

# UNDERSTANDING BLOCKCHAIN FOR THE BIZ



**Steve Wong**

Cloud, Platforms & IT Outsourcing (CPI) Group

DXC Technology



@SteveWongLA



**Pete Ludé**

CTO

Mission Rock Digital

[pete@MissionRockDigital.com](mailto:pete@MissionRockDigital.com)

How many have heard of...

**BLOCKCHAIN**

?

“Blockchain allows for one Internet user to **transfer** a unique piece of **digital property** to another Internet user such that the transfer is guaranteed to be **safe and secure**...

The consequences of this breakthrough are hard to overstate.”

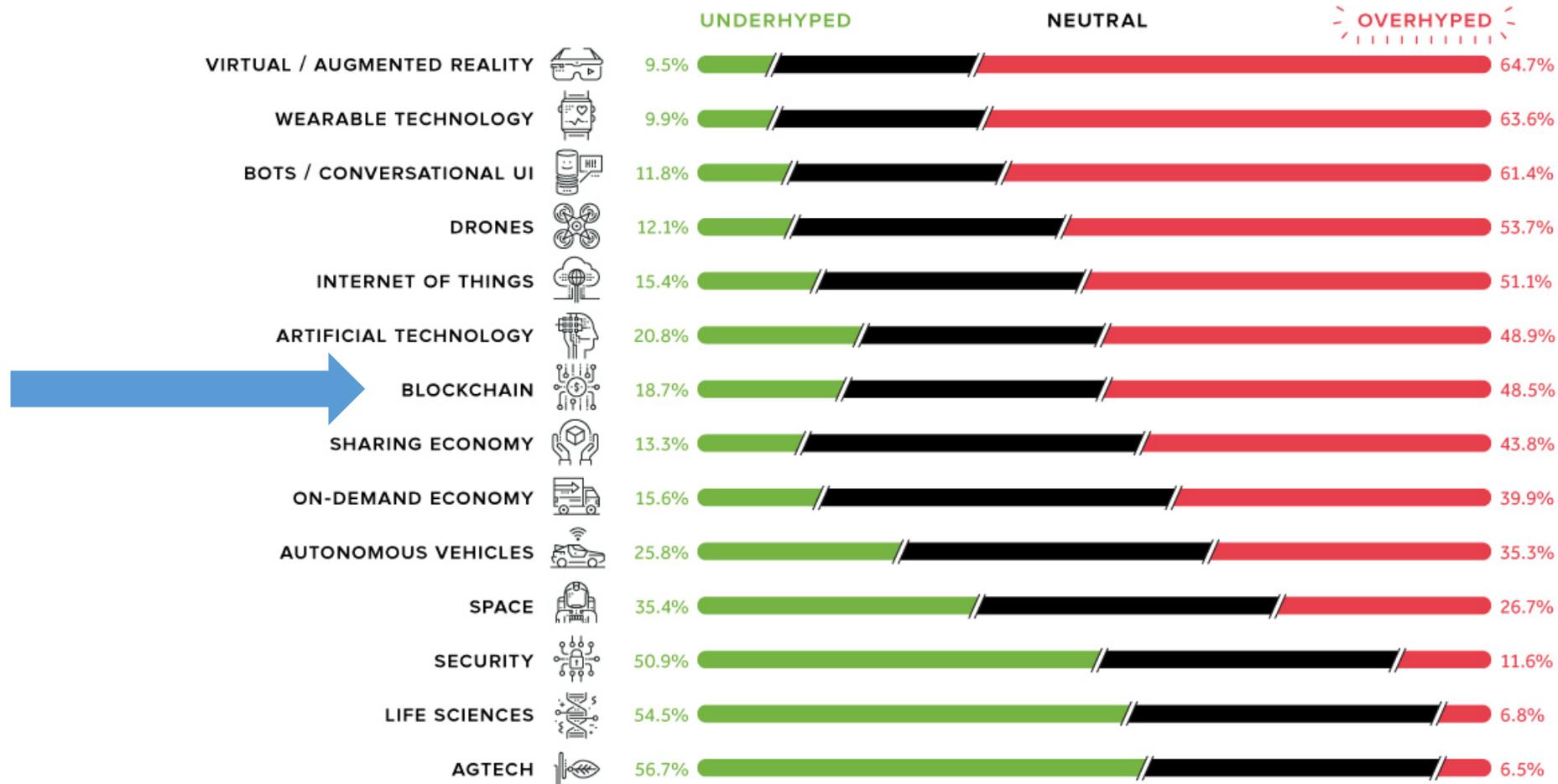
- **Marc L. Andreessen**, Co-founder Andreessen Horowitz & HPE Board of Directors

# Agenda

- Isn't this a bunch of Hype?
- Well then, What is Blockchain again?
- How does it work?
- Where is Blockchain now?
- Businesses Benefits
- Blockchain applications
- Conclusions



# Hype?



<https://www.visualcapitalist.com/overhyped-sectors-tech-entrepreneurs/>

22 February 2018

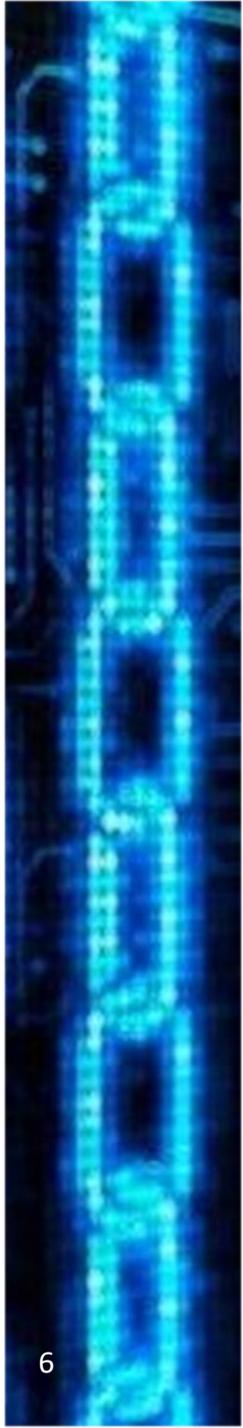
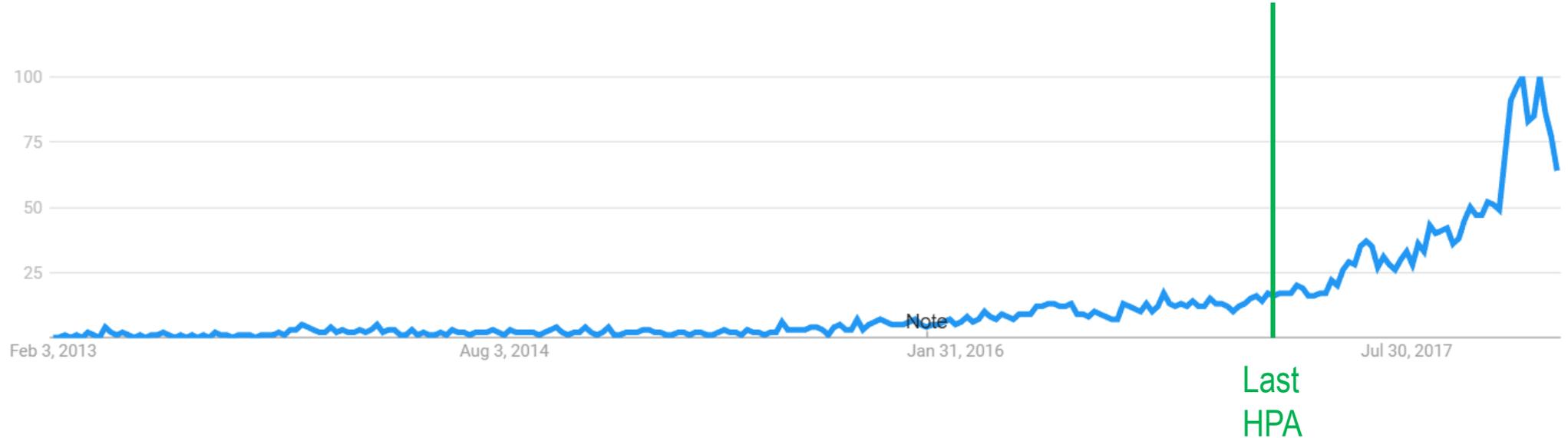
Blockchain for the Business - S Wong and P Ludé

# Hype?

Google Trends

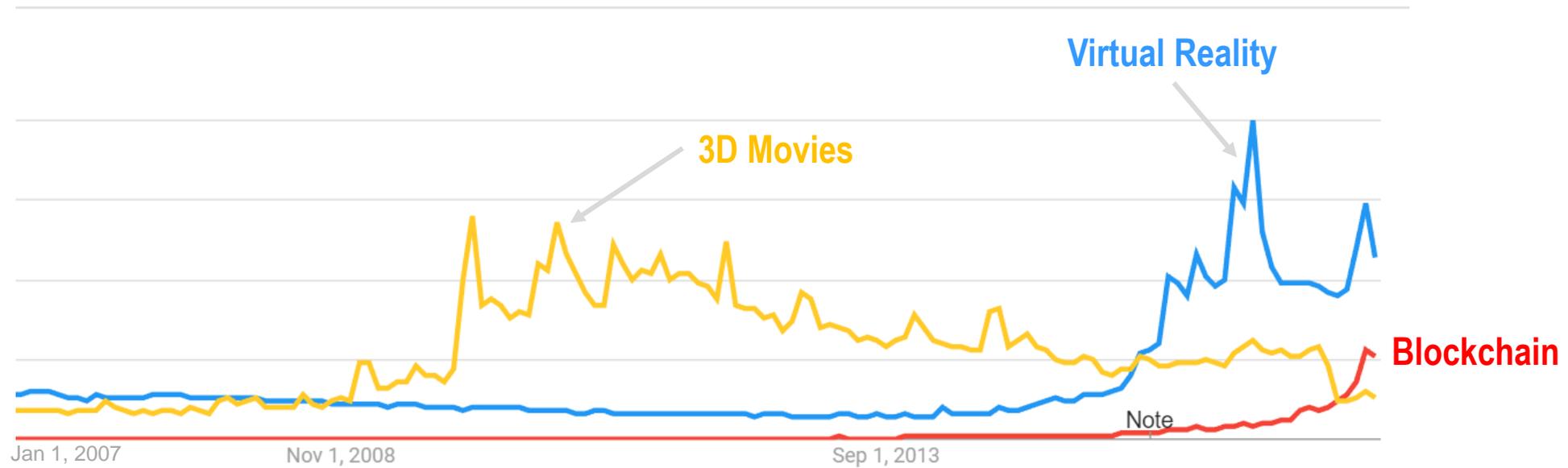
Interest over time 

Searches on "Block Chain"



# Hype?

Google Trends



# ISO-IEC JPEG Exploring Blockchain



**ISO/IEC JTC 1/SC29/WG1 N78005**  
78th Meeting – Rio de Janeiro, Brazil – 27 January - 2 February 2018

**INTERNATIONAL ORGANISATION FOR STANDARDISATION  
ORGANISATION INTERNATIONALE DE NORMALISATION  
ISO/IEC JTC1/SC29/WG1  
CODING OF STILL PICTURES**

**ISO/IEC JTC1/SC29/WG1 N78005  
Date: 2018-2-2**

Press Release  
Contacts: Antonio Pinheiro, Frederik Temmermans (pr@jpeg.org)

For immediate release

February 2, 2018 – Rio de Janeiro, Brazil

**JPEG explores blockchain in its standards**

The JPEG Committee had its 78<sup>th</sup> meeting in Rio de Janeiro, Brazil. Relevant to its ongoing standardization efforts in JPEG Privacy and Security, JPEG organized a special session to explore how to support blockchain and distributed ledger technologies to past, ongoing and future JPEG family of standards. This is motivated by the fact that considering the potential impact of such technologies in the future of multimedia standardization will be required to

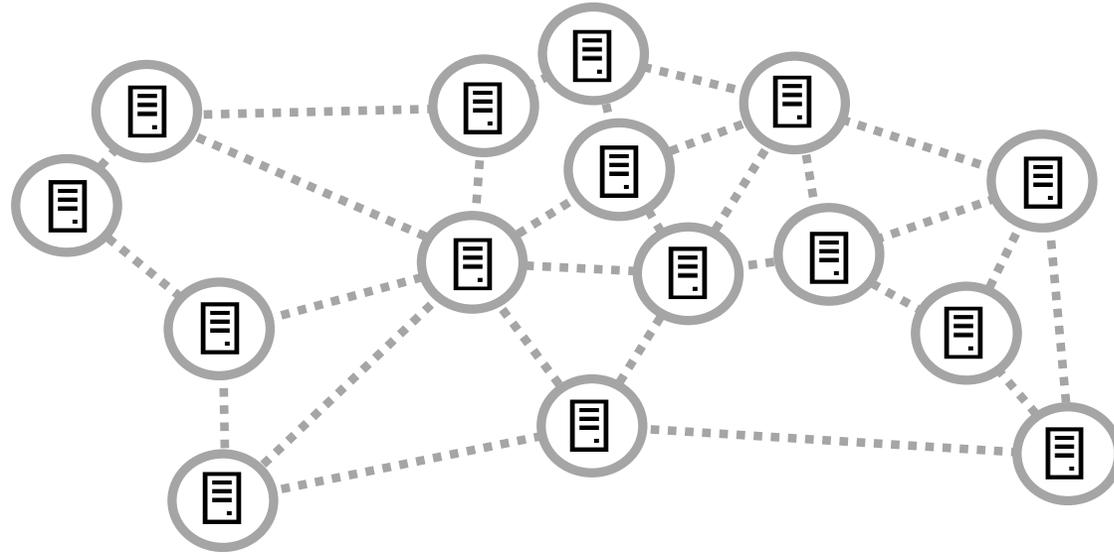
# ISO-IEC JPEG Exploring Blockchain



*“Blockchain and distributed ledger technologies promise a significant impact on the future of many fields. JPEG is committed to provide standard mechanisms to apply blockchain on multimedia applications in general and on imaging in particular.”* said Prof. Touradj Ebrahimi, the Convenor of the JPEG Committee.



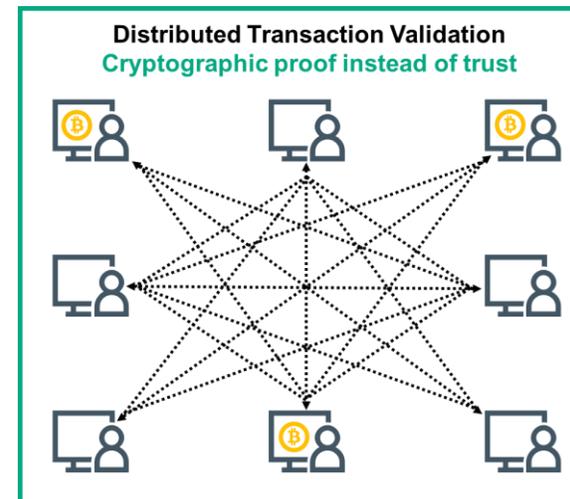
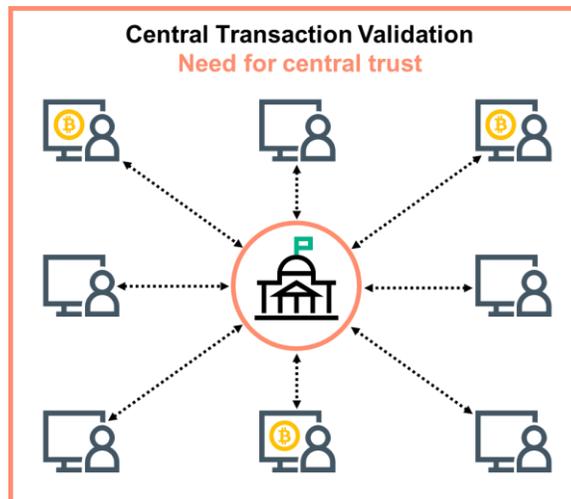
# What is Blockchain again?



