



## Blockchain & Cryptocurrency

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# *The Importance of Responsive Active Management in Blockchain Technology*



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Michael J. Venuto is an ETF industry veteran with over a decade of experience in the design and implementation of ETF-based investment strategies. He is Co-Founder and Chief Investment Officer of Toroso Investments, LLC. Michael is the lead portfolio for the first actively managed ETF focused on Blockchain (BLOK) companies filed in the US. He is also, behind the launch of the Toroso ETF Industry Index, which measures and monitors the performance of publicly traded companies that derive revenue from the Exchange Traded Funds ecosystem.

Previously, he was Head of Investments at Global X Funds where he provided portfolio optimization services to institutional clients. Before that, he was Senior Vice President at Horizon Kinetics where his responsibilities included new business development, investment strategy, Fintech private equity and strategic initiatives. In 2014, Michael was chosen as one of the [ETF.COM](http://ETF.COM) All Stars for his research and is often quoted as an ETF expert in publications such as Reuters and Barron's.

Toroso oversees over 700 million in investments and has actively invested in publicly traded Blockchain linked securities since 2016.



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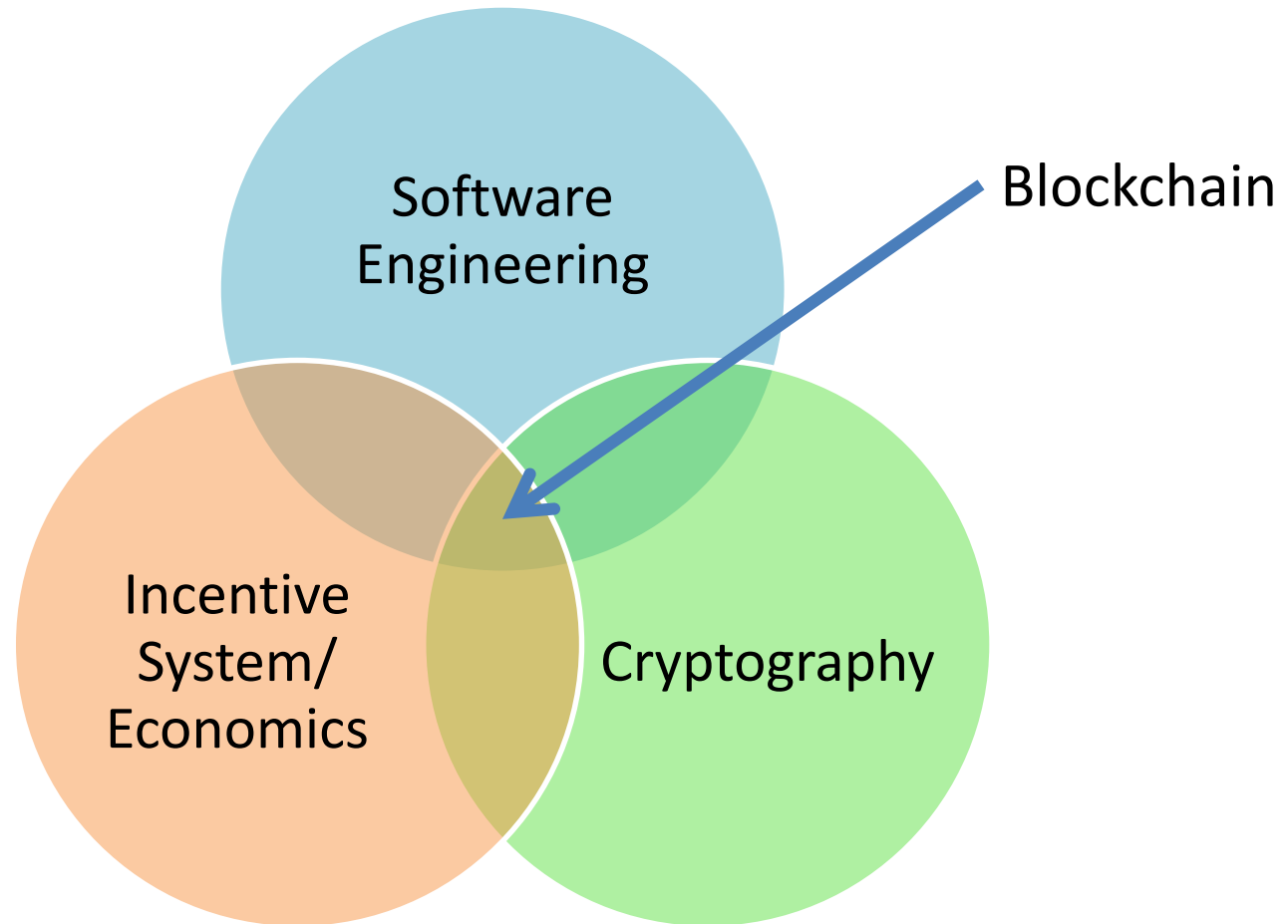
# 1. Introduction

# Blockchain is an exciting innovation



Eric Schmidt - discussing Bitcoin on March 17, 2014  
Former CEO & Chairman of Google Inc.

