



IMD0913

HISTÓRIA: DO BITCOIN AO BLOCKCHAIN

Cypherpunks e Criptoanarquistas

Grupos libertários preocupados com **privacidade**, defendendo a **criptografia** como uma ferramenta importante:

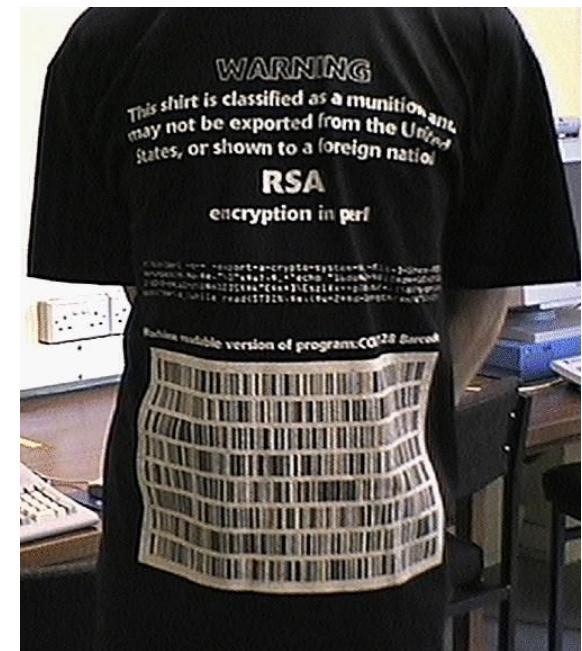
"Privacy is the power to selectively reveal oneself to the world."

*"... 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"

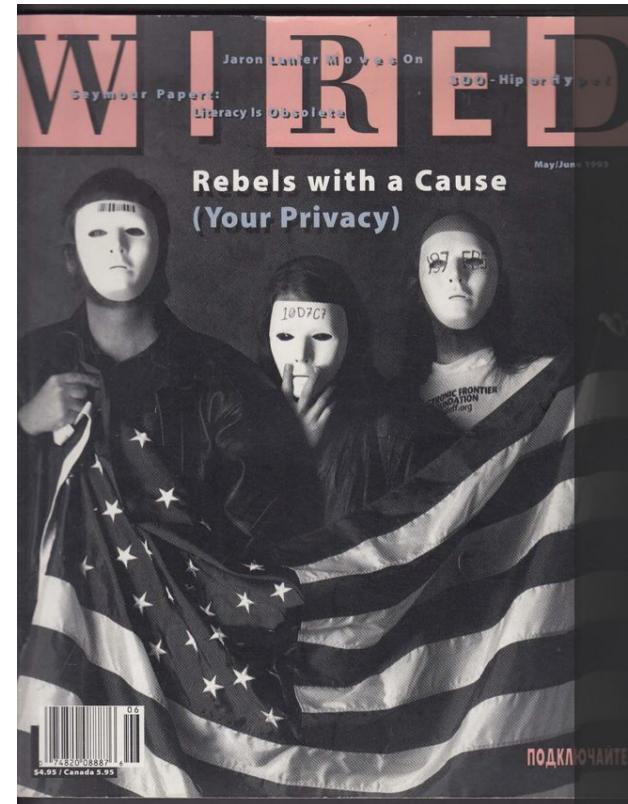
```
#!/bin/perl -sp0777i<X+d*1MLa^*1N%0]dsXx++1M1N/dsM0<j]dsj
$/=unpack('H*',$_);$_=`echo 16dio\U$k"SK$/SM\$n\EsN0p[1N*1
1K[d2%Sa2/d0$^Ixp"\|dc`;s/\W//g;$_=pack('H*',/(. )*/$/)
```



Cyberpunks 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 Cyberpunk's Manifesto - Eric Hughes (1993)



Cypherpunks e Criptoanarquistas

Marc Andreessen: co-founder of Netscape which invented SSL

Julian Assange: WikiLeaks founder

Adam Back: inventor of Hashcash and of NNTP-based Eternity networks; co-founder of Blockstream

Bram Cohen: creator of BitTorrent

Hal Finney (deceased): cryptographer; main author of PGP 2.0 and the core crypto libraries of later versions of PGP; designer of RPOW

John Gilmore: Sun Microsystems' fifth employee; co-founder of the Cypherpunks and the Electronic Frontier Foundation; project leader for FreeS/WAN

Eric Hughes: founding member of Cypherpunks; author of A Cypherpunk's Manifesto

Satoshi Nakamoto: Pseudonym for the inventor(s) of Bitcoin.

Richard Stallman: founder of Free Software Foundation, privacy advocate

Nick Szabo: inventor of smart contracts; designer of bit gold, a precursor to Bitcoin

Wei Dai: Created b-money; cryptocurrency system and co-proposed the VMAC message authentication algorithm. The smallest subunit of Ether, the wei, is named after him.

