NINTH ANNUAL LEADERSHIP EVENT
CYBER SECURITY SUMMIT
Security solutions through collaboration.™

October 28–30, 2019 | Minneapolis Convention Center

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Agenda

• Brief History of Blockchain

• Blockchain in the Enterprise

• Security Focus
The point is...

• Blockchain will not solve all of your problems, but it does some things pretty well.

• The future of blockchain is still unclear.

• Security professionals beware.
A blockchain is...

- **A ledger**
  - Record of all historical transactions
  - Details of new transactions are recorded as a new block
  - Each block contains the hash of the previous block, altogether forming a chain

- **That is distributed,**
  - Every participant to the blockchain P2P network has a copy of the ledger

- **Decentralized,**
  - No central authority to validate a transaction
  - Transactions are validated by some of the participants (called « miners » in bitcoin),
    based on a pre-defined consensus mechanism

- **Irreversible**
  - Being highly distributed and decentralized, transactions are not reversible

- **Numerous variants exists to allow for e.g., alternative consensus mechanisms, private networks, integration of computational logical (smart contracts)**
Hype Cycle for Blockchain Business, 2019

- Blockchain in Supply Chain
- Blockchain in Logistics and Transportation
- Blockchain in CSPs
- Cryptocurrency and Blockchain Regulation
- Blockchain in Healthcare
- Blockchain in Gaming
- Cryptocurrency Custody Services
- Blockchain in Utilities
- Blockchain in Oil and Gas
- Blockchain in Retail
- Blockchain in Media and Entertainment
- Strategic Tokenization
- Stablecoin
- Blockchain Business Models
- Smart Assets
- Decentralized Autonomous Organization
- Blockchain for Customer Service
- Blockchain for Advertising
- Blockchain for Lead Generation
- Smart Contracts
- Blockchain in Insurance
- Blockchain in Education
- Blockchain Rewards/Loyalty Models
- Blockchain in Government
- Blockchain Consortium
- Blockchain in Banking and Investment Services
- Blockchain End-to-End
- Blockchain-Based ACH Payments
- Blockchain in 3D Printing
- Digital/Cryptocurrency
- Fiat
- Blockchain Society
- Blockchain Data Exchanges
- Cryptocurrencies
- ICOs
- Distributed Ledgers

Plateau will be reached in:
- less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years

As of July 2019
What’s Next for Blockchain?

• Standardization

• Scalability

• Interoperability
Enterprise Blockchain Implementation Plan
Blockchain Business Benefits

- **Efficiency**
  - No central authority or intermediary delaying settlement
  - No duplication of efforts (one single ledger for all parties)
  - Automatic enforcement of business rules with smart contracts

- **Auditability / traceability**
  - Immutable transaction history

- **Transparency / trustless**
  - No need to trust the other transacting parties, or a central authority

- **Security**
  - Guaranteed by cryptographic schemes (signatures, proof-of-work, etc.)
Do you *need* a blockchain?

- **Do you need to store state?**
  - *no*
  - **Are there multiple writers?**
    - *no*
      - **Is public verifiability required?**
        - *no*
          - **Are all writers trusted?**
            - *yes*
              - **Permissionless Blockchain**
            - *no*
              - **Private Permissioned Blockchain**
        - *yes*
          - **Public Permissioned Blockchain**
    - *yes*
      - **Are all writers known?**
        - *yes*
          - **Permissionless Blockchain**
        - *no*
          - **Private Permissioned Blockchain**
  - *yes*
    - **Can you use an always online TTP?**
      - *yes*
        - **Permissionless Blockchain**
      - *no*
        - **Don’t use Blockchain**

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    - **Are all writers known?**
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        - **Don’t use Blockchain**
"Long Blockchain Corp" shares soar
Long Island Iced Tea Corp (LTEA:NASDAQ)

USD
Extended Hours
Last | 4:04:27 PM EST
6.84  -0.08 (-1.1577%)
Close | 4:00:00 PM EST
6.91  +4.47 (183.20%)

5 Day

CNBC
Fig. 1—(a) Centralized. (b) Decentralized. (c) Distributed networks.
Blockchain Use Case - BiTA
Blockchain Use Case - Libra
Blockchain Security Incident #1
Blockchain Security Incident #2
Blockchain Security Incident #3
• Code Review
• Crypto/Math Analysis
• Pen Test
• Audit coverage
• Full-Stack Architectures
• Build on existing Tech
The point is...

• Blockchain will not solve all of your problems, but it does some things pretty well.

• The future of blockchain is still unclear.

• Security professionals beware.
“Everything should be made as secure as possible. especially blockchain.”

Albert Einstein
Thank You

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