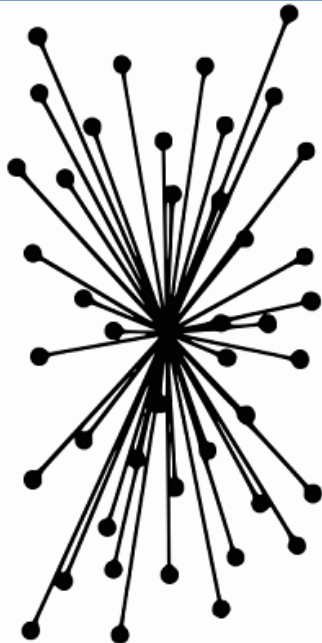
# The Intersection of Three Disciplines



# Force of Disintermediation With Massive Potential for Disruption

## Before Blockchain

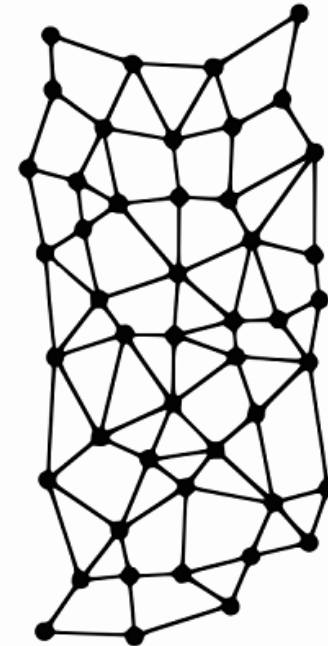
One trusted intermediary to verify the data had not been forged, manipulated or duplicated. The intermediary had leverage in costs and information.



