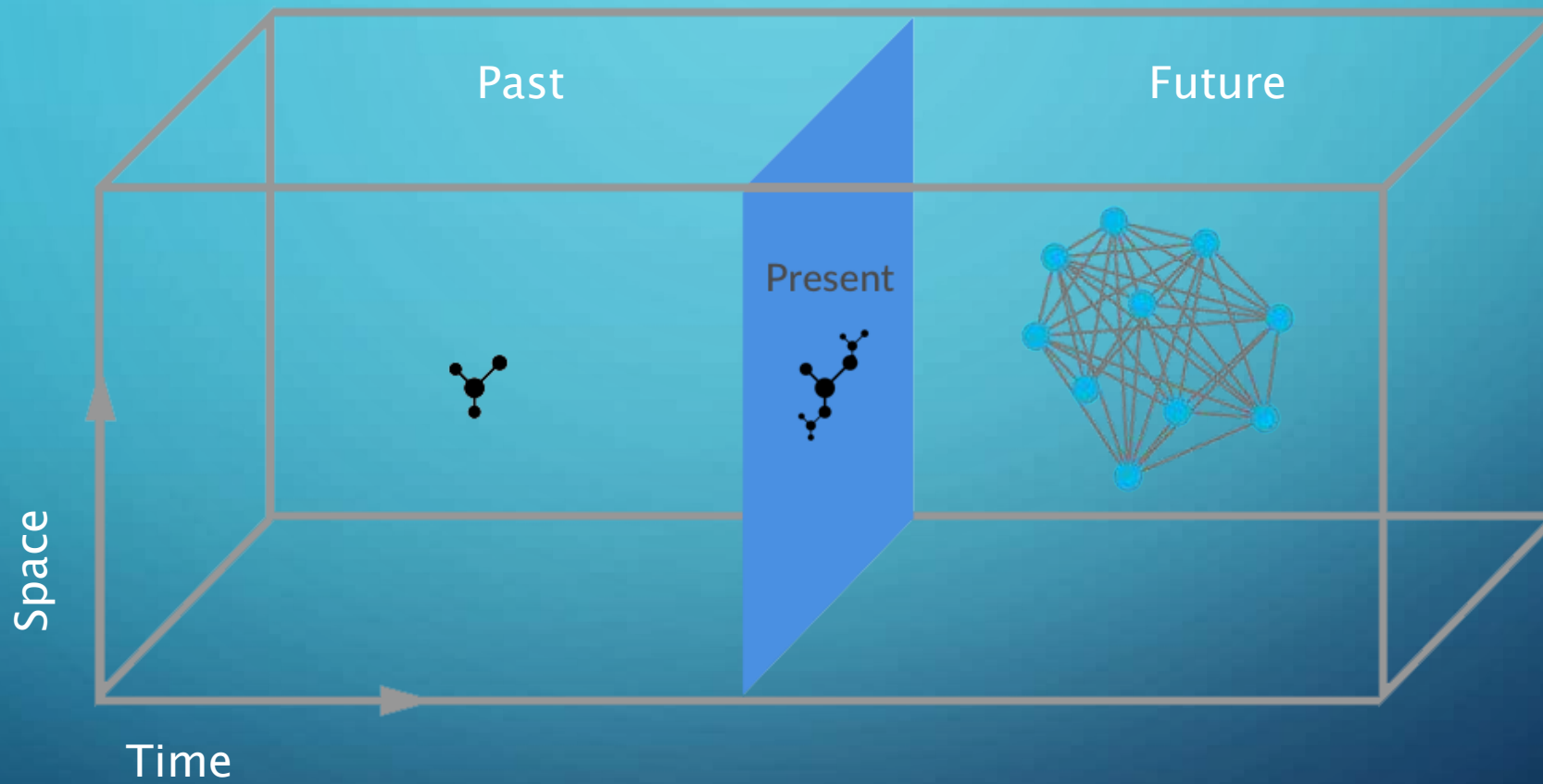


A decorative graphic on the left side of the slide, consisting of a network of white lines and small circles on a blue gradient background, resembling a circuit board or a neural network.

INTRODUCTION TO BLOCKCHAIN

THE INTERNET OF VALUE EXCHANGE

Internet: Past / Present / Future



State of Money



Functions of Money



A Peer-to-Peer Electronic Cash System

9 Page whitepaper | October 2008

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. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a [img alt="Satoshi Nakamoto's face" data-bbox="432 714 526 914"] that cannot be changed without redoing the proof-of-work.

