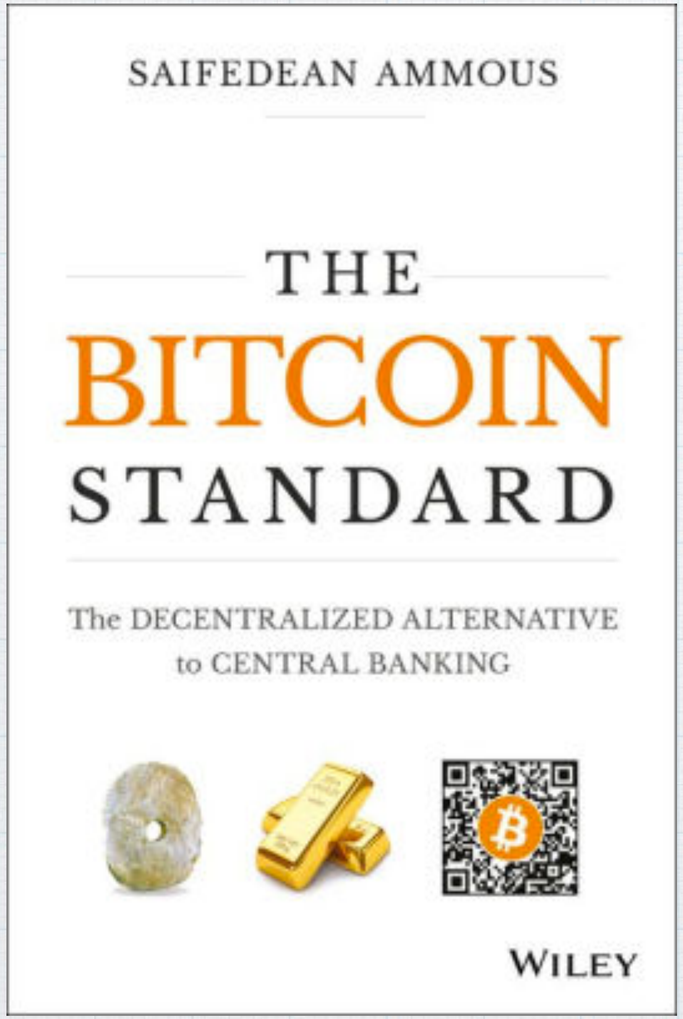
Cryptocurrency

April 2020

Cryptocurrency Agenda

* What it is
* Short history
* Why it is important
* How it works
* How to use it
* Bitcoin anonymity

If you had to read one book...



1. Money
2. Primitive Moneys
3. Monetary Metals
4. Government Money
5. Money and Time Preference
6. Capitalism's Information System
7. Sound Money and Individual Freedom

The first seven chapters, covering how we got to where we are is compelling

Rai Stones
Yap Island

Cryptocurrency Defined

* It is a digital currency
* It is a store of value
* It uses encryption techniques
    * to regulate quantity
    * to verify transfer of funds
* It runs on a network of nearly unstoppable computers
* It operates independent of a central bank or government