Centralized

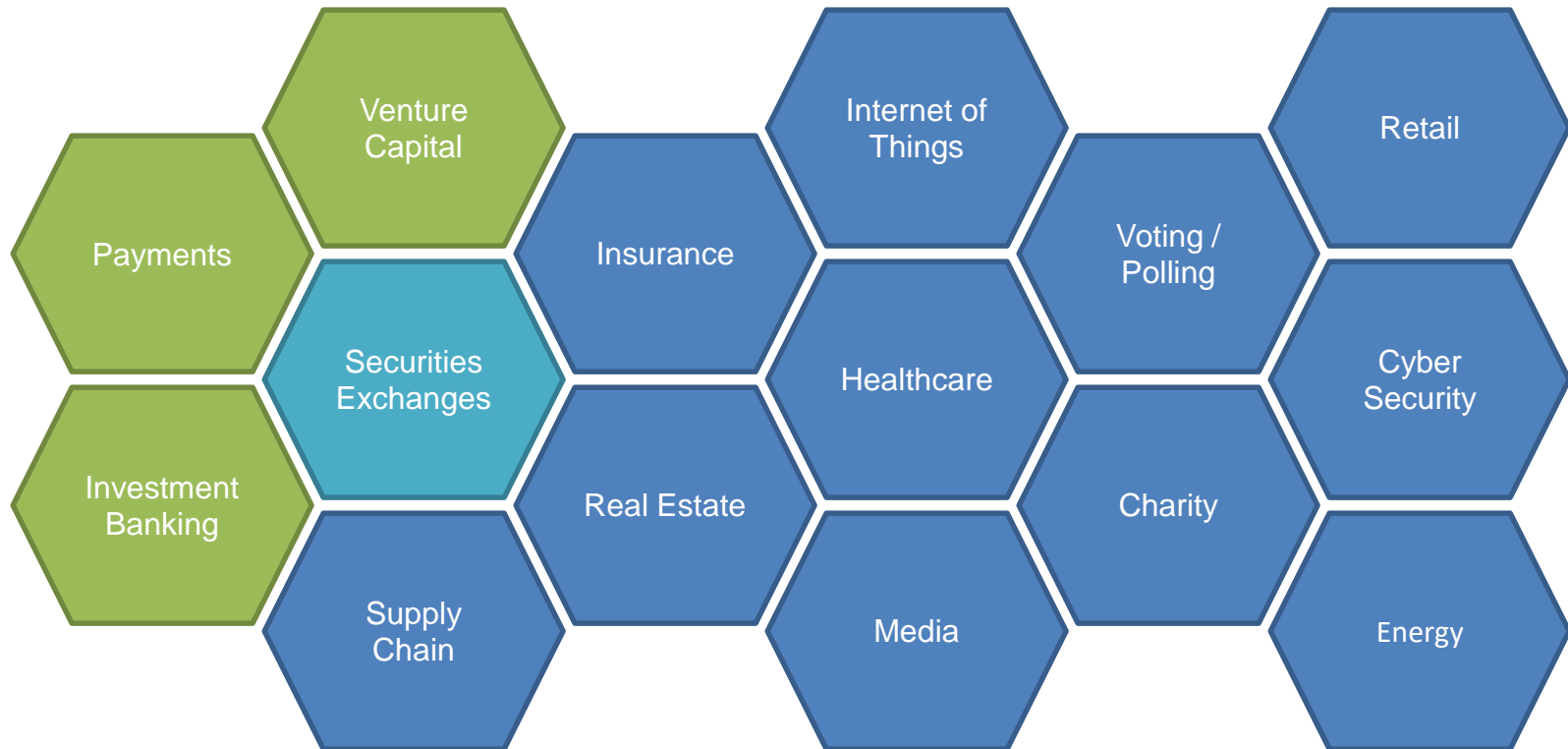
## After Blockchain

No need for trusted intermediary. Everyone can trust the data has not been forged, manipulated or duplicated. Everyone has access to the same costs and information.



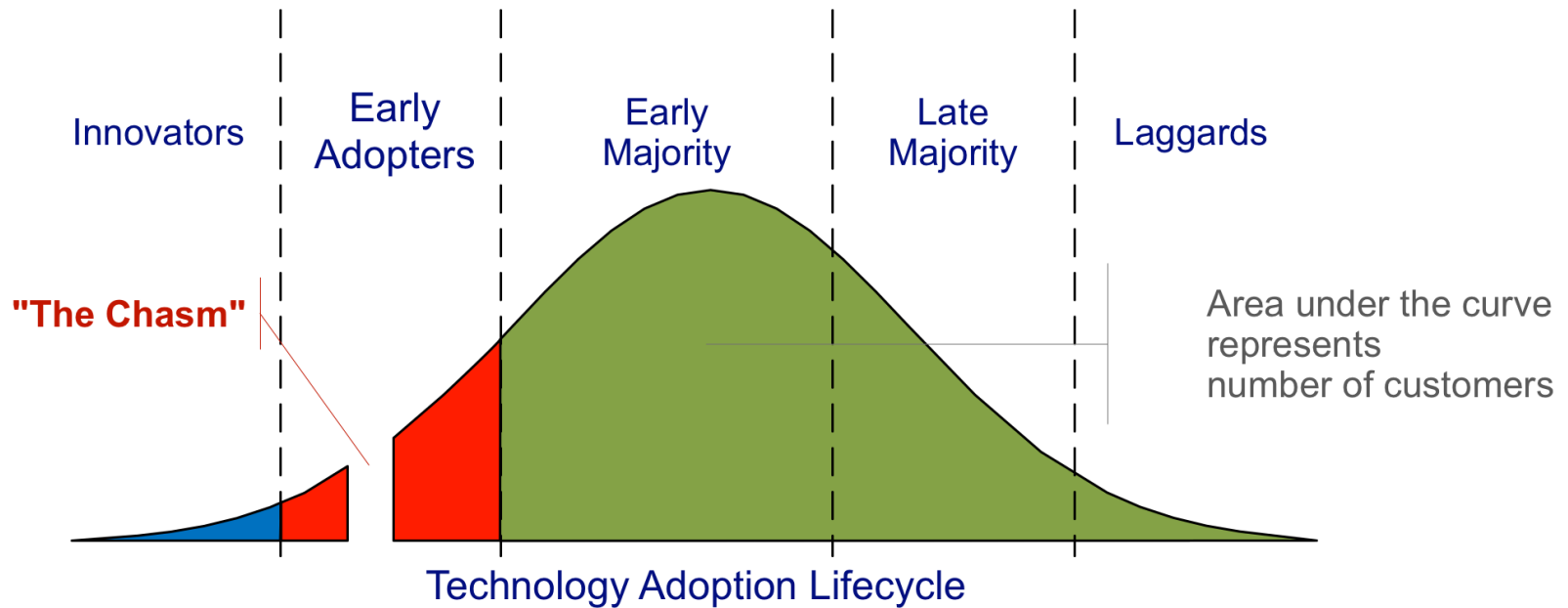
Distributed

## Cryptocurrency is Just One Use Case of Blockchain Technology



*“If you asked people in 1989 what they needed to make their life better, it was unlikely that they would have said a decentralized network of information nodes that are linked using hypertext.” — Farmer & Farmer*