Philip Zimmermann: original creator of PGP v1.0 (1991); co-founder of PGP Inc. (1996); co-founder with Jon Callas of Silent Circle

DigiCash

1989 por **David Chaum**

Blind Signatures

Fracassou devido a centralização

Untraceable Electronic Cash †
(Extended Abstract)

David Chaum¹ Amos Fiat² Moni Naor³

¹ Center for Mathematics and Computer Science
Kruislaan 413, 1098 SJ Amsterdam, The Netherlands

² Tel-Aviv University
Tel-Aviv, Israel

³ IBM Almaden Research Center
650 Harry Road, San Jose, CA 95120

CRYPTO 1988

DigiCash™

Photo: Declan McCullagh (2002)

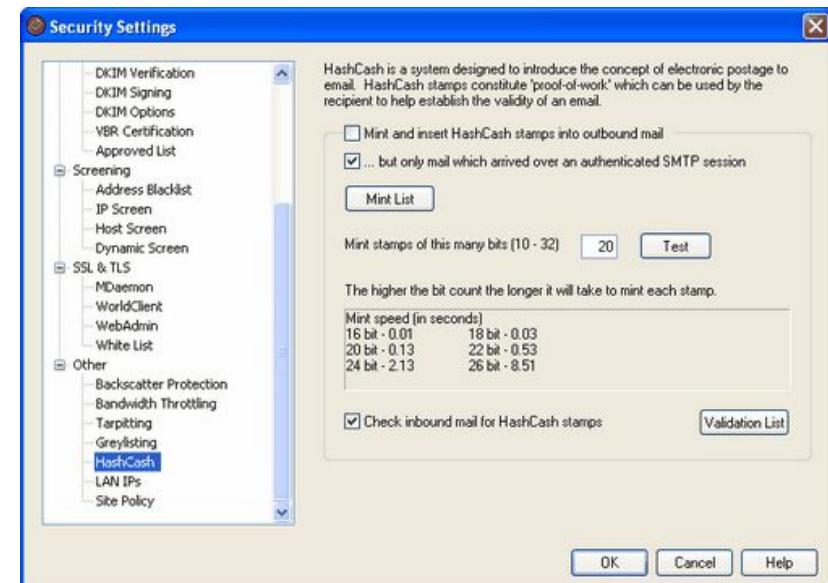
HashCash

1997 por Adam Back

Originalmente desenvolvido com o objetivo de limitar SPAM

Sistema baseado em *proof-of-work*

Resolver **enigma criptográfico** baseado em **hash** para enviar um e-mail



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 *whitepaper* em 2008

electronic payment system based on cryptographic proof instead of trust

proof-of-work

Realizou a primeira transação na rede Bitcoin em 2009

Estimativa de 980.000 BTC



Bitcoin: a primeira criptomoeda

Bloco #0 Gênesis em **03/01/2009**

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

Hash do bloco #0:

000000000019d6689c085ae165831e934ff763ae46a2a6c172b3f1b60a8ce26f

Coinbase (50BTC) para:

1A1zP1eP5QGeff2DMPTfTL5SLmv7DivfNa



Block Hash

000000000019d6689c085ae165831e934ff763ae46a2a6c172b3f1b60a8ce26f 

Summary

Height	0 ►	Relayed By	 unknown
Confirmations	751,093	Difficulty	2.54 K / 1.00
Block Size	285 Bytes	Block Reward	50.00000000 BTC
Stripped Size	285 Bytes	Fee Reward	0 BTC
Weight	1,140	Tx Count	1
Time	2009-01-03 15:15:05	Tx Volume	0 BTC
Merkle Root	4a5e1e4baab89f3a32518a88c31bc87f618f76673e2cc77ab2127b7afdeda33b		
Version	0x1		
Nonce	0x7c2bac1d		
Bits	0x1d00ffff		
Other Explorers	 BLOCKCHAIR		

Transactions (1)

Sort: Tx Block Id ▾

4a5e1e4baab89f3a32518a88c31bc87f618f76673e2cc77ab2127b7afdeda33b		0 Satoshi/vByte	Fee: 0 BTC
Input (1)	0 BTC	→ Output (1)	50.00000000 BTC
 coinbase	0	 1A1zP1eP5QGefi2DMPTFTL5SLmv7DivfNa	50.00000000

Primeira transação

Bloco #170 em 12/01/2009

Entre **Satoshi Nakamoto** e **Hal Finney**

Transação de 10 BTC

Hash do bloco #170:

00000000d1145790a8694403d4063f323d499e655c83426834d4ce2f8dd4a2ee

<https://www.blockchain.com/btc/block/00000000d1145790a8694403d4063f323d499e655c83426834d4ce2f8dd4a2ee>



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), Toughit (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



Download: [IMG_0984.jpg](#)



Download: [IMG_0985.jpg](#)



Download: [IMG_0986.jpg](#)



Download: [IMG_0988.jpg](#)



Download: [IMG_0989.jpg](#)



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!

