

Leadership in Digital Uncertainty: New Strategy to Cope with the New Normal

Prepared for
IGF – Cameroon
Working Group



William Favre Slater, III
Chicago, Illinois
June 30, 2020

Agenda

- Executive Summary
- Introduction
- Why?
- The World in 2020
- Information Warfare
- The Internet
- Blockchain Technology
- Cybersecurity
- Types of Blockchains
- Why Blockchain solves problems
- Is There Hope?
- Conclusion
- Resources

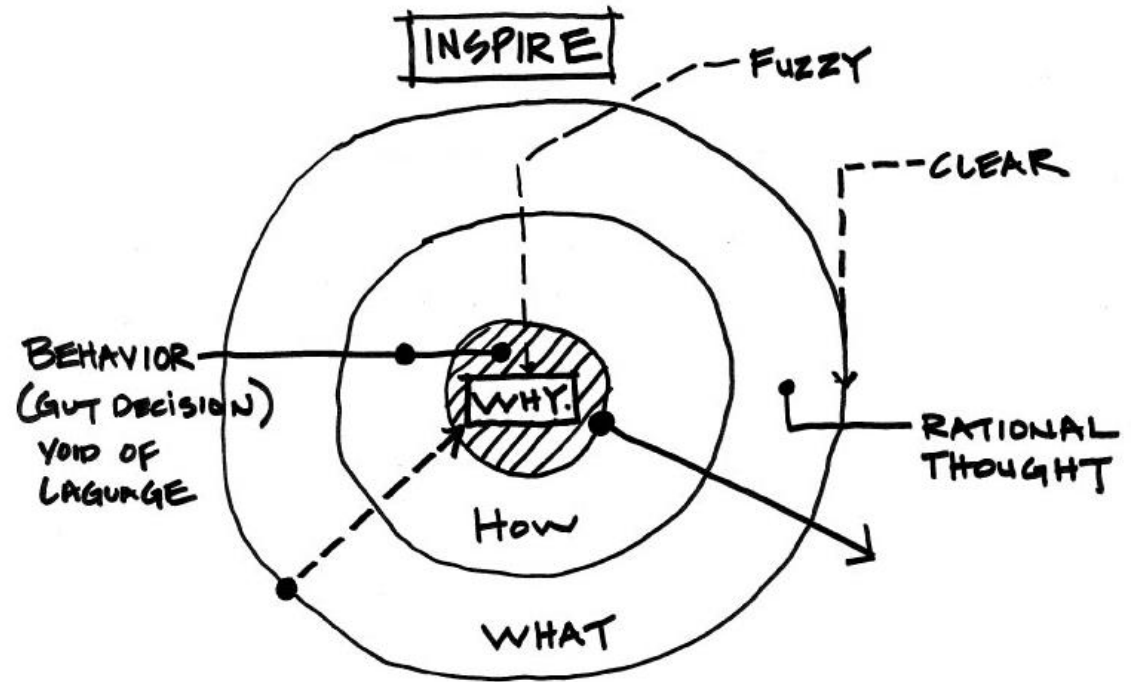
Executive Summary

- 2020 has brought the entire World many unexpected surprises and business challenges.
- For Leaders that are resourceful, Technologies such as the Internet, distributed & decentralized computing, and Blockchain offer great hope for the future.
- This presentation will discuss these technologies at a high level and show why they should be considered to help organizations perform the Digital Transformations that will help them embrace the challenges of the “New Normal” that we have all come to expect in 2020 and beyond.

Introduction

- This presentation will discuss at a high level
 - The World in 2020
 - Information Warfare
 - The Internet
 - Blockchain Technology
 - Cybersecurity
 - Types of Blockchains
 - Why Blockchain Solves Problems
 - Is There Hope?
 - Conclusion
 - Useful Resources

Why?



UNDERSTAND WHY ... (PURPOSE, CAUSE, BELIEF)

For more information about Start with WHY, please view Simon Sinek's legendary presentation: <https://www.youtube.com/watch?v=qp0HIF3SfI4>

The World in 2020

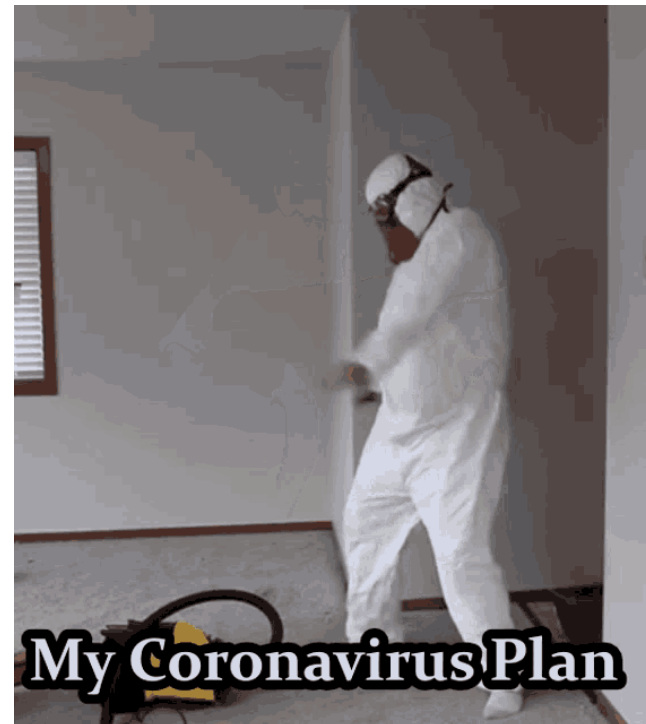


The World in 2020

Remember that ancient Chinese Curse, “May You Live in Interesting Times.”?

1. CoronaVirus
2. Global Pandemic
3. Economic Uncertainty
4. Layoffs
5. Civil Unrest & Riots
6. Lockdowns
7. Social Distancing
8. Teleworking
9. Masks
10. Contact Tracing
11. Fear Everywhere

AMERICAN HUMOR ALERT



(For maximum effect: Play
I Am Everyday People by
Sly and the Family Stone.)

7

CoronaVirus Heatmap – Johns Hopkins University – January 26, 2020



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CoronaVirus Heatmap – Johns Hopkins University - June 29, 2020

gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6

COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins Universit...

Total Confirmed
10,189,350

Confirmed Cases by
Country/Region/Sovereignty

- 2,557,980 US
- 1,344,143 Brazil
- 640,246 Russia
- 548,318 India
- 313,467 United Kingdom
- 279,419 Peru
- 271,982 Chile
- 248,770 Spain
- 240,436 Italy
- 225,205 Iran
- 216,852 Mexico
- 206,512 Pakistan
- 199,476 France
- 197,239 Turkey

Last Updated at (M/D/YYYY)
6/29/2020, 10:33:52 AM



188
countries/regions

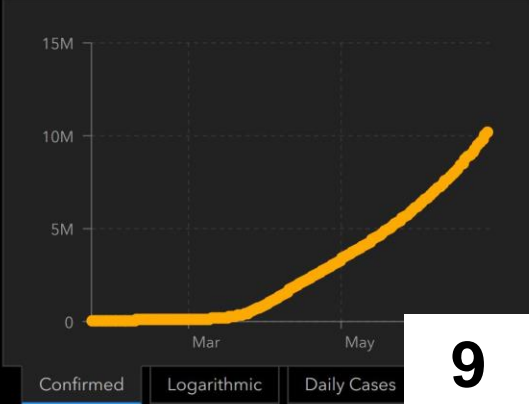
Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#).
Lead by JHU CSSE. Technical Support: [Esri Living Atlas team](#) and [JHU APL](#). Financial Support: [JHU](#) and [NSF](#). Click [here](#) to donate to the CSSE dashboard team, and other JHU COVID-19 Research Efforts. [FAQ](#). Read more in this [blog](#). [Contact US](#).

Global Deaths
502,719


- 125,864 deaths US
- 57,622 deaths Brazil
- 43,659 deaths United Kingdom
- 34,744 deaths Italy
- 29,781 deaths France
- 28,343 deaths Spain
- 26,648 deaths Mexico

US State Level
Deaths, Recovered

- 31,397 deaths, **70,010** recovered New York US
- 14,975 deaths, **30,092** recovered New Jersey US
- 8,059 deaths, **recovered** Massachusetts US
- 6,888 deaths, **recovered** Illinois US
- 6,606 deaths, **66,686** recovered Pennsylvania US



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"The future is
already here –
it's just not
evenly
distributed."
–William Gibson

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Information Warfare





"MAKE THE LIE BIG,
MAKE IT SIMPLE,
KEEP SAYING IT, AND
EVENTUALLY THEY
WILL BELIEVE IT."

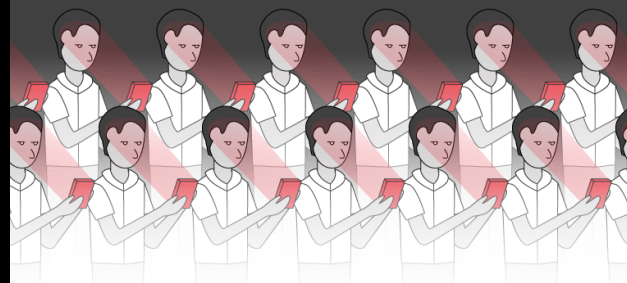
- ADOLF HITLER

Information Warfare

The use and management of information in pursuit of an advantage over an opponent, such as propaganda, disinformation, and gathering assurances that one's own information is accurate.

n. the use of information or information technology during a time of crisis or conflict to achieve or promote specific objectives over a specific adversary or adversaries

Source: https://en.wikipedia.org/wiki/Information_warfare

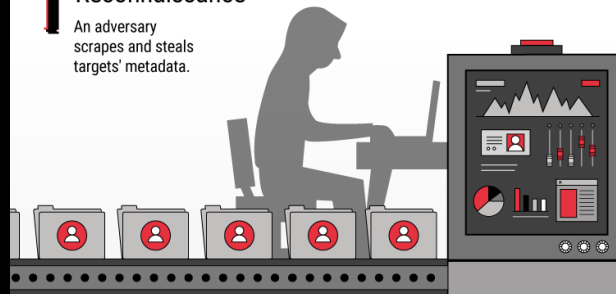


FUTURE OF INFORMATION WARFARE

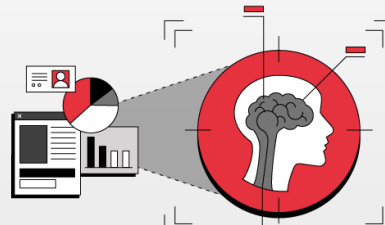
Wars of the future will use computational propaganda and advanced digital deceptions to distort the enemy's perception of reality and manipulate public opinion. The information warfare attack chain:

1 Reconnaissance

An adversary scrapes and steals targets' metadata.

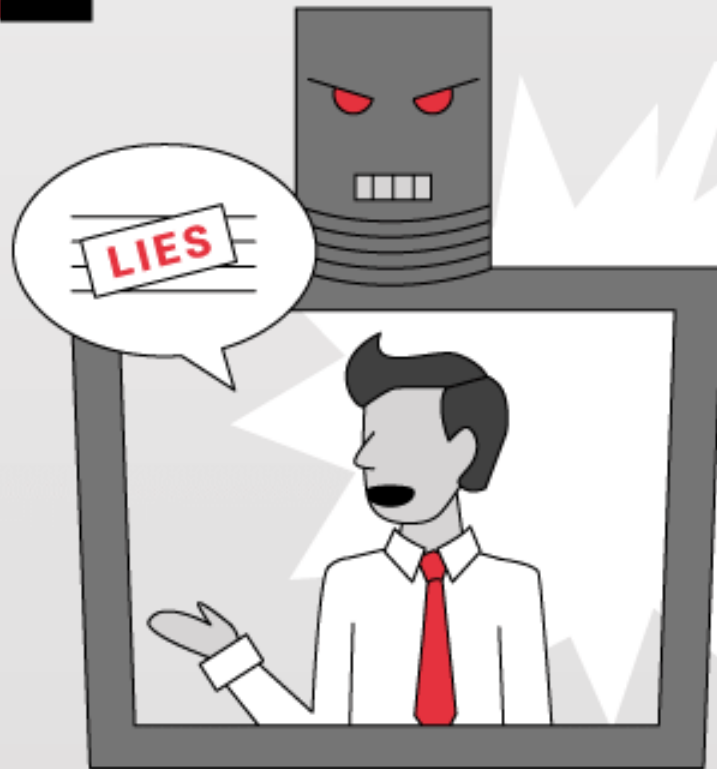


The adversary uses metadata to create a psychographic profile to identify targets' vulnerabilities.