Satoshi Nakamoto

Blockchain Basics

No Central Authority

- Open source (with exceptions)
- Shared Records

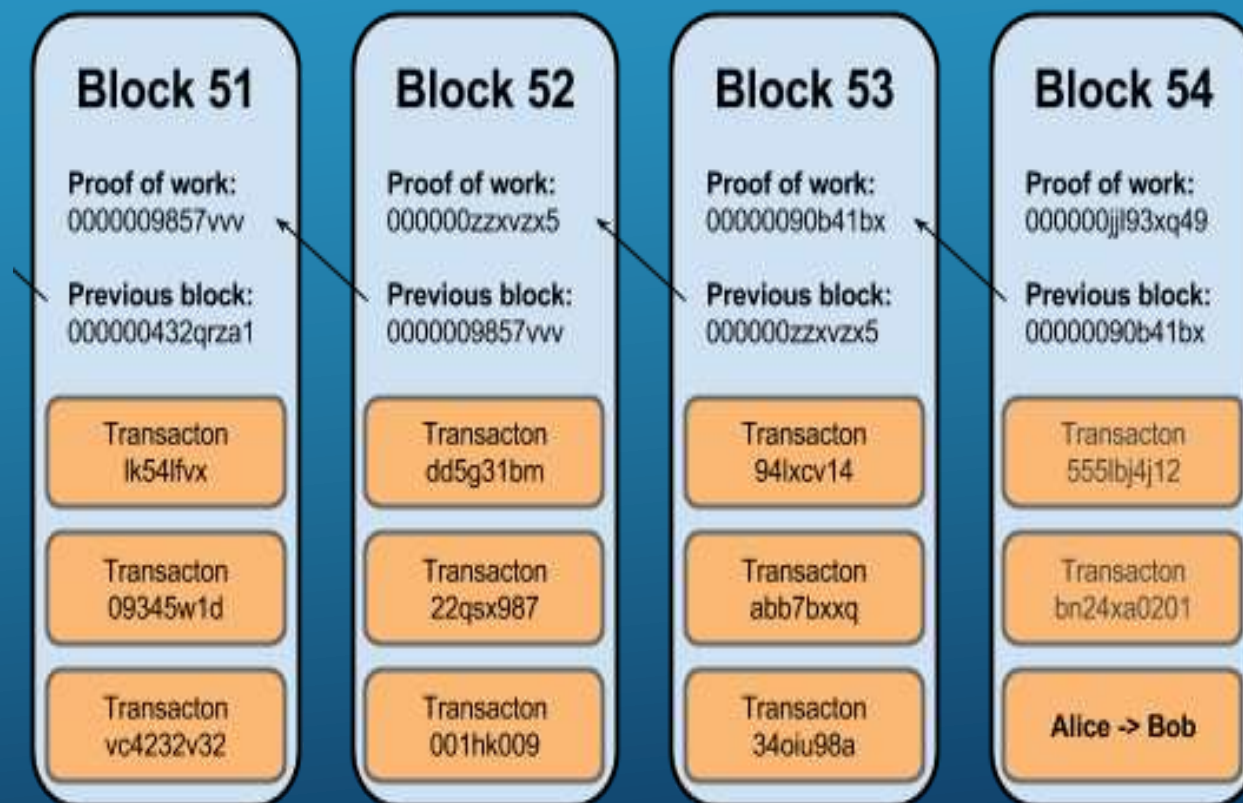
Immutable Record Keeping

- Time-Stamped
- Hashed

Chained by Cryptography

- Solution to 'double-spend' problem
- Proof-of-Work by Miners

Blocks



Cryptocurrency Mining & Halving

- Total bitcoins to-be-mined: 21,000,000
- Mining reward bitcoin blockchain initially BTC50 (\$857,450)
- Halves every 210,000 blocks / now: BTC12.5 (\$190,000)
- New block every ~10 Minutes
- Current rate 1,800 new bitcoins per day