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

Transações históricas

Transaction

Transaction [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	00000000152340ca42227603908689183edc47355204e7aca59383b0aac1fd8

Details

[a1075db55d416d3ca199f55b6084e2115b9345e16c5cf302fc80e9d5fbf5d48d](#) mined May 22, 2010 3:16:31 PM

1XPtgdRhN8RFnznW CddobD9iKZatrVH4	10000.99 BTC	→	175kEw2md5avVNyYgj6RiXuQKNwkXaxFyQ	10000 BTC (\$)
FEE: 0.99 BTC		530538 CONFIRMATIONS		
		10000 BTC		

<https://www.blockchain.com/btc/tx/a1075db55d416d3ca199f55b6084e2115b9345e16c5cf302fc80e9d5fbf5d48d>

Transações históricas

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

U\$ 41,00

09/11/2021: 1 BTC = U\$ \$69.045,00

U\$ 690.045.000,00



Bitcoin Pizza Index

The Bitcoin Pizza Index is now at

\$259,994,176!

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.

267 days to go till the next Bitcoin Pizza Day on Wednesday May 22nd 2024!

<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



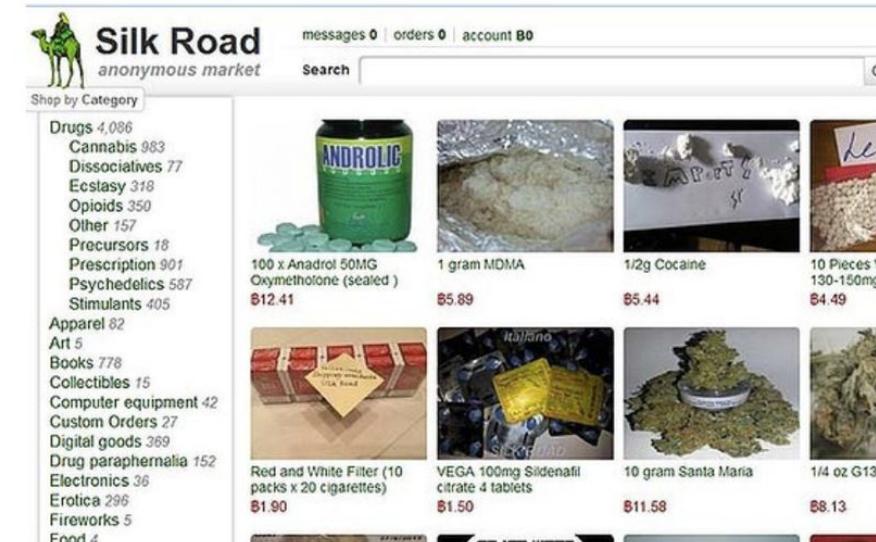
Casos notáveis: Silk Road

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)

#71

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://tydgcckixpbu6uz.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

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

Pages: 1

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](https://bitcointalk.org/index.php?topic=47811.0) procurando por desenvolvedores para auxiliarem na sua *startup* de Bitcoin

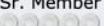
Ele deixa seu e-mail pessoal: **rossulbricht@gmail.com**

<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 #5
Merited by mindrust (20), Bitman86 (4), roslinpl (1), johhnyUA (1), ETFbitcoin (1), frankenmint (1), xtraelv (1), Husna QA (1), taserz (1), BlackHatCointer (1), dawoodkhan97 (1), Jumperman4 (1)

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.

12/12/2010

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 #1
Merited by bumbacoin (50), sukamasoto (30), yahoo62278 (25), notaek (25), mindrust (20), legendster (10), aTriz (7), Lauda (5), Betwring (5), Mrpumperitis (5), TMAN (5), minorman (5), FrueGreadts (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), denzkilim (1), Bardman (1), Woshib (1), akirasedo17 (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), 1Dq (1), TheArchaeologist (1), OWZ1337 (1), zantezu (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/>