Source: CB Insights. (2018) Memes That Kill Kill: The Future of Information Warfare. Retrieved on May 10, 2018 from <https://app.cbinsights.com/research/future-of-information-warfare/>.

2 Weaponization

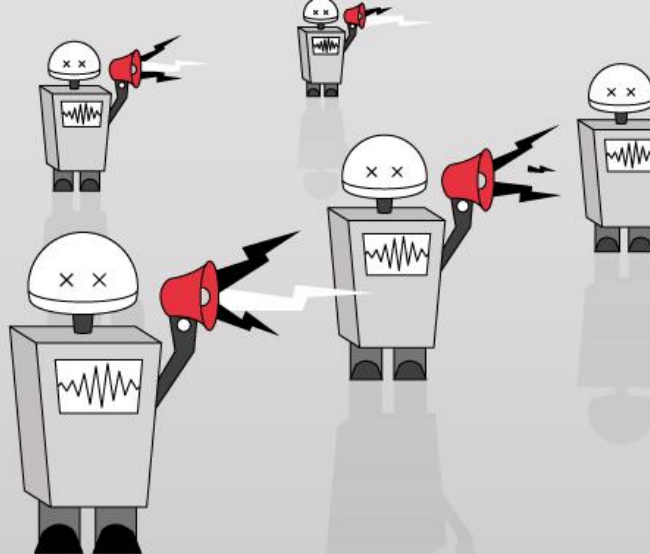


AI-enabled editing software is used to generate malicious fake video and audio content.

Source: CB Insights. (2018) Memes That Kill Kill: The Future of Information Warfare. Retrieved on May 10, 2018 from <https://app.cbinsights.com/research/future-of-information-warfare/>.

3 Attack

Bot armies strategically pump deceptive content into online information systems.

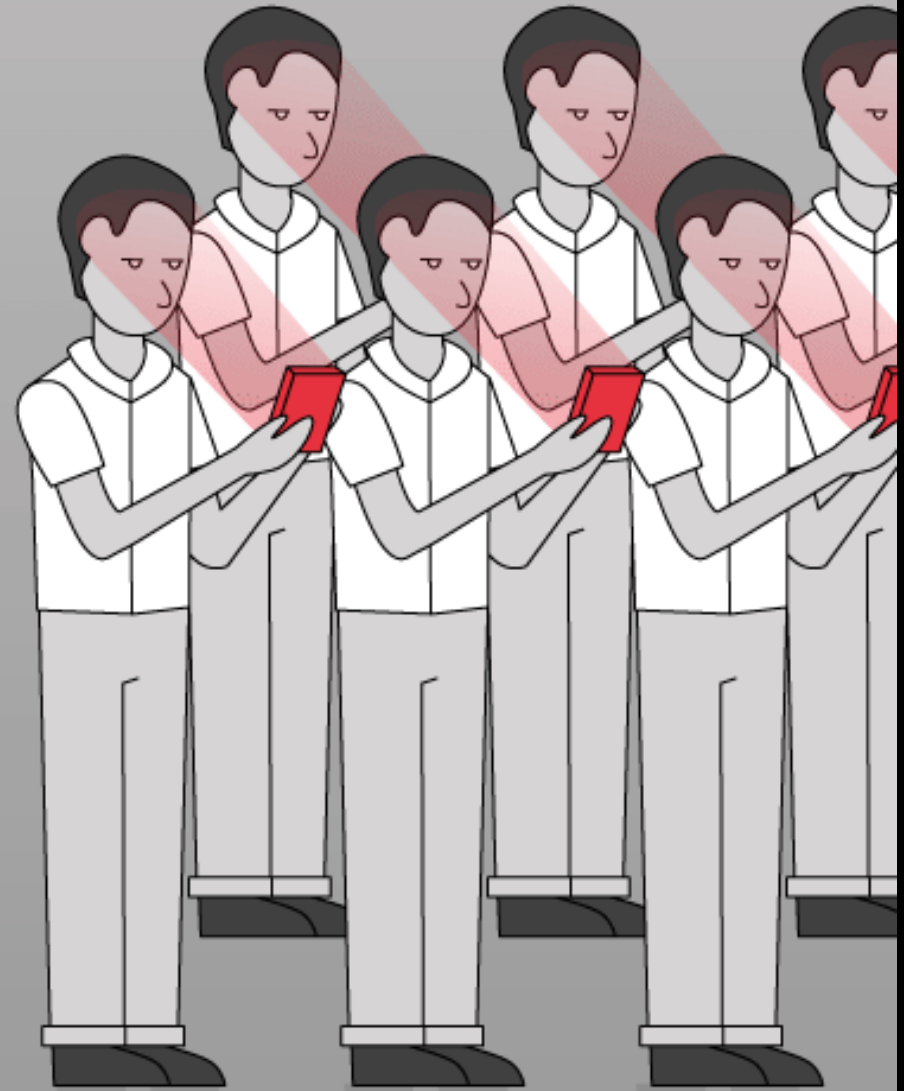


Machine learning-enabled bots feed content to people most likely to share faked media.

Source: CB Insights. (2018) Memes That Kill Kill: The Future of Information Warfare. Retrieved on May 10, 2018 from <https://app.cbinsights.com/research/future-of-information-warfare/>.

4 Infection

Social news feeds enable widespread sharing and viewing of deceptive content.



Source: CB Insights. (2018) Memes That Kill Kill: The Future of Information Warfare. Retrieved on May 10, 2018 from <https://app.cbinsights.com/research/future-of-information-warfare/>.

5 Destruction

Disinformation runs rampant online, eroding society's trust in institutions and leading to chaos, confusion, and even rebellion.



Source: CB Insights. (2018) Memes That Kill Kill: The Future of Information Warfare. Retrieved on May 10, 2018 from <https://app.cbinsights.com/research/future-of-information-warfare/>.

- **Rumor: most contagious of all social messages**
- **Kernel of truth in rumor (or urban legend) is distorted in 3 directions:**
 - **(1) Level story** (i.e., leave out details essential for understanding true meaning of incident)
 - **(2) Sharpen story** (i.e., make remaining details more specific)
 - **(3) Assimilate story** (i.e., change story so it makes sense to those spreading the rumor)
 - **Example: rumors of 9/11**



From "Tutorial: Military Memetics," by Dr. Robert Finkelstein, presented at Social Media for Defense Summit, 2011

TELEVISION PROGRAMMING

FEAR **PANDEMIC**

FEAR ISIS

FEAR TODAY

FEAR
TOMORROW

FEAR EACH
OTHER

FEAR RUSSIA

FEAR FOR
YOUR KIDS

FEAR CLIMATE
CHANGE

FEAR, FEAR, FEAR, FEAR, FEAR, FEAR

FEAR EVERYTHING AND THEN GIVE US
YOUR POWER SO WE CAN SAVE YOU

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A Brief History of The Internet

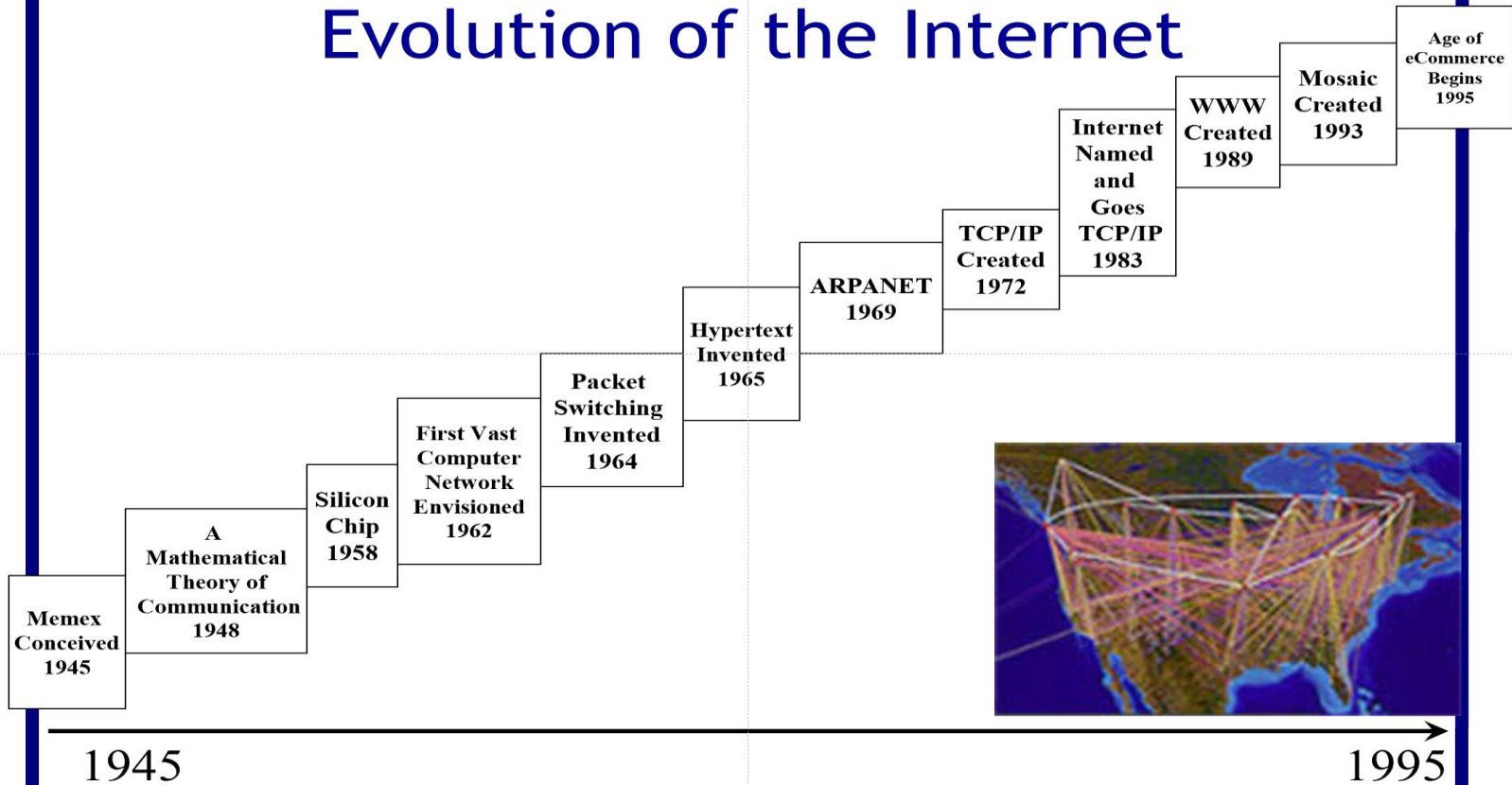


A Brief History of the Internet

- Telegraph
- Public Switched Telephone Network
- ARPANET
- The Internet
- The World Wide Web
- The Human Internet

A Brief History of the Internet

A Brief Summary of the Evolution of the Internet



What Happens on The Internet?

2019 *This Is What Happens In An Internet Minute*



A Brief History of Blockchain



What Is Blockchain?

- Distributed Ledger
- Decentralized
- Popularized by Satoshi Nakamoto (Bitcoin inventor)
- Uses Public-Key Cryptography and Hashing
- Append-only Transactions
- The Open Source Code already exists in Github (Bitcoin and Ethereum)
- Immutable (cannot delete blocks or change data in blocks)
- Driven by consensus protocol(s)
 - Proof of Work
 - Proof of Stake
 - Etc.
- The world's largest Blockchain Database is the Bitcoin Blockchain Database, with about 200 GB (it doesn't scale very well)

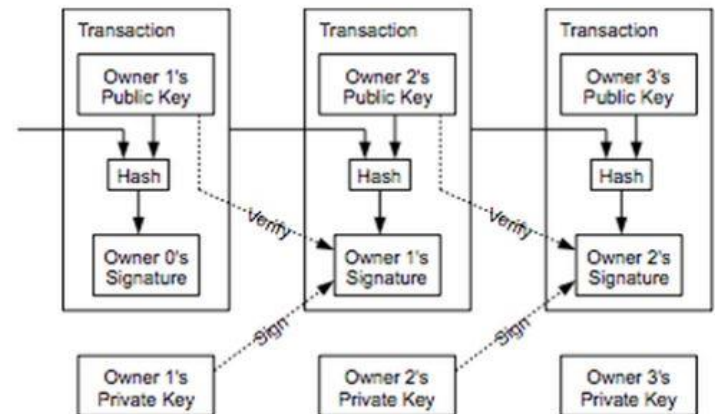


Image: Satoshi Nakamoto

What Is Blockchain?