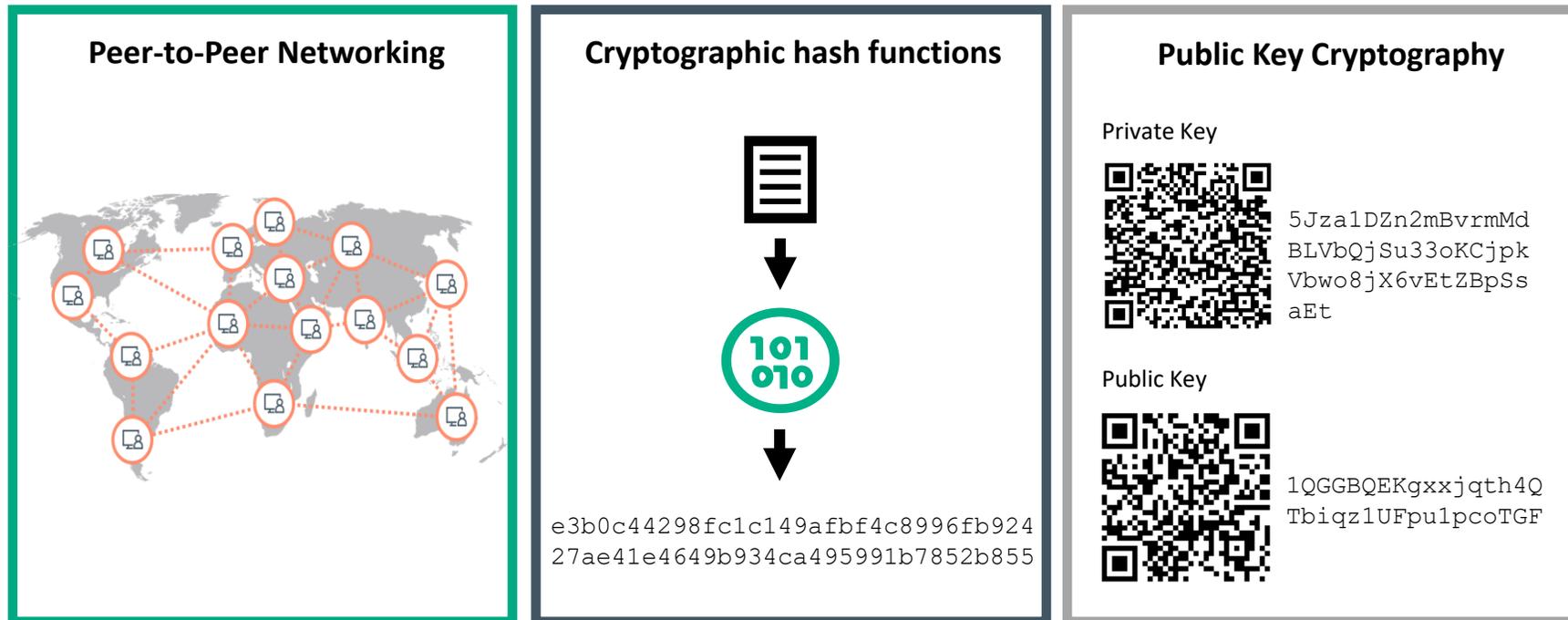
- The technology behind Bitcoin
- A **ledger of transactions** replicated to all servers
- Distributed, **peer-to-peer network**
- Requires no central authority
- Digital cryptography ensures
  - Transactions are verifiable
  - System is tamper-proof
- Ledger updates are applied through automated network consensus

# ...and why was it invented?

Because “... no mechanism exists to make payments over a communications channel **without a trusted party**”

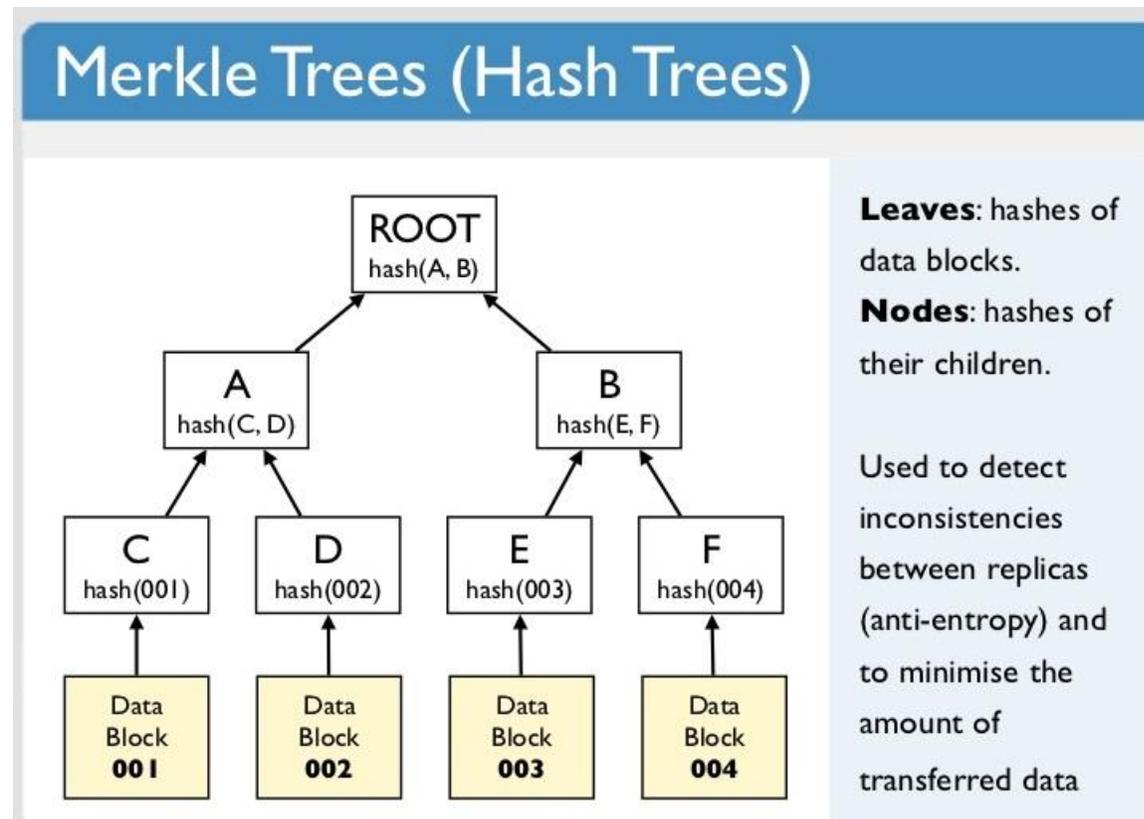


# Technology Basics



# Technology Basics

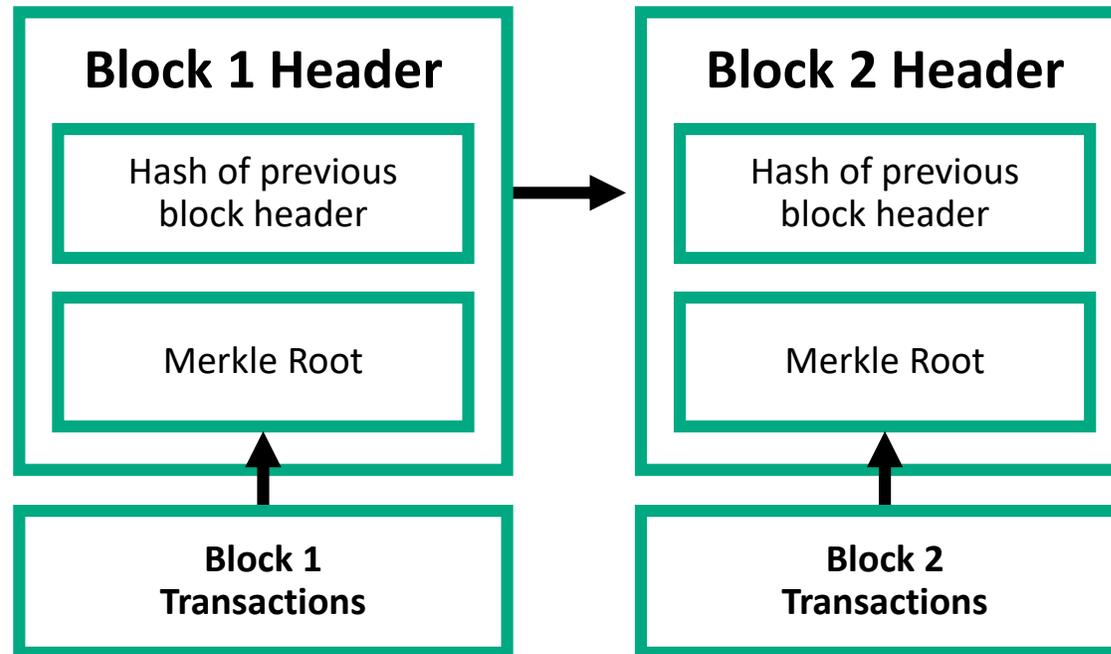
**Merkle tree:** every leaf node is labelled with a data block and every non-leaf node is labelled with the cryptographic hash of the labels of its child nodes.



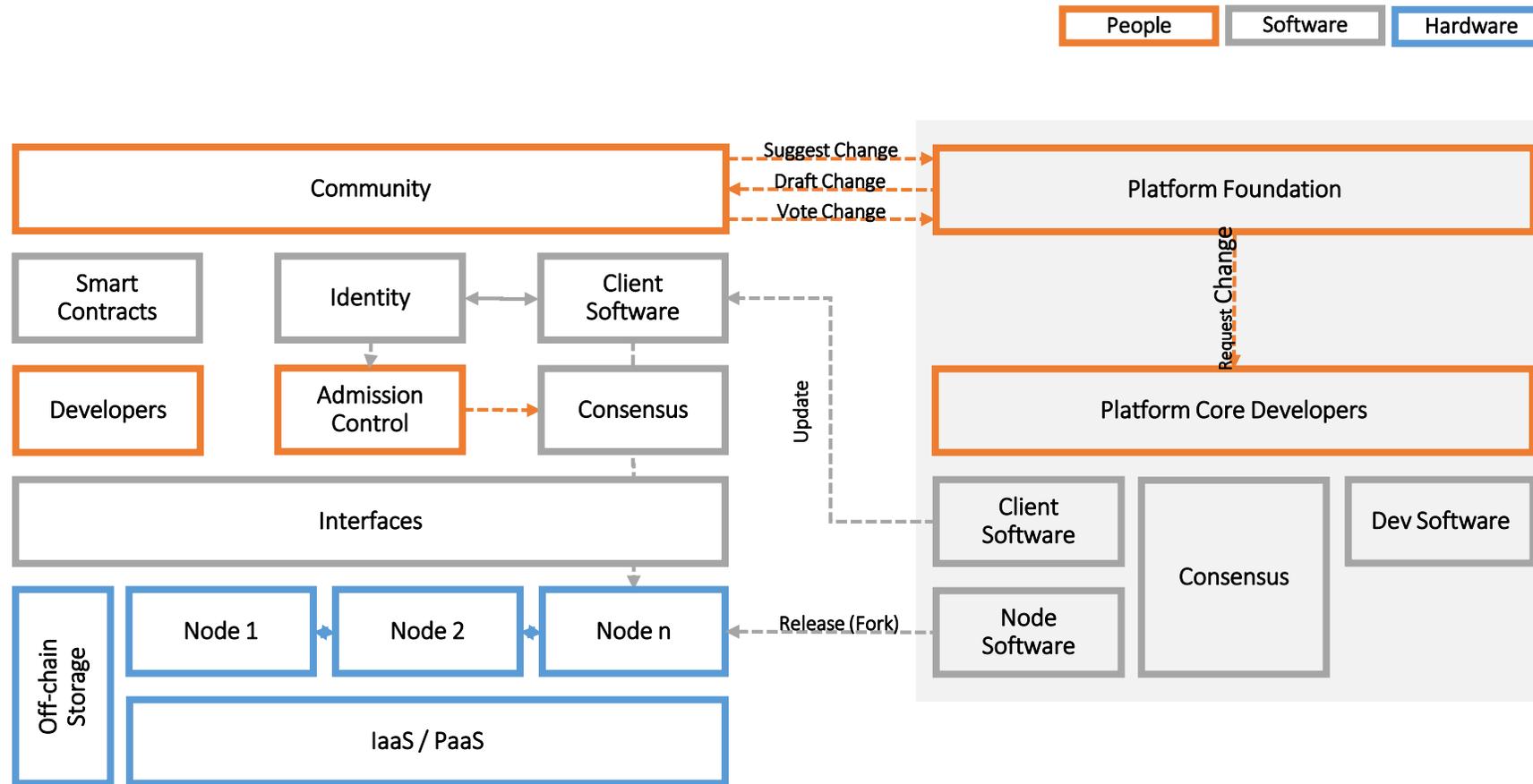
# How does Blockchain work?



# How does Blockchain work?



# Blockchain Functional View





Don't cryptocurrency transactions take an extraordinary amount of electric power?

# Mining



22 February 2018

Blockchain for the Business - S Wong and P Ludé



# Bitcoin mining – simple (in theory)

## Bitcoin Mining involves

- 1) Picking a random number between 0 and 4,294,967,296 (the “nonce”)
- 2) Organizing recent transactions plus the nonce into a block
- 3) Perform a Hash Function
- 4) Check the results against known value

If it matches, **you win**

**12.5 bitcoins**

~ \$132, 000 as of today



# Example of a Double SHA-256 Hash

(start with the character string): **Hollywood Professional Alliance**



Perform Hash Function

ee6fdd2164997c36209d06625b905c2ab8933a1bd3c11e282a771a2326c72227



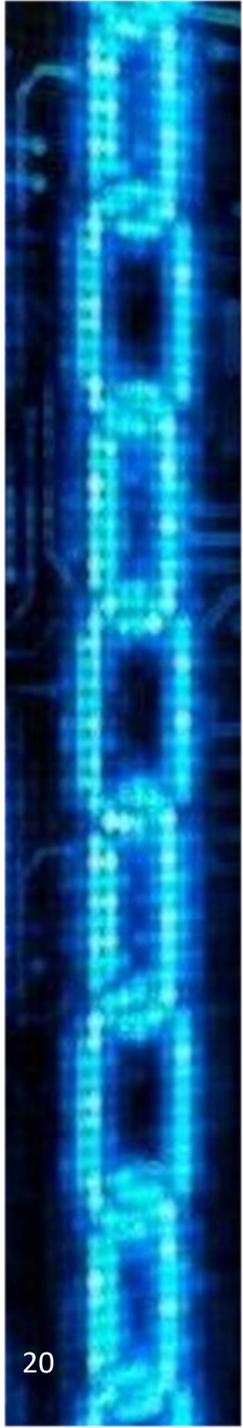
Converted from hex to binary...

```
11101110 01101111 11011101 00100001 01100100 10011001 01111100 00110110
00100000 10011101 00000110 01100010 01011011 10010000 01011100 00101010
10111000 10010011 00111010 00011011 11010011 11000001 00011110 00101000
00101010 01110111 00011010 00100011 00100110 11000111 00100010 00100111
```

Try it yourself! <http://www.xorbin.com/tools/sha256-hash-calculator>

22 February 2018

Blockchain for the Business - S Wong and P Ludé



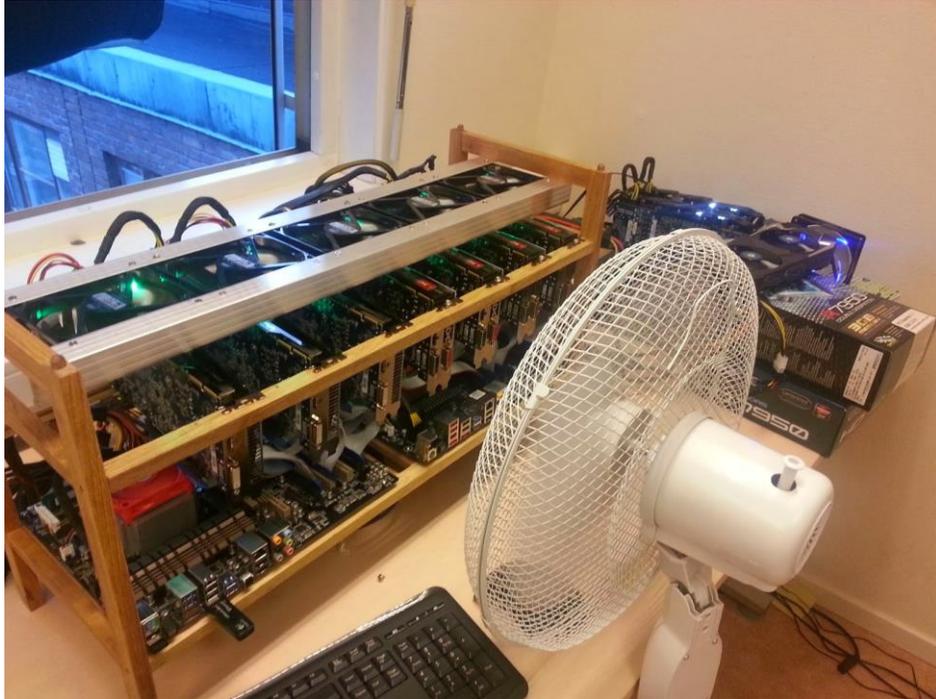
# You don't even need a computer

It's possible to try this by hand....