1900+ Cryptocurrencies
Here are a few

* Bitcoin

* Bitcoin Cash

* Monero - privacy
* Zcash - privacy

* Ethereum

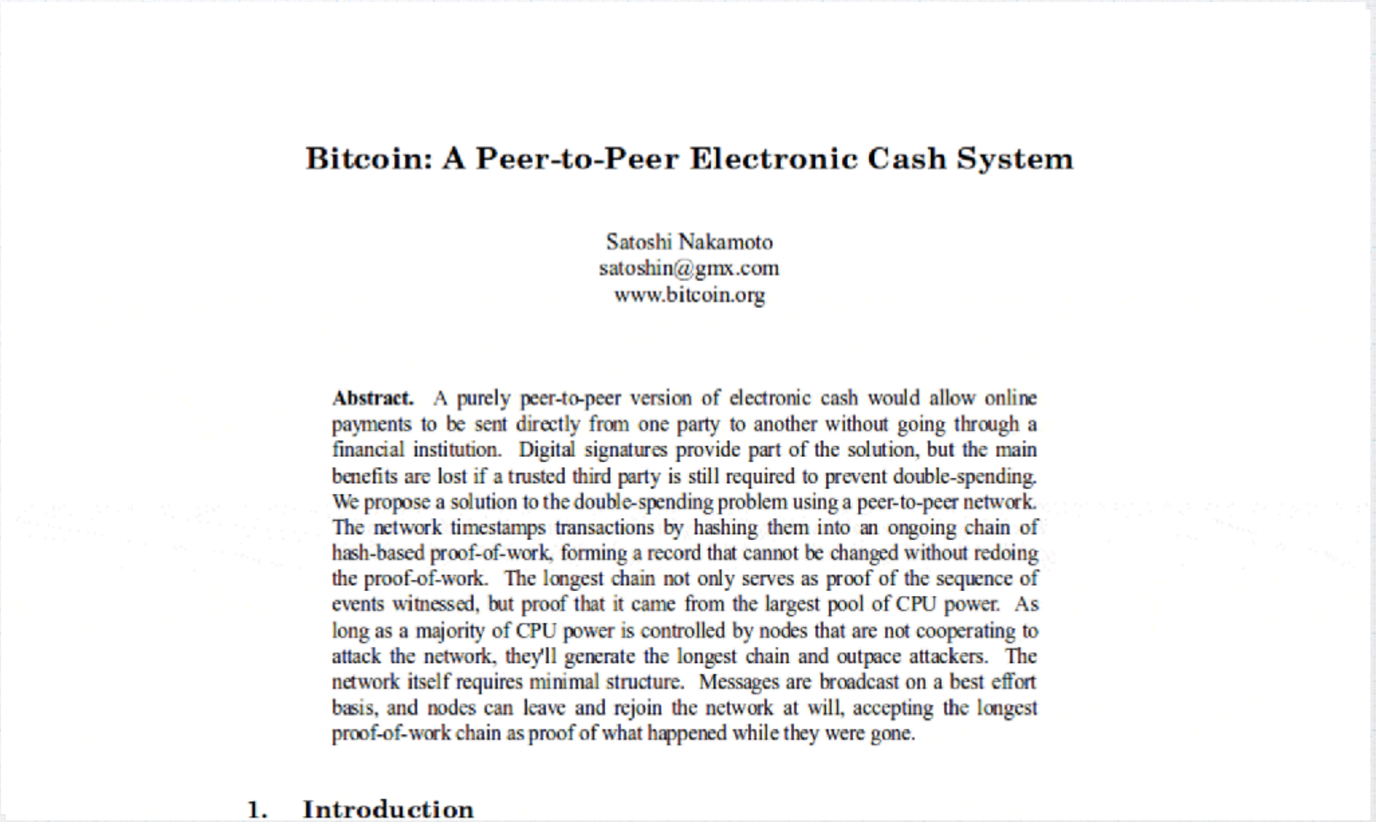
* XRP (Ripple)
* Of the 1900+ coins, most are based on Ethereum
* Ethereum was the first to make creating coins easy

list of cryptos

Kenny's Public Key

Bitcoin Beginnings

* Bitcoin whitepaper written by Satoshi Nakamoto was released 31 October 2008
* His real identity remains unknown
* Software was released on 12 January 2009
* Cypherpunk Hal Finney downloaded the software on this date and received 10 bitcoin



Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

1. Introduction

* The first commercial transaction was by Laszlo Hanyecz who bought two Papa John's pizzas for 10,000 bitcoin

User Perspective, What Bitcoin Looks Like

* Visa Debit Card
* A QR Code
    * Smartphone, computer screen, paper, sticker, bluetooth, NFC tag
* A Bitcoin address

Bitcoin BTC
3LG5bbP4yGSJjVVLb1Y5fAHW4zBp9FcKjs

One Way To Use Bitcoin

Bitcoin is now accepted at:

* Starbucks
* Whole Foods
* Barnes & Noble
* Office Depot
* Nordstrom
* Baskin Robbins
* Bed Bath & Beyond
* Caribou Coffee
* Crate & Barrel
* Express
* GameStop
* Jamba Juice
* Lowe's
* OfficeMax
* Petco
* Regal Cinemas
* Ulta Beauty
* Amazon-owned Whole Foods Market
* Nuvolect LLC

More Locations Accepting Bitcoin

* KFC Canada
* Overstock.com – A company that sells big ticket items at lower prices due to overstocking
* Playboy
* Subway – Eat fresh
* Microsoft – Users can buy content with Bitcoin on Xbox and Windows store
* Reddit – You can buy premium features there with bitcoins
* Virgin Galactic – Richard Branson company that includes Virgin Mobile and Virgin Airline
* OkCupid – Online dating site
* Namecheap – Domain name registrar
* CheapAir.com – Travel booking site for airline tickets, car rentals, hotels
* Expedia.com – Online travel booking agency
* Gyft – Buy giftcards using Bitcoin
* Newegg.com – Online electronics retailer now uses bitpay to accept bitcoin as payment
* Wikipedia – The Free Encyclopedia with 4 570 000+ article

Even More Locations

* Alza – Largest Czech online retailer
* The Internet Archive – web documatation company
* Bitcoin.Travel – a travel site that provides accommodation, apartments, attractions, bars, and beauty salons around the world
* Pembury Tavern – A pub in London, England Old Fitzroy – A pub in Sydney, Australia
* The Pink Cow – A diner in Tokyo, Japan
* The Pirate Bay – BitTorrent directories
* Zynga – Mobile gaming 4Chan.org – For premium services
* EZTV – Torrents TV shows provider
* Mega.co.nz – The new venture started by the former owner of MegaUpload Kim Dotcom
* Lumfile – Free cloud base file server – pay for premium services
* Etsy Vendors – 93 of them
* PizzaForCoins.com – Domino's Pizza signed up – pay for their pizza with bitcons
* Whole Foods – Organic food store (by purchasing gift card from Gyft)
* Bitcoincoffee.com – Buy your favorite coffee online Grass Hill