From Blockchain Consensus Protocol Guide:

- A blockchain is a decentralized peer-to-peer system with no central authority figure.
- While this creates a system that is devoid of corruption from a single source, it still creates a major problem:
 - How are any decisions made?
 - How does anything get done?
 - Think of a normal centralized organization
- All the decisions are taken by the leader or a board of decision makers. This isn't possible in a blockchain because a blockchain has no "leader". For the blockchain to make decisions, they need to come to a consensus using "consensus mechanisms".

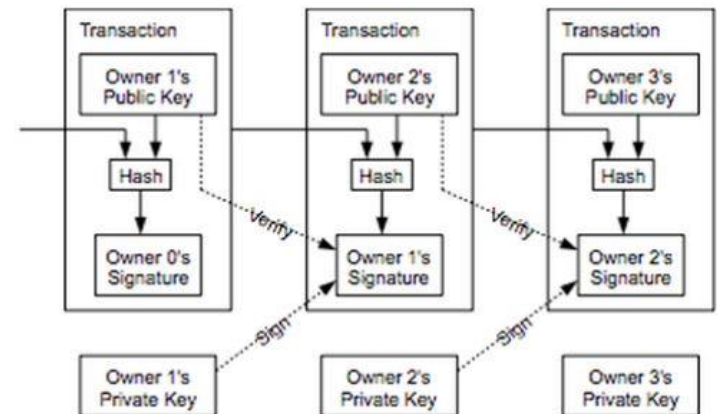
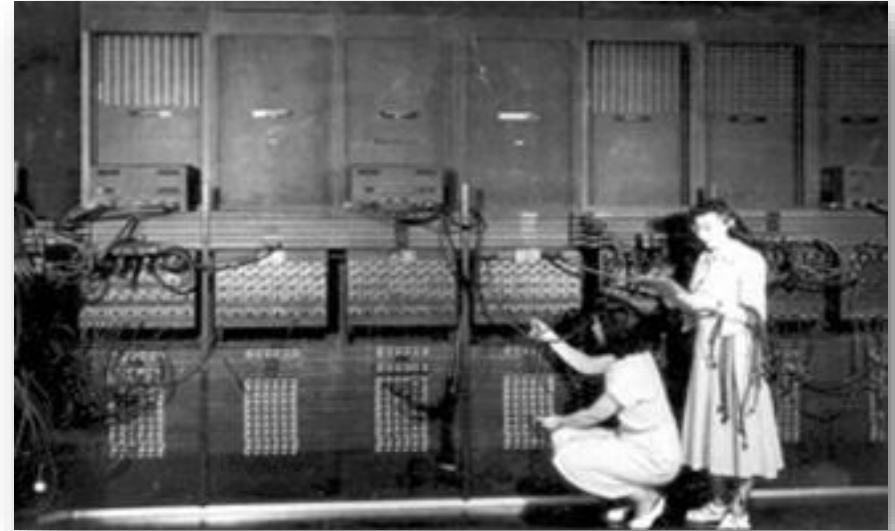


Image: Satoshi Nakamoto

Technologies Events that Led to the Creation of Bitcoin & Blockchain

- Cryptography
- Transistors
- Digital Computers
- Databases
- Silicon Chips
- Programming
- Applied Cryptography
- Computer Networks
- Transaction Processing
- TCP/ IP and The Internet
- The World Wide Web
- Evolution of Security and Privacy Thought
- Digital signatures
- Time-stamped documents
- Smart Contracts
- Byzantine Fault Tolerance
- The Great 2008 Economic Recession



What is the Byzantine Generals Problem?

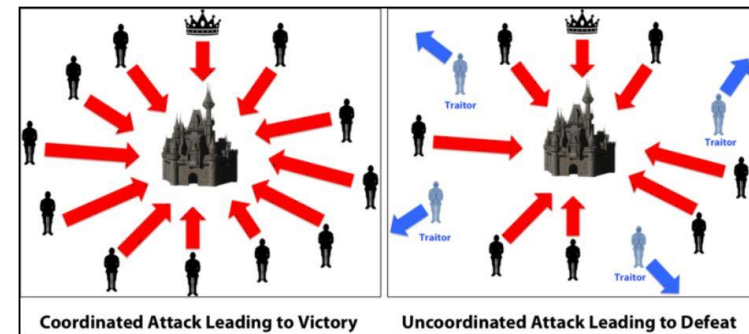


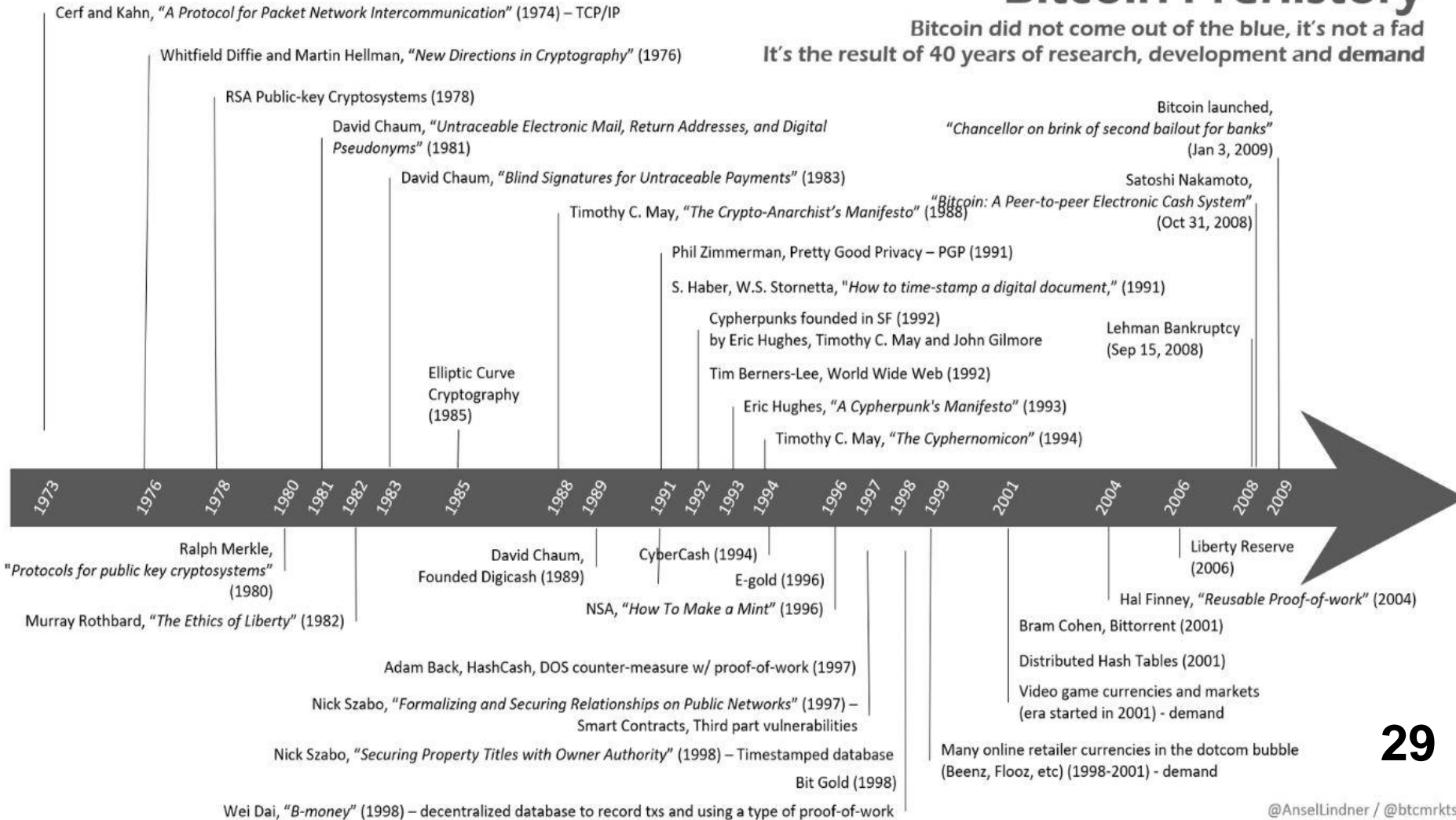
Image Courtesy: Medium

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A Brief History of Blockchain

Bitcoin Prehistory

Bitcoin did not come out of the blue, it's not a fad
It's the result of 40 years of research, development and demand

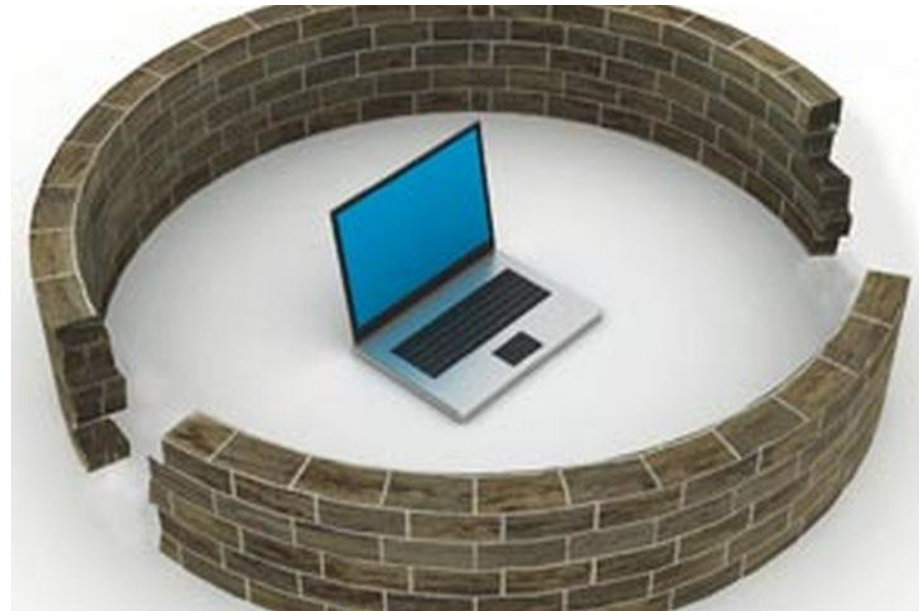


What Is Cybersecurity?



What Is Cybersecurity?

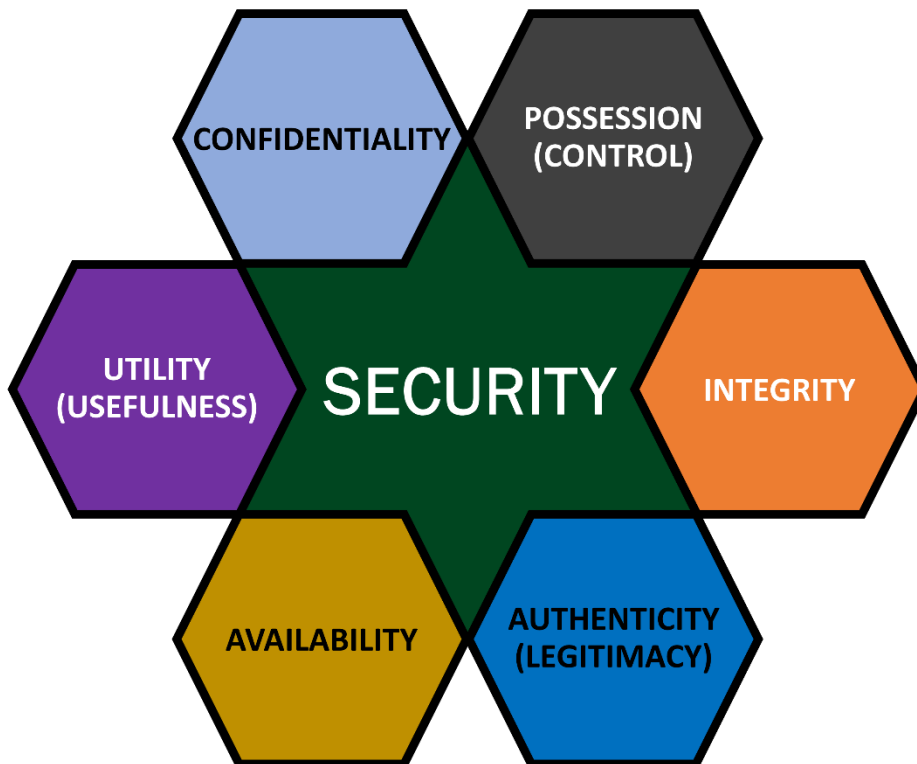
- Most people will tell you that a system or computer network is “secure” if you have control over:
 - ***Confidentiality***
 - ***Integrity***
 - ***Availability***



What Is Cybersecurity, Really?