The image shows a handwritten SHA-256 calculation on graph paper. It consists of several columns of binary strings and hex characters. The calculation starts with a message 'c e 2 0 b 4 7 e' and proceeds through multiple rounds of computation, resulting in intermediate values labeled 'new A' through 'new H'. The final result is 'f577ed68'. The handwriting is in black ink on a blue grid background.

Ken Shirriff <https://gizmodo.com/mining-bitcoin-with-pencil-and-paper-1640353309>

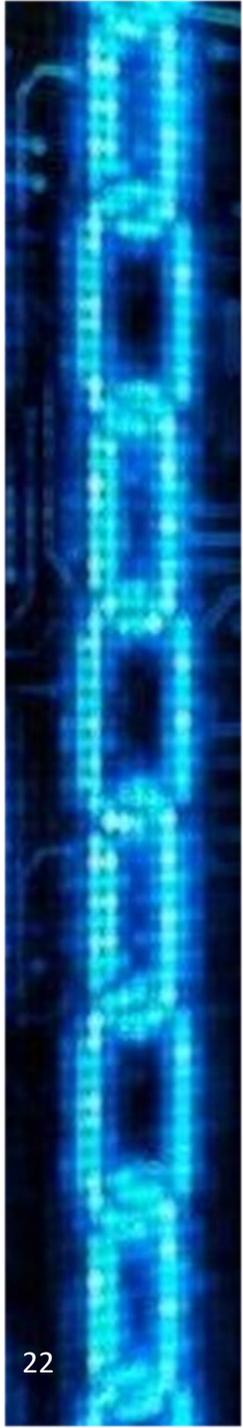
# The Early days...



GPU mining



FPGA rigs



# Latest generation of ASIC mining rigs

## BITMAIN



- 189 ASICs (16 nm technology)
- Each ASIC: 100 cores
- 14 terahashes / second
- 1,440 watts



# Mining ASIC's are a real business...

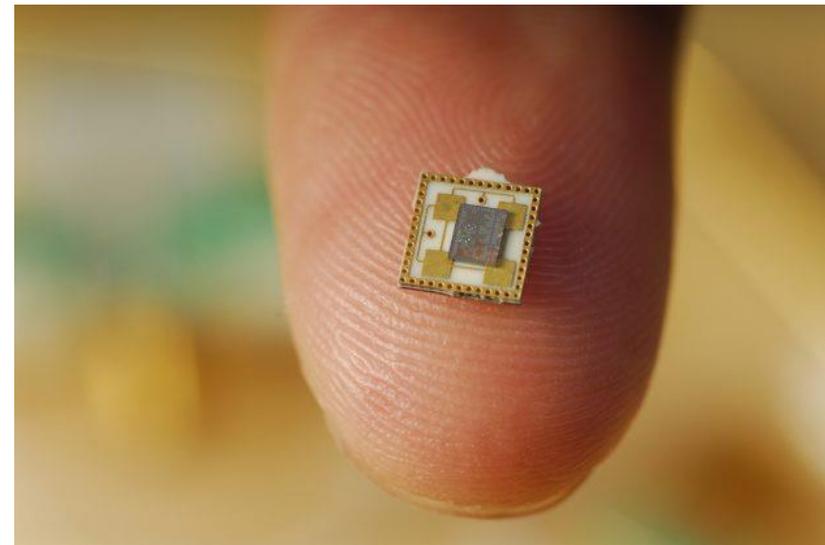
## TECH

TECH | MOBILE | SOCIAL MEDIA | ENTERPRISE | CYBERSECURITY | TECH GUIDE

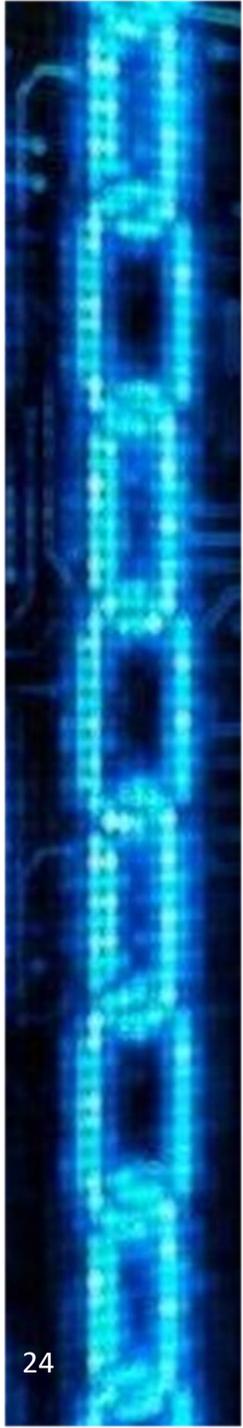
### Samsung is making chips designed to mine cryptocurrencies like bitcoin

- Samsung Electronics is producing chips for a Chinese company to mine cryptocurrencies.
- Cryptocurrency mining requires super computers to solve complex mathematical problems to validate transactions on the bitcoin network.
- Specialized chips are a key part of the computer architecture.

Arjun Kharpal | @ArjunKharpal  
Published 5:10 AM ET Wed, 31 Jan 2018



7nm technology





22 February 2018

Blockchain for the Business - S Wong and P Ludé

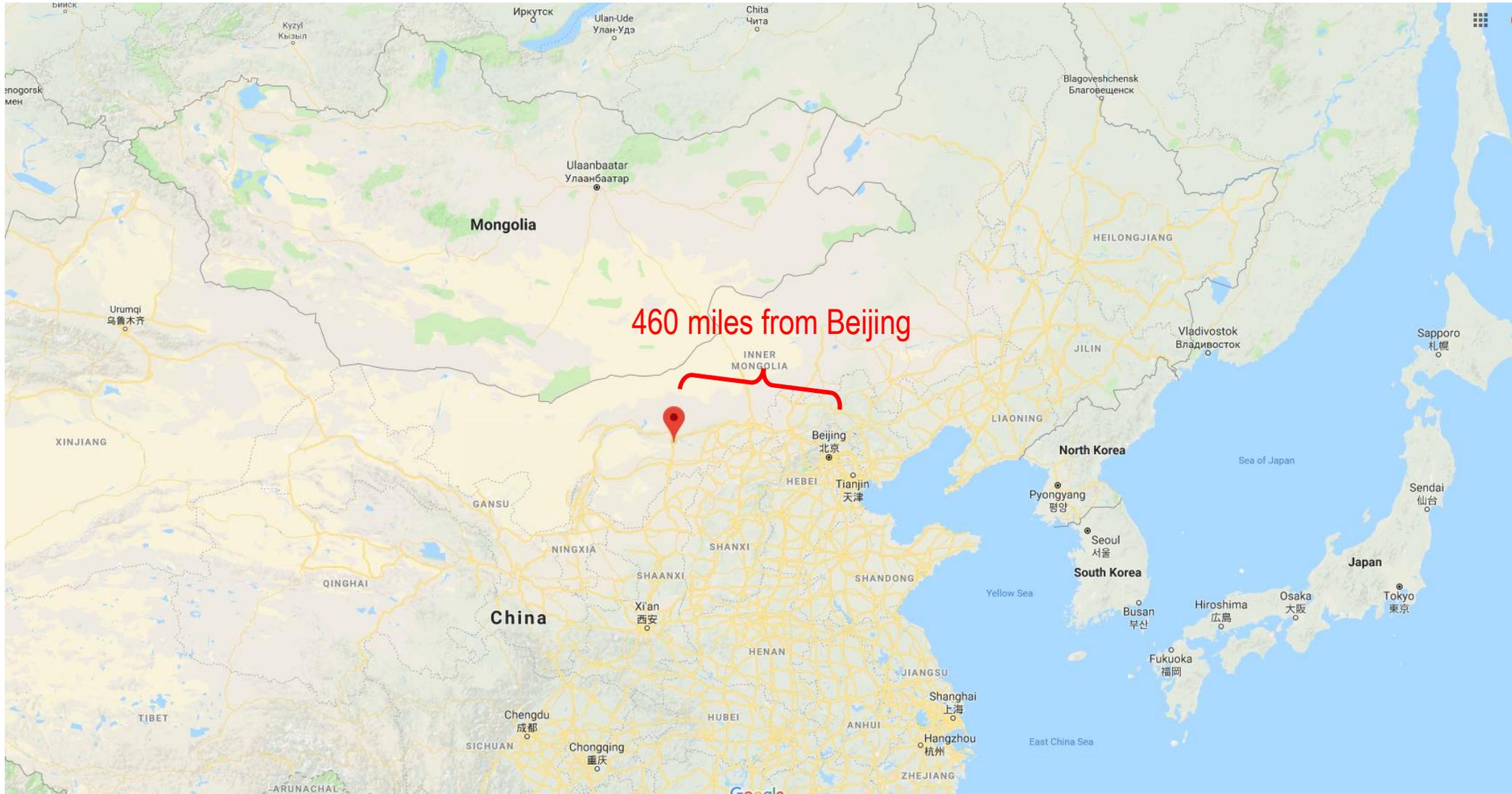


*One of the largest Bitcoin mining operations...*



Ordos prefecture of Inner Mongolia





## Ordos prefecture of Inner Mongolia

22 February 2018

Blockchain for the Business - S Wong and P Ludé



# Kodak slaps its name on a sketchy bitcoin-mining business

You can lease a Kodak KashMiner, but it might not be a wise idea.



Jon Fingas, @jonfingas  
01.11.18 in Internet

11  
Comments

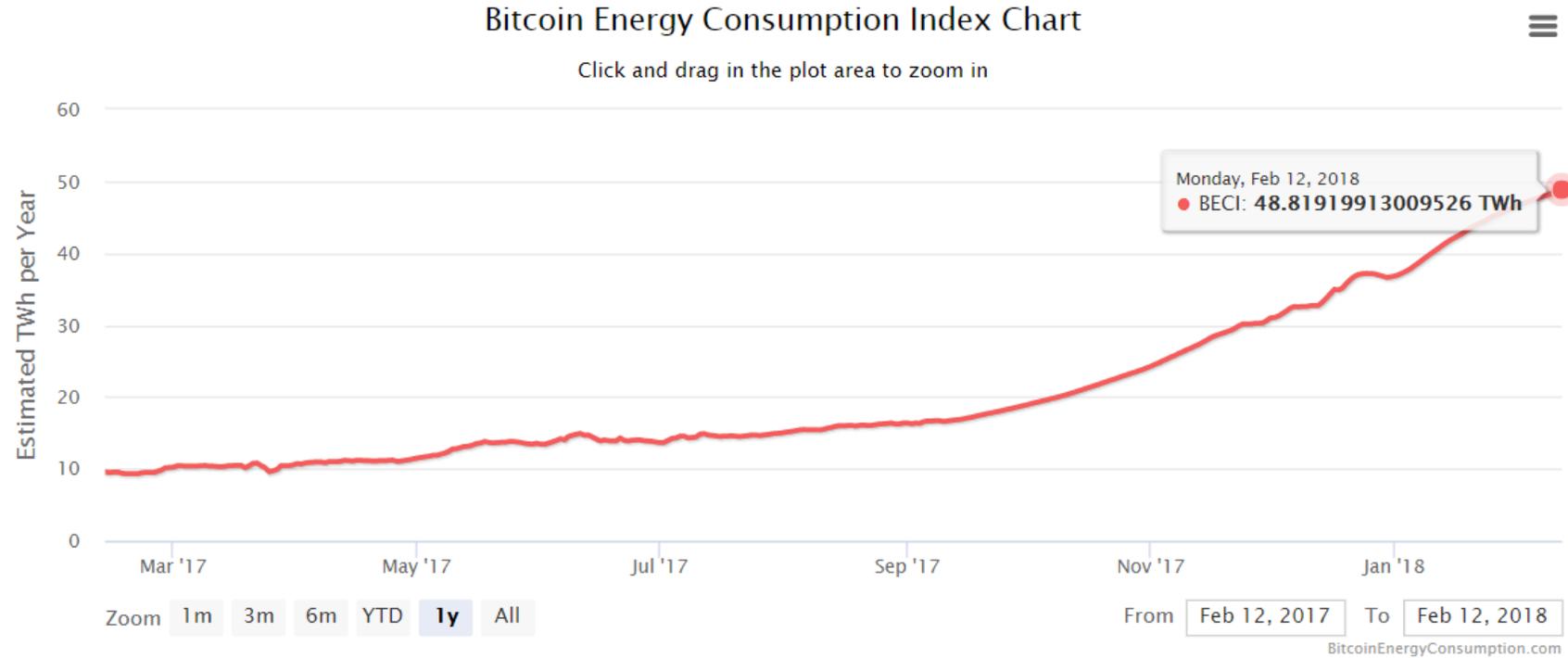
494  
Shares



**“It’s mind-bogglingly stupid.”**

- Dr. Nicholas Weaver, UC Berkeley

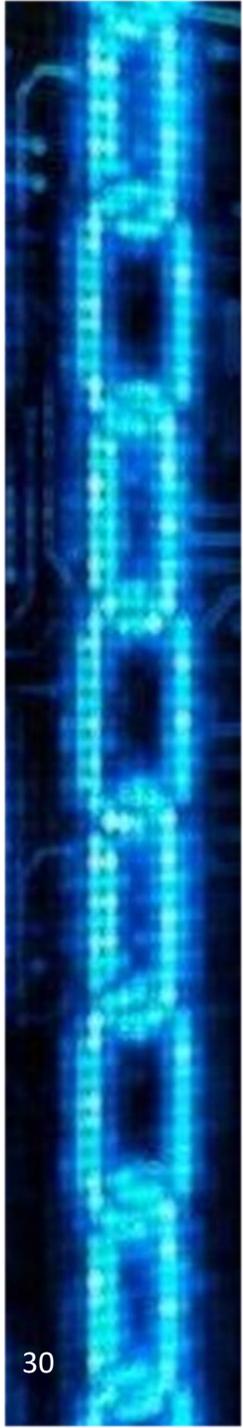
# Nearly 50 Terawatt-hrs per year



## Key Network Statistics

Description	Value
Bitcoin's current estimated annual electricity consumption* (TWh)	48.82
Annualized global mining revenues	\$7,374,246,478
Annualized estimated global mining costs	\$2,440,959,957

