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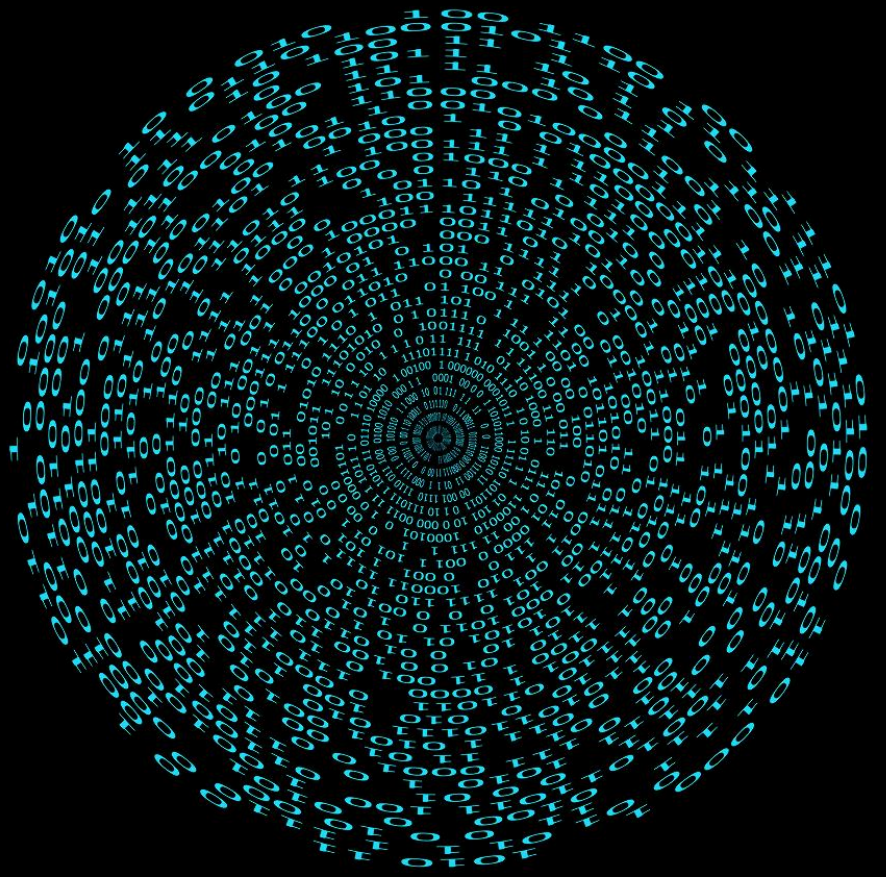


World Continuous Auditing & Reporting Symposium

Blockchain: From The Auditor's Viewpoint

November 8, 2019

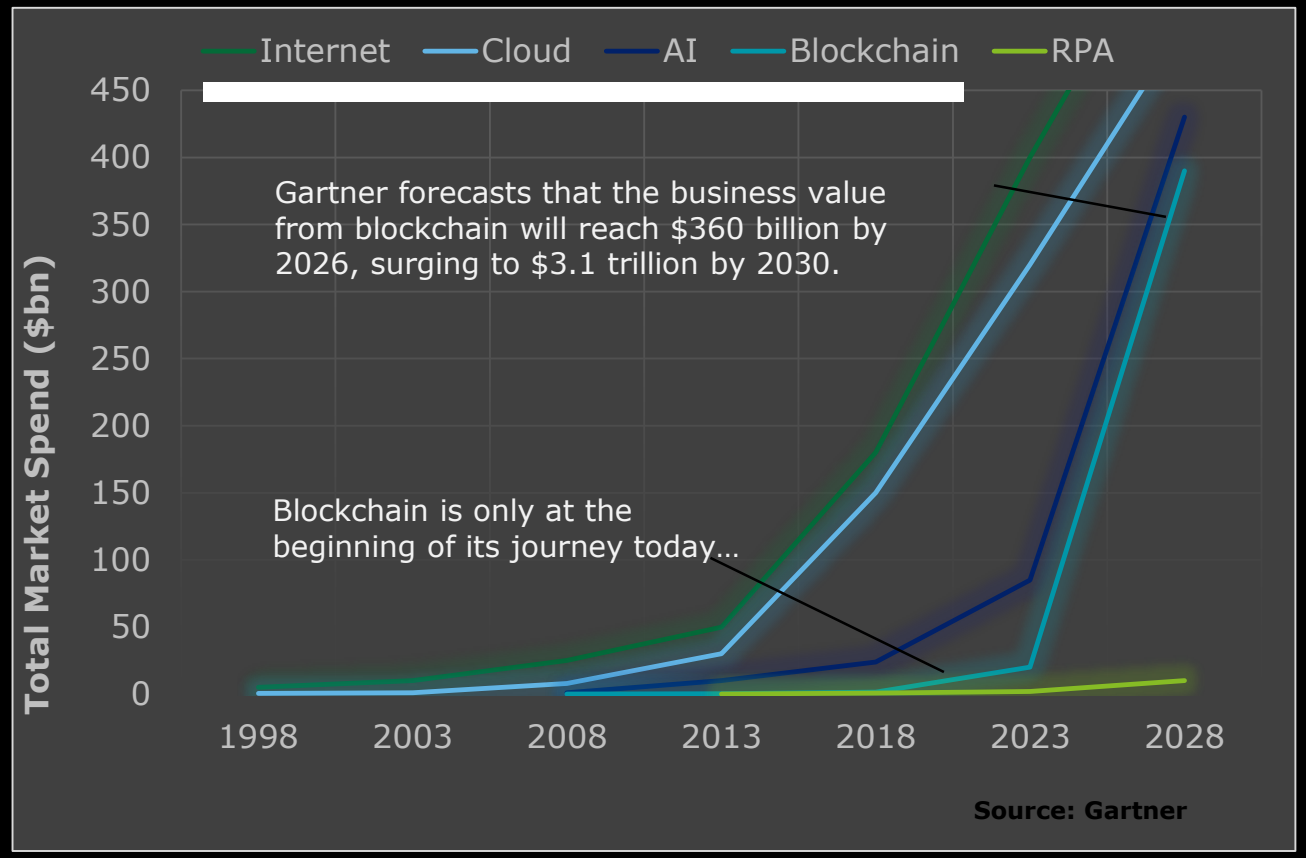
What is blockchain?