PARKERIAN HEXAD

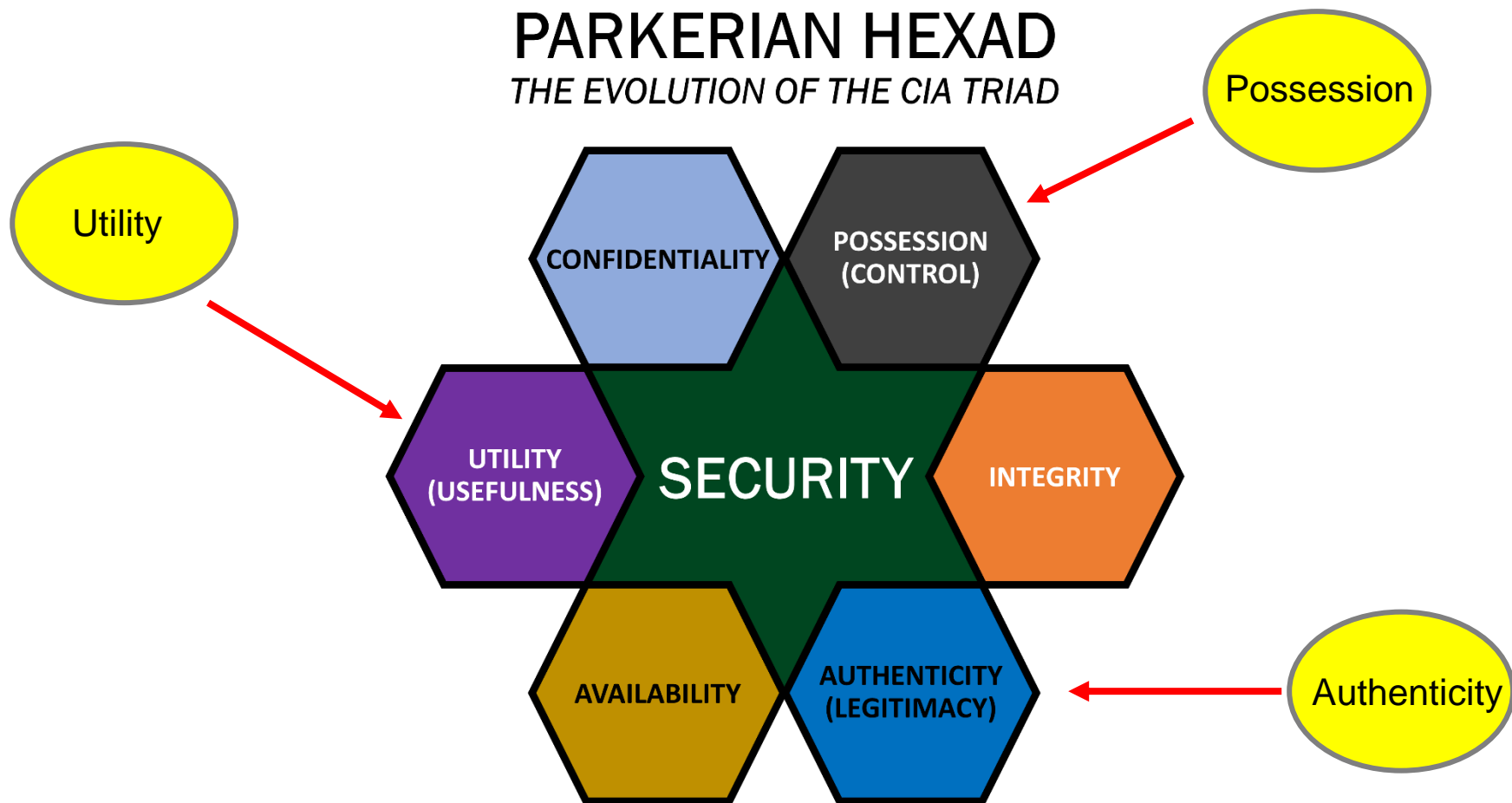
THE EVOLUTION OF THE CIA TRIAD



2019 - Visual Adaptation of the Parkerian Hexad by Matthew Lammers

What Is Cybersecurity, Really?

PARKERIAN HEXAD THE EVOLUTION OF THE CIA TRIAD

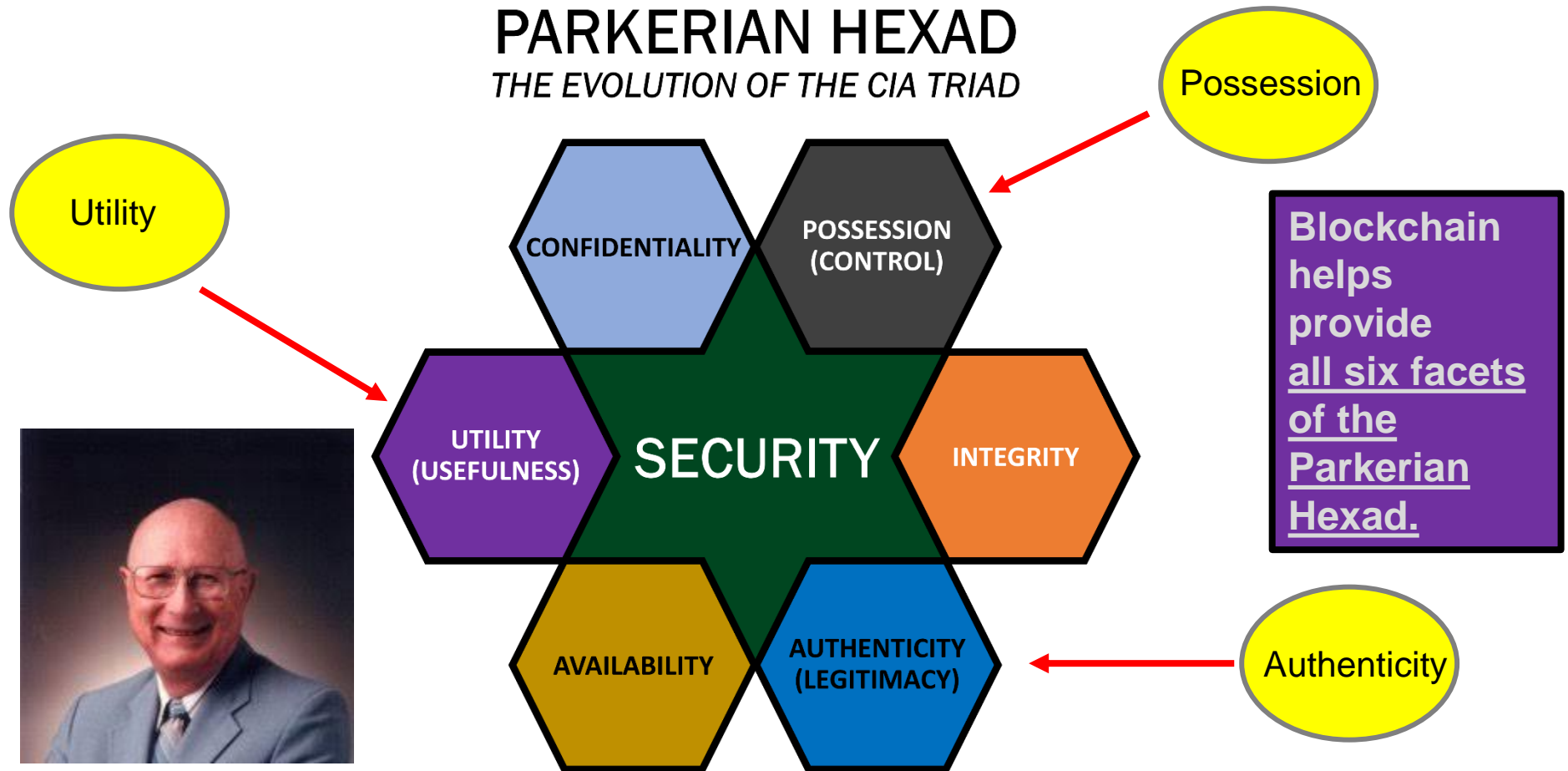


2019 - Visual Adaptation of the Parkerian Hexad by Matthew Lammers

What Is Cybersecurity, Really?

PARKERIAN HEXAD

THE EVOLUTION OF THE CIA TRIAD



Donn B. Parker
Godfather of Cybersecurity

2019 - Visual Adaptation of the Parkerian Hexad by Matthew Lammers

More About Blockchain



Why Does Blockchain Solve Issues Related to Misinformation?

Secure Access

Immutable Records

Undeletable Records

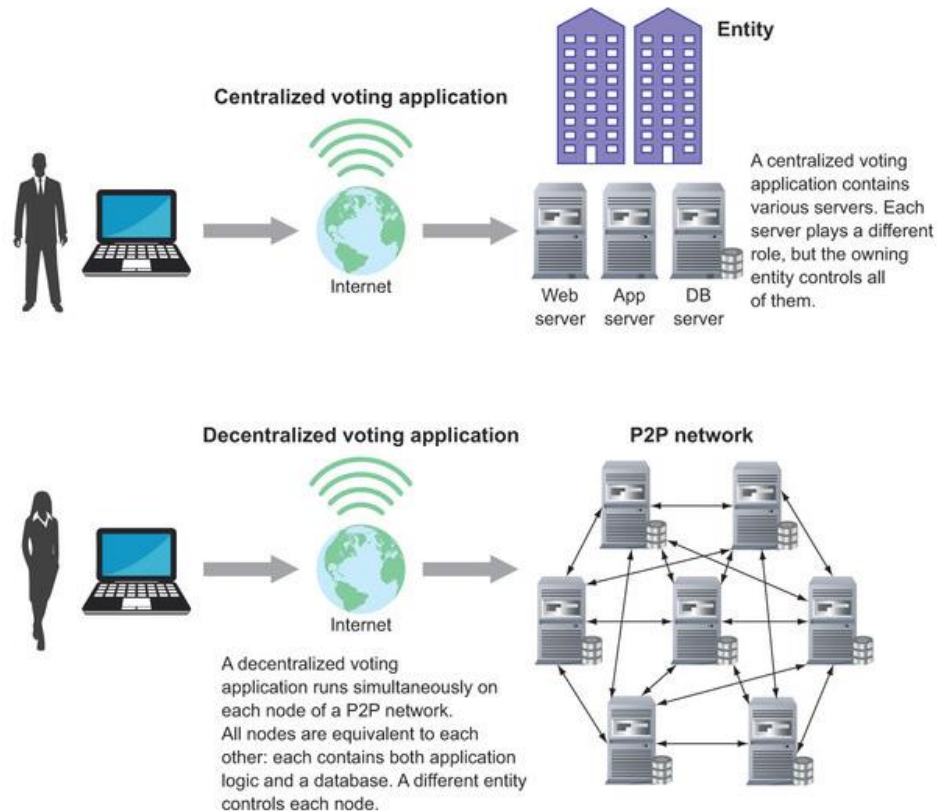
Peer-to-Peer

Distributed Ledger

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What Does a Blockchain Solution Look Like?