Explosão das **altcoins**



Litecoin



ZCash



Stellar



Peercoin



Dogecoin



DASH



Monero



Ripple

Bitcoin startups

coinbase **xapo**

ANDREESSEN
HOROWITZ

COINALYTICS



BLOCKCHAIN



PANTERA



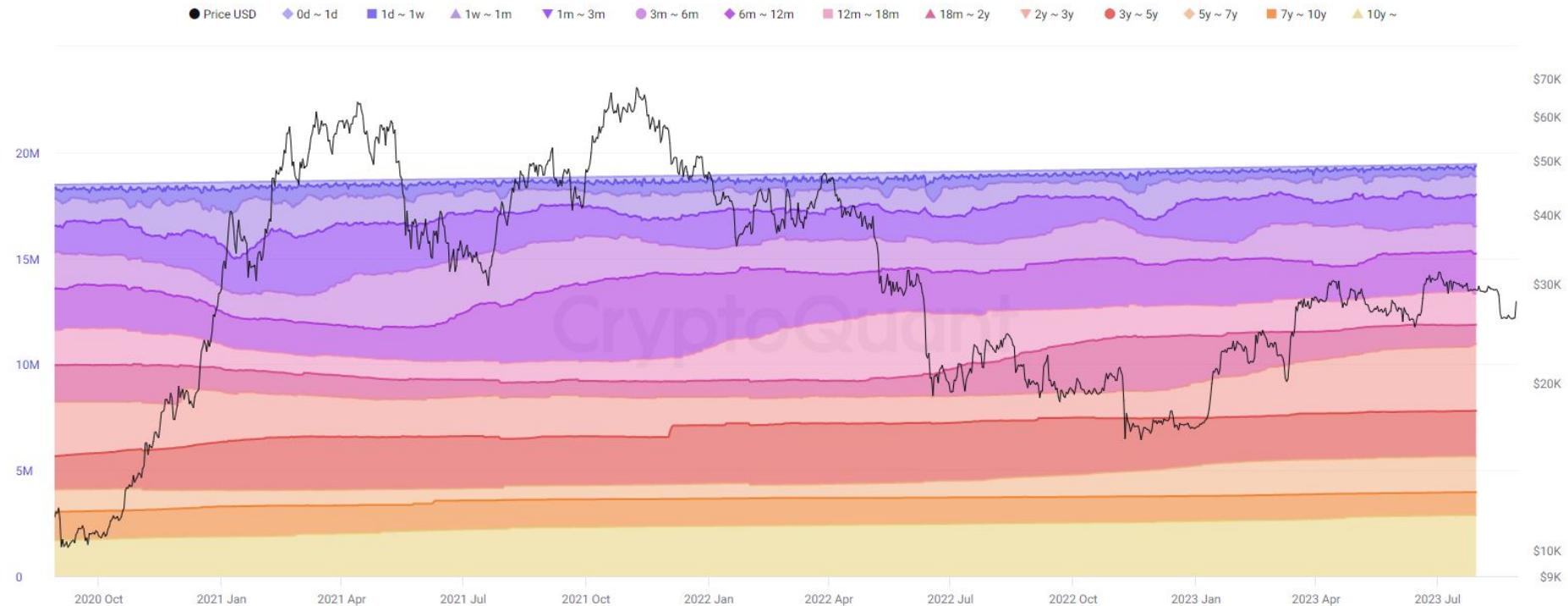
BLOCKCHAIN
CAPITAL



Bitcoin x Tempo

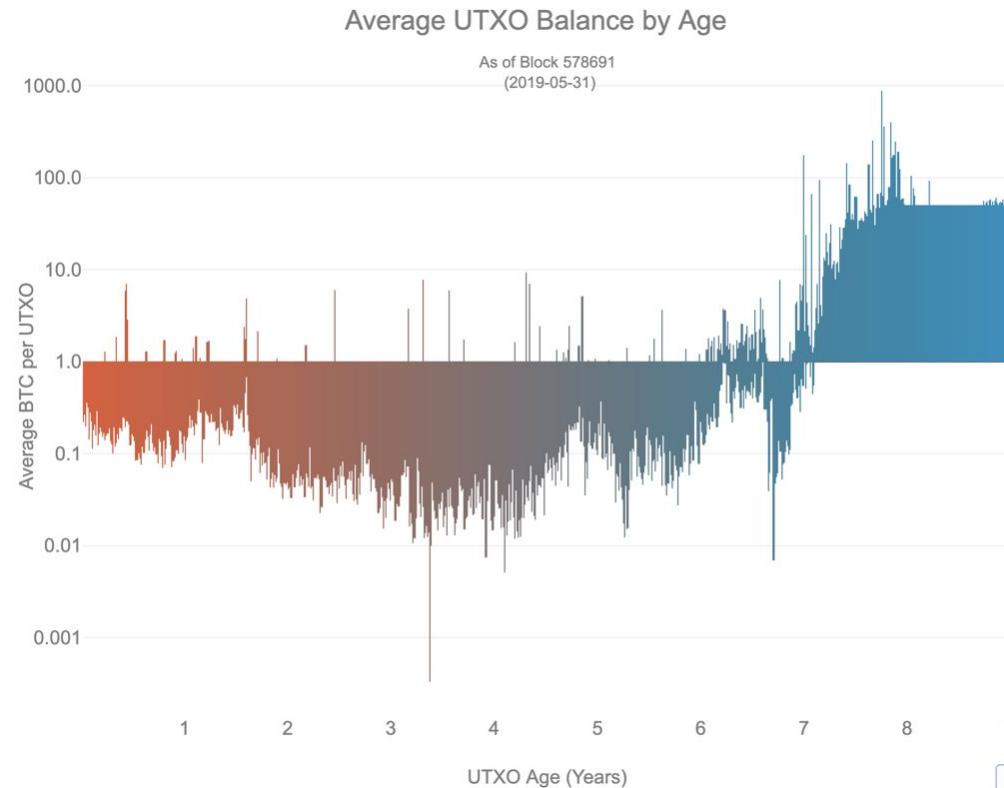


Idade dos UTXOs: o que podemos concluir?



<https://cryptoquant.com/asset/btc/chart/network-indicator/utxo-age-bands?window=DAY&priceScale=log&metricScale=linear>

Idade dos UTXOs: o que podemos concluir?



Maior transação em BTC

 **BLOCKCHAIR** ☾ En ▾

Search BTC, ETH, BCH, LTC, BSV, DASH, XRP, GRS, DOGE blockchain

/ Bitcoin ▾ / Transaction ▾ / 29a3efd3ef04f9153d47a990bd7b048a4b2d213daaa5fb8ed670fb85f13bdbcf

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

General info

Hash (txid)	29a3efd3ef04f9153d47a990bd7b048a4b2d213daaa5fb8ed670fb85f13bdbcf		
Block Id	153509	432200 confirmations	
Time (UTC)	2011-11-16 05:59 (8 years ago)		
Coidays destroyed	36,078,560.76		
Input count	11		
Output count	2		
Input total	550,000.0000000 BTC	1,265,000.00 USD	
Output total	550,000.0000000 BTC	1,265,000.00 USD	
Fee	0.0000000 BTC	0.00 USD	
Fee per kB	0.0000000 BTC	0.00 USD	
Fee per kWU	0.0000000 BTC	0.00 USD	
Fee per kB	0.0000000 BTC	0.00 USD	

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	1 ₁₀

Other blockchain explorers

-  <https://btc.com/29a3efd3ef04f9153d47a990bd7b048a4b2d213daaa5fb8ed670fb85f13bdbcf>