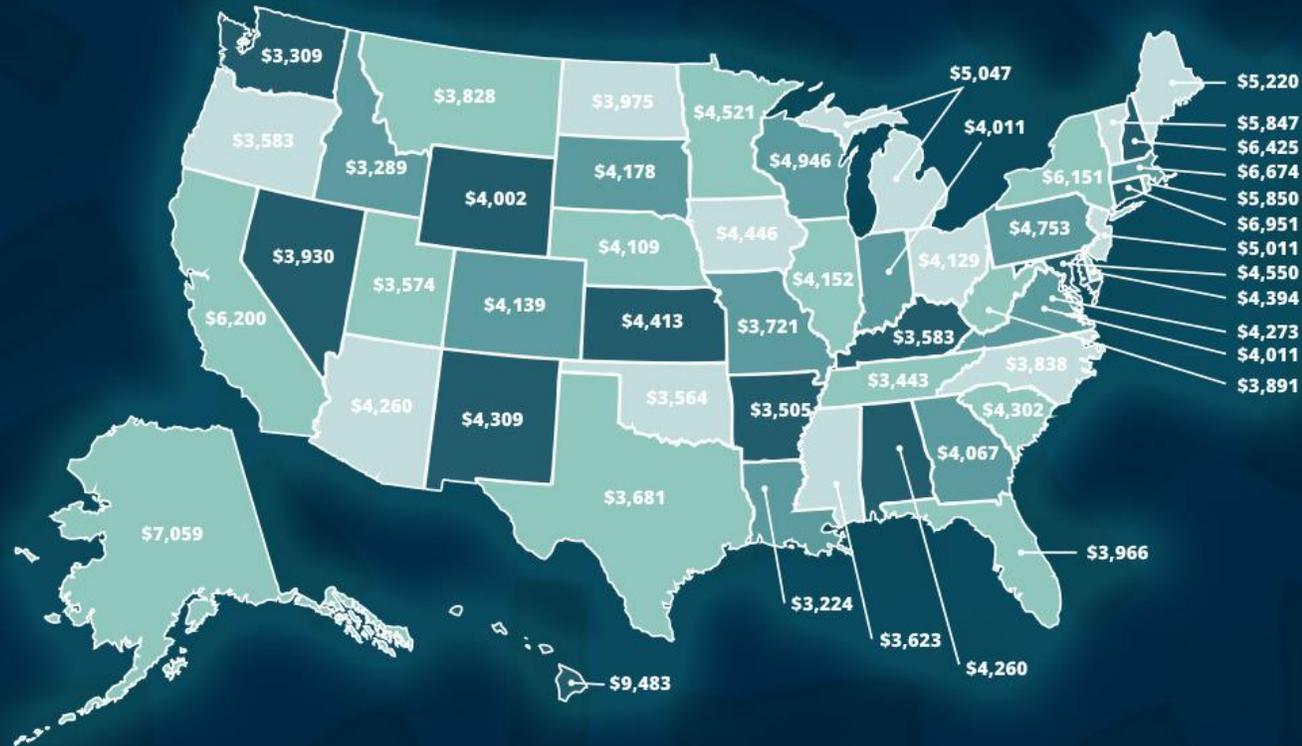
Source: Digiconomist  
22 February 2018





# THE COST TO MINE 1 BITCOIN

BASED ON AVERAGE ELECTRICITY RATE PER STATE



# Proof of Stake may solve this

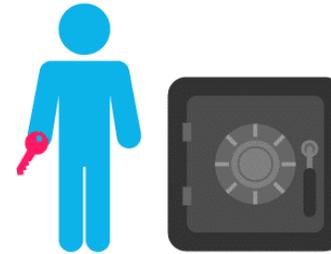
## **Proof of Work**

vs

## **Proof of Stake**



*proof of work is a requirement to define an expensive computer calculation, also called mining*

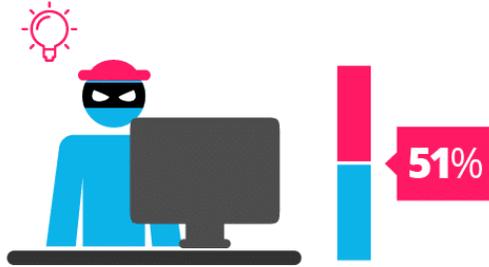


*Proof of stake, the creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.*

Source: BlockGeeks.com

# Proof of Stake may solve this

## **Proof of Work** vs **Proof of Stake**



*A reward is given to the first miner who solves each blocks problem.*

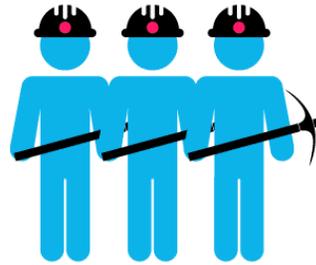


*The PoS system there is no block reward, so, the miners take the transaction fees.*

Source: BlockGeeks.com

# Proof of Stake may solve this

## **Proof of Work** vs **Proof of Stake**



***Network miners compete to be the first to find a solution for the mathematical problem***



***Proof of Stake currencies can be several thousand times more cost effective.***

Source: BlockGeeks.com

# Proof of Stake: Testing now underway

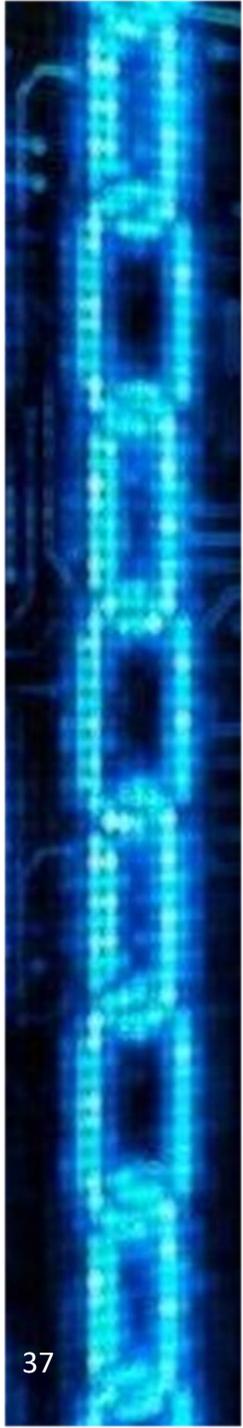
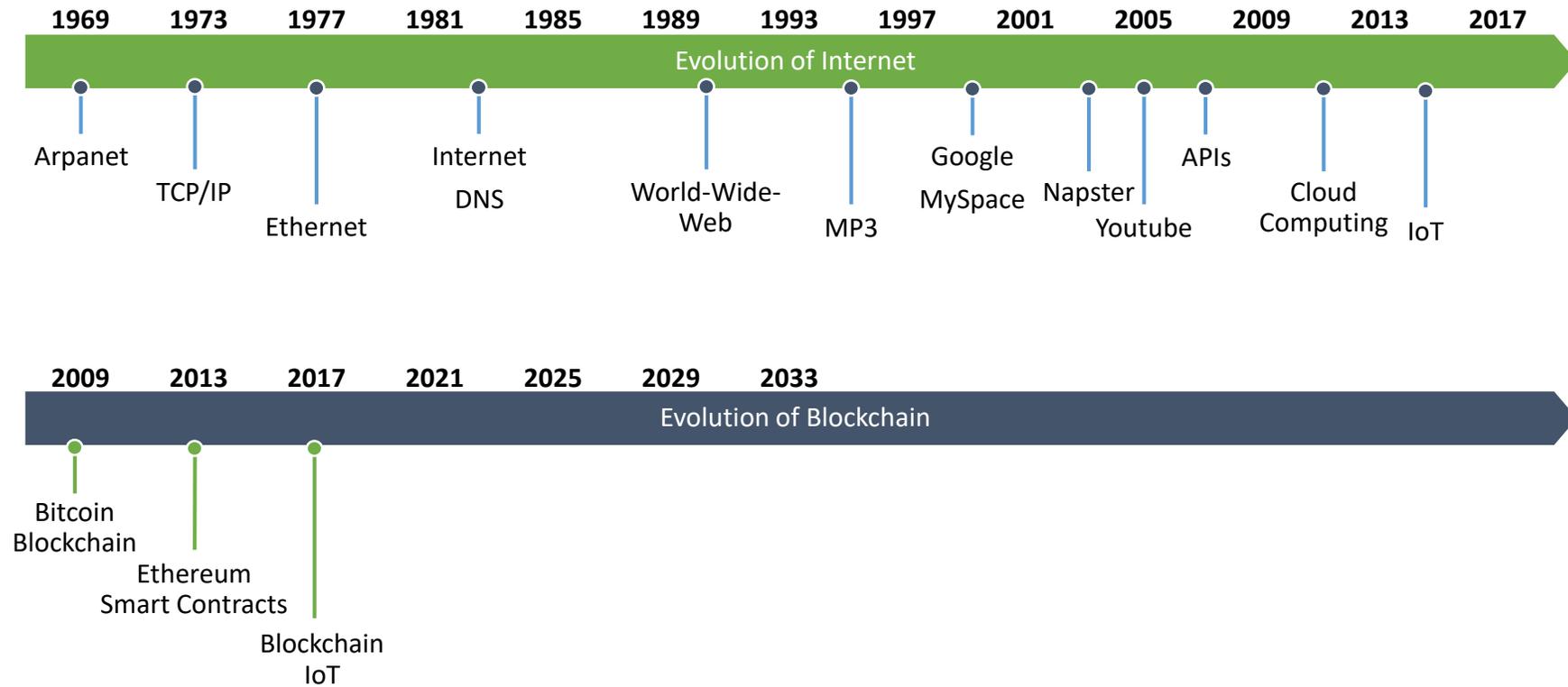


- Casper – a Proof of Stake protocol by which malicious actors can be punished
- Alpha test Launched on December 31 2017

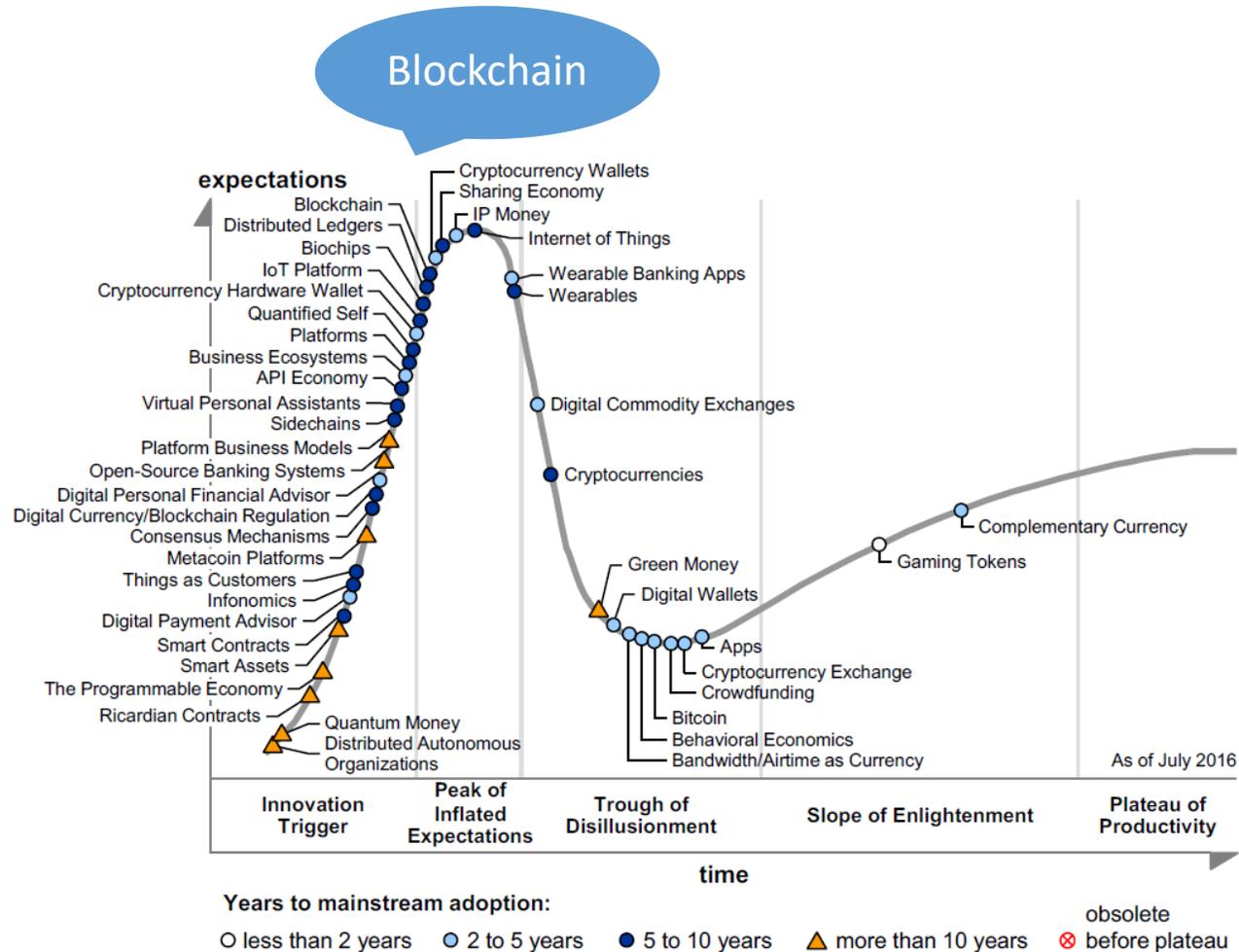
# Where is Blockchain right now?