Still More Locations

* Alpacas - A local farm in Haydenville, MA
* Jeffersons Store - A street wear clothing store in Bergenfield, N.J
* Helen's Pizza - Jersey City, N.J., you can get a slice of pizza for 0.00339 bitcoin by pointing your phone at a sign next to the cash register
* A Class Limousine - Pick you up and drop you off at Newark (N.J.) Airport
* Seoclerks.com - Get SEO work done on your site cheap
* Mint.com - Mint pulls all your financial accounts into one place. Set a budget, track your goals and do more
* Fancy.com - Discover amazing stuff, collect the things you love, buy it all in one place
* Bloomberg.com - Online newspaper
* Humblebundle.com - Indie game site
* BigFishGames.com - Games for PC, Mac and Smartphones (iPhone, Android, Windows)
* Suntimes.com - Chicago based online newspaper San Jose Earthquakes -
* San Jose California Professional Soccer Team (MLS)

There is getting to be a pattern

* Crowdtilt.com – The fastest and easiest way to pool funds with family and friends
* Lumfile – Server company that offers free cloud-based servers
* Museum of the Coastal Bend – 2200 East Red River Street, Victoria, Texas 77901,
* USA Gap, GameStop and JC Penney – have to use eGifter.com Etsy Vendors – Original art and Jewelry creations Fight for the Future – Leading organization finding for Internet freedom
* i-Pmart (ipmart.com.my) – A Malaysian online mobile phone and electronic parts retailer
* curryupnow.com – A total of 12 restaurants on the list of restaurants accept bitcoins in San Francisco Bay Area
* Dish Network – An American direct-broadcast satellite service provider
* The Libertarian Party – United States political party
* Yacht-base.com – Croatian yacht charter company
* Euro Pacific – A major precious metal dealer CEX – The trade-in chain has a shop in Glasgow, Scotland that accepts bitcoin
* Straub Auto Repairs – 477 Warburton Ave, Hastings-on-Hudson, NY 10706 – (914) 478-1177
* PSP Mollie – Dutch Payment Service Intuit – an American software company that develops financial and tax preparation software and related services for small businesses, accountants and individuals.
* ShopJoy – An Australian online retailer that sells novelty and unique gifts
* Lv.net – Las Vegas high speed internet services
* ExpressVPN.com – High speed, ultra secure VPN network Grooveshark – Online music streaming service based in the United States
* Braintree – Well known payments processor

I Think You Get The Point

* MIT Coop Store – Massachusetts Institute of Technology student bookstore
* SimplePay – Nigeria's most popular web and mobile-based wallet service
* SFU bookstore – Simon Fraser University in Vancouver, Canada
* State Republican Party – First State Republican Party to accept bitcoin donations (http://www.lagop.com/bitcoin-donate)
* mspinc.com – Respiratory medical equipment supplies store Shopify.com – An online store that allows anyone to sell their products
* Famsa – Mexico's biggest retailer
* Naughty America – Adult entertainment provider
* Mexico's Universidad de las Américas Puebla – A major university in Mexico
* MovieTickets.com – Online movie ticket exchange/retailer Dream Lover – Online relationship service
* Lionsgate Films – The production studio behind titles such as The Hunger Games and The Day After Tomorrow
* Rakutan – A Japanese e-commerce giant Badoo – Online dating network
* RE/MAX London – UK-based franchisee of the global real estate network
* T-Mobile Poland – T-Mobile's Poland-based mobile phone top-up company
* Stripe – San Francisco-based payments company
* WebJet – Online travel agency
* Green Man Gaming – Popular digital game reseller
* Save the Children – Global charity organization
* NCR Silver – Point of sales systems
* One Shot Hotels – Spanish hotel chain Coupa Café in Palo Alto
* PureVPN – VPN provider
* That's my face – create action figures
* Foodler – North American restaurant delivery company
* Amagi Metals – Precious metal furnisher