Figure 1.2. Comparison of a centralized voting application with a decentralized one. One institution owns all servers of a centralized application. A decentralized voting application runs simultaneously on multiple nodes of a network that different entities own.



Types of Blockchains



Types of Blockchains





Bitcoin vs. Ethereum vs. Hyperledger (Linux and IBM) and now many others

Public vs. Private

Permissioned (private) vs. Permissionless

Types of Blockchains

Bitcoin vs. Ethereum

	Bitcoin	Ethereum
 VS 		
Founder	Satoshi Nakamoto	Vitalik Buterin
Release Date	9 Jan 2008	30 July 2015
Release Method	Genesis Block Mined	Presale
Blockchain	Proof of work	Proof of work (Planning for POS)
Useage	Digital Currency	Smart Contracts Digital Currency
Cryptocurrency Used	Bitcoin(Satoshi)	Ether
Algorithm	SHA-256	Ethash
Blocks Time	10 Mintues	12-14 Seconds
Mining	ASIC miners	GPUs
Scalable	Not now	Yes

Types of Blockchains

Bitcoin, Ethereum, & Hyperledger



Blockchain characteristics comparison

Characteristics	Bitcoin	Ethereum	Hyperledger
Permission restrictions	Permissionless	Permissionless	Permissioned
Restricted public access to data	Public	Public or private	Private
Consensus	Proof-of-Work	Proof-of-Work	PBFT
Scalability	High node-scalability, Low performance-scalability	High node-scalability, Low performance-scalability	Low node-scalability, High performance-scalability
Centralized regulation (governance*)	Low, decentralized decision making by community/miners	Medium, core developer group, but EIP process	Low, open-governance model based on Linux model
Anonymity	Pseudonymity, no encryption of transaction data	Pseudonymity, no encryption of transaction data	Pseudonymity, encryption of transaction data
Native currency	Yes, bitcoin, high value	Yes, ether	No
Scripting	Limited possibility, stack-based scripting	High possibility, Turing-complete virtual machine, high-level language support (Solidity)	High possibility, Turing-complete scripting of chaincode, high-level Go-language support

Types of Blockchains

Ethereum, Hyperledger, and Corda

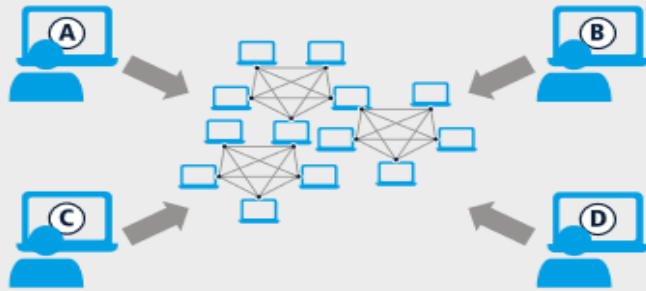
Comparison of Ethereum, Hyperledger Fabric and Corda

Characteristic	Ethereum	Hyperledger Fabric	R3 Corda
Description of platform	<ul style="list-style-type: none"> Generic blockchain platform 	<ul style="list-style-type: none"> Modular blockchain platform 	<ul style="list-style-type: none"> Specialized distributed ledger platform for financial industry
Governance	<ul style="list-style-type: none"> Ethereum developers 	<ul style="list-style-type: none"> Linux Foundation 	<ul style="list-style-type: none"> R3
Mode of operation	<ul style="list-style-type: none"> Permissionless, public or private⁴ 	<ul style="list-style-type: none"> Permissioned, private 	<ul style="list-style-type: none"> Permissioned, private
Consensus	<ul style="list-style-type: none"> Mining based on proof-of-work (PoW) Ledger level 	<ul style="list-style-type: none"> Broad understanding of consensus that allows multiple approaches Transaction level 	<ul style="list-style-type: none"> Specific understanding of consensus (i.e., notary nodes) Transaction level
Smart contracts	<ul style="list-style-type: none"> Smart contract code (e.g., Solidity) 	<ul style="list-style-type: none"> Smart contract code (e.g., Go, Java) 	<ul style="list-style-type: none"> Smart contract code (e.g., Kotlin, Java) Smart legal contract (legal prose)
Currency	<ul style="list-style-type: none"> Ether Tokens via smart contract 	<ul style="list-style-type: none"> None Currency and tokens via chaincode 	<ul style="list-style-type: none"> None

Types of Blockchains

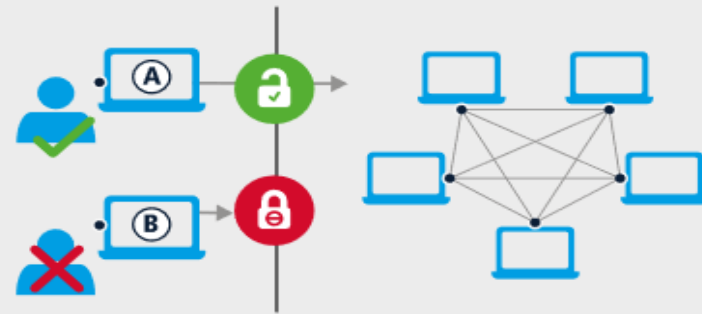
Public vs. Private

PUBLIC VS. PRIVATE BLOCKCHAINS



PUBLIC, PERMISSIONLESS BLOCKCHAINS

- Anyone can join the network and submit transactions
- Anyone can contribute computing power to the network and broadcast network data
- All transactions are broadcast publicly



PRIVATE, PERMISSIONED BLOCKCHAINS

- Only safelisted (checked) participants can join the network
- Only safelisted (checked) participants can contribute computing power to the network and broadcast network data
- Access privileges determine the extent to which each safelisted participant can contribute data to the network and access data from the network

Key differences between public, permissionless blockchains and private, permissioned blockchains; Source: Accenture

Types of Blockchains

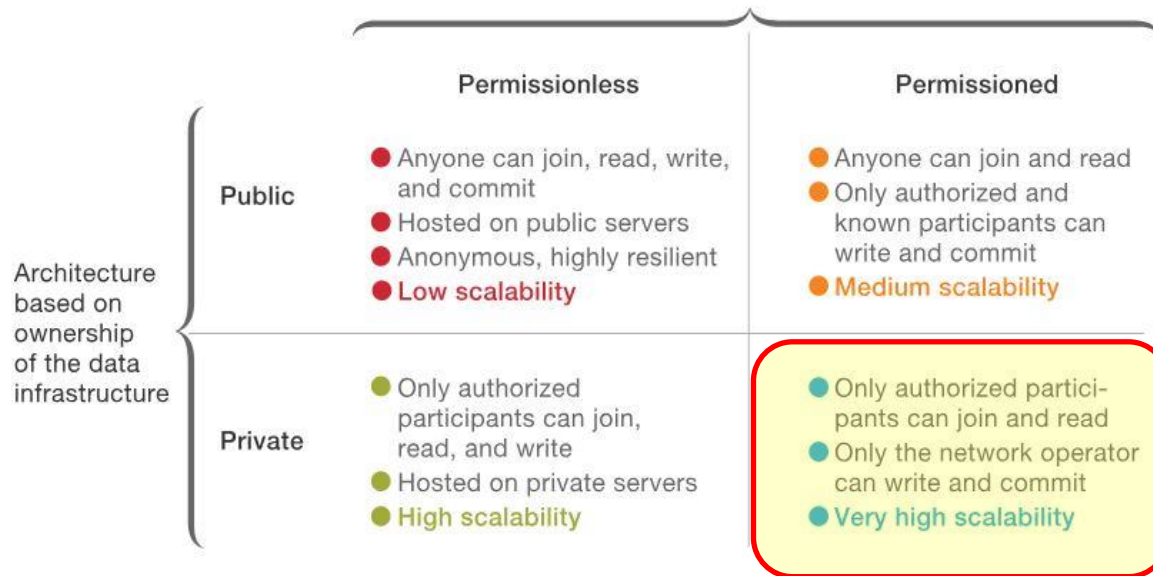
Important Blockchain Architecture Decision

Exhibit 3

Most commercial blockchain will use **private, permissioned architecture** to optimize network openness and scalability.

Blockchain-architecture options

Architecture based on read, write, or commit permissions granted to the participants



McKinsey&Company

Blockchain Use Cases & Use Case Evolution



Blockchain Use Cases



Blockchain Use Cases

Blockchain Beyond Bitcoin

Banking

- Funds transfer can be sped up, allowing instant transactions.
- The banking industry can make use of the blockchain to improve efficiency and reduce costs in securitisation, regulatory compliance and digital wallet services (full service and payment banks).

Healthcare

- Hospitals can securely store health data and share it on request to authorised doctors or medical professionals.

Entertainment – betting, music

- Decentralised betting in online casinos and sports betting can be taken to the blockchain.
- Musicians can get paid directly by their fans without paying record companies or other platforms a large part of their payouts.

Energy

- Currently, retail energy producers contribute to the energy grid and receive incentives.
- The energy market is strictly centralised and is controlled by distribution companies (DISCOMs).
- The blockchain can facilitate peer-to-peer energy transactions.

Financial services

- The blockchain can be used to improve services such as trade settlements.
- FinTech companies can use the blockchain to offer remittances and international payments at reduced costs and at greater speeds.

Areas of application – the blockchain

Insurance

- Smart contracts and the identities of insurers can be managed using the blockchain.
- Contracts dependent on real-time data will rely on the blockchain—for example, crop insurance or telematics for vehicle insurance.
- Also, there is strong potential for the reinsurance market.

Real estate

- The lack of transparency and problems of bureaucracy, fraud and incorrect public records can be solved using smart contracts.
- Also, tracking, verifying and transfer details can be securely managed for new buyers.

Private transport/ridesharing

- The blockchain can be used for peer-to-peer ridesharing apps, allowing car owners and users to manage terms and conditions without the intervention of third parties.

source pwc via @mikequindazzi

Blockchain Use Cases

50+ BLOCKCHAIN REAL WORLD USE CASES



MATTEO GIANPETRO ZAGO



Blockchain Use Cases

Non-Financial Use Cases

Digital Content/Documents, Storage & Delivery



BitProof, Blockcai, Ascribe, ArtPlus, Chainy.Link, Stampery, Blocktech (Alexandria), Bisantium, Blockpart, The Rudimental, BlockCDN

Authentication & Authorization



The Real McCoy, Degree of Trust, Everpass, BlockVerify,

Digital Identity



Sho Card, Uniqid, Oname, Trustatom

Marketplace



Providing premium rights & brand based coins: MyPowers

Smart Contracts



Otonomos, Mirror, Symbion, New system Technologies

Real Estate



Factom

Diamonds



Everledger

Gold & Silver



BitShares, Real Asset Co., DigitalTangible (Serica), Bit Reserve

Reviews/Endorsement



TRST.im, Asimov (recruitment services), The World Table

Blockchain in IoT



Filament, Chimera-inc.io, ken Code – ePlug

App Development



Proof of ownership for modules in app development: Assembly

Network Infrastructure & APIs



Ethereum, Eris, Codius, NXT, Namecoin, Colored Coins, Hello Block, Counterparty, Mastercoin, Corona, Chromaway, BlockCypher

Other



Prediction platform:
Augur
Election Voting: Follow My Vote
Patient Records management: BitHealth

Financial Use Cases

Currency Exchange & Remittance



Coinbase (Wallet), BitPesa, Billion, Ripple, Stellar, Kraken, Fundrs.org, MeXBT, CryptoSigma

P2P Transfers



BTC Jam, Codius, BitBond, BitnPlay (Donation), DeBuNe (SME's B2B transactions)

Ride Sharing



La'zooz

Data Storage



Storj.io, Peernova

Trading Platforms



equityBits, Spritzle, Secure Assets, Coins-e, DXMarkets, MUNA, Kraken, BitShares

Gaming



PlayCoin, Play(on DACx platform), Deckbound

Blockchain Use Case Evolution

Defining Blockchain

A distributed ledger technology

Blockchain is a cryptographic, or encoded ledger – a database of transactions in the form of blocks arranged in a chain. These are validated by multiple users through consensus mechanisms (such as proof-of-work in Bitcoin mining) shared across a public or private network.