# The Evolution



# Hype Cycle for Emerging Technologies

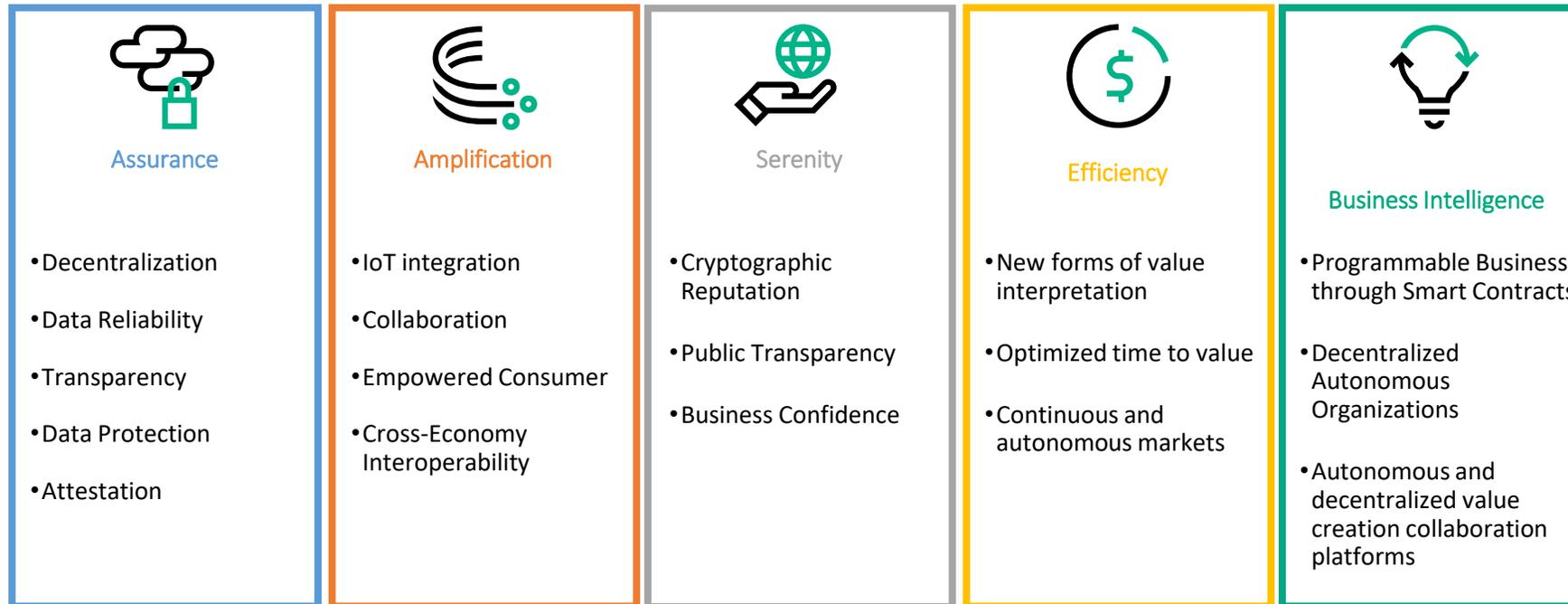


Source: Gartner (July 2016)

# Blockchain Business Benefits



# Blockchain Business Benefits





Is it secure?



# There's been some bad press...

## The New York Times

BUSINESS DAY

### *Apparent Theft at Mt. Gox Shakes Bitcoin World*

By NATHANIEL POPPER and RACHEL ABRAMS FEB. 25, 2014



Haseeb Qureshi [Follow](#)

Engineering @earndotcom. @Airbnb alum. Instructor @Outco. Writer. Effective Altruist. Blockchainist. Former poker pro.

Jul 20, 2017 · 16 min read

### A hacker stole \$31M of Ether—how it happened, and what it means for Ethereum

DEADLINE | HOLLYWOOD **BUSINESS** Biggest Hack In History Freezes \$156M In Tech Funds, Damaging Some Ent...

## Biggest Hack In History Freezes \$156M In Tech Funds, Damaging Some Entertainment Startups

# Trust No One: Ethereum Smart Contract Security Is Advancing



Alyssa Hertig     
Nov 3, 2017 at 21:00 UTC

FEATURE

"Everyone here is a target for attack. Be paranoid."

That's how Ethereum Foundation security lead Martin Swende ended his deep-dive lecture on smart contract security at Devcon3 yesterday. At this point, he's witnessed his fair share of attacks on ethereum and wants the community to know what they're getting into.

There was [The DAO hack](#), where millions of dollars in ether was stolen due to a smart contract bug. There was the time ethereum transactions [slowed](#) because of an unknown attacker – this on one of Swende's first days working on the protocol, no less. And then just a few months ago, ethereum client [Parity lost](#) \$30 million after being hacked.

And that's not to mention all the bitcoin-related hacks.

With this, developers point out that – as revolutionary as ethereum can and could be – there's still a lot of kinks to iron out, one of the reasons the open-source project's flagship conference saw such a focus on security on its second day, with developers and academics alike releasing new tools to take smart contract security a step further.

Despite these major attacks, though, developers are optimistic about where smart contract security is heading.

RSK Labs chief scientist and cryptocurrency security consultant Sergio Demian Lerner told CoinDesk:

“Despite these major attacks, developers are optimistic about where smart contract security is heading”

# theguardian

[Alex Hern](#)

**Wed 8 Nov 2017** 06.29 EST  
Last modified on Wed 8 Nov  
2017 09.25 EST

Shares  
10,714

## '\$300m in cryptocurrency' accidentally lost forever due to bug

User mistakenly takes control of hundreds of wallets containing cryptocurrency Ether, destroying them in a panic while trying to give them back



More than \$300m of cryptocurrency has been lost after a series of bugs in a popular digital wallet service led one curious developer to accidentally take control of and then lock up the funds, according to reports.

Unlike most cryptocurrency hacks, however, the money wasn't deliberately taken: it was effectively destroyed by accident. The lost money was in the form of Ether, the tradable currency that fuels the Ethereum distributed app platform, and was kept in digital multi-signature wallets built by a developer called Parity.

#img-1

lets require more than one user to enter their key before funds can be

# theguardian

'\$300m in cryptocurrency' accidentally lost forever due to bug

User mistakenly takes control of hundreds of wallets containing



devops199 commented 2 days ago • edited ▼

I accidentally killed it.

<https://etherscan.io/address/0x863df6bfa4469f3ead0be8f9f2aae51c91a907b4>



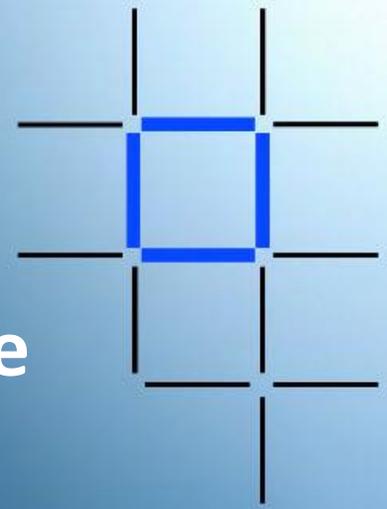
More than \$300m of cryptocurrency has been lost after a series of bugs in a popular digital wallet service led one curious developer to accidentally take control of and then lock up the funds, according to reports.

Unlike most cryptocurrency hacks, however, the money wasn't deliberately taken: it was effectively destroyed by accident. The lost money was in the form of Ether, the tradable currency that fuels the Ethereum distributed app platform, and was kept in digital multi-signature wallets built by a developer called Parity.

#img-1

lets require more than one user to enter their key before funds can be

# Security and Vulnerability



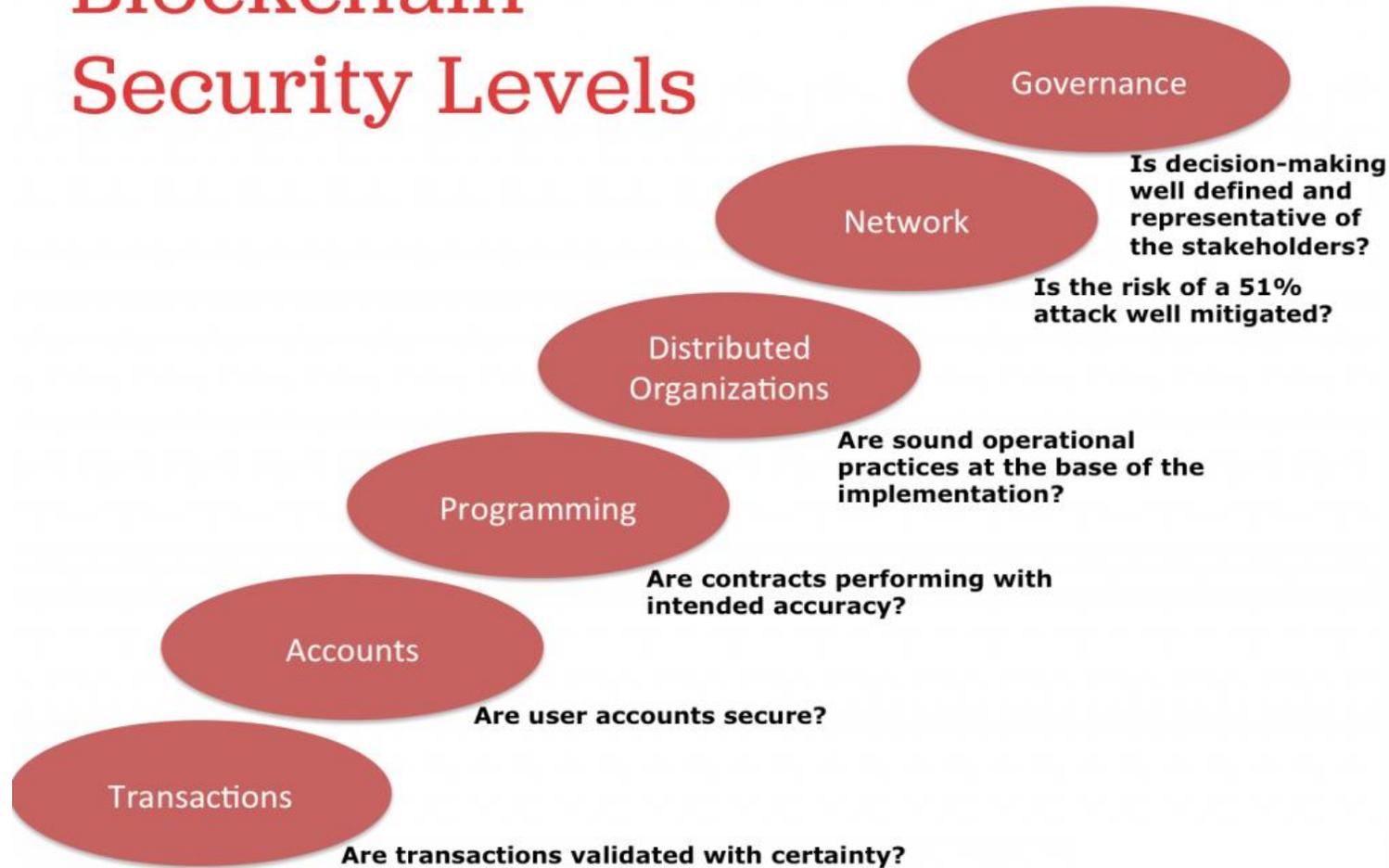
**Cryptography used is VERY secure**

## **Vulnerabilities have been due to:**

- Programming errors (smart contracts)
- Carelessness (in digital wallets)
- Social Engineering
- Theft

# Security and Vulnerability

## Blockchain Security Levels



Source: **William Mougayar**

<http://startupmanagement.org/2016/08/08/blockchain-security-is-multi-layered-here-are-the-6-most-important-levels/>

Blockchain for the Business - S Wong and P Ludé



Is there enough capacity?





CryptoKitties

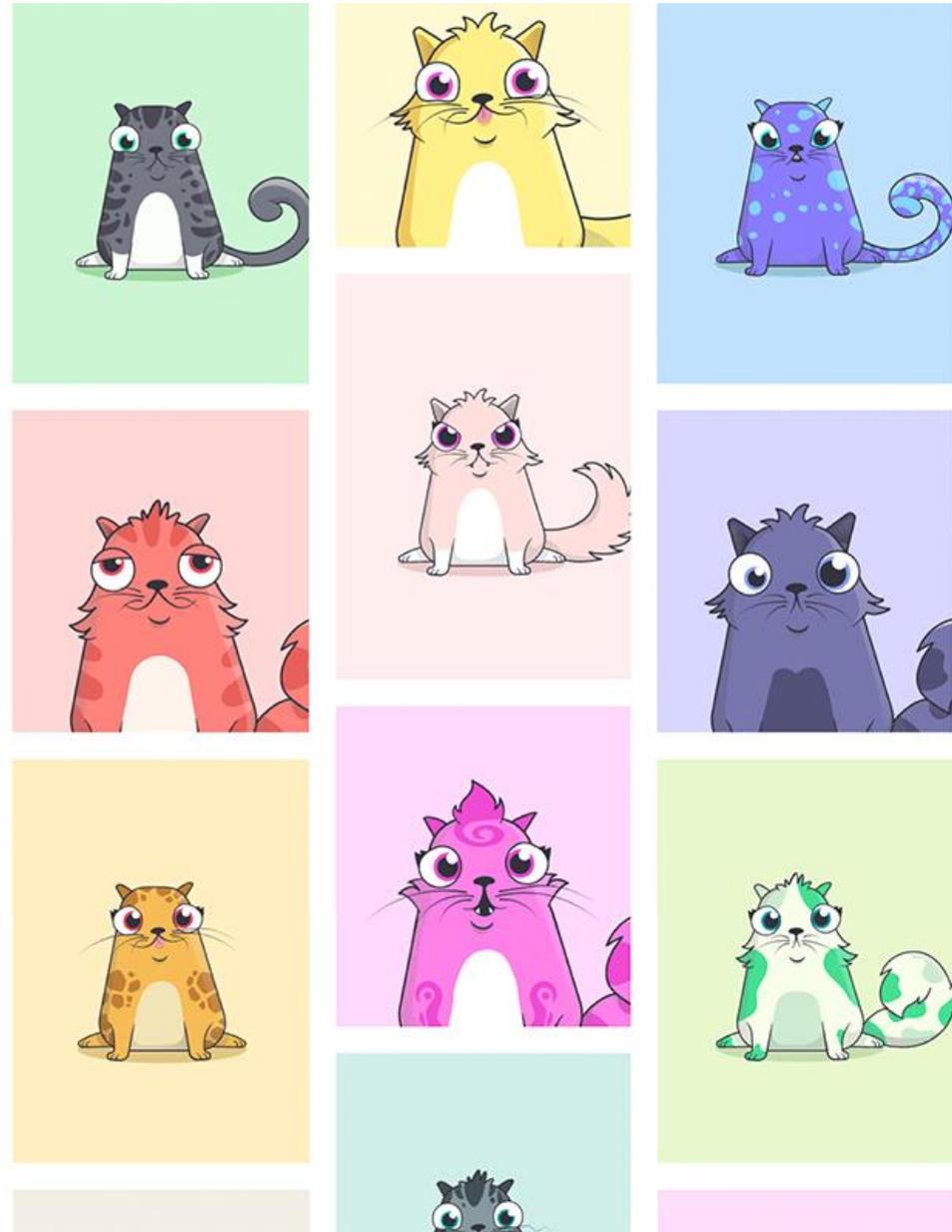
Sign in

Marketplace

# Collectible. Breedable. Adorable.

Collect and breed digital cats.

