



The Blockchain & Cryptocurrencies  
*Blockchain in The Legal & Financial Sector – Fundamentals, Applications, & Tokenization*  
Joseph Raczynski, Technologist – Thomson Reuters  
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### Overview

- Brief Perspective of Technology Today: Exponential Growth
- Level Setting Blockchain
- What is Happening Now for Financial & Legal in this Space?
- Where will Blockchain take off in the Industry?
- ICOs the first “Killer App”



EXPONENTIAL TECHNOLOGIES



What does **LINEAR** growth feel like?

30 **Linear** Steps



You walk 30 yards

# LOCAL + LINEAR



Human Development over 250,000 Years

What does **EXPONENTIAL** growth feel like?

If you take 30 **EXPONENTIAL** steps...

You would travel around the earth **26 times**.

- 1 2 4 8 16 32
- 64 128 256
- 512 1024...

...1,073,741,824 yards  
i.e. 1 Billion



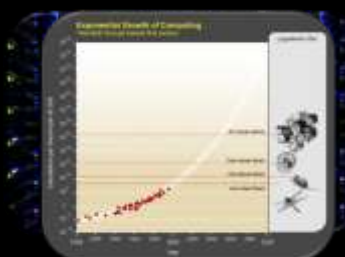
## Exponential Growth Impact



## Trinity of Forces – Cloud Storage



## Trinity of Forces – Processing Power



### Trinity of Forces – Artificial Intelligence

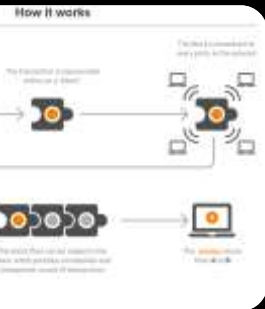


### BLOCKCHAIN

### History of Blockchain



- Peer to peer electronic cash transfer
- No central bank authority
- Relies on cryptography proof rather than trust
- Nodes agree/verify the history of the chain
- Winners of computational race earn bitcoin
- Solves the double spend problem

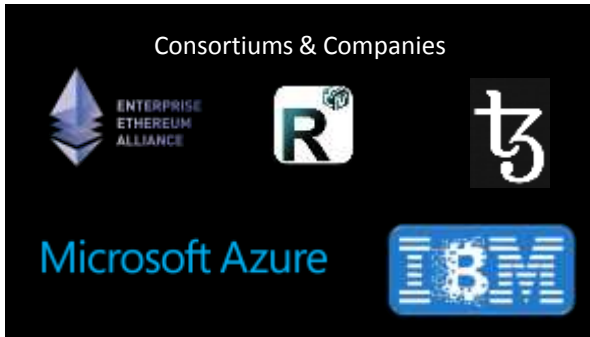


### What is Happening Now for the Industry?

### Legal & Financial Space

- **2016:** General Awareness Through Legal
  - 1.5 Billion Invested in last 18 months\*
  - All of the largest banks (50) in the world are involved – R3
  - Goldman Sachs: 11-12 Billion US saved yearly by clearing and settlement of cash securities
    - 2-4 Billion saved by moving real estate titles to the ledger
- **2017:** The Year of Pilots
  - Law Firms setting up Blockchain Practice Areas
  - Starting to take Bitcoin
  - Collaboration with Universities e.g. University College London
  - Year of the ICO
- **2018:** Real use of the technology
  - Banking & Insurance companies
  - Financial Industry – transactions (options, swaps, trading confirmations)





Where will Blockchain take off in the Legal Industry?

- ### Blockchain of Things (BoT)
- **Smart Contracts** – self executing legal documents
  - **Real Estate** – real estate transactions e.g. Honduras (Factom)
  - **Boardroom** – recording which C-suite voted for various proposals at a company
  - **Identity** – Passport (private & public blockchain) proof of validation – other info safe - **AML**
  - **Chain of Title** – track the ownership of a property back to creation
  - **Authentication** – verification of things like diamonds or signed sports memorabilia
  - **Notary services** – will be gone in the next few years
  - **Rental Contracts** – Airbnb vulnerable - creating a rental network (Slockit)
  - **Music Licensing** – Musicians directly selling music to their listeners (BitTunes)
  - **Money Transfer** – absolutely be impacted with money exchange (Western Union)

### Smart Contracts & Coding

```
function () {
  // ...
  if (this.contract.isApproved() == true) {
    // ...
    // ...
    // ...
  }
  // ...
}

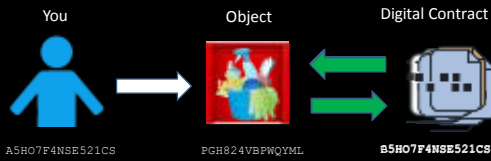
```



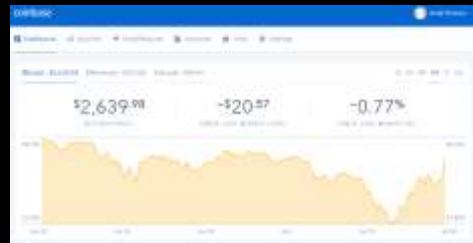
What the Future May Look like with Blockchain?