Forking

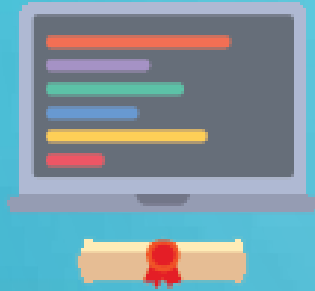


- bitcoin \$255B (\$15.2k)
- bitcoin cash \$40B (\$2.4k)
- bitcoin gold \$4B (\$243)

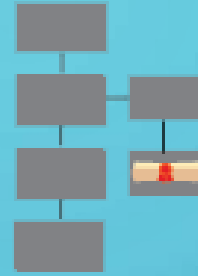


ethereum

Smart Contracts



Contract written as code
parties may
on blockchain
anonymous



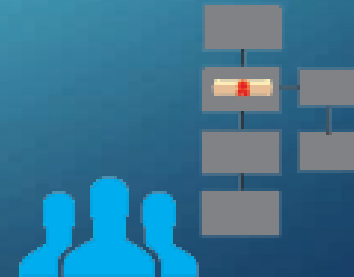
Contract becomes part of
public blockchain



Contract
stay



Contract executes by itself
when conditions are met

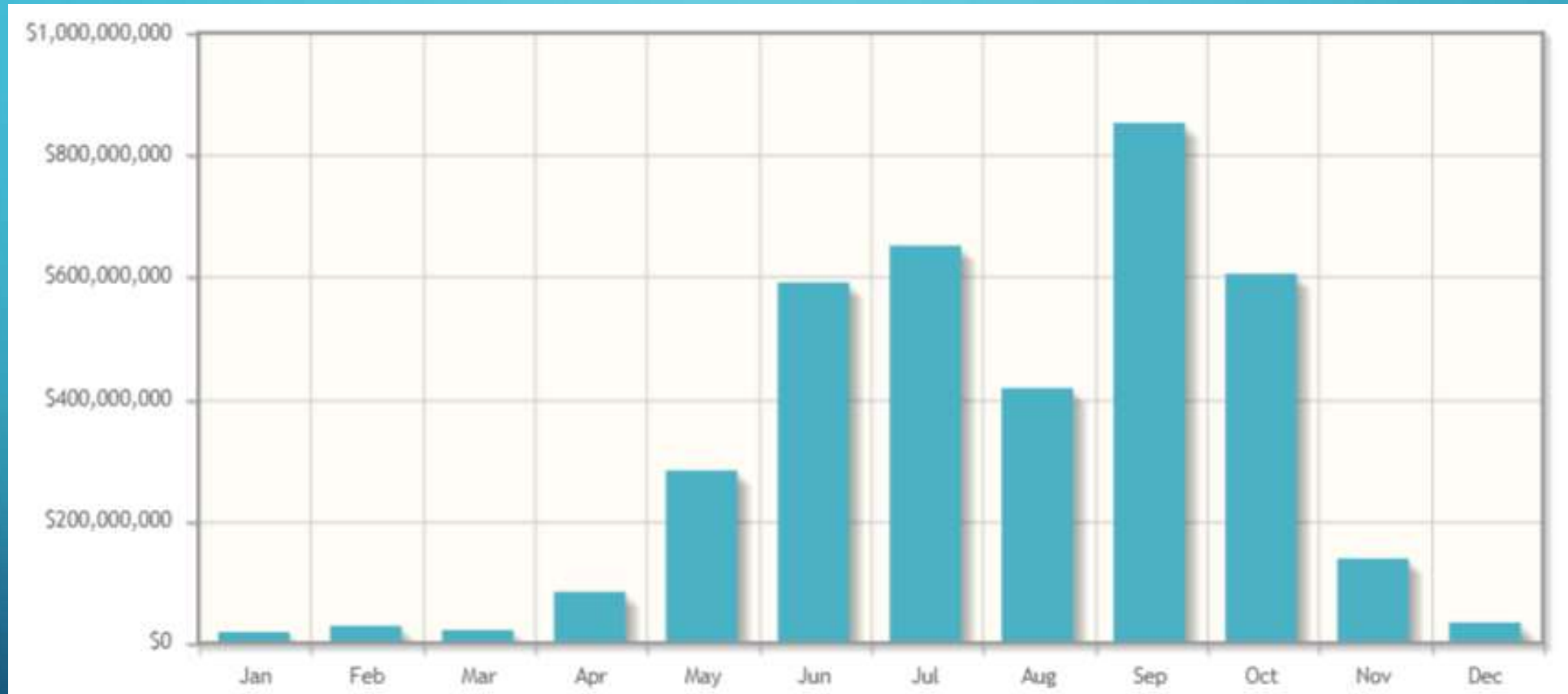


Transaction recorded
(optional 3rd party validation)