## 2. State of the Industry



**WARNING!** Blockchain is not competitive yet for large-scale use

# Summary of Market Metrics for All Blockchain Cryptoassets

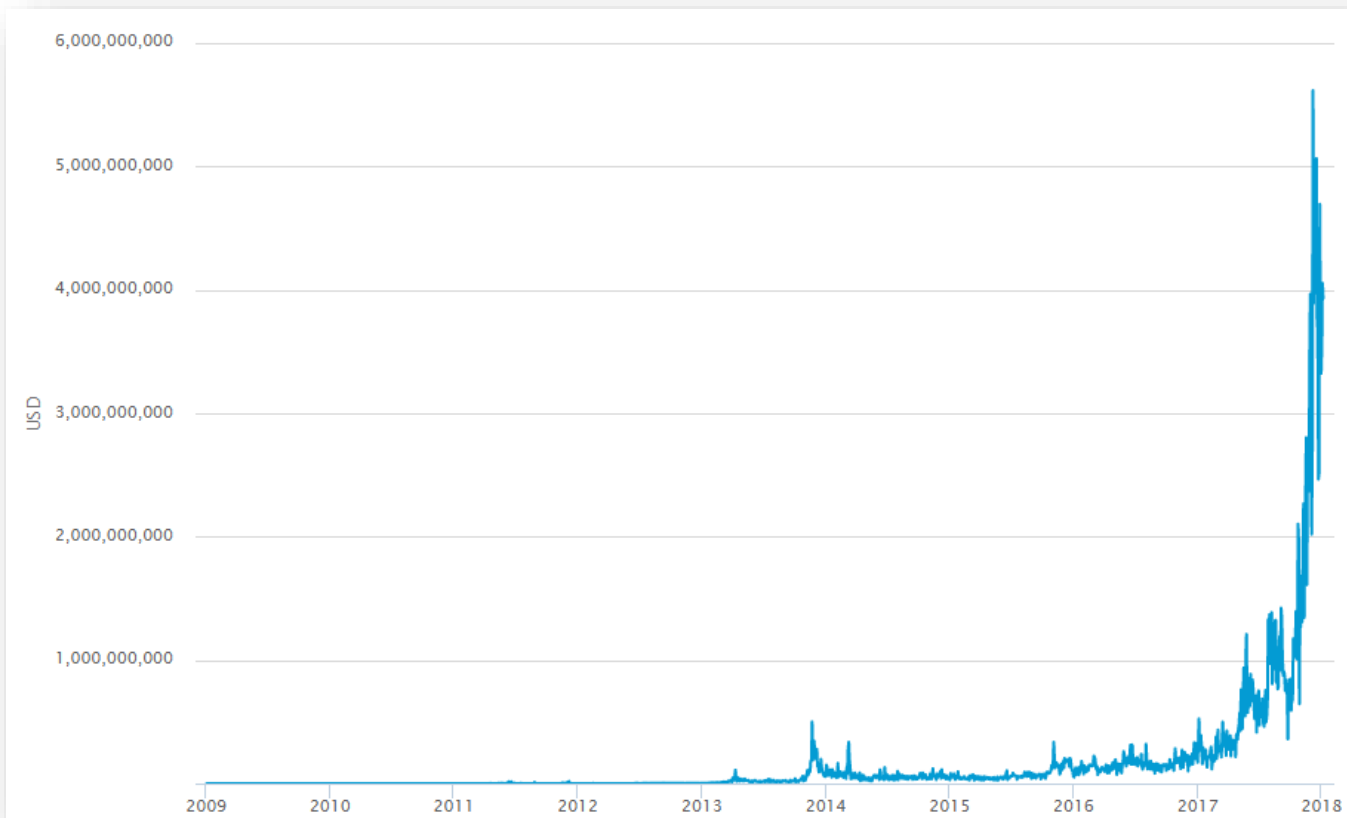
- As of Jan 8<sup>th</sup>, 2018:
  - Total number of cryptoassets listed: **1386**
  - Total market cap: **\$740 Billion**
  - Total raised in ICOs (cumulative): **\$3.7 Billion**
  - 24h volume in all exchanges & pairs: **~\$50 Billion**
  - Bitcoin dominance: **34.2%**