Start Meow



# Ethereum's blockchain is jamming up because of a new game that lets people buy virtual cats



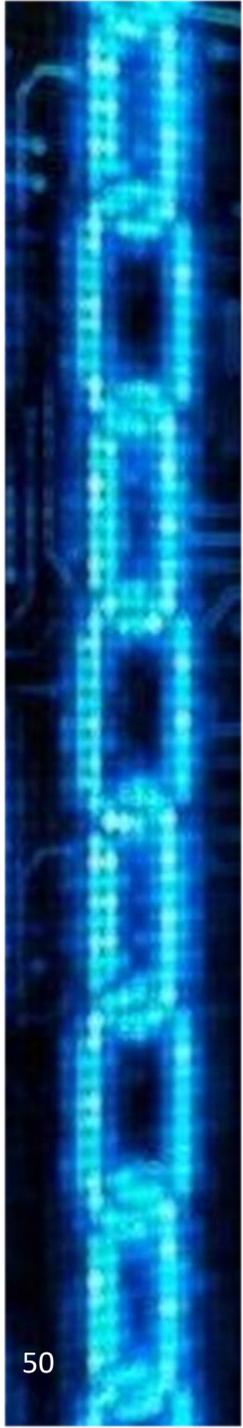
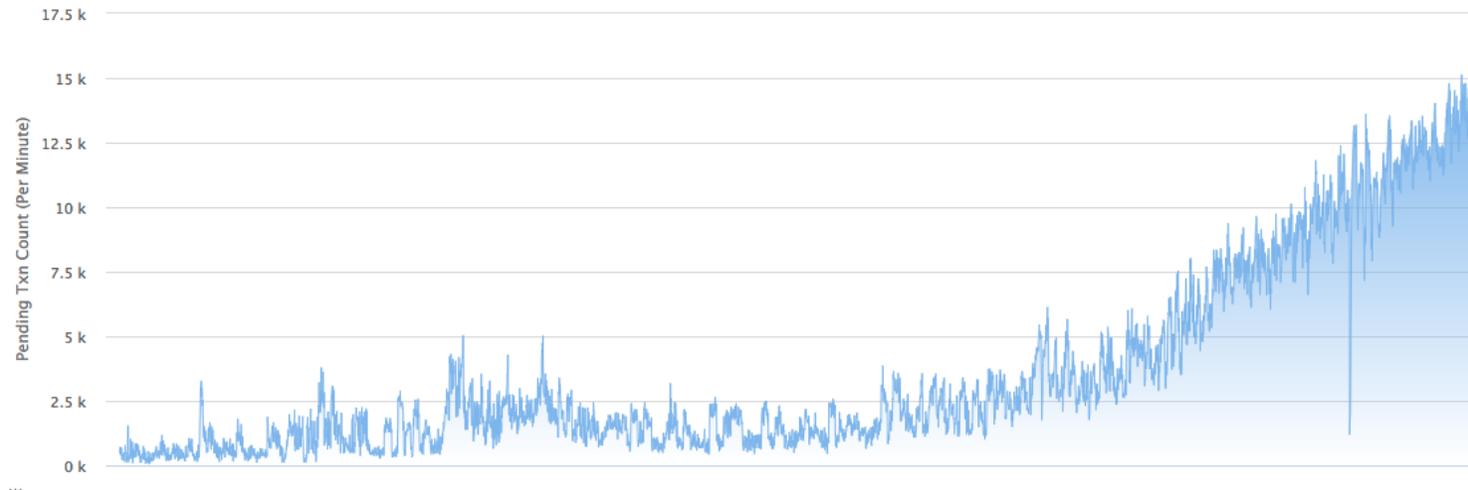
Frank Chaparro

© Dec. 4, 2017, 3:42 PM 🔥 19,363



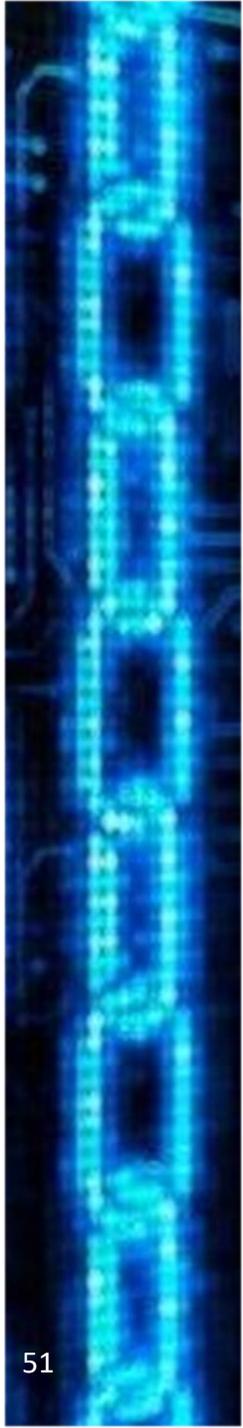
Ethereum Pending Transactions Queue – Time Series

Source: Etherscan.io  
(From 7/30/2015 to 12/4/2017)  
Click and drag in the plot area to zoom in



# Comparing Capacity

	Transactions Per Second
	24,000
 ethereum	15
 ripple	1,500
	7,000



# Enabling off-chain and scaling solutions



Off-chain scaling solution for performing ERC20-compliant token transfers



A novel incentive structure guarantees fast, reliable, and affordable results without third-party trust.

Plasma

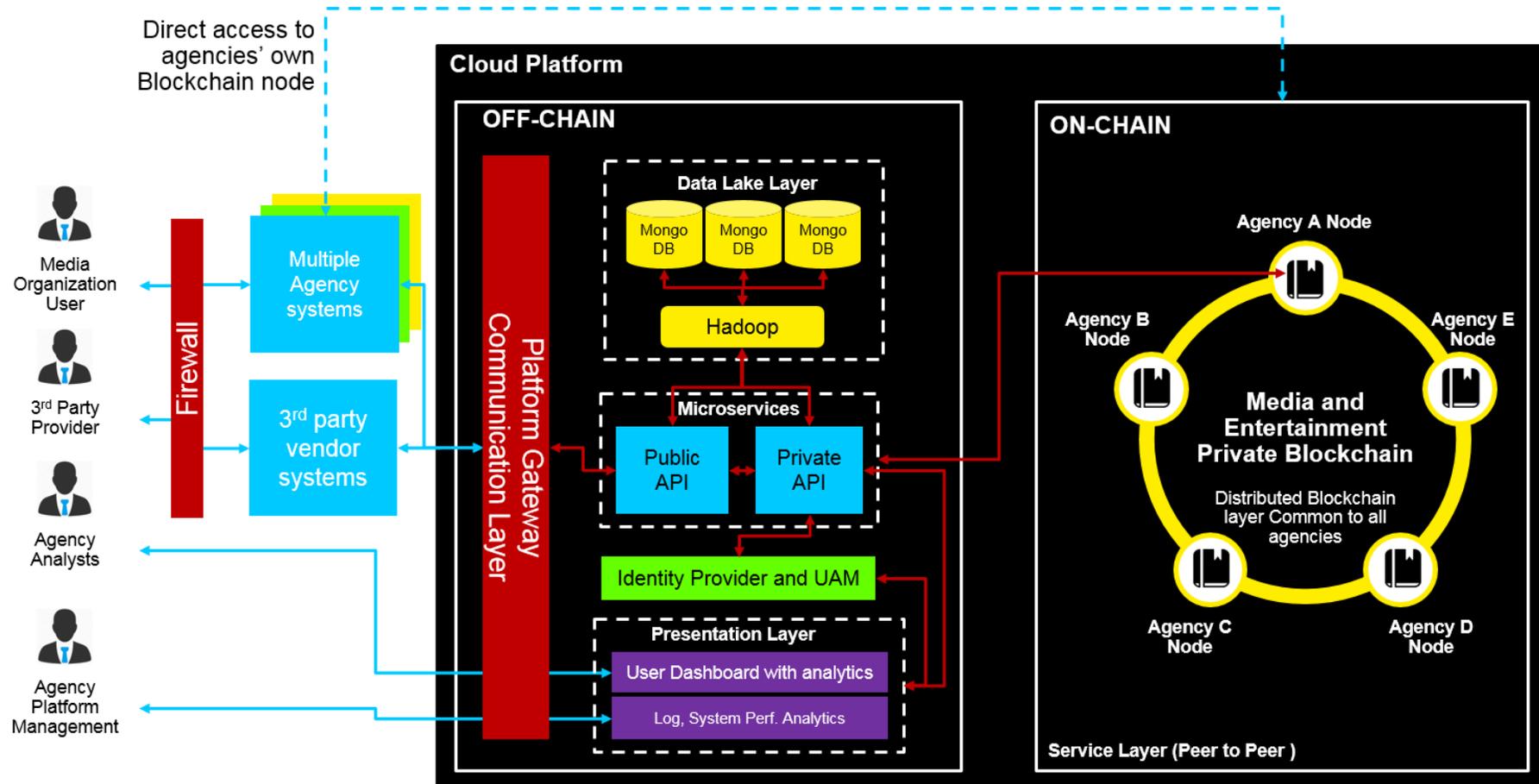
Proposed framework for incentivized and enforced execution of smart contracts which is scalable to potentially billions of state updates per second



IOTA Tangle enables companies to explore new B2B models by making every technological resource a potential service to be traded on an open market in real time, with no fees.



# Enabling off-chain and scaling solutions



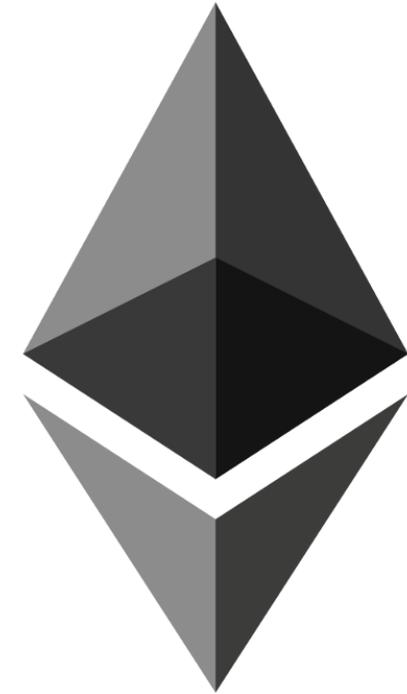
# Blockchain Applications



# ERC\*-20 Tokens

- Used by Decentralized Applications (Dapps)
- A cryptocurrency built on top of Ethereum
- Smart Contracts platform
- Used in vast majority of Initial Coin Offerings (ICO's)
- Token creation and transaction MUST follow ERC-20 rules
- Over **37,000 Token Contracts**‡

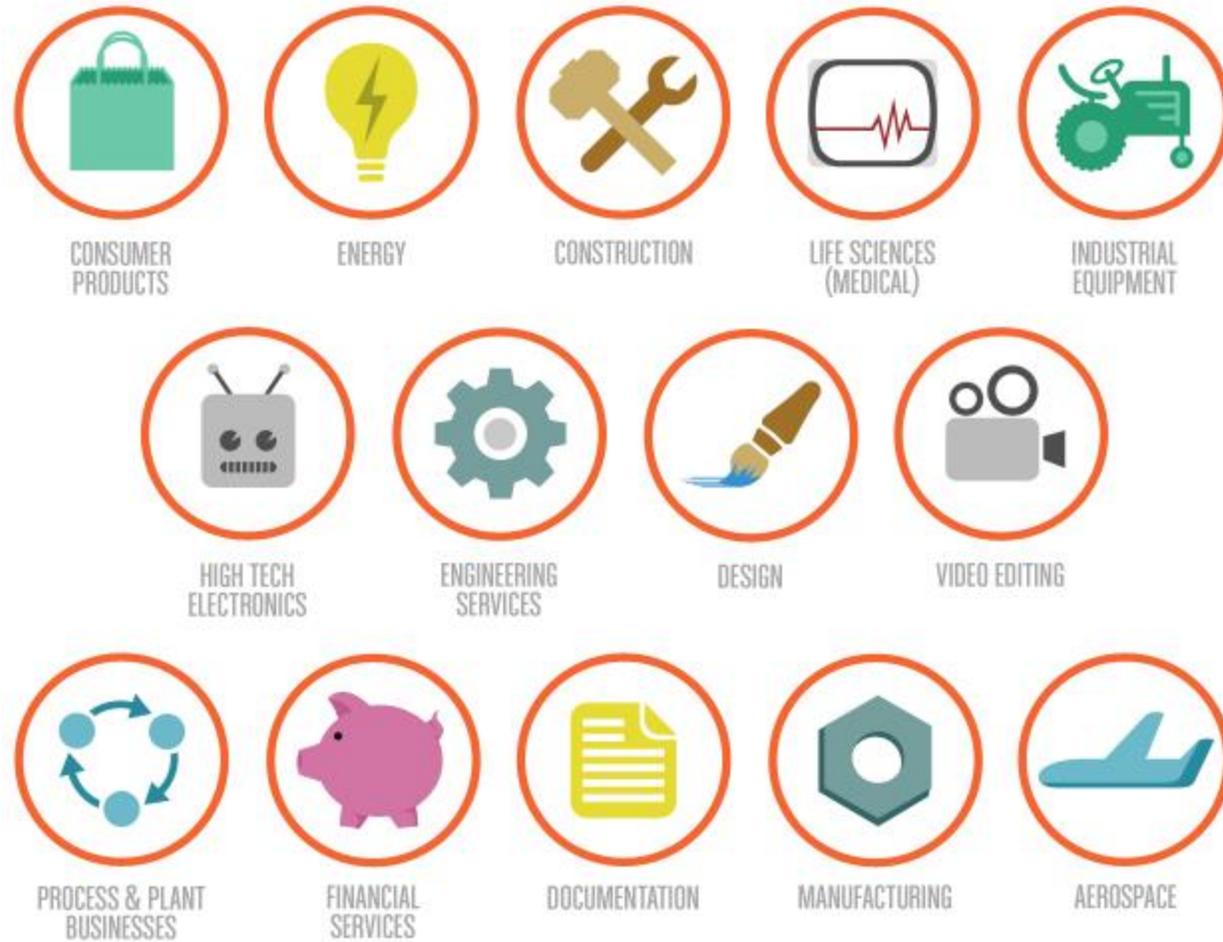
# ERC20



\*ERC = Ethereum Request for Comments

‡Source: <https://etherscan.io>

# Blockchain Tokens now in every industry



# Blockchain Tokens now in every industry



**BANANA  
COIN**

**World's first  
blockchain option  
for investing in  
production of  
*organic bananas***

Bananacoin is a new  
Ethereum based token  
that is tied to the price of  
**1 kg of bananas** on the  
international market





# Useless Ethereum Token

## The world's first 100% honest Ethereum ICO.

You're going to give some random person on the internet money, and they're going to take it and go buy stuff with it. Probably electronics, to be honest. Maybe even a big-screen television.

Seriously, don't buy these tokens.

The UET crowdsale has finished. Thanks to everyone who contributed!

(Regardless of the fact that none of you read any of the warnings on this page.)

You can view the token contract and transactions on Etherscan.

### Crowdsale Statistics

Ether contributed

310.445

I had a feeling someone would waste their money.

Contributions in USD

\$328960

Enough to buy 274 televisions!

Tokens issued

3965716.097

Including 591.000 bonus tokens!

<https://uetoken.com/>

22 February 2018

Blockchain for the Business - S Wong and P Ludé

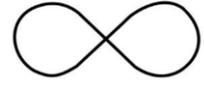
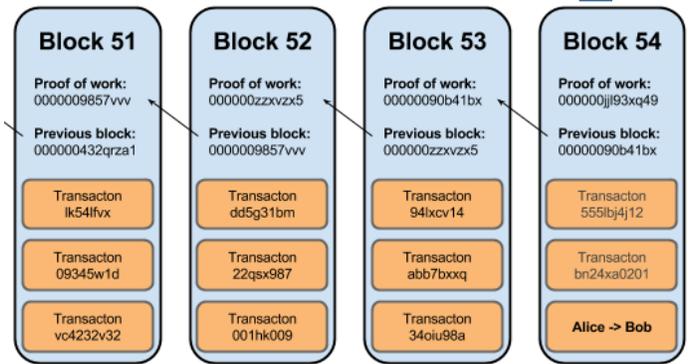
# Hollywood Implementation



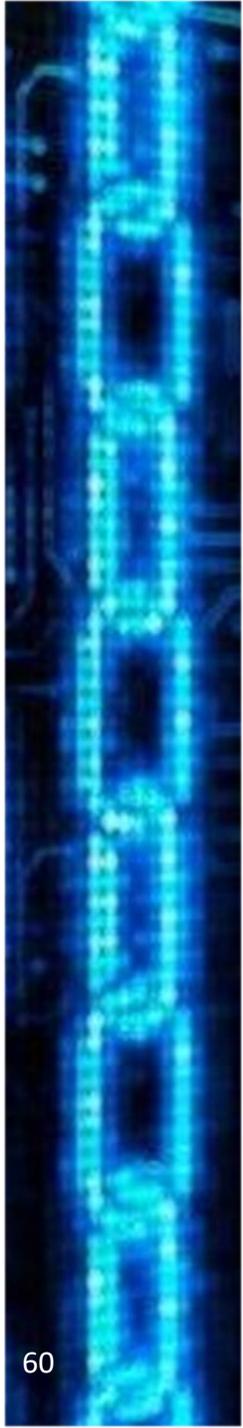
# The Hollywood Hustle



© Script Sells Produce Distribute



INFINITY



# Blockchain: For Pre-Production

## Cryptographic hash

Steve sends his script to his agent Alice. To protect his work, Steve encrypts it using Steve's public key.