Near-term Blockchain Solutions

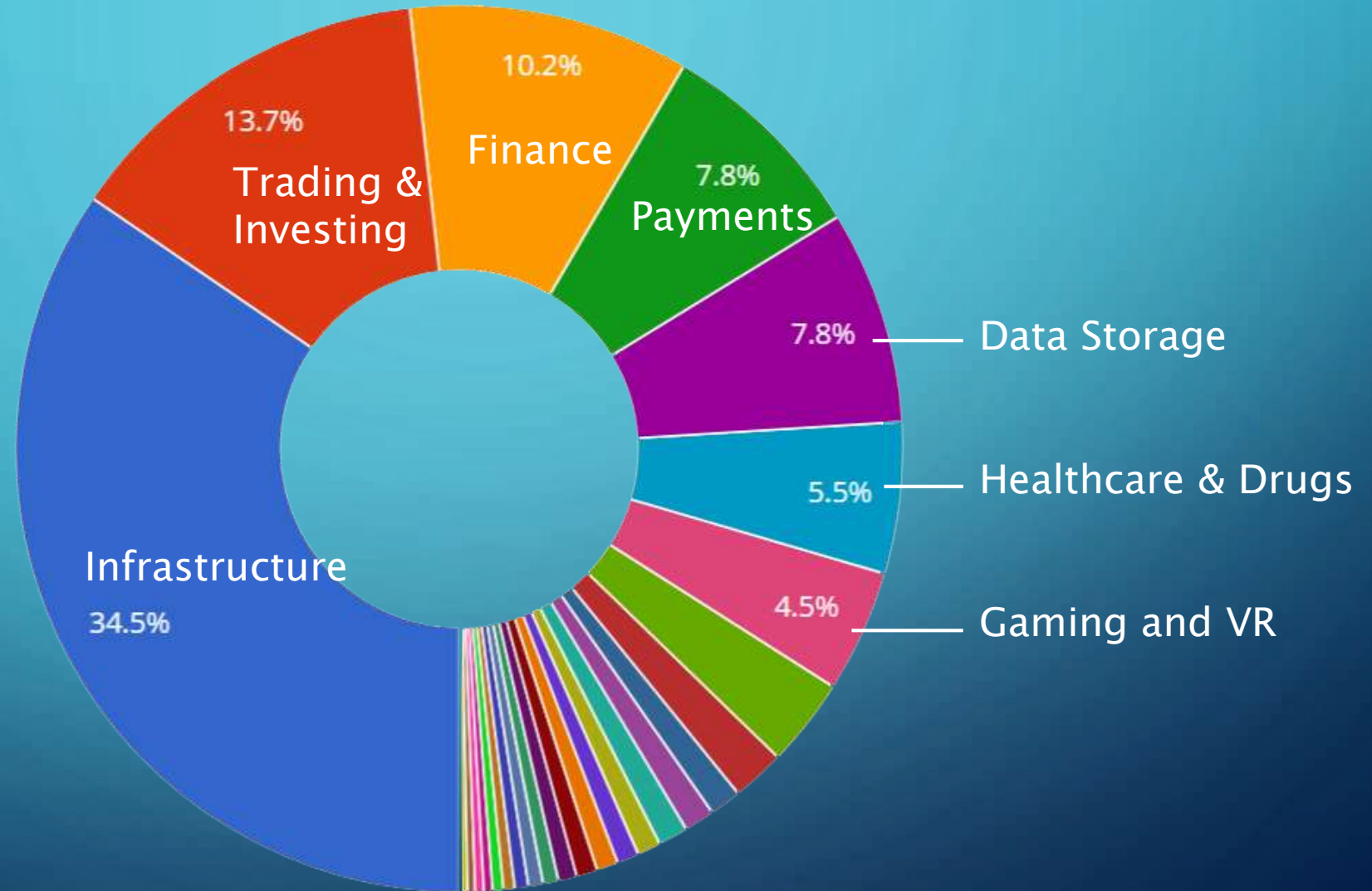


Initial Coin Offerings (ICOs)