# Scalability

- The Achilles heel of Blockchain: it doesn't scale well
- Potential solutions have been discussed during the past 4 years, deriving in contentious arguments
  - “Bitcoin Civil War”
- As of Jan 2018 we have hit an important milestone: the Lightning Network is live in the Bitcoin blockchain
  - Up to 50,000 transaction/second, comparable to the Visa network
  - Still in testing mode, not ready for mass adoption
  - Our estimate: 1 year before proven bug free.
  - If it materializes, the sky is the limit for the blockchain economy.

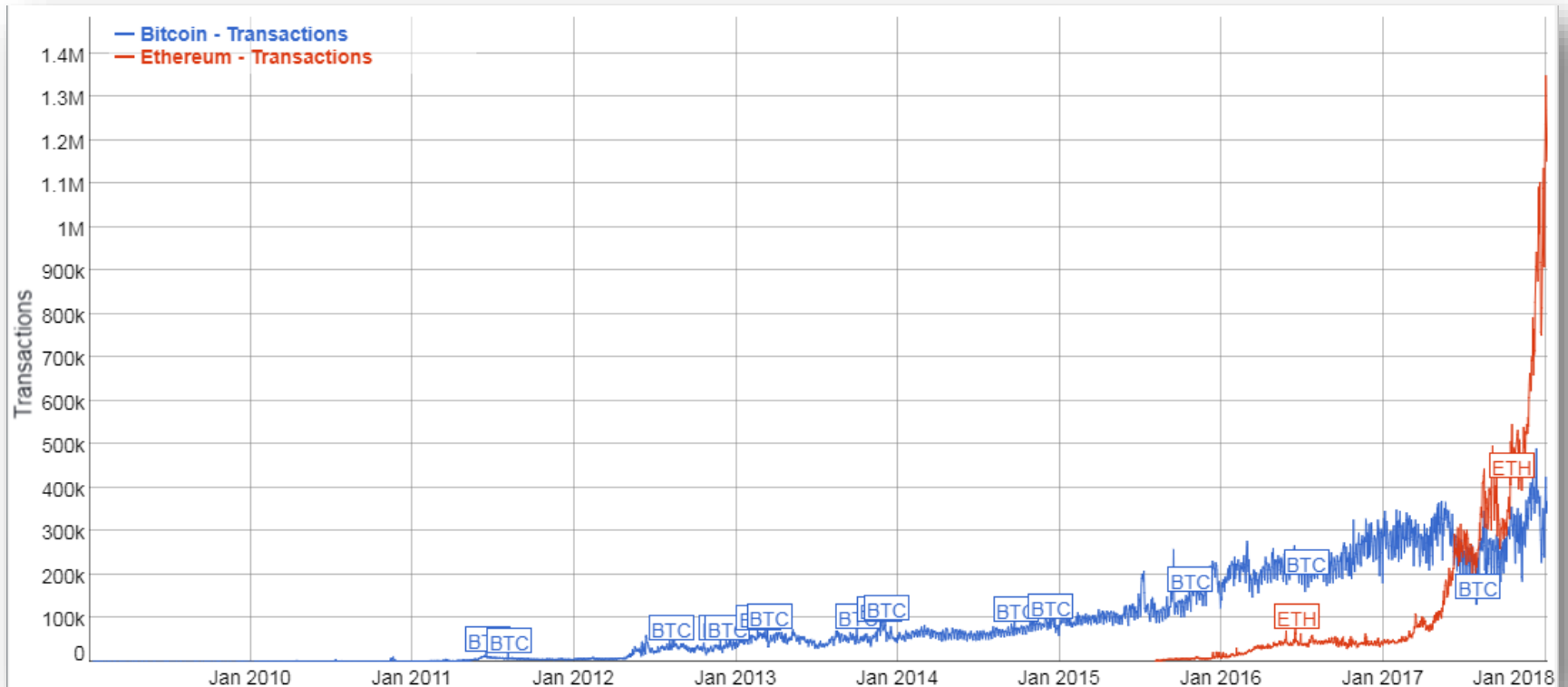


# Approaching \$6 Billion in Bitcoin Transaction Value per Day



Source: Blockchain.info

# However in Absolute Transaction Count Ethereum Wins: 3x More Volume than BTC



# 3. Current Trends

# Enterprise Consortia

Large corporations, anticipating the disruptive potential of public blockchains, are creating their own private blockchains as “walled gardens”.