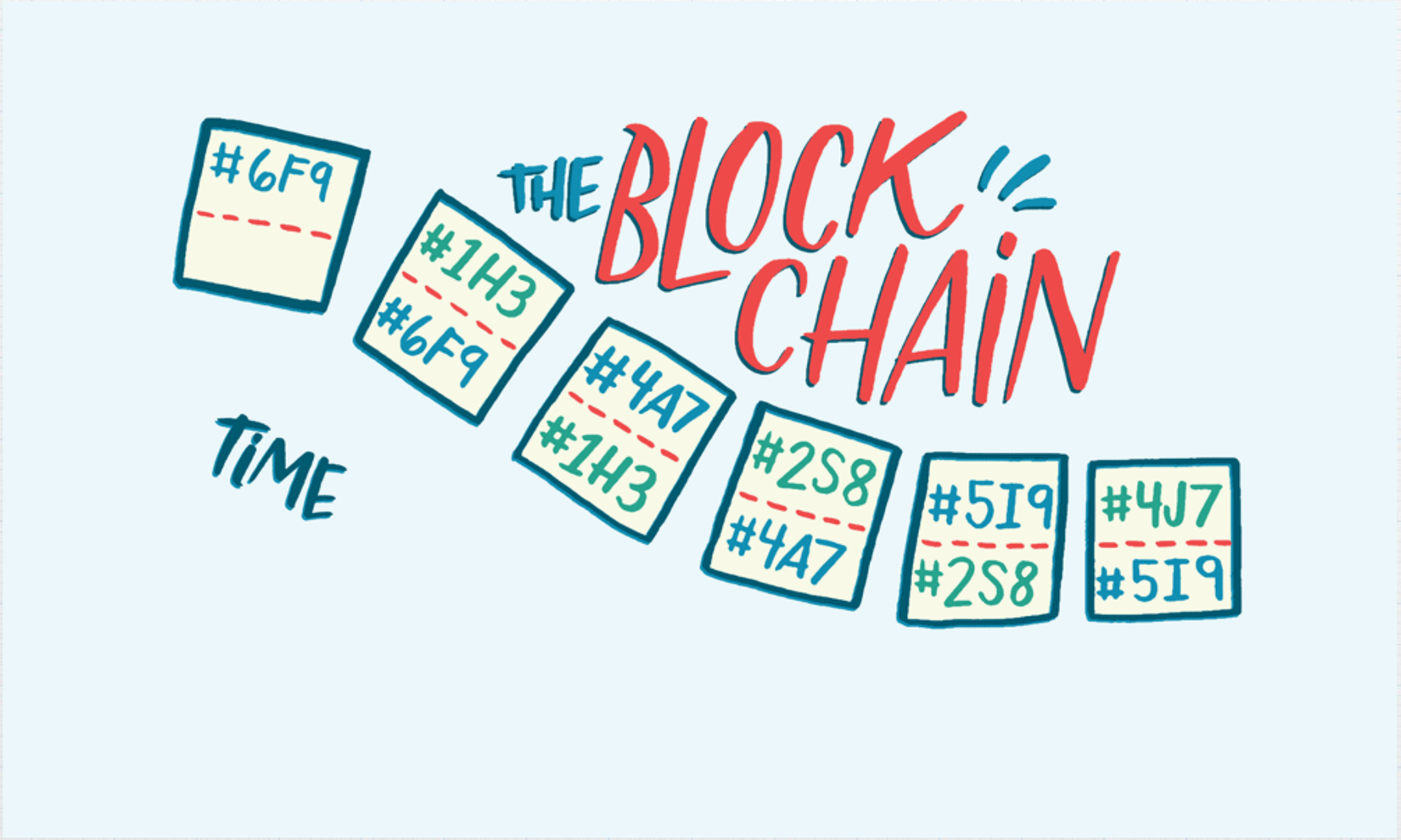
Where Does Bitcoin Come From?

* Its forged in fire!
* It's created based on a schedule
* Bitcoins start as rewards given to miners for validating transactions and maintaining the network
* From there, they're spent and traded on the open market.

