit for blockchain projects, says the technology is close to making money

PUBLISHED TUE, OCT 27 2020 7:00 AM EDT | UPDATED TUE, OCT 27 2020 2:26 PM EDT



SHARE [f](#) [t](#) [in](#) [e](#)

KEY POINTS

- JPMorgan Chase said its digital currency, JPM Coin, is being used commercially for the first time this week by a large technology client to send payments around the world.
- That development, along with other behind-the-scenes moves, persuaded JPMorgan to create a new business to house its blockchain and digital currency efforts called Onyx, said Takis Georgakopoulos, the bank's global head of wholesale payments.
- The unit has more than 100 dedicated staffers, he said.

An advertisement for PÓS GRADUAÇÃO EAD UNIASSELVI. It features a yellow background with a black diamond shape containing text about special offers: "MATRÍCULA GRÁTIS + 40% DE BOLSA NO 1º PÉRIODO + 1 CURSO BÔNUS". A woman is smiling in the background. Below the diamond, there is a box with the text "Mais de 150 Opções de Cursos".

ONDE ESTAMOS AGORA?

- ▶ ICOs - *Initial Coin Offerings*
- ▶ Maneira de investir Ether em startups baseadas na plataforma Ethereum
- ▶ Permissionless, custo e esforço baixo! (conhecem o kickstarter?)
- ▶ Filecoin ICO U\$253M
- ▶ Tezos ICO U\$200M

ONDE ESTAMOS AGORA?



Litecoin



ZCash



Stellar



Peercoin



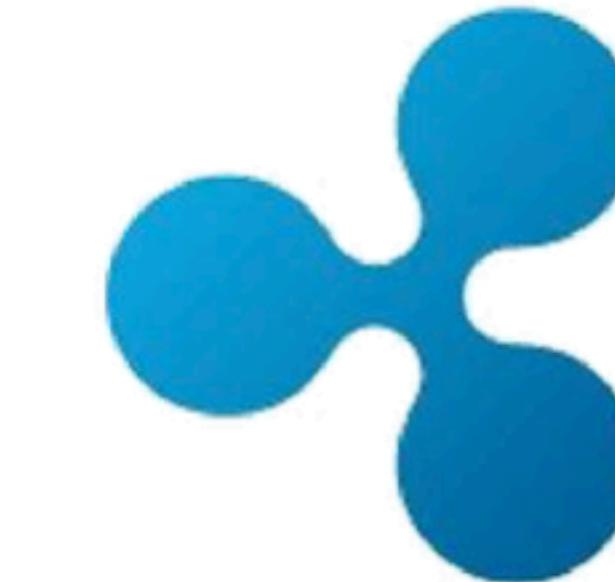
Dogecoin



DASH



Monero

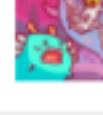


Ripple

ONDE ESTAMOS AGORA?



ONDE ESTAMOS AGORA?

		CATEGORY	BALANCE	USERS	VOLUME	ACTIVITY
1	 PancakeSwap ◆ BSC	DeFi	\$3,78B	530,91k +5.51%	\$728,56M	
2	 Splinterlands ◆ Hive	Games	\$105,52k	427,24k +3.78%	\$67,27k	
3	 Alien Worlds ◆ WAX	Games	\$0	245,08k -14.38%	\$0	
4	 Axie Infinity ◆ ETH - RONIN	Games	\$4,65B	91,54k -1.12%	\$67,05M	
5	 MOBOX: NFT Farmer ◆ BSC	Games	\$44,25k	51,38k +90.71%	\$742,91k	
6	 CryptoMines ◆ BSC	Games	\$12,83k	48,31k +5.72%	\$110,06	
7	 AtomicAssets ◆ WAX	Other	\$0	39,99k -50.14%	\$423,28k	
8	 Uniswap ◆ ETH	Exchanges	\$9,35B	33,44k -9.10%	\$472,47M	
9	 Upland ◆ EOS	Games	\$88,61k	31,56k -0.71%	\$0	
10	 Farmers World ◆ WAX	Games	\$0	26,21k -48.12%	\$0	
11	 OpenSea ◆ ETH - Polygon	Marketplaces	\$70,88k	22,83k +0.67%	\$51,21M	
12	 CryptoBay	Games	\$1.36k	20,41k +0.11%	\$1.42k	

ONDE ESTAMOS AGORA?



ONDE ESTAMOS AGORA?