235 projects / \$3.7B

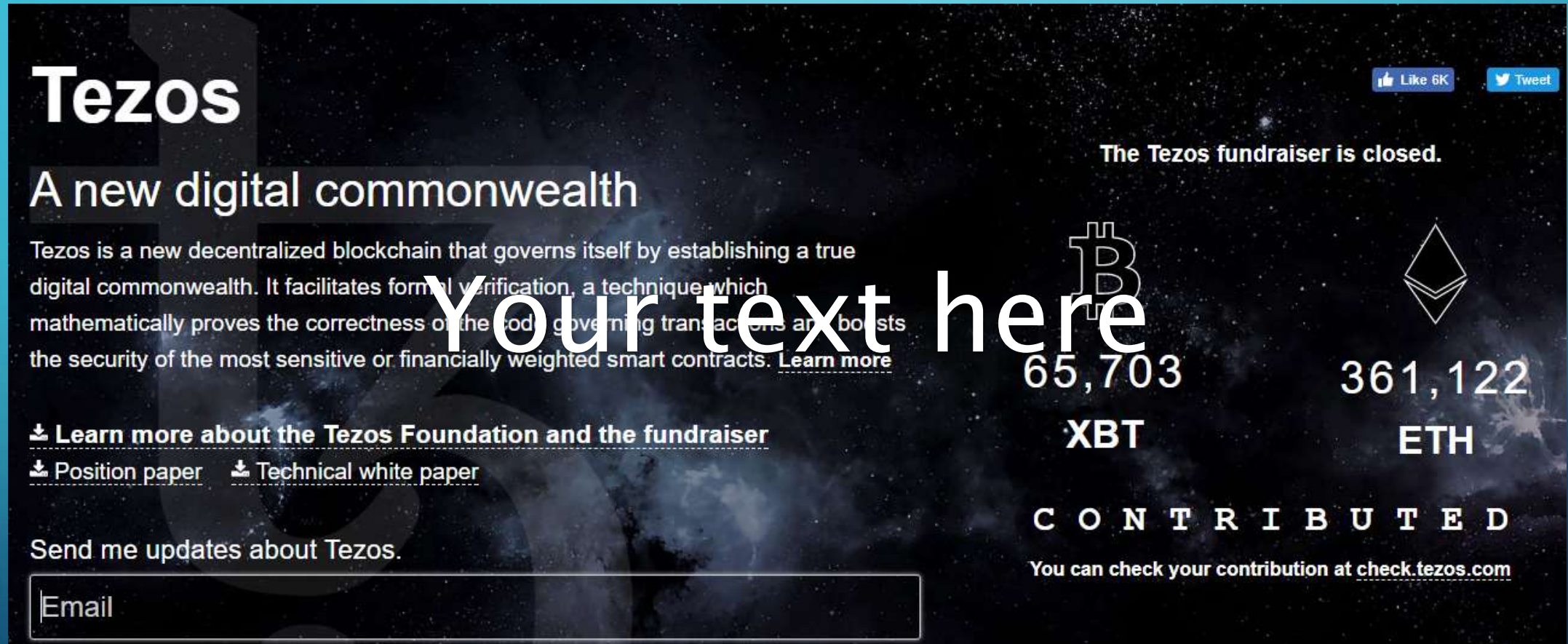
Investments by Category



Top Ten ICOs 2017

<u>Project</u>	<u>Raised</u>
Filecoin	\$257,000,000
Tezos	\$232,319,985
EOS Stage 1	\$185,000,000
Paragon	\$183,157,275
Bancor	\$153,000,000
Kin	\$97,041,936
Status	\$90,000,000
TenX	\$64,000,000
Mobile GO	\$53,069,235

For what it's worth



Tezos

A new digital commonwealth

Tezos is a new decentralized blockchain that governs itself by establishing a true digital commonwealth. It facilitates formal verification, a technique which mathematically proves the correctness of the code governing transactions and boosts the security of the most sensitive or financially weighted smart contracts. [Learn more](#)

[Learn more about the Tezos Foundation and the fundraiser](#)

[Position paper](#) [Technical white paper](#)

Send me updates about Tezos.

Email

The Tezos fundraiser is closed.