→ Similar to CompuServe, AOL, MSN in the 1990s.

Top consortia:

- Ethereum Enterprise Alliance
- Hyperledger
- R3
- Ripple

# Bonanza for Semiconductor Companies



- Cryptocurrency mining microchips represent 13% of Taiwan Semiconductor revenue
- NVIDIA released its own mining GPU
- AMD microchips are top choice for Ethereum miners

Image sources:  
DataCenterKnowledge.com,  
Chandler Guo



# Supply Chain is Spearheading Innovation in Enterprise Use Cases

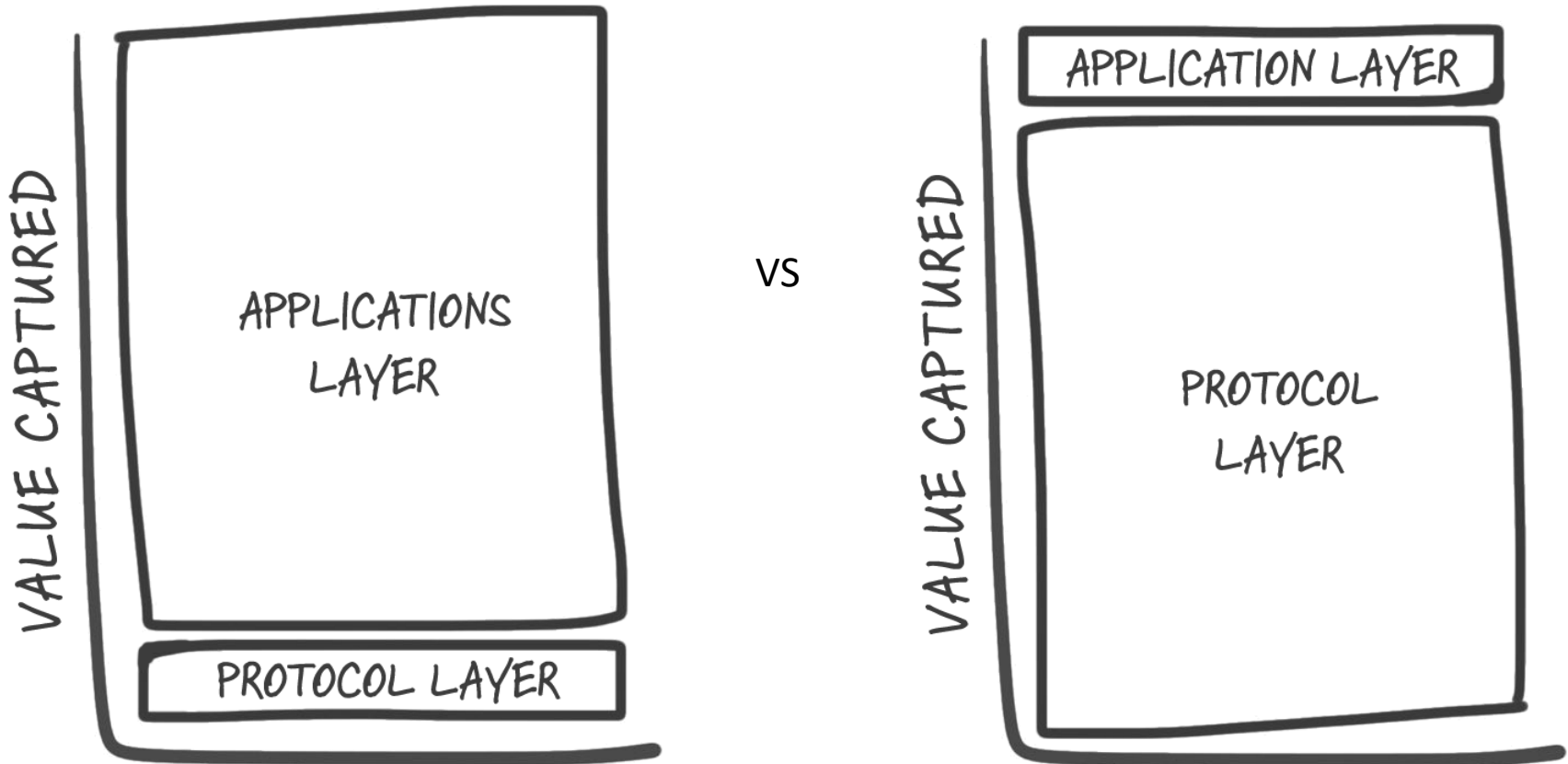
- BHP Billiton
- Wal-Mart
- Everledger – a Diamond industry startup
- Modum – a Pharma industry startup