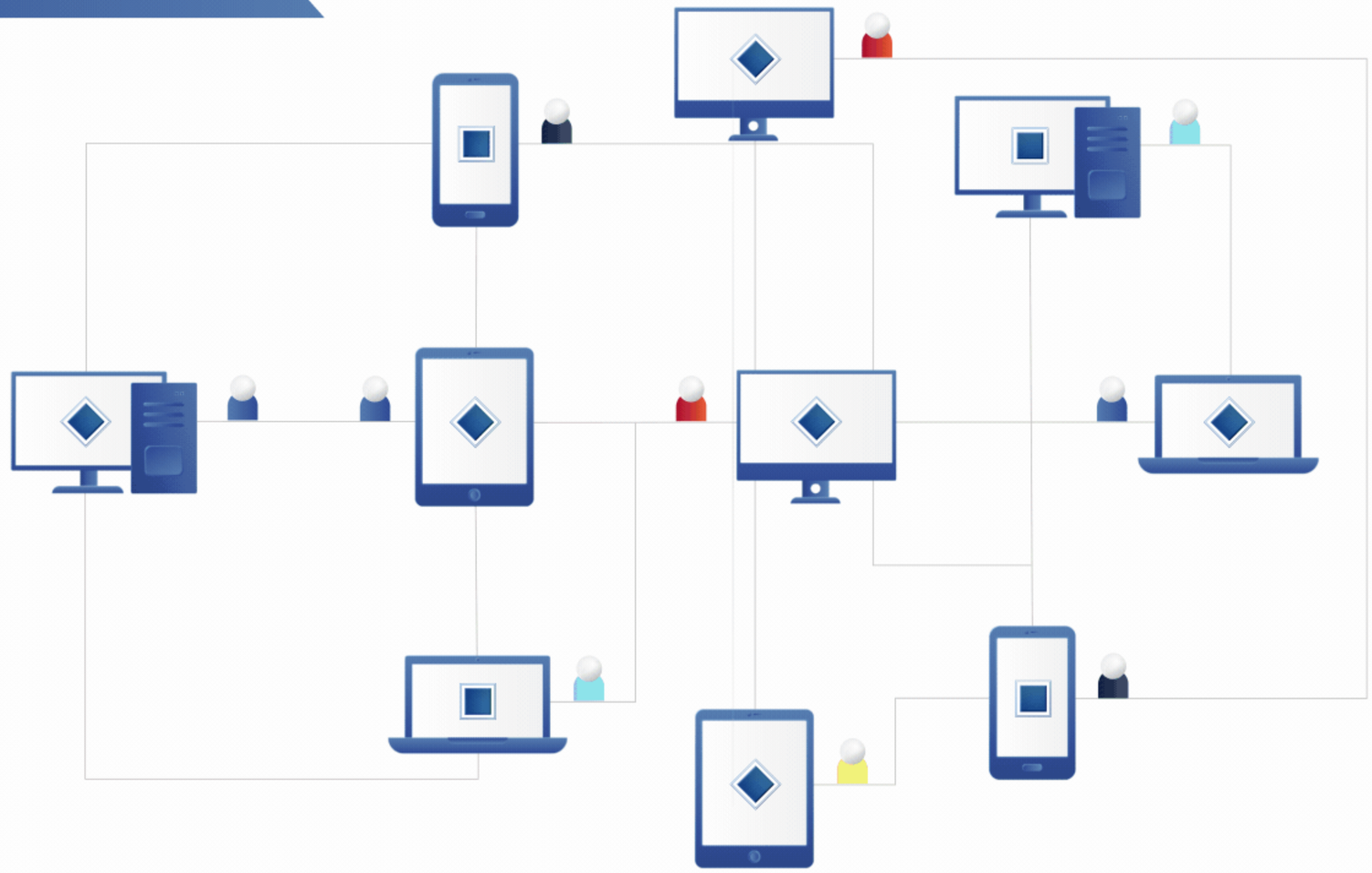
Bitcoin Supply

* The rate at which new bitcoins are created is algorithmically cut in half roughly every 4 years (210,000 blocks)
* Bitcoin has gone through two halvings to date; in November 2012, and again in July 2016.
* The next halving will be in approximately 26 days
* Blocks are generated every 10 minutes on average
    * Starting at 50 new bitcoins per block when the system was launched in 2009,
    * This creates a very well-defined supply curve.
* The stability of Bitcoin's monetary policy a key differentiator versus other crypto assets.