Blockchain technology could cut banks' infrastructure costs for cross-border payments, securities trading, and regulatory compliance

Potential benefits of Blockchain technology for the financial services industry



Reduce costs of overall transactions and IT infrastructure



Ability to store and define ownership of any tangible or intangible asset



Improved security and efficiency of transactions



Irrevocable and tamper-resistant transactions



Increased accuracy of trade data and reduced settlement risk



Enabling effective monitoring and auditing by participants, supervisors, and regulators



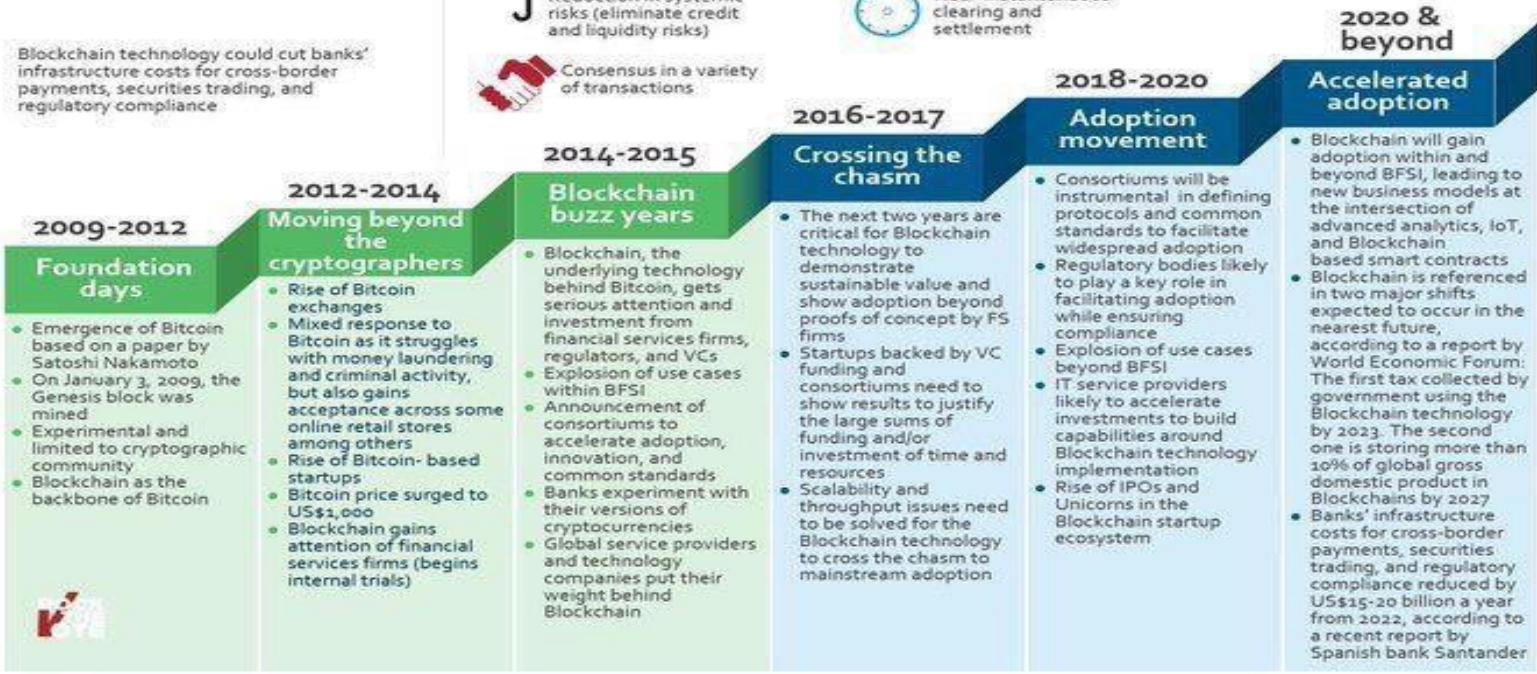
Reduction in systemic risks (eliminate credit and liquidity risks)



Near-instantaneous clearing and settlement



Consensus in a variety of transactions



Everest Group Blockchain in BFSI – Looking Beyond the Hype

Blockchain Use Case Considerations

Block chain use cases requires massive cloud resources

Establish trust

Transact on identity

Ensure provenance of data

Facilitate value exchange

Enable smart contracts



Is There Hope?



Mary Meeker Says “YES”

- Investor Mary Meeker says Covid-19 crisis is separating businesses with strong online strategies from laggards
- Mary Meeker, who is known for her lengthy annual “Internet Trends” report, sent a letter to her firm’s investors detailing observations from the Covid-19 crisis.
- Among them: The businesses who were already well along the offline-to-online transition are faring best.
 - <https://www.cnbc.com/2020/04/17/mary-meeker-covid-19-report-online-businesses-beating-laggards.html>
 - <https://www.axios.com/mary-meeker-coronavirus-trends-report-0690fc96-294f-47e6-9c57-573f829a6d7c.html>
- Why it matters: Bond's best-known partner, Mary Meeker, is a former bank analyst renowned for her annual Internet Trends Report, which many investors and entrepreneurs use as a touchstone for where tech is now and where it's going. This 28-page report to Bond's limited partners, obtained by Axios, shares some structural similarities.



Mary Meeker

Mary Meeker Says “YES”

➤ Some takeaways:

- ❑ "Covid-19 has upended our modern lives in ways we're just starting to understand."
- ❑ Prior epic viruses have permanently changed the world, but coronavirus may prove less impactful because of our information-sharing and scientific technologies.
- ❑ Scientists and other domain experts are getting "more seats at the table."
- ❑ Digital transformation is accelerating, due to so many people working from home. New work-life balances are also being struck.
- ❑ This may become the "call to arms" to better marry technology with healthcare, in terms of everything from telehealth to rapid point-of-care diagnostics, to applying automation and AI to health care services.
- ❑ "We are optimists and believe there is hope on the other side of despair.... We need government, business and entrepreneurial intervention at scale (deployed logically and effectively) to get to the other side."



Mary Meeker

Conclusion



Conclusion

- We covered:
 - The World in 2020
 - Information Warfare
 - The Internet
 - Blockchain Technology
 - Cybersecurity
 - Types of Blockchains
 - Why Blockchain solves problems
 - Is There Hope?



*I have learned
that people will
forget what you
said, people will
forget what you
did, but people
will never forget
how you made
them feel.*

Maya Angelou
1928-2014



Photo by Michael Collopy

**Leadership in Digital
Uncertainty:
New Strategy to Cope
with the New Normal**

Thank You!

Questions & Answers

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Parting Thoughts: As an ISOC Member Since 1998... I Support Cameroon & Internet Freedom



Parting Thoughts: Like Records on a Blockchain, let our Love, Support, & Friendship Be Immutable and Enduring

UNITED STATES OF AMERICA



William Favre Slater, III

- **President / CEO / CISO of Slater Technologies, Inc**
- **312-758-0307**
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United States of America**



William Favre Slater, III

Resources



Resources - Free Daily Newspaper on Blockchain

Not secure | paper.li/billslater/1530793250#/

Blockchain Matters

A Curated Daily Web Newspaper Dedicated to Blockchain, Blockchain-related Technologies, & CryptoEconomics

Wm Favre Slater, III

Monday, Jun. 29, 2020

The Future of Peer-to-Peer Online Learning Amid the COVID-19 Pandemic

cointelegraph.com

The coronavirus pandemic is transforming the education sector as much as it is transforming various important aspects of our lives. The majority of teaching and learning has been transferred to digit...

Shared by Sammar Abbas



Nonfungible Tokens Could Change the Way We Own Things

cointelegraph.com

Blockchain technology is widely associated with the exchange of interchangeable digital

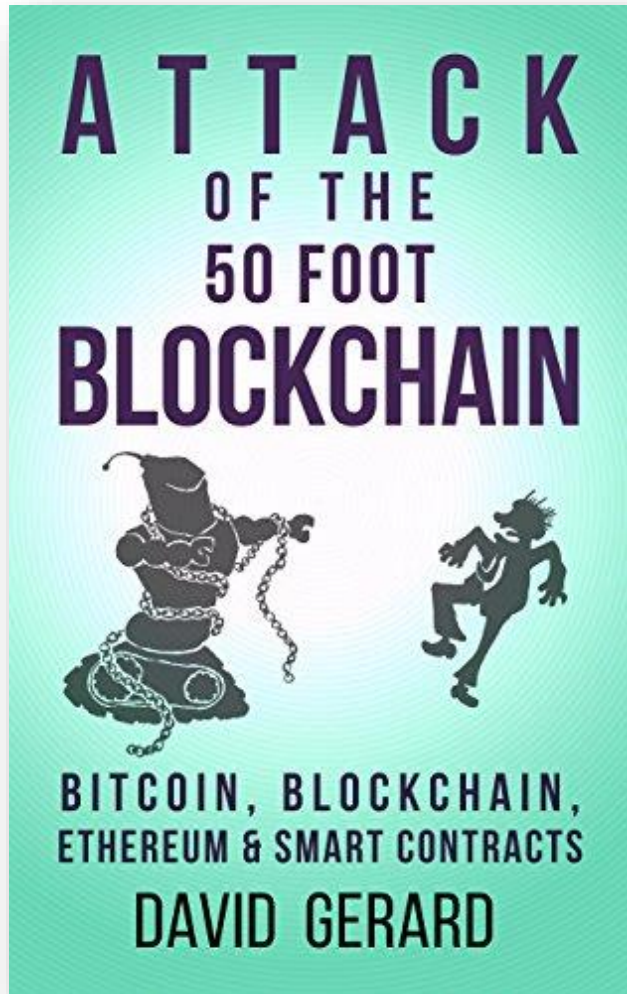


More information: <https://paper.li/billslater/1530793250#/>

Resources - Best Blockchain Books

- **Mastering Ethereum**
 - by Andreas M. Antonopoulos and Dr. Gavin Wood
- **Blockchain Applications: A Hands-On Approach**
 - by Arshdeep Bahga and Vijay Madisetti
- **Building Ethereum DApps**
 - By Roberto Infante
- **Truffle Quick Start Guide**
 - by Nikhil Bhaskar
- **Mastering Blockchain - Second Edition**
 - by Imran Bashir
- **Introducing Ethereum and Solidity: Foundations of Cryptocurrency and Blockchain Programming for Beginners**
 - By Chris Dannen
- **Ethereum, Tokens & Smart Contracts: Notes on getting started**
 - by Eugenio Noyola
- **Blockchain Enabled Applications: Understand the Blockchain Ecosystem and How to Make it Work for You**
 - by Vikram Dhillon, David Metcalf, Max Hooper
- **Foundations of Blockchain**
 - By Koshik Raj
- **The Book of Satoshi: The Collected Writings of Bitcoin Creator Satoshi Nakamoto**
 - By Phil Champagne

Resources - For a Cynical & Humorous View of Blockchain



Resources - 12 Free Blockchain Resources

1. William Slater's Blockchain Resource Page <http://billslater.com/blockchain>
2. Factom University <http://www.factom.com/university>
3. Ethereum 101 <http://www.ethereum101.org>
4. Build on Ripple <http://ripple.com/build>
5. Programmable money by Ripple <https://goo.gl/g8vFPL>
6. DigiKnow <https://youtu.be/scr68zFddso>
7. Blockchain University <http://blockchainu.co>
8. Bitcoin Core <https://bitcoin.org>
9. Blockchain Alliance <http://www.blockchainalliance.org>
10. Multichain Blog <http://www.multichain.com/blog>
11. HiveMind <http://bitcoinhivemind.com>
12. Chicago Blockchain Project <http://chicagoblockchainproject.com/>
13. Chicago Bitcoin and Open Blockchain Meetup Group
<https://www.meetup.com/Bitcoin-Open-Blockchain-Community-Chicago/>

Resources - Rules Never to Break The Blockchain

1. Don't use Cryptocurrency or Blockchain to Skirt the Law
2. Keep your contracts as simple as possible
3. Publish with great caution
4. Back Up, Back Up, Back Up Your Private Keys
5. Triple-check the Address Before Sending Currency
6. Take Care When Using Exchanges
7. Beware of Wi-Fi
8. Identify Your Blockchain Dev
9. Don't Get Suckered
10. Don't Trade Tokens Unless You Know What You're Doing

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Resources - Free Blockchain Projects