# 4. The Future of Blockchain

# The Fat Protocol Theory

The Web

Blockchain



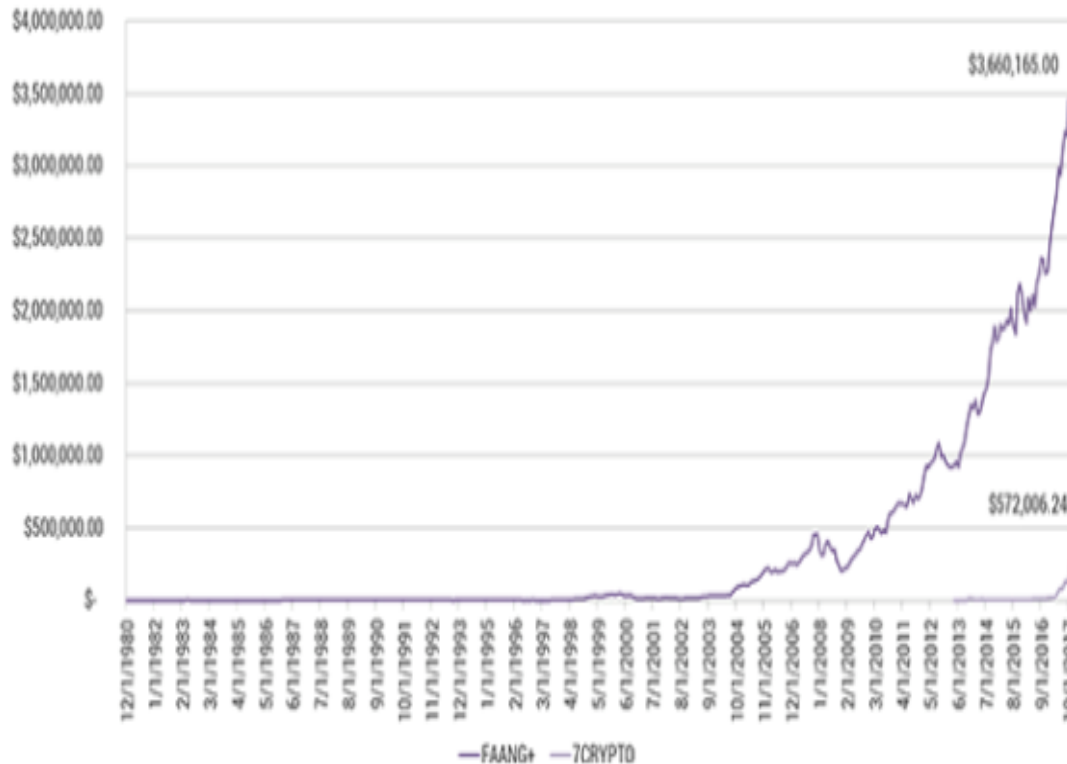
Source: UNION SQUARE VENTURES

# Case Study: A Blockchain Protocol to Compete With Facebook

- Facebook's business model depends on its ability to accumulate behavioral data on its users and sell it at a premium to advertisers.
- Using a blockchain protocol users could be the ones monetizing their own data in a tradable market with advertisers.

# 5. Investment Potential

## FAANG vs CRYPTO Market Cap (in millions)



# Is there a Cryptocurrency Bubble?

### MARKET CAP VALUE (in millions)

Fed Reserve Bal	\$ 4,438,591.80
BOJ	\$ 4,637,106.90
ECB	\$ 5,249,459.00
Gold	\$ 7,488,000.00
FAANG+ Market Cap	\$ 3,660,165.00
US ETF Assets	\$ 3,440,434.96
Top 7 Crypto Network Value	\$ 572,006.24