-  <https://www.blockchain.com/btc/tx/29a3efd3ef04f9153d47a990bd7b048a4b2d213daaa5fb8ed670fb85f13bdbcf>
-  <https://explorer.bitcoin.com/btc/tx/29a3efd3ef04f9153d47a990bd7b048a4b2d213daaa5fb8ed670fb85f13bdbcf>
-  <https://explorer.viabtc.com/btc/tx/29a3efd3ef04f9153d47a990bd7b048a4b2d213daaa5fb8ed670fb85f13bdbcf>

[Raw transaction #](#) [PDF receipt](#)

Inputs: Outputs:

Time	Value (BTC)	Value (USD)	Recipient	Value (USD)	Value (BTC)	Times
2011-09-11 15:42	50,000.0000000	251,500.00	1QF76AaXFVmMqeikSQRvQNz4AhJ9tkwB	115,000.00	50,000.0000000	2014-03-07 05:34
2011-09-11 15:34	50,000.0000000	251,500.00	1H8PAUxZti5fwzbbeK5gwDdXvEZouSsNuV	1,150,000.00	500,000.0000000	2011-11-16 09:17
2011-09-11 15:42	50,000.0000000	251,500.00	1LY4ey9FVKuodaDr84sdZDXLy5o8nFDY			
2011-09-11 15:34	50,000.0000000	251,500.00	132vQw4XpVdayQarsyQEfrjGKrhsMogGb			
2011-09-11 15:42	50,000.0000000	251,500.00	1GNBnkXohjwf42vzRG5NmkQHFX6iAZb2Sa			

Maior transação em USD

 **BLOCKCHAIR**

EN | [Search BTC, ETH, BCH, LTC, BSV, DASH, XRP, GRS, DOGE blockchain](#) | [Permalink](#) | <https://blockchair.com/bit>

/ Bitcoin / Transaction / 1e4968cac36d91c4a4294810e9d384e4b52bb73695dc23feb9459c5d89ab6e9c

General info

Hash (txid)	1e4968cac36d91c4a4294810e9d384e4b52bb73695dc23feb9459c5d89ab6e9c	
Block Id	578328	
Time (UTC)	2019-05-29 09:12 (2 months ago)	
Coindays 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

Inputs:

Time	Value (BTC)	Value (USD)	Recipient
2019-01-15 06:49	391.81757105	1,412,620.00	34xp4vRoCGJym3xR7yCVPFHoCNvx4Twseo
2019-01-15 06:49	2,000,0000000	7,210,620.00	34xp4vRoCGJym3xR7yCVPFHoCNvx4Twseo
2019-01-15 06:49	2,000,0000000	7,210,620.00	34xp4vRoCGJym3xR7yCVPFHoCNvx4Twseo
2019-01-15 06:49	2,000,0000000	7,210,620.00	34xp4vRoCGJym3xR7yCVPFHoCNvx4Twseo

Outputs:

#	Recipient	Value (USD)	Value (BTC)	Times
0	3QjvmQSvufx54RDAoZdXzkj2WZG7xdvv3i	772,926,000.00	88,888.0000000	2019-07-10 12:50
1	32MHMmESiEYaBeZrCbpMu6UF7LKDLdBPX	596,247,000.00	68,569.59930808	Unspent

[Raw transaction](#) | [PDF receipt](#)

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

2016 TheDAO *hack*

<https://www.coindesk.com/learn/2016/06/25/understanding-the-dao-attack/>

2020 Ethereum 2.0 (Eth2)



Ethereum Hype



CryptoKitties

Collect and breed furrever friends!



Get your own Kitty

Buy & sell cats with our community

Crack puzzles alongside other players

Create collections & earn rewards

Chase limited edition Fancy cats

Breed adorable cats & unlock rare traits

Play games in the KittyVerse

Ethereum x Tempo



Bancos e Blockchain

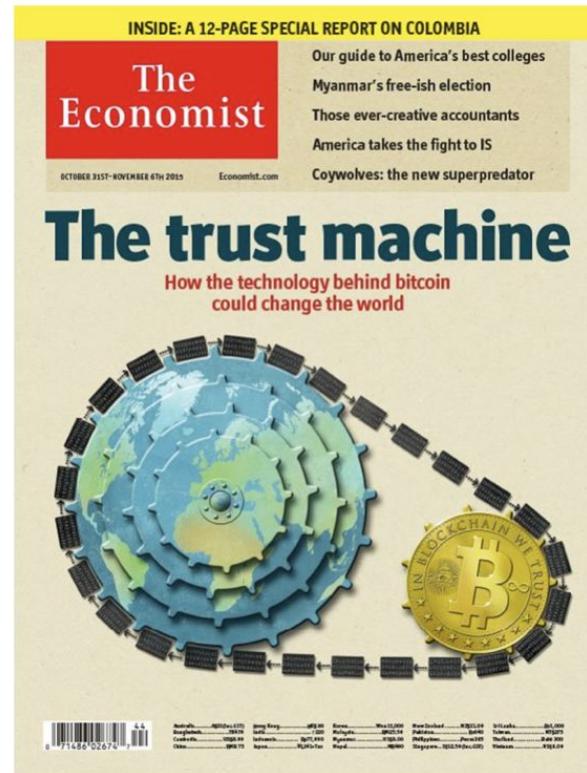
Blockchains privados / permissionados

Fechados

Não *trustless*

Sem incentivos econômicos

Separar *blockchain* de *bitcoin*



Iniciativas de blockchain privados



Quorum

c·rda



HYPERLEDGER

Jamie Dimon da JPMorgan

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."



Aaron Lucchetti

@AaronLucchetti



Jamie Dimon on [#bitcoin](#): I'd fire a JPM trader in a second who traded that. Its against the rules, its stupid, its dangerous.