- The R3 Consortium <http://www.r3cev.com>
- T ZERO: Overstocking the Stock Market <http://www.overstock.com>
- Blockstream's Distributed Systems <http://www.blockstream.com>
- OpenBazaar's Blockchain <http://www.openbazaar.com>
- Code Valley: Find Your Coder <http://www.codevalley.com>
- Bitfury's Digital Assets <http://www.bitfury.com>
- Any Coin Can Shapeshift <http://www.shapeshift.io>
- Machine-Payable Apps on 21 <http://www.21.co>
- Anonymous Transactions on Dash <http://www.dash.org>
- ConsenSys: Decentralized Applications: <http://www.consenSys.net>

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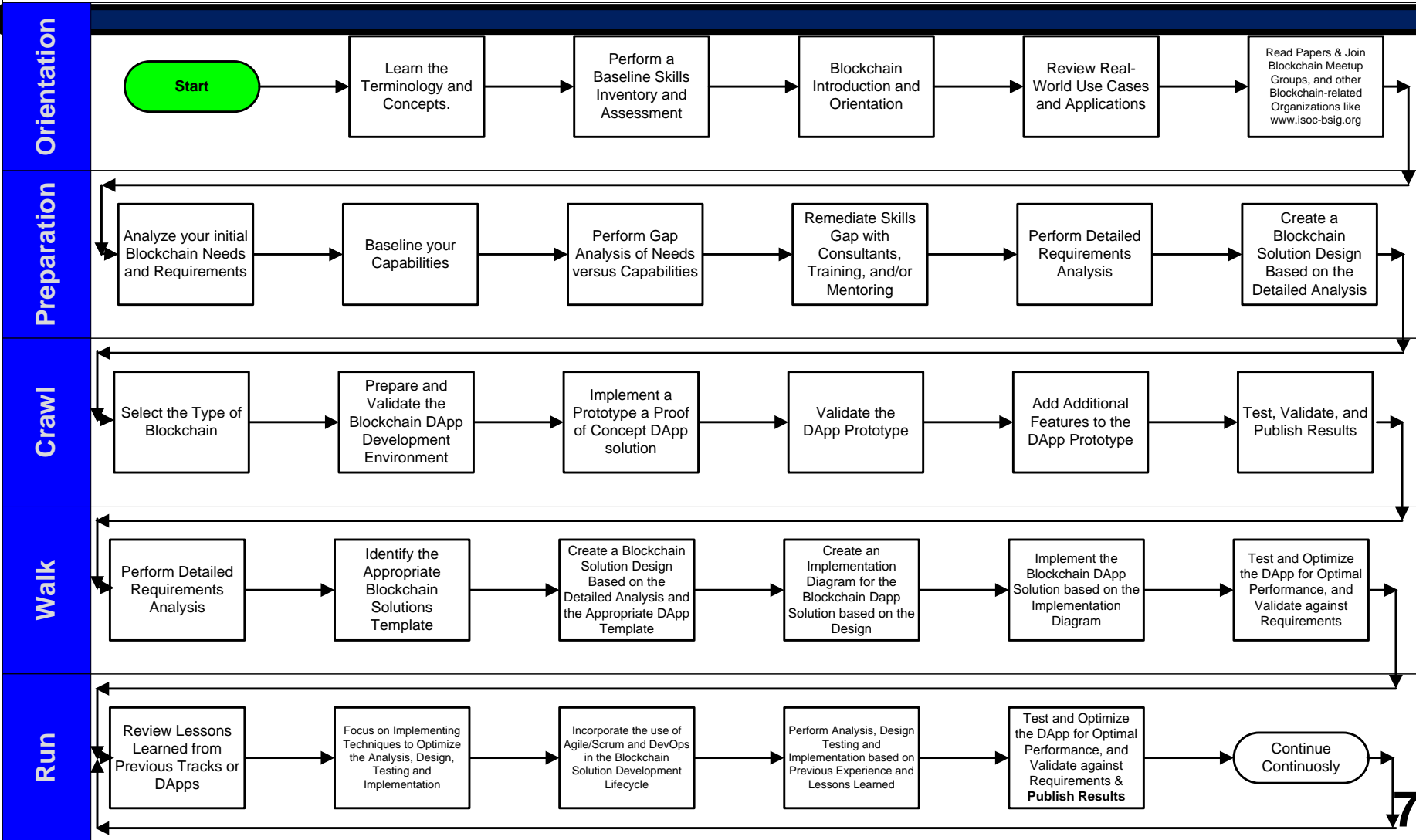
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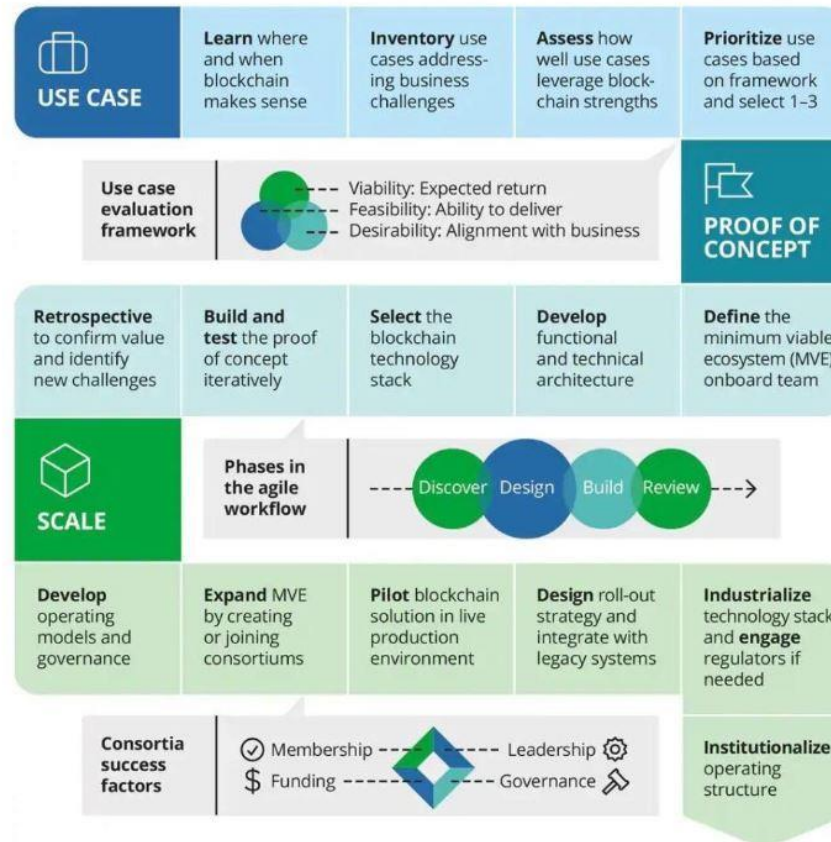
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Roadmap to "Blockchain" Your IT Organization: How to Help Your IT Staff Go from Square One to Competence & Dominance in Blockchain Technologies



Blockchain Implementation Roadmap

The Blockchain Implementation Roadmap



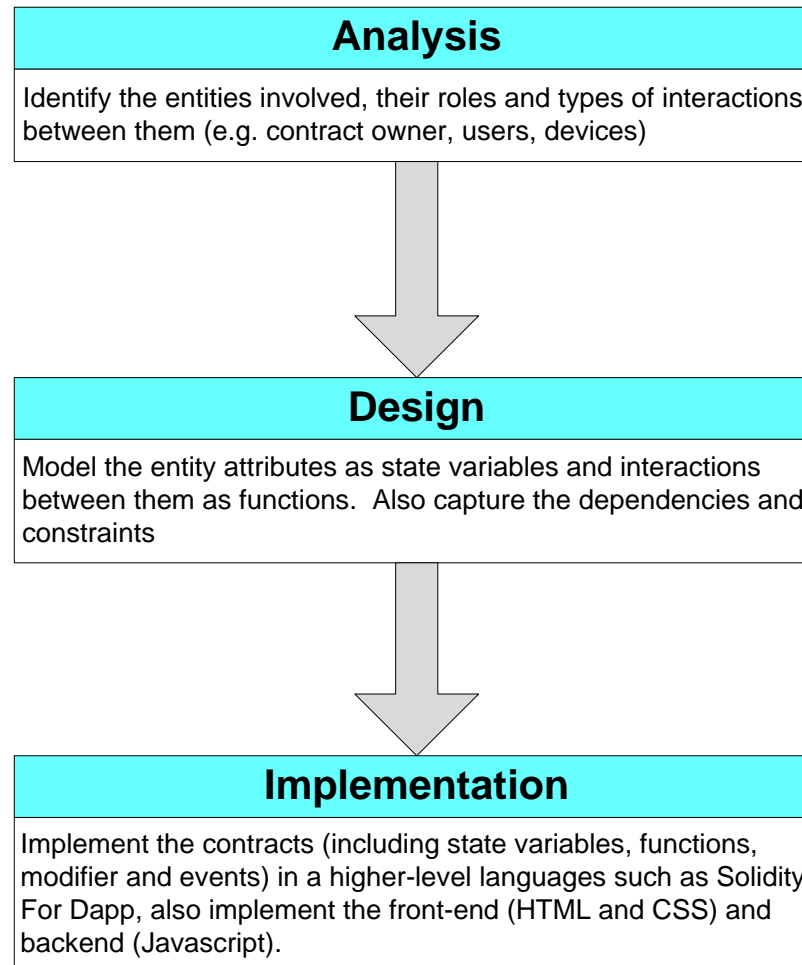
Source: Deloitte analysis.

Deloitte Insights | [Deloitte.com/insights](https://deloitte.com/insights)

Best Practice - Using Templates and Patterns for Blockchain Distributed Application Development