Bitcoin (XBT)
65,703

Ethereum (ETH)
361,122

CONTRIBUTED

You can check your contribution at check.tezos.com

\$1.4 billion (January 2018)

Basic Blockchain Economics: Gas Prices

10/10/2017
1/8/2018

Change Currency	
Estimates over last 5,000 blocks - Last update: Block 4267900	
Median Cost for Transfer	SafeLow Cost for Transfer
\$0.134	\$0.024
Median Wait (s)	Median Wait (blocks)
63	3
Gas Price Mid (Gwei)	Gas Price Low (Gwei)
21	0

11/15/2017

Change Currency	
Estimates over last 1,500 blocks - Last update: Block 4559486	
Std Cost for Transfer	Gas Price Std (Gwei)
\$0.007	1
SafeLow Cost for Transfer	Gas Price SafeLow (Gwei)
\$0.001	0.1
Median Wait (s)	Median Wait (blocks)
81	6

Change Currency	
Estimates over last 1,500 blocks - Last update: Block 4876997	
Std Cost for Transfer	Gas Price Std (Gwei)
\$0.956	40
SafeLow Cost for Transfer	Gas Price SafeLow (Gwei)
\$0.550	23
Median Wait (s)	Median Wait (blocks)
358	22

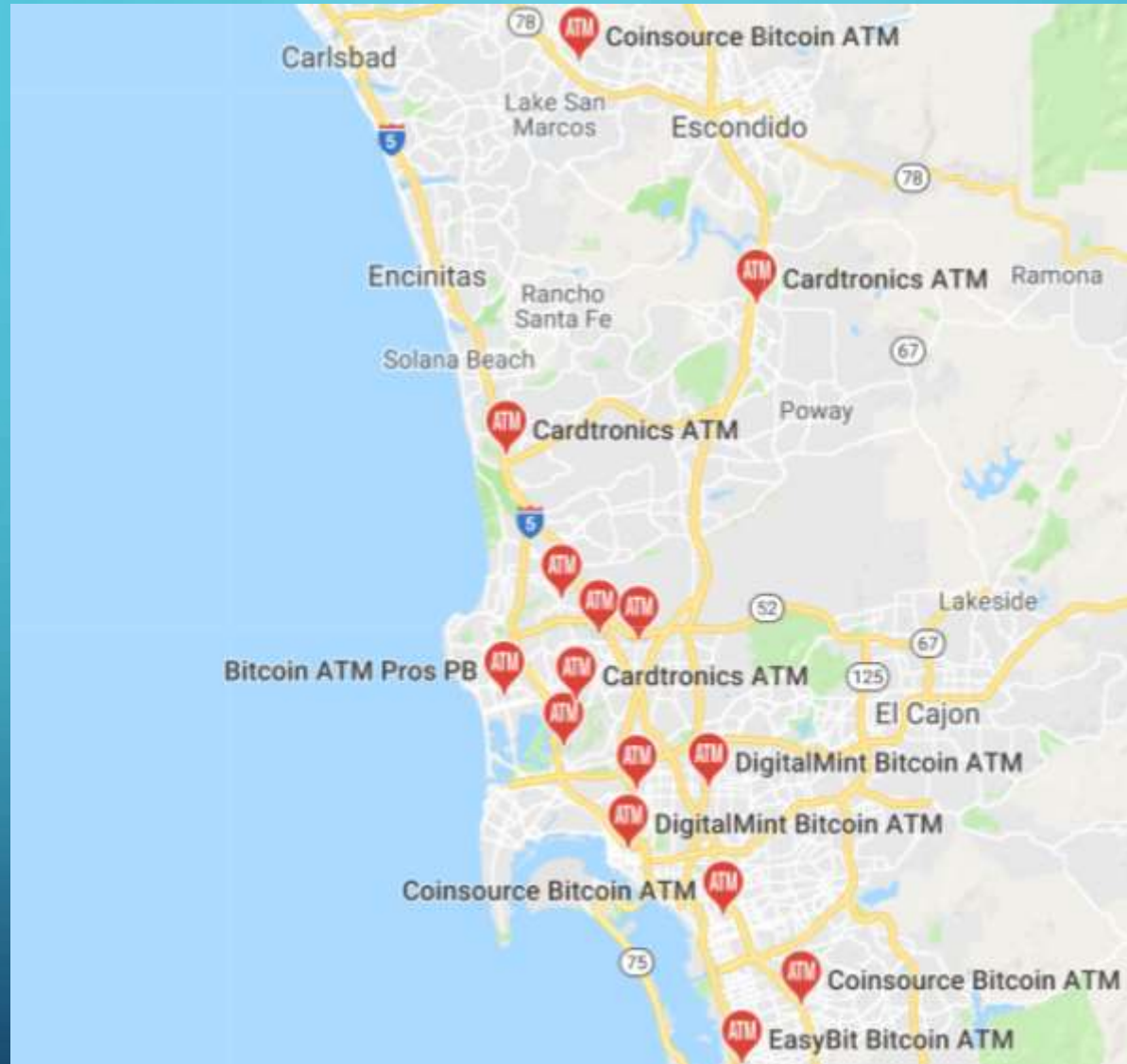
Top 20 Exchanges

Exchange ▼	Country ▼	24 h BTC TV ▼	USD (eq) ▼	Fee ▼	Fiat Currency ▼	Pairs ▼
BitMex	Seychelles	162,998.81	\$2,857,108,341	-0.03%	Seychellois Rupee	13
Bitfinex	Hong Kong	114,176.01	\$2,001,322,774	0%	Hong Kong dollar	61