Source: coinmarketcap.com and Morningstar

# Why isn't there an ETF?

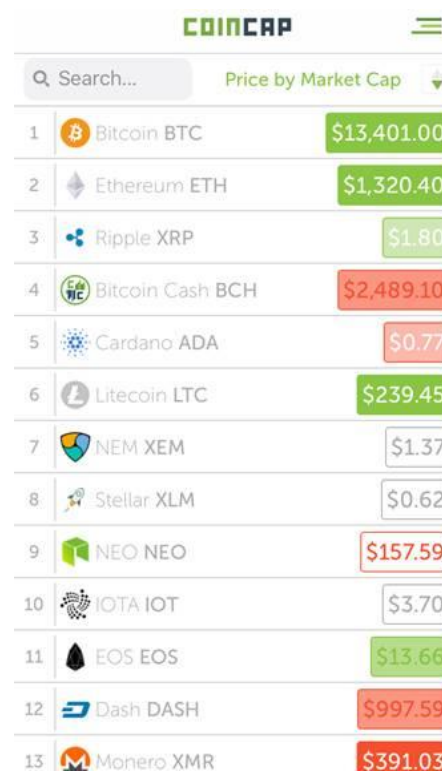
1. 33 Act Physical
2. 40 Act with Futures
3. US ETN
4. Hard Forks
5. Ideology

Coin	SBTC	LBTC	GOD	BUM	BCP	BTCS	BCA
Supply	21,210,000	N/A	21,000,000	21,000,000	N/A	21,000,000	21,000,000
PoW Algorithm	N/A	N/	N/A	Equihash	Equihash	Equihash	SHA256
Mining Hardware	N/A	No Mining-- DPoS	N/A	GPU/CPU	GPU	GPU	ASIC
Block Time	N/A	3 sec	N/A	1 min	N/A	30 sec	10 min
Block Size	8MB	2MB	N/A	1MB	8MB	1MB	1MB
Difficulty Adjustment	N/A	N/A	N/A	Every Block	N/A	Every Block	Every 2016
Segwit	No (2x)	N/A	N/A	Yes	N/A	Yes	Yes
Replay Protection	Yes	Yes	N/A	Yes	Yes	Yes	Yes
Unique Address Format	Yes	Yes	N/A	Yes	Yes	Yes	Yes

*Is a trusted third party needed for a technology designed to replace trusted third parties?*

# Cryptocurrencies & Blockchain

- What is the relationship?
- Cryptocurrencies are not stocks
- Cryptocurrencies need blockchain, but blockchain doesn't need cryptocurrencies.



The screenshot shows the COINCAP website interface. At the top, there is a search bar and a dropdown menu set to 'Price by Market Cap'. Below this is a list of 13 cryptocurrencies, each with a rank, icon, name, and price. The prices are color-coded: green for positive values and red for negative values. The list is as follows:

Rank	Coin	Price
1	Bitcoin BTC	\$13,401.00
2	Ethereum ETH	\$1,320.40
3	Ripple XRP	\$1.80
4	Bitcoin Cash BCH	\$2,489.10
5	Cardano ADA	\$0.77
6	Litecoin LTC	\$239.45
7	NEM XEM	\$1.37
8	Stellar XLM	\$0.62
9	NEO NEO	\$157.59
10	IOTA IOT	\$3.70
11	EOS EOS	\$13.66
12	Dash DASH	\$997.59
13	Monero XMR	\$391.03

# Blockchain Stocks



Former Name	Current Name	Location	Trading Range 2017
Tulip Bio Med	Bitcoin Servies	USA	42,500%
JA Energy	UBI Blockchain Internet	China	20,445%
Natural Resource Holdings	Blockchain Mining	Israel	12,021%
Leeta Gold	HIVE Blockchian Technologies	Canada	6,384%
Grand Pacaraima Gold	First Bitcoin Capital	Canada	5,897%
Carrus Capital	Global Blockchain Technologies	Canada	2,900%
AgriVest Americas	NXChain	USA	1,700%
Bioptix	Riot Blockchain	USA	1,611%
AE Innovative Capital	Bitcoin Group	Germany	1,503%
On-Line	Online Blockchain	UK	1,300%
Long Blockchain	Long Island Ice Tea Corp	USA	458%
Transeastern Power Trust	Plockchain Power Trust Unit	Canada	309%

# 3 Types of Blockchains

## PUBLIC

- Fully decentralized & open to the public (internet)
- Where cryptocurrencies operate
- Anyone can read, send transactions and see them executed if valid
- Consensus process also open & decentralized

## CONSORTIUM

- Hybrid approach
- Consensus process controlled by pre-selected set of nodes
- For example, 20 financial institutions (each operates a node), requires that 15 firms must verify every block for it to be valid

## PRIVATE

- Shielded by permissions in a closed structure (intranet)
- Private enterprise use
- Permissions are central to one organization
- Permissions may be restricted

# TETF

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& Financial Services ETF

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