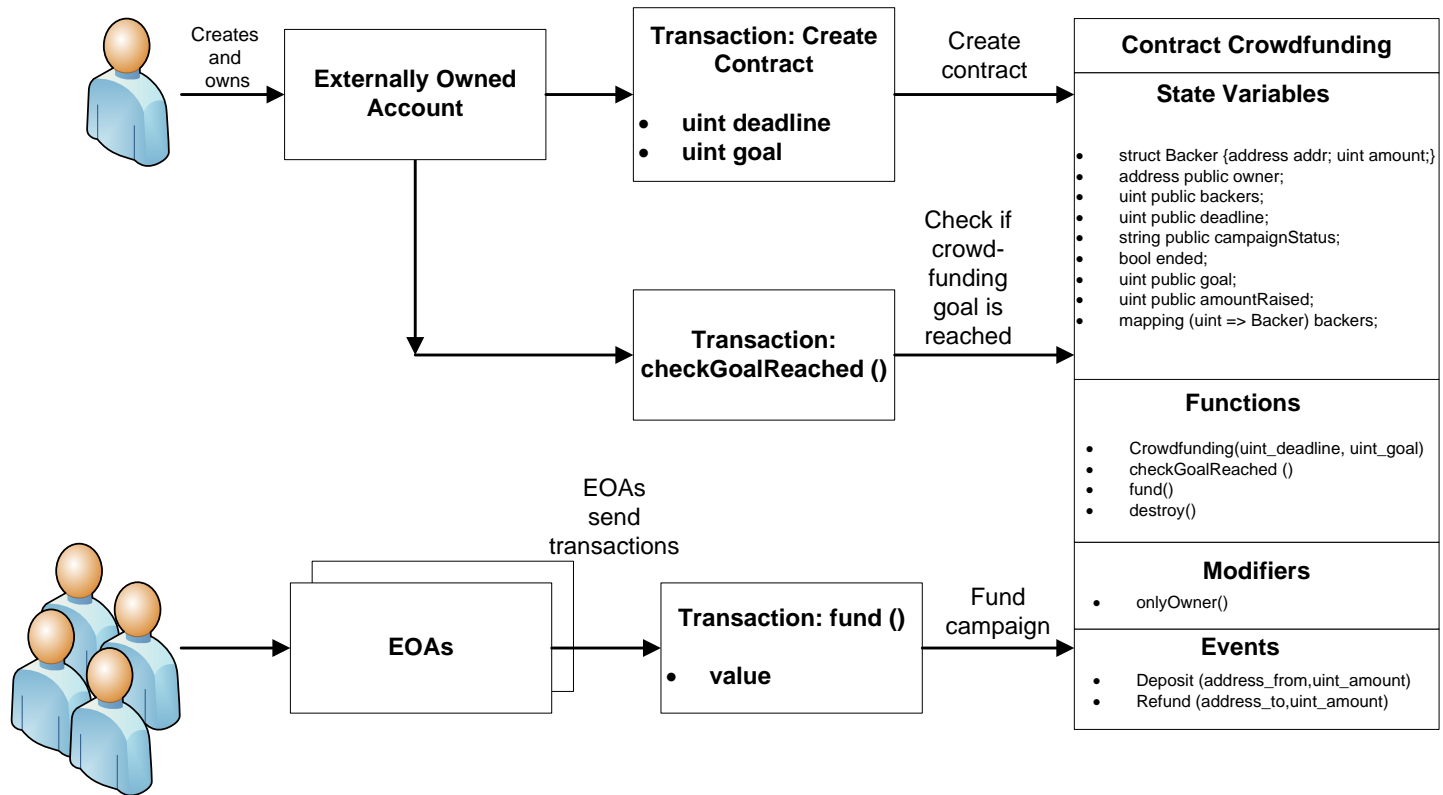


Blockchain Application Development



Blockchain Implementation Diagram

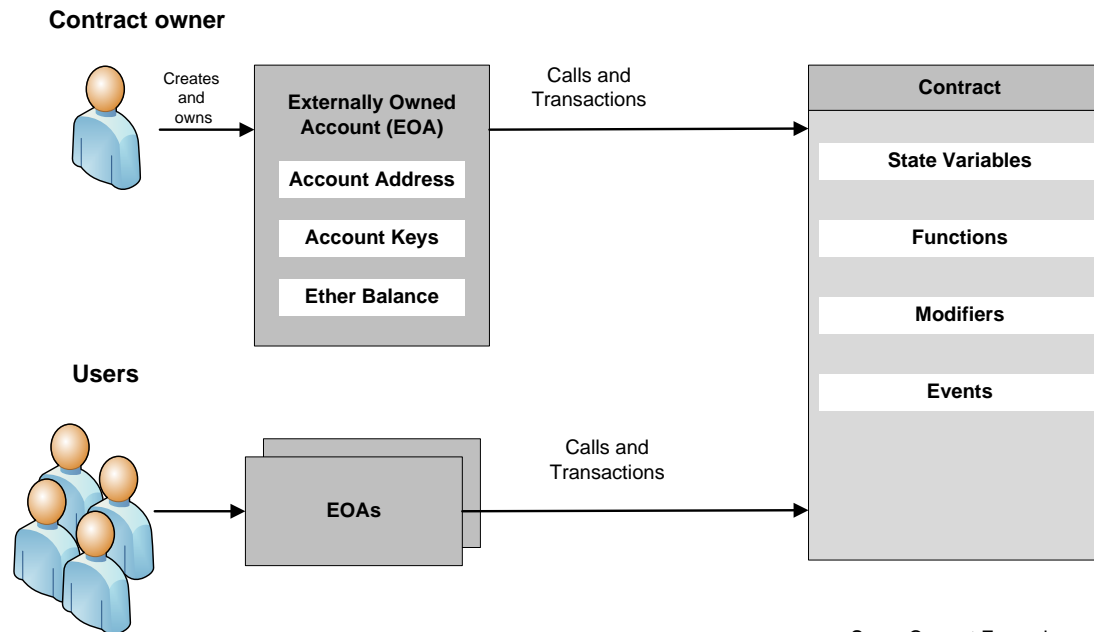
(Example Business Case:
Crowdfunding Application)



Blockchain Application Template - Many to One

Blockchain Application Templates

Many-to-One

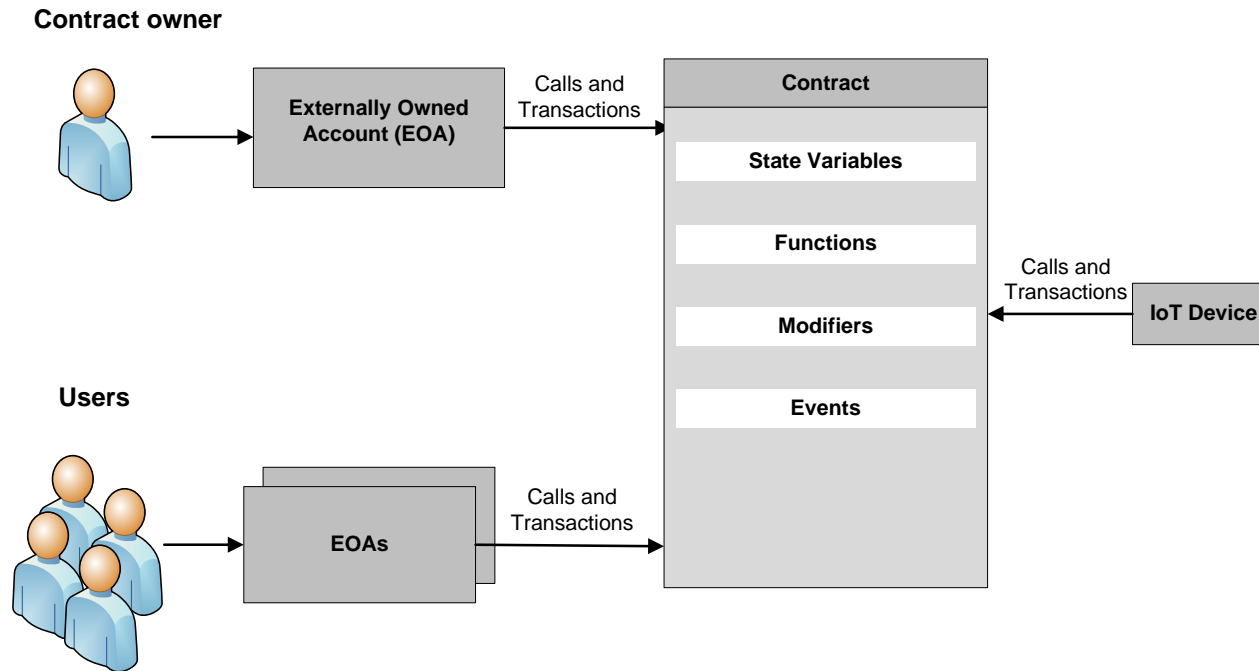


Some Current Examples

- Crowdfunding
- Event Registration
- Voting
- Name Registration

Blockchain Application Template - Many to One for IoT Applications

Many-to-One for IoT Applications

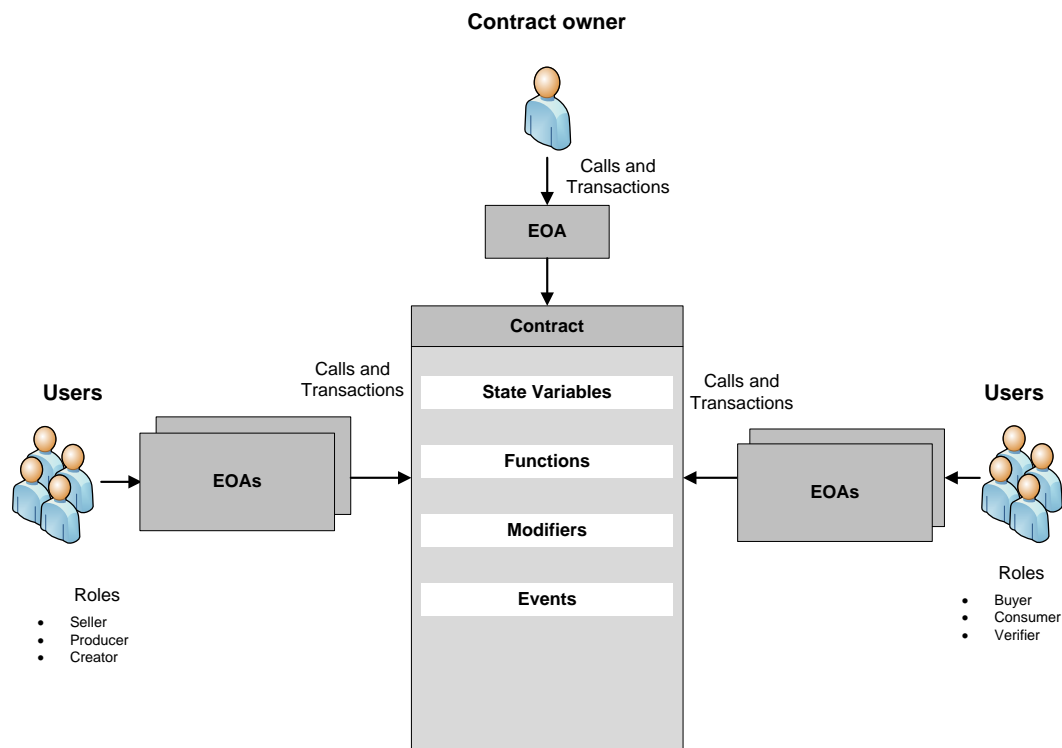


Some Current Examples

- Solar charging stations
- Smart switch

Blockchain Application Template - Many to One for Financial Applications

Many-to-One for Financial Applications



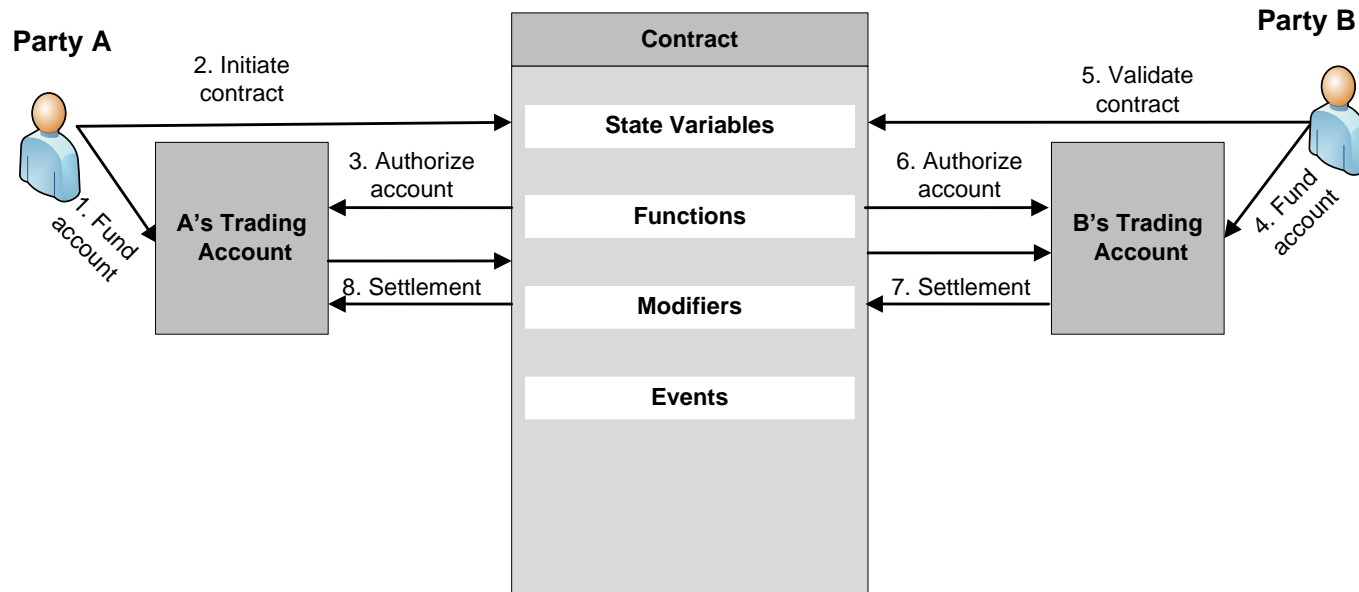
Some Current Examples

- Product sales
- Stock photos
- Document verification

Source: Blockchain Applications: A Hands-on Approach by Arsheep Bahga and Vijay Madiseti

Blockchain Application Template - Many-to-Many or Peer-to-Peer

Many-to-Many or Peer-to-Peer



Some Current Examples

- Call option
- Interest rate swap

Blockchain Application Common Patterns

- Condition-Effects-Interaction
- Withdrawal
- Access Restriction
- Mortal
- Automatic Expiration
- Rejector
- Circuit Breaker
- Allow Once Per Account