Alice receives the script from Steve. In order for her to see Steve's script, Alice decrypts it using her private key.

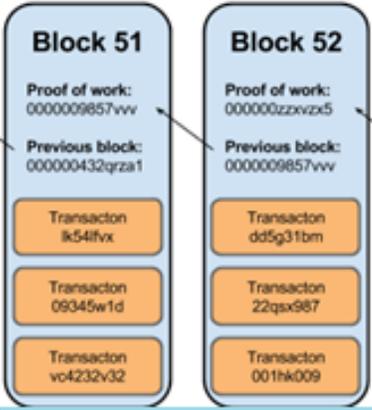
5Jza1DZn2mBvrm  
MdBLVbQjSu33oK  
CjpkVbwo8jX6vE  
tZBpSsaEt

Steve  
PubKey

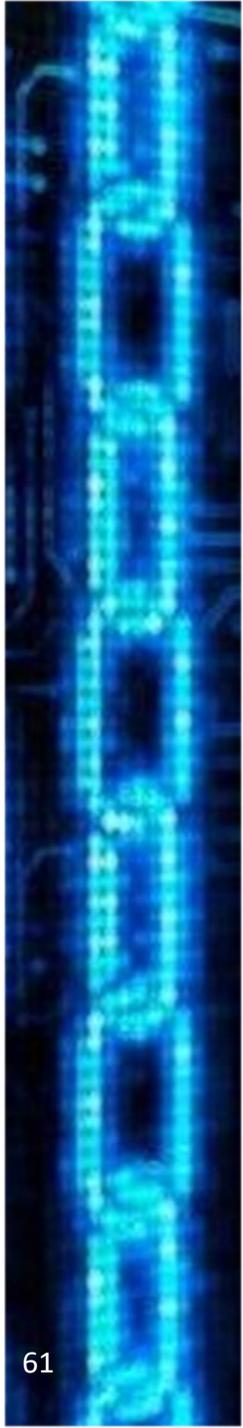
(Script) PublicKey Steve

Alice  
PrKey

1QGGBQEKgxxjqth4Q  
Tbiqz1UFpulpcotGF



22 February 2018



# Blockchain: For Production

## Cryptographic hash

DIT / Data Manager Dave uploads digital dailies to editor Kim. To protect his work, Dave encrypts it using his public key.

Kim receives the camera file from Dave. In order for her to see Dave's camera file, Kim decrypts it using her private key.

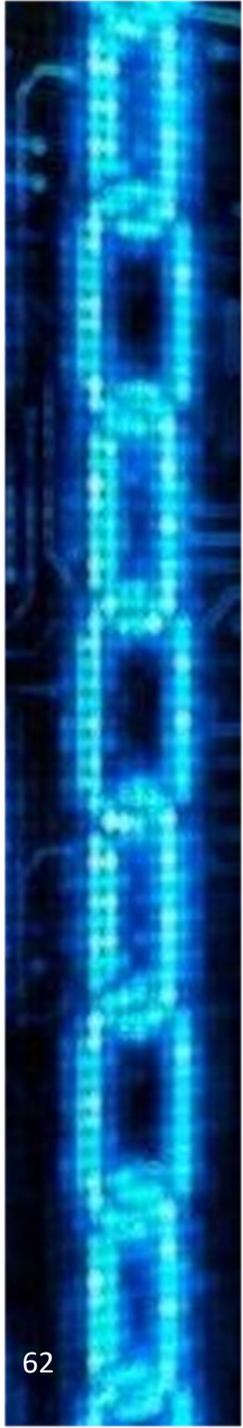
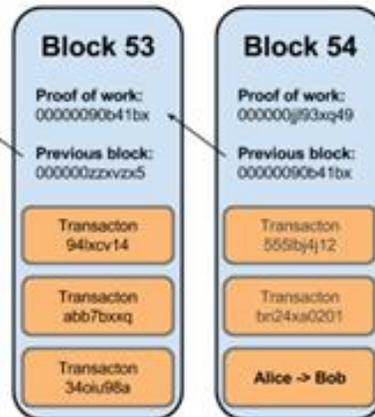
5Jza1DZn2mBvrm  
MdBLVbQjSu33oK  
CjpkVbwo8jX6vE  
tZBpSsaEt

Dave  
PubKey

(Camera File) PublicKey  
Dave

Kim  
PrKey

1QGGBQEKgxxjqtH4Q  
Tbiqz1UFpulpcoTGF



# Blockchain: For Distribution

## Cryptographic hash

XYZFlix streams a movie viewer Tom . To protect their licensed movie, XYZFlix encrypts it using their public key.

Tom receives the movie file from XYZFlix. In order for Tom to see the movie, Tom decrypts it user his private key

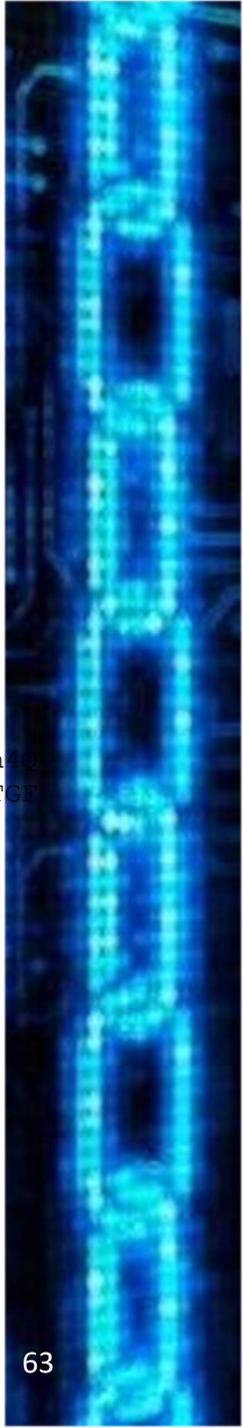
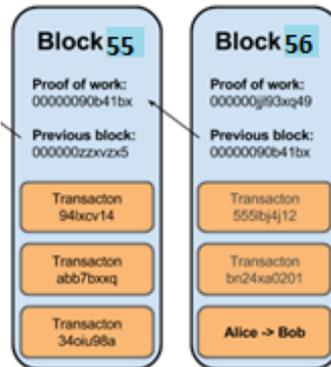
5Jza1DZn2mBvrm  
MdBVLvQjSu33oK  
CjpkVbwo8jX6vE  
tZBpSsaEt

XYZFlix  
PubKey

(Camera File) PublicKey  
Dave

Tom  
PrKey

1QGGBQEKgxxjqth4Q  
Tbiqz1UFpulpcoTGF



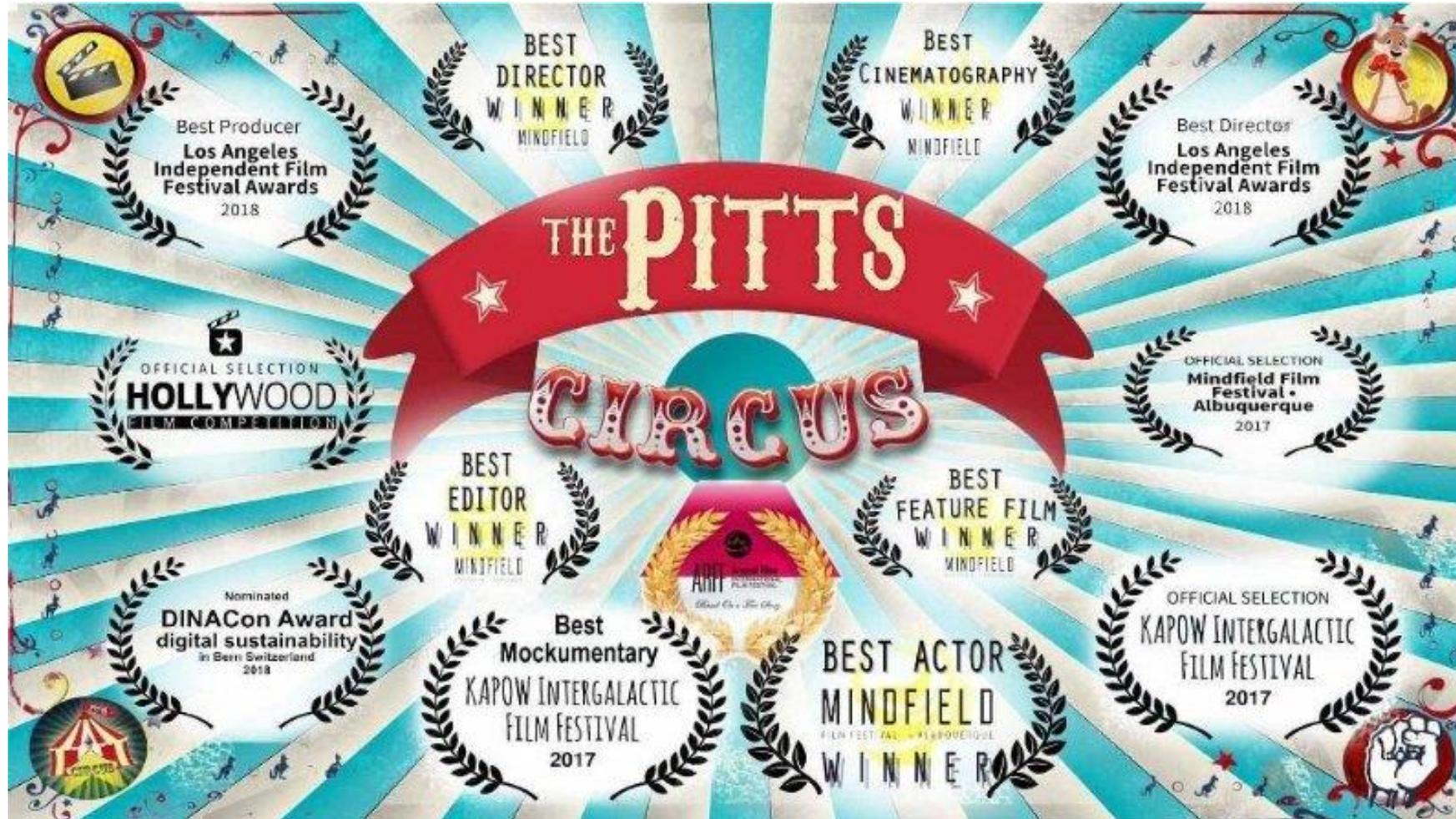
# Some Current Examples



# Feature Film Financing



# Feature Film Financing



# Feature Film Financing



The image is a screenshot of a web article from Deadline Hollywood. The page has a blue header with the 'DEADLINE HOLLYWOOD' logo and a search bar. Below the header is a navigation menu with links for HOME, FILM, TV, AWARDSLINE, BOX OFFICE, BUSINESS, INTL, VIDEO, JOBS, and GOT A TIP?. The main headline is 'Film Slate To Be Financed By Digital Currency And Distributed Via Blockchain'. The author is Bruce Haring, and the article was published on December 7, 2017, at 8:15pm. There are social media sharing icons for Facebook, Twitter, Google+, LinkedIn, and email. A photo of a woman is featured in the article, with the caption 'SingularDTV'. A sidebar on the right lists categories: BUSINESS, BREAKING NEWS, DEVELOPMENT, DIGITAL, TECHNOLOGY, ETHEREUM, and GROUND CONTROL ENTERTAINMENT. The main text of the article begins with 'EXCLUSIVE: In what may be the first group of features to be financed by cryptocurrency and distributed via the blockchain, a consortium of companies plans to release *New Frontiers*, a sci-fi anthology of five segments that will combine into one feature.'

DEADLINE | HOLLYWOOD

Search

HOME | FILM | TV | AWARDSLINE | BOX OFFICE | BUSINESS | INTL | VIDEO | JOBS | GOT A TIP?

## Film Slate To Be Financed By Digital Currency And Distributed Via Blockchain

by Bruce Haring  
December 7, 2017 8:15pm

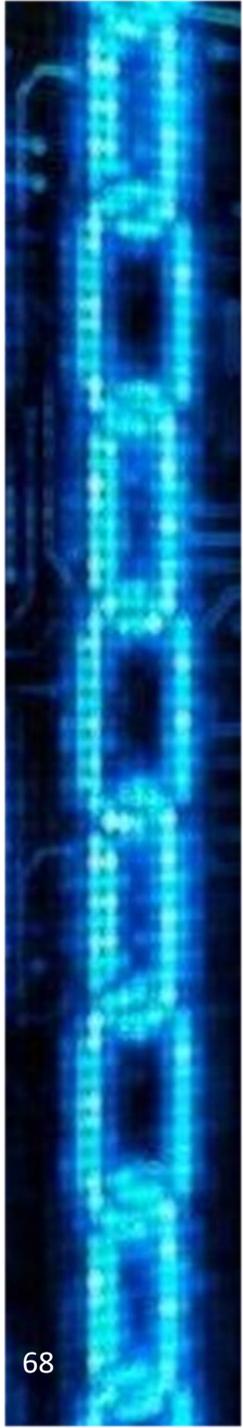
f t g+ in 5 e p

▶ BUSINESS  
▶ BREAKING NEWS  
▶ DEVELOPMENT  
▶ DIGITAL  
▶ TECHNOLOGY  
▶ ETHEREUM  
▶ GROUND CONTROL ENTERTAINMENT

SingularDTV

**EXCLUSIVE:** In what may be the first group of features to be financed by cryptocurrency and distributed via the blockchain, a consortium of companies plans to release *New Frontiers*, a sci-fi anthology of five segments that will combine into one feature.

# Feature Film Financing



# Feature Film Financing

THE FIRST MAJOR FEATURE FILM  
TO BE FUNDED THROUGH  
**AN ETHEREUM CROWDSALE**



## CAMPAIGN STATS

1.7m

USD Raised  
/Tokens Issued

1.7m

Funding Goal  
(USD)

# Production & Post Production Workflow



# Blockchain for Computing & Rendering



Global, open source, decentralized supercomputer that anyone can access. It is made up of the combined power of users' machines, from PCs to entire data centers.



The first network to transform the power of GPU compute into a decentralized economy of connected 3D assets.



Open Source project aimed to create a decentralized trustless SuperComputer by utilizing cryptography and blockchain technology.



# Distributed Computing Example: Render Token



- >50,000 GPU's in today's public cloud
- 247 million GPU's available on the internet
- If RNDR tokens leverage 1% ...
- Equivalent of \$21 billion of central cloud infrastructure



US009197642B1

(12) **United States Patent**  
**Urbach**

(10) **Patent No.:** **US 9,197,642 B1**  
 (45) **Date of Patent:** **Nov. 24, 2015**

---

(54) **TOKEN-BASED BILLING MODEL FOR SERVER-SIDE RENDERING SERVICE**

(75) Inventor: **Julian Michael Urbach**, Sherman Oaks, CA (US)

(73) Assignee: **OTOY, INC.**, Los Angeles, CA (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1173 days.

(21) Appl. No.: **12/964,153**

(22) Filed: **Dec. 9, 2010**

**Related U.S. Application Data**

(60) Provisional application No. 61/285,283, filed on Dec. 10, 2009.