Bithumb	South Korea	101,030.84	\$1,770,908,976	0%	South Korean won	10
Bittrex	United States	92,668.76	\$1,624,335,093	0%	USD	273
Coincheck	Japan	75,965.18	\$1,331,548,061	0%	Japanese yen	1
Coinone	South Korea	55,759.63	\$977,377,098	0.10%	South Korean won	7
GDAX	United States	45,985.51	\$806,052,413	0%	USD	9
Binance	China	44,029.97	\$771,774,926	0.10%	Renminbi	167
Poloniex	US	39,973.52	\$700,671,848	0%	USD	99
HitBTC	Denmark, UK	39,300.14	\$688,868,574	0.01%	Danish krone	372
QUOINEX	Japan	21,156.31	\$370,836,264	0%	Japanese yen	48
BTC Markets	Australia	18,375.31	\$322,089,784	0.10%	Australian dollar	9
Kraken	US, Canada	17,104.85	\$299,820,653	0.05%	USB	47
Bitstamp	United Kingdom	15,798.97	\$276,930,666	0%	Pound sterling	12
Korbit	South Korea	15,450.66	\$270,825,349	0%	South Korean WON	5
bitFlyer	Japan	14,856.19	\$260,405,241	0%	Japanese YEN	9
EXMO	United Kingdom	9,365.00	\$164,153,466	0.20%	BPS	43
WEX	Singapore	6,581.69	\$115,366,495	0.20%	Singapore Dollar	47
YObit	Russia	5,662.87	\$99,261,051	0.20%	USD, Rubel	6231

What Crypto can Buy



Bitcoin ATMs



Security

- Digital bearer instrument
- Private key held by owner
- Users are in charge of security
- Cold storage most secure option