Quick Review of Blockchain

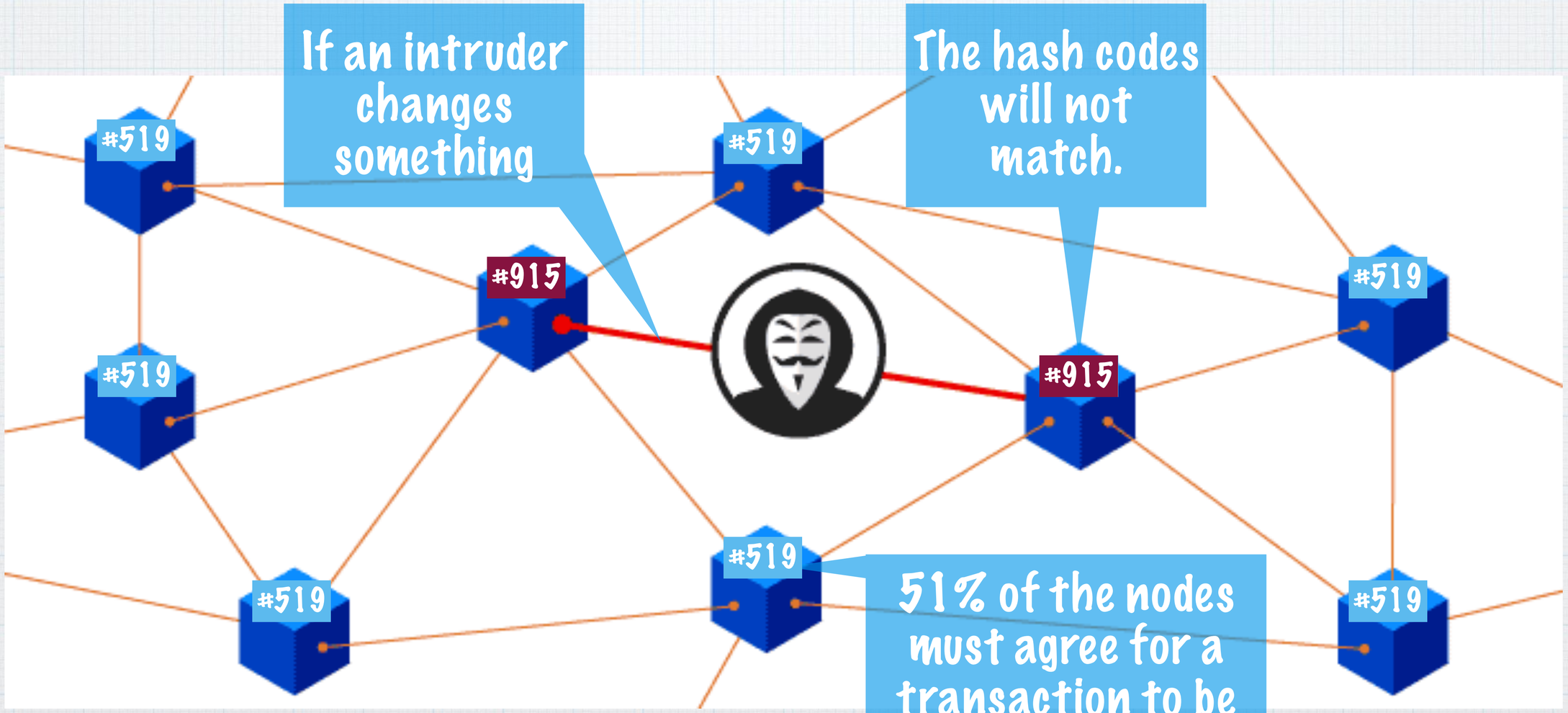


Consensus Protocol

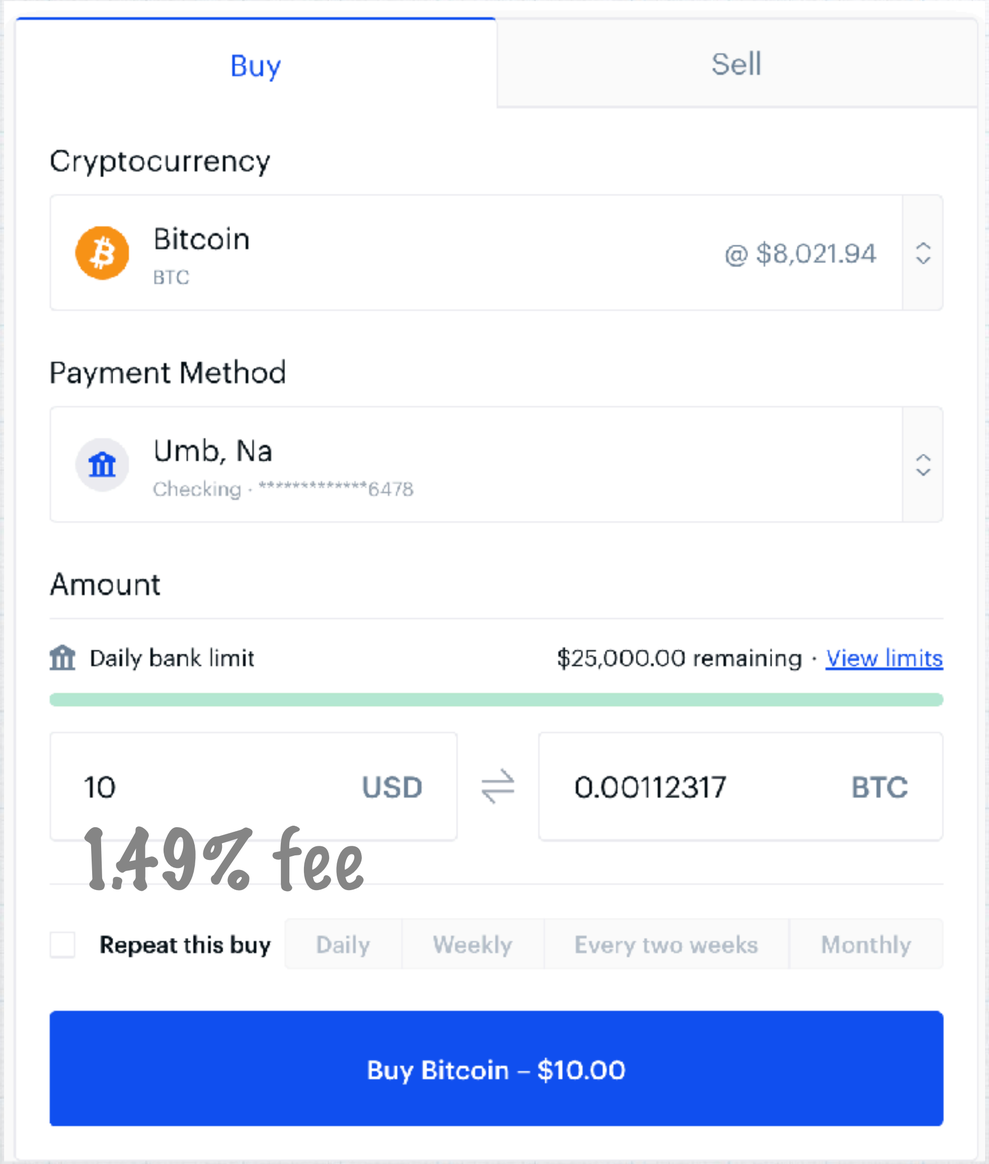


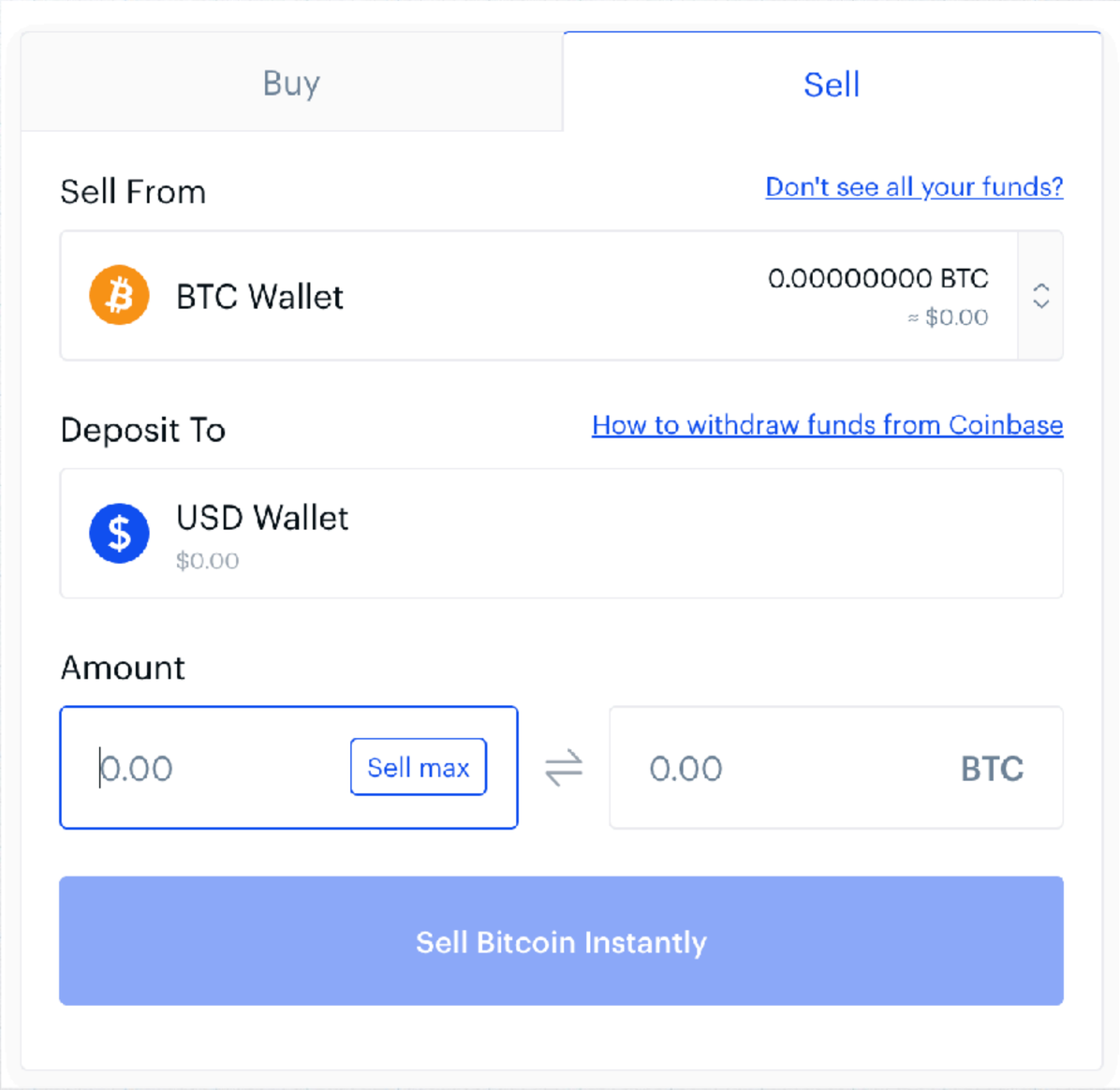
Lisk ACADEMY

Intrusion Detection



Buy-Sell Bitcoin From Coinbase.com





Coinbase My Account Details

Your Account Details

Account Limits and Features

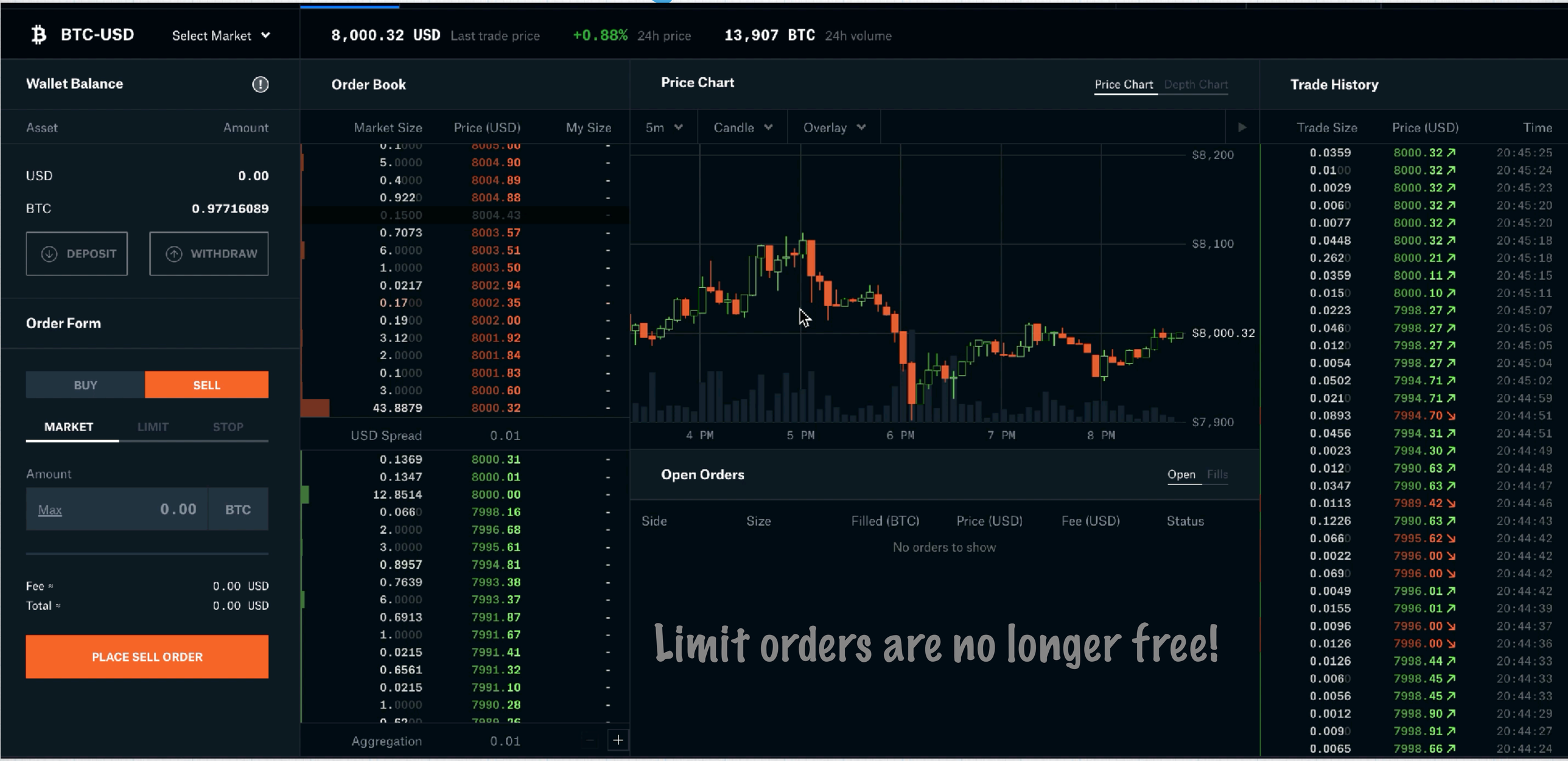
Send digital currency	Enabled
Receive digital currency	Enabled
Bank purchases / deposits	$25,000 /day
3DS purchases	$5,000 /week
Card purchases	$5,000 /week
PayPal withdrawals	$25,000 /day
Wire transfer	$250,000 /wire

Recent Activity

FEB 28	Withdrew funds	To UMB, NA **********6478	−$1,167.52 −$1,167.52