(56) **References Cited**  
 U.S. PATENT DOCUMENTS

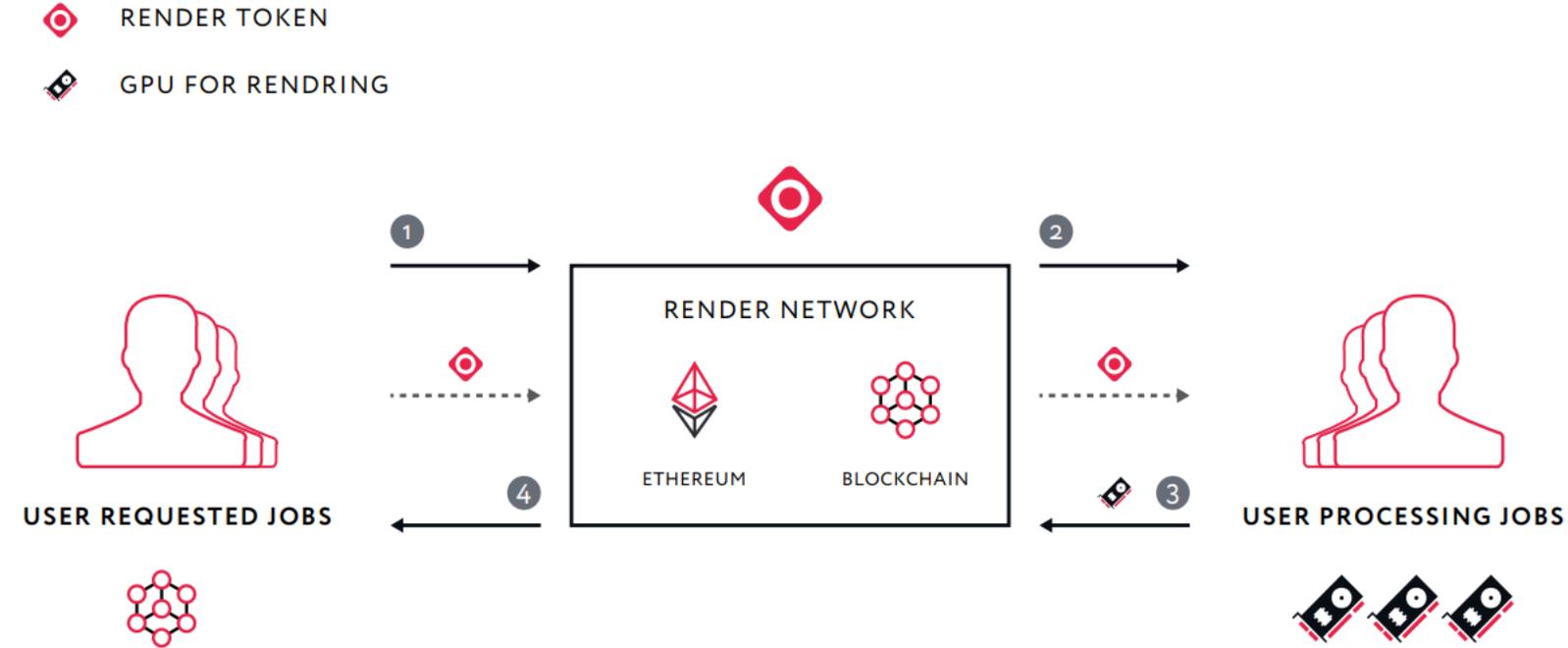
6,117,188	A *	9/2000	Aronberg et al.	717/176
2008/0271130	A1 *	10/2008	Ramamoorthy	726/9
2009/0019163	A1 *	1/2009	Pecus	709/226
2009/0183243	A1 *	7/2009	Ruppert et al.	726/5
2009/0313477	A1 *	12/2009	Park et al.	713/182
2010/0077216	A1 *	3/2010	Kramer et al.	713/172
2010/0146512	A1 *	6/2010	Chen et al.	718/103
2010/0235882	A1 *	9/2010	Moore	726/3
2010/0251352	A1 *	9/2010	Zarchy et al.	726/9
2010/0325441	A1 *	12/2010	Laurie et al.	713/185
2011/0093371	A1 *	4/2011	Clemm et al.	705/34
2011/0296521	A1 *	12/2011	Bernabeu	726/19
2012/0039326	A1 *	2/2012	Chia et al.	370/342

\* cited by examiner

*Primary Examiner* — Jungwon Chang  
 (74) *Attorney, Agent, or Firm* — James J. DeCarlo; Greenberg Traurig, LLP

# RNDR

## RENDER SYSTEM FLOW



# Blockchain for Music rights



A platform letting music fans share ownership with artists in their favorite songs



Rights Management, Decentralized Storage, Metadata repository



A growing collective of music professionals, music lovers and tech partners,



Unique currency, fair compensation, transparent contracts and no intermediaries



Innovative cryptocurrency powered solution for the music industry that allows artists to monetize their work in a collaborative P2P marketplace.



# Blockchain for Music rights



Three of the largest member-owned collection societies in the world announced a “groundbreaking partnership” to prototype a new shared system of managing authoritative music copyright information using blockchain technology.



# Blockchain for Storage

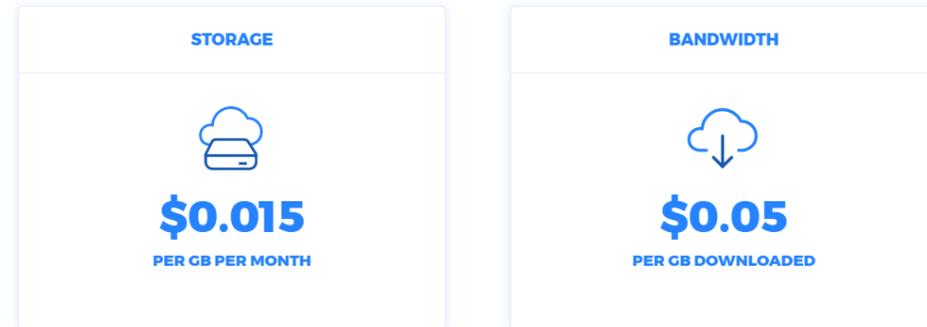


**STORJ.IO**

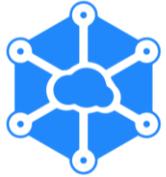
Blockchain-based, end-to-end encrypted, distributed object storage, where only you have access to your data

## Simple pricing

Pay only for what you use. No setup fees, no minimum usage.



# Blockchain for Storage



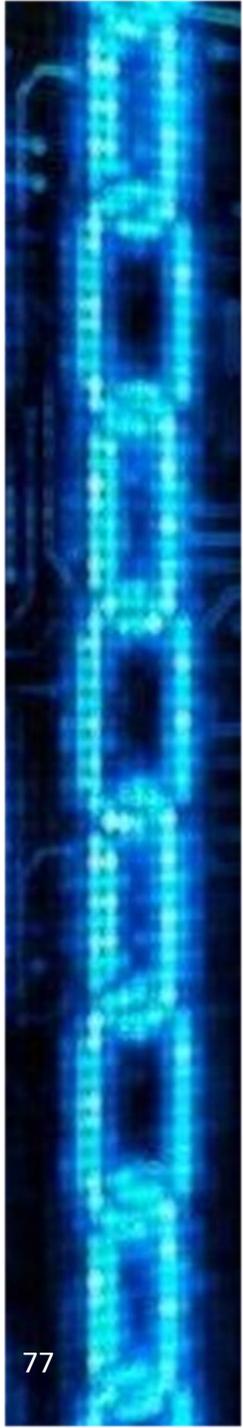
**STORJ.IO**

Blockchain-based, end-to-end encrypted, distributed object storage, where only you have access to your data

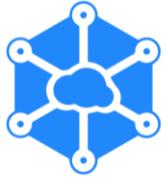


Sia is the first decentralized storage platform secured by blockchain technology.

How many TB?



# Blockchain for Storage



**STORJ.IO**

Blockchain-based, end-to-end encrypted, distributed object storage, where only you have access to your data



Sia is the first decentralized storage platform secured by blockchain technology.



**Filecoin**

A decentralized storage network that turns cloud storage into an algorithmic market.



# Blockchain for Distribution



Blockchain-based decentralized protocol for a worldwide free content entertainment system



Decentralized video infrastructure for web streaming, with tokens for payment



Video sharing platform based on blockchain, where authors are paid for their content, and users are rewarded for watching free videos.



Tokens designed to decentralize the buying, selling, and rewarding of attention across media platforms, including Spectiv VR and 360-video



Blockchain Based Token to Connect Creators and Consumers of Digital Media



# Blockchain for Advertising



Allows brands make ad buys on both broadcast and OTT TV using blockchain technology.



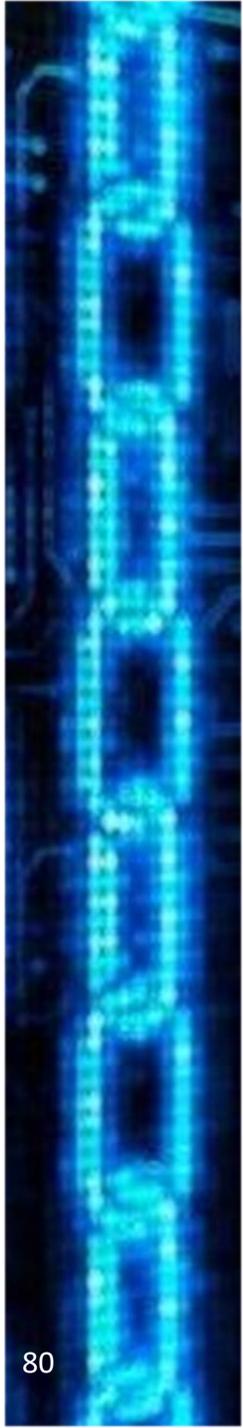
Basic Attention Token radically improves the efficiency of digital advertising by creating a new token that can be exchanged between publishers, advertisers, and users.



The first blockchain ecosystem dedicated to advertising: a new foundation for creating a trusted pipeline for data exchange and collaboration



Allows the digital advertising supply chain to coordinate in a scalable, trustworthy and secure way using the blockchain



# Blockchain Implementation Considerations



# Permissionless vs Permissioned Blockchains

A question of control and trust

## Permissionless Blockchains



Trust is enforced by Cryptographic proof from the Software Protocol

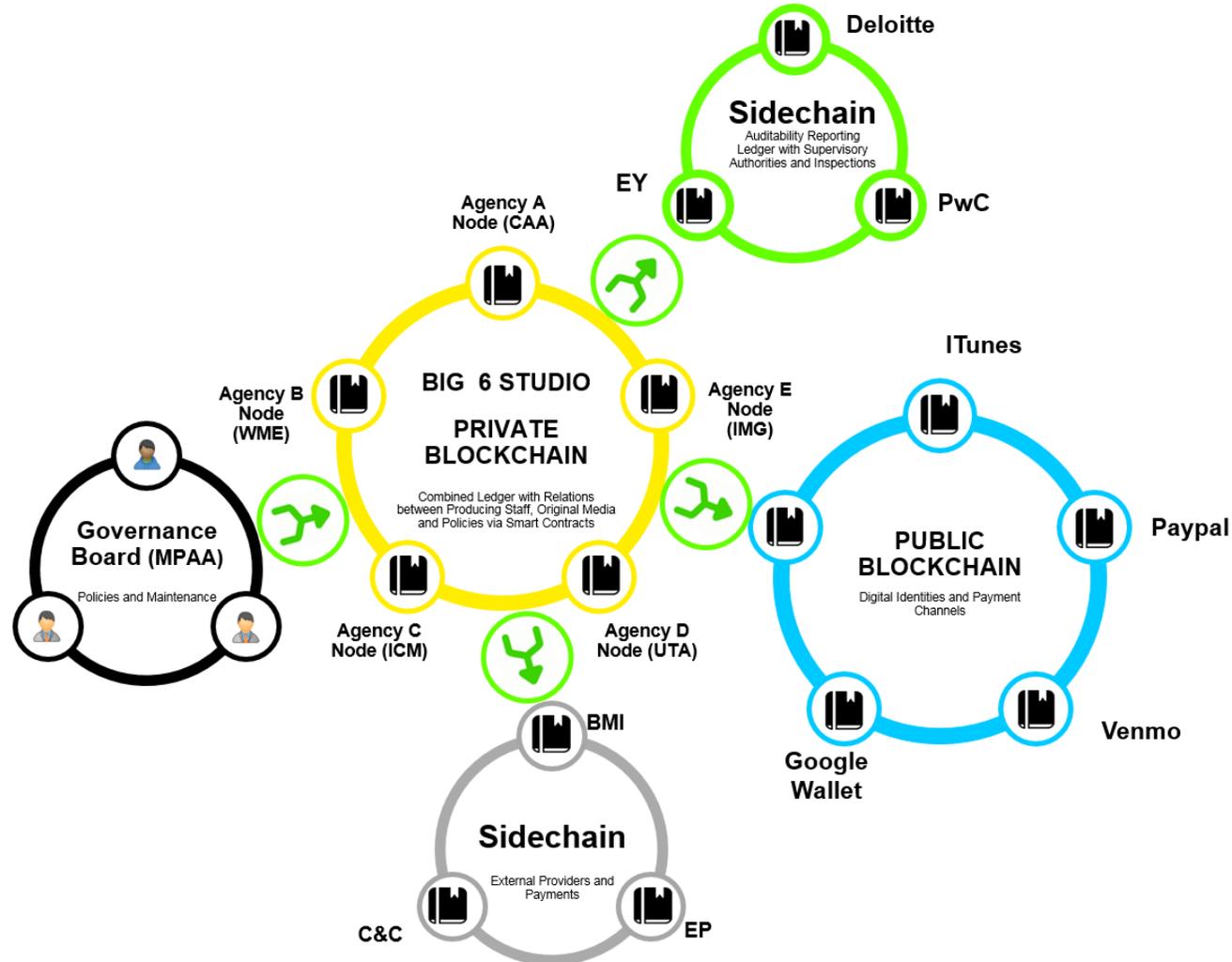
## Permissioned Blockchains



Trust is enforced through restricted access to transaction validation

# Blockchain: Disintermediated Style of Hollywood Business

		1d3981ba1e1892a8754666 6766b83d6a10a6341db303 863a19fd63c2e90599e1
Writer		
		9cb2832ca2366f088a8eab 3657dd39879431c3a0c23 8bb224d7a790ca2a96d4
Production		
		98ee4021c6f1b0e4e4ad7c b7a1dcca8b61520b695d5a 6e92ea8a5d3a6af77259
Distribution		
		681927e34b77e4b91b1f6f 305d9ede004ad0b0227c81 ff74d8f7015e1b8e9c4e
Licensee		
		fefb4ac0bc602c600d94d9 f7b0c32ae6e6e1d413f 06eb7e9a8295eab81e03
Viewer		



# Summary

- Blockchain is a distributed, peer-to-peer ledger
- It is the Underlying technology to cryptocurrency
  - But not *just* for Bitcoin...
  - A fundamentally useful technology for many B2B applications
- Can eliminate the need for intermediaries
- Not without risks
  - Security, Scaling, Power consumption, coding errors
- There will be lots of experimenting
  - Some scams
  - Many failures
  - But some impactful successes are likely!



# UNDERSTANDING BLOCKCHAIN FOR THE BIZ



**Steve Wong**

Cloud, Platforms & IT Outsourcing (CPI) Group

DXC Technology



@SteveWongLA



**Pete Ludé**

CTO

Mission Rock Digital

[pete@MissionRockDigital.com](mailto:pete@MissionRockDigital.com)