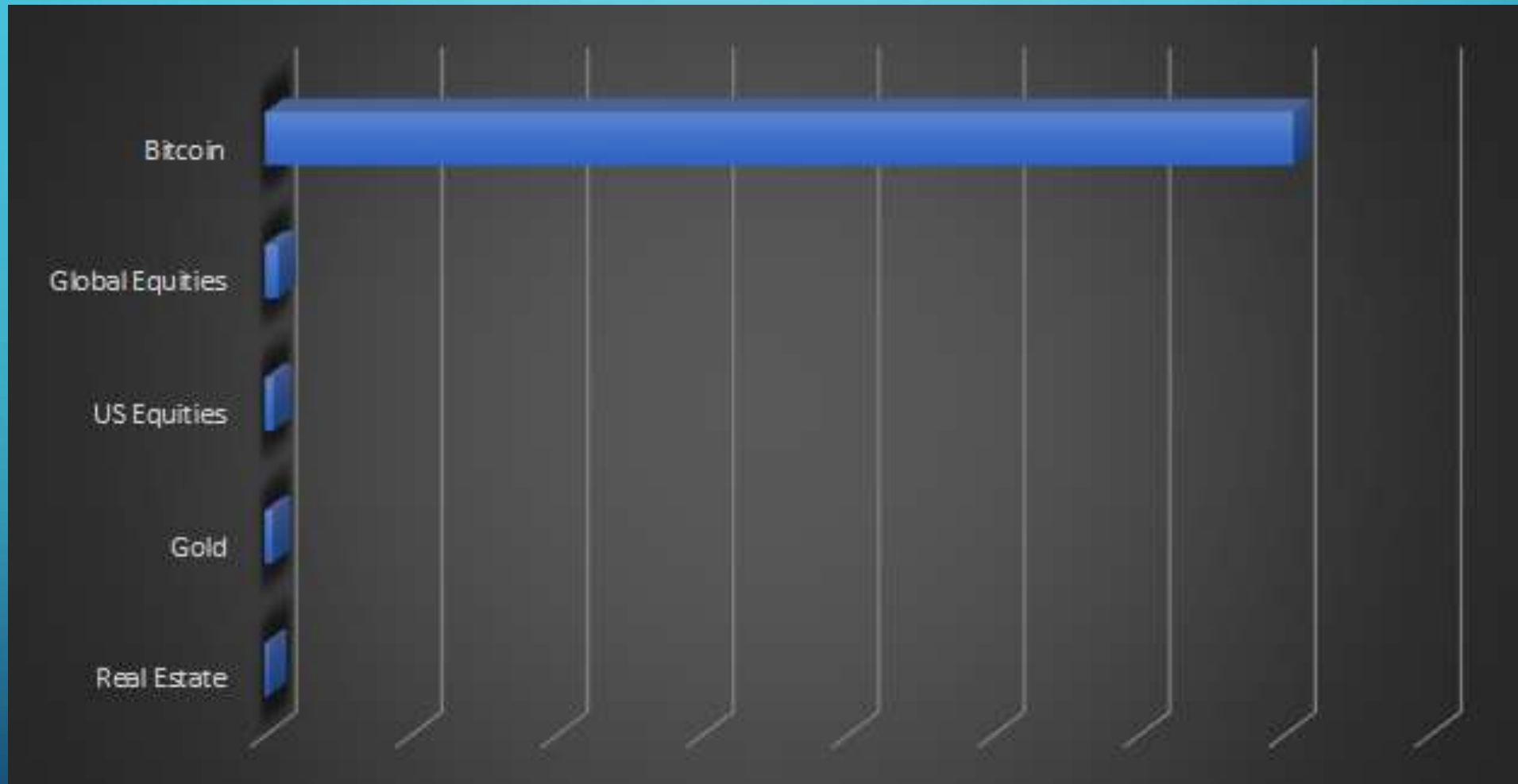




Bitcoin Futures Trading



Market Returns



\$1,000 invested in bitcoin in January 2013 (\$13) would be \$1.1m at the end of 2017 (1,087%)

Legal Status US / World



Bitcoin is a
commodity



Bitcoin is
taxed as
property



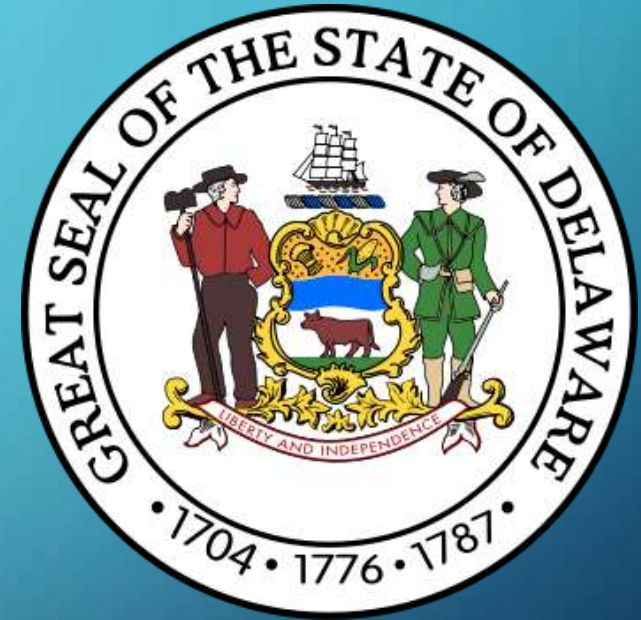
Virtual
currencies
are money



Tokens are
neither
currency or
money

Overall disagreements over the legal status of virtual currencies and token sales

State Laws



Cryptocurrency Wallets Worldwide