FEB 28	Transferred funds	From Coinbase Pro	+$1,167.52 +$1,167.52
NOV 15	Sent Bitcoin	To Bitcoin address	−0.0018 BTC −$9.98
NOV 15	Transferred Bitcoin	From Coinbase Pro	+0.0018 BTC +$9.98

GDAX Exchange

https://pro.coinbase.com/



Private Keys

* A private key allows you to spend money, i.e, keep safe
* Warm Storage: smartphone wallet, Mac/PC, or online such as coinbase.com
* Cold Storage: paper wallet, Ledger Nano S

Bitcoin Anonymity

* What can we discover about 1K7A6wsyxj6fThtMYcNu6X8bLbnNKovgtP
* Explore the bitcoin blockchain:
  * https://www.blockchain.com/btc/address/1K7A6wsyxj6fThtMYcNu6X8bLbnNKovgtP
* Use duckduckgo:
  * https://duckduckgo.com/?q=1K7A6wsyxj6fThtMYcNu6X8bLbnNKovgtP
* Use bitcoinwhoswho
  * https://bitcoinwhoswho.com/address/1K7A6wsyxj6fThtMYcNu6X8bLbnNKovgtP
* $202,271.59 transaction today:
  * https://bitcoinwhoswho.com/address/3Hc6mjnFWfjwLiAkuwBSpqDmhSyNzxjk8u

In Conclusion

* Cryptocurrency use around the world is on the rise
* For the first time the number of fiat ATM machines in the world dropped
    * Paper currency has been on the decline for a number of years
* There is little risk to give it a try, what have you got to lose?

discussion

Crypto Resources

* https://messari.io/onchainfx
* https://www.coinbase.com/price
* https://etherworld.co/
* https://www.reddit.com/r/ethereum
* https://www.ethnews.com/
* https://etherscan.io/
* https://www.coindesk.com/information/paper-wallet-tutorial