9:48 AM - Sep 12, 2017



12



22



15



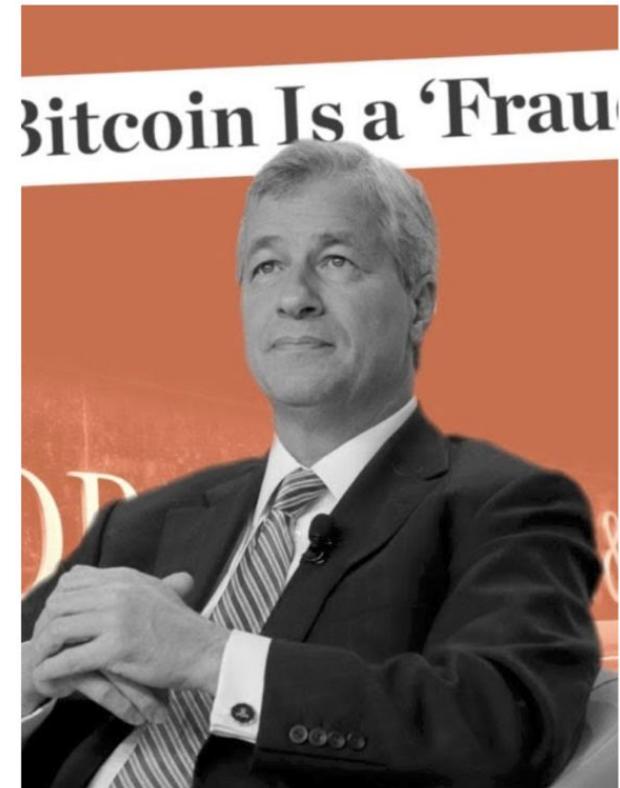
Jamie Dimon da JPMorgan

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 JPMorgan

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 JPMorgan

Dimon's many regrets about bitcoin

Bitcoin has rocketed in value despite Dimon's comments



Jamie Dimon da JPMorgan

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 JPMorgan

The screenshot shows a news article from CNBC's Finance section. The headline reads: "JPMorgan creates new unit for blockchain projects, says the technology is close to making money". The article was published on Tuesday, October 27, 2020, at 7:00 AM EDT, and last updated on Tuesday, October 27, 2020, at 2:26 PM EDT. The author is Hugh Son (@HUGH_SON). Below the headline, there is a section titled "KEY POINTS" with three bullet points:

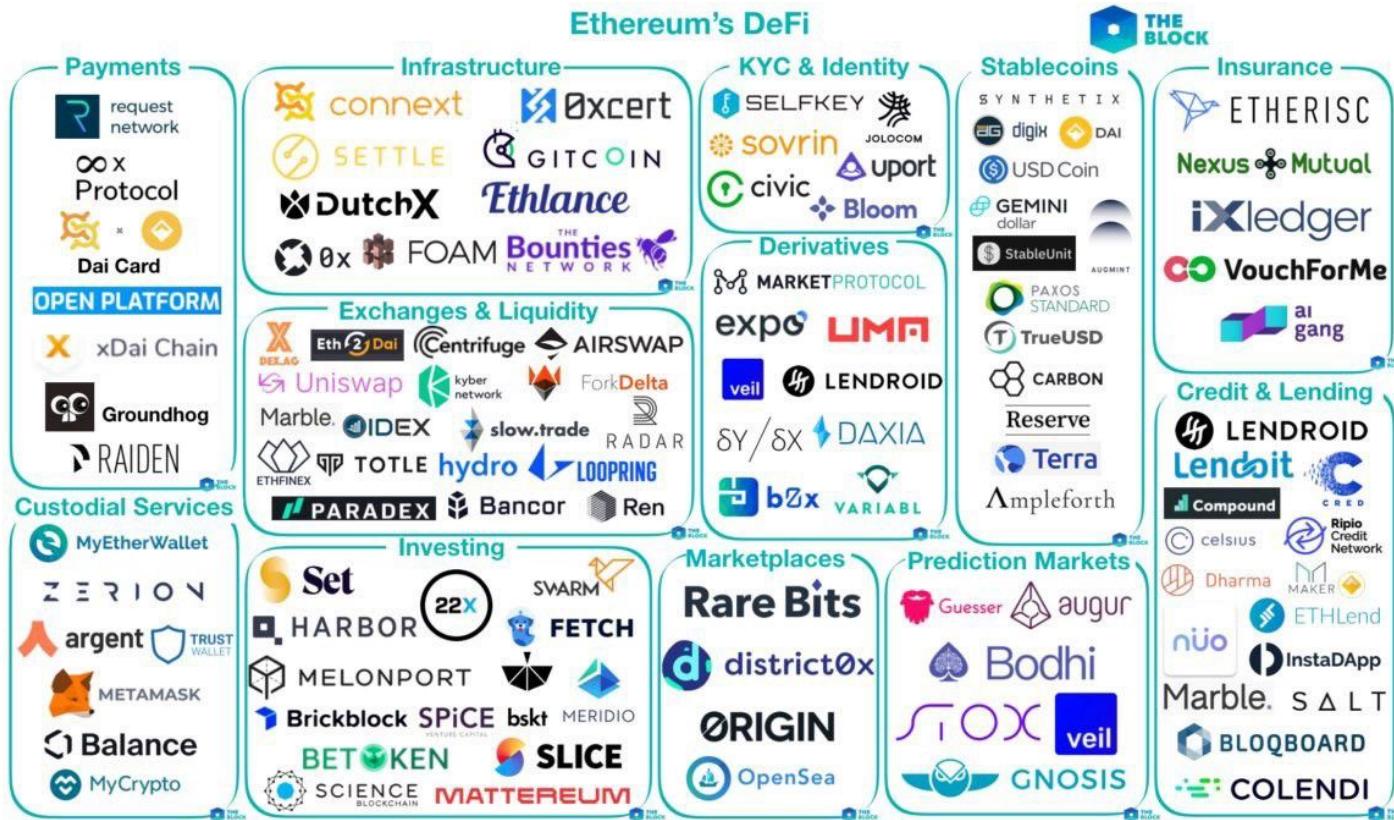
- JPMorgan Chase said its digital currency, JPM Coin, is being used commercially for the first time this week by a large technology client to send payments around the world.
- That development, along with other behind-the-scene moves, persuaded JPMorgan to create a new business to house its blockchain 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.