### Identity Shift: the Future with Blockchain

- DAO - Decentralized Autonomous Organization



### How To Buy and Send Money



### What is an ICO?

- **ICO:** Initial Coin Offering – a way to raise money for startups
- Company Website
- Whitepaper – Purpose – Timeline – Transfer Info
- “Donating” funds to the project via their website
- Transactions are stored on the Blockchain as a record – “smart contract”
- Users are given “tokens” or “coins” in exchange for their “donation” of Bitcoin (BTC) or Ethereum (ETH)
- Transfer those “coins” to your online wallet for you to hold
- Lastly, once the ICO time period is over, public exchanges then begin trading those coins



### Visualizations

- **Cryptomaps.org** is a “market-state visualization” tool that shows the relationship between different cryptocurrencies by the size of their market capitalizations and trade volumes.
- **Bitbonkers** is a unique website that shows the Bitcoin blockchain’s blocks and transactions with balls and squares that fall from the sky.



### Visualizations – cont.

- **Map of Coins** is an interesting website that displays the history behind the various altcoins in existence through a tree-like representation.
- Have you ever felt like you wanted to listen to bitcoin transactions happening in real-time? Well, with **Bitlisten**, now you can.



### ICO Demo

[Coin Schedule](#)

### Exchanges

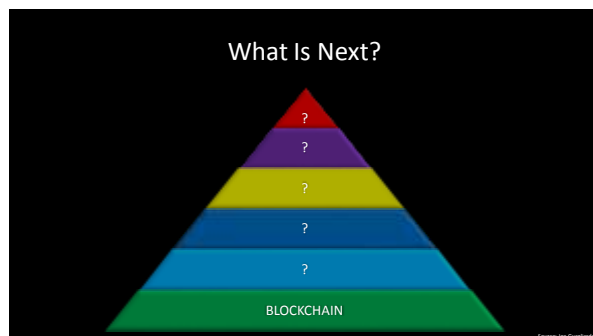
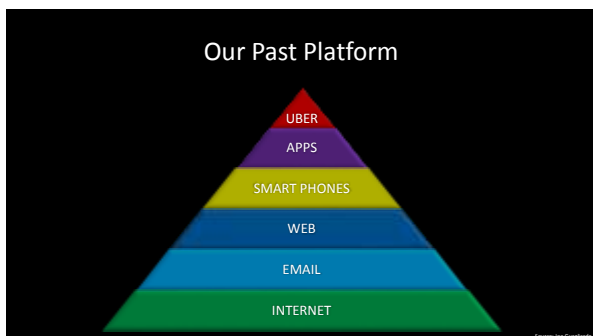
- [Poloniex](#)
- [Kraken](#)
- [Coinbase](#)
- [BTC-E](#)

### Legal Implications

- **Law Firms Help Launch ICOs**
  - Consultation on how to do it. Cooley, Perkins, Cole and Holland & Knight
- **Potential Class Action Suits — ICO Gone Amiss**
  - \$37 Million in Ether Stolen as People Refuse to Learn Their Lesson About Cryptocurrencies
  - SEC — Releases Warning — July 2017
- **AML — Anti Money Laundering Issues**
  - How do you track where, when and to whom money is going Globally
  - FINCIN — also primarily watching
- **Taxes**
  - How is this taxed? Currently seen as property.
  - How do you deal with people mining and their taxes?

### SEC Guidance

- Analysis on whether an offering is a security applies equally to the uses of new technologies such as ICOs
- But ICOs are not, by default, securities offerings - must carefully review the expectations and rights of the potential token holders
- Clear reminder that any securities offered and sold in the United States, regardless of form, must comply with the federal securities laws
- Without an exemption, any exchange on which such tokens are traded may need to register
- Person who receives compensation in connection with a token sale may be required to register as a broker-dealer
- Person who provides advice regarding the investment in or value of the tokens may be required to register as an investment adviser
- Company or fund that purchases tokens could be deemed an investment company



## Other Industry Terms

- Colored coins
- Sidechains
- Anchored chains
- Specialized chains
- Other Cryptocurrencies (200+)
- Blockchain Economy
- Blockchain of Things
- Oracles
- Tokens
- Augur

## Challenges

- Skeptics
- Ideological Motives – Antiestablishment Roots
- Regulatory
  - Privacy issues – sharing
  - Interoperability Fragmentation
  - Scalability
  - Need for standards
  - Technology driven solutions v Solutions Driven

## Questions & Quick Guide of Resources



- **Twitter:** [@joerazz](#)
- **Main Sites:**  
[JoeTechnologist.com](#) or [JosephRaczynski.com](#)
- **YouTube:** [Joseph Raczynski](#)
- **Topics:**
  - Blockchain
  - AI
  - Cybersecurity
  - Cloud
  - Portal
  - Big Data
  - AR/VR/MR
  - Drone Technology