On the right side of the page, there is a yellow advertisement for EAD UNIASSELVI. It features a woman holding a diploma and text in Portuguese advertising a graduation program with special offers and scholarships.

Onde estamos agora?



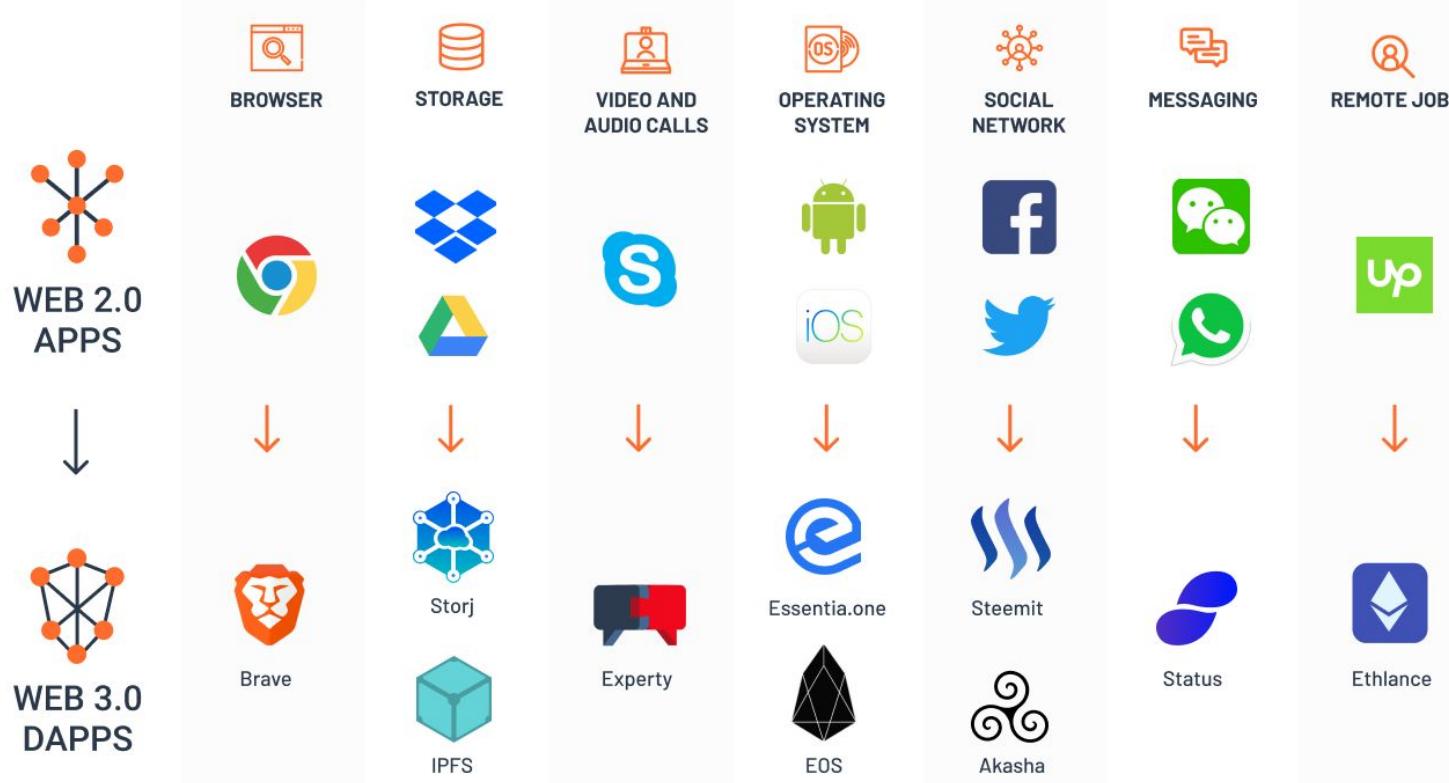
Onde estamos agora?



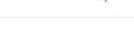
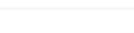
Onde estamos agora?



Onde estamos agora?



Onde estamos agora?

Rank	Project	Category	Total Value	Market Cap	24h % Change	7-day Price Chart
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 +1.42%	\$1,42k	

Onde estamos agora?



*"Enquanto a nota de dinheiro está no papel, o Drex vai estar em **blockchain**."*