Blockchain is to value, what the internet is to information… hence, the Internet of Value

A distributed ledger which allows digital assets to be stored, transferred, and transacted in a real time, immutable manner

Blockchain is bigger than you think

Market spending growth on emerging technologies



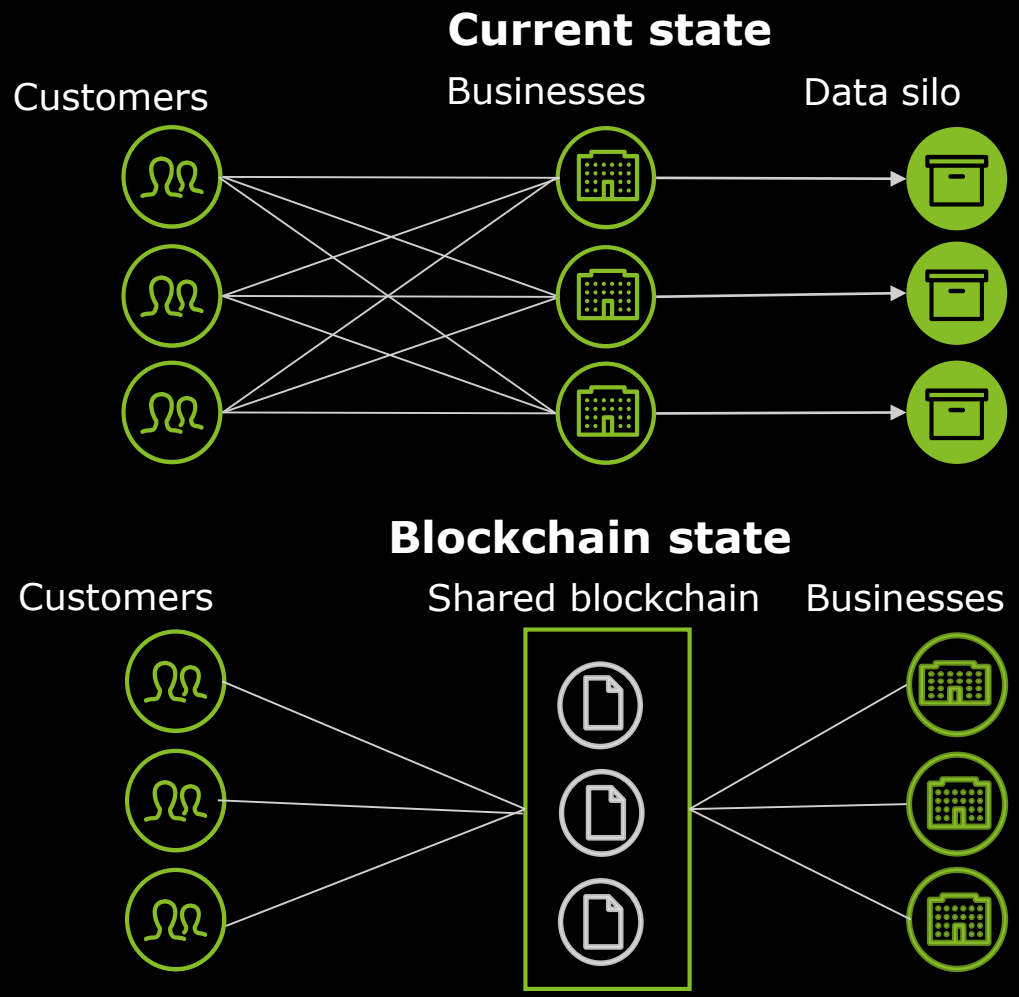
Worldwide blockchain spending is expected to reach nearly **$16 billion** by 2023 (source: IDC).

Deloitte's 2019 global survey of senior executives:

56% consider blockchain as a top 5 strategic priority

40% will invest $5M+ in blockchain this coming year

Benefits of blockchain



- Greater transparency
- Increased effectiveness, efficiency, and speed
- Data standardization
- Data reconciliation

What can a blockchain do?

A blockchain is enabling technology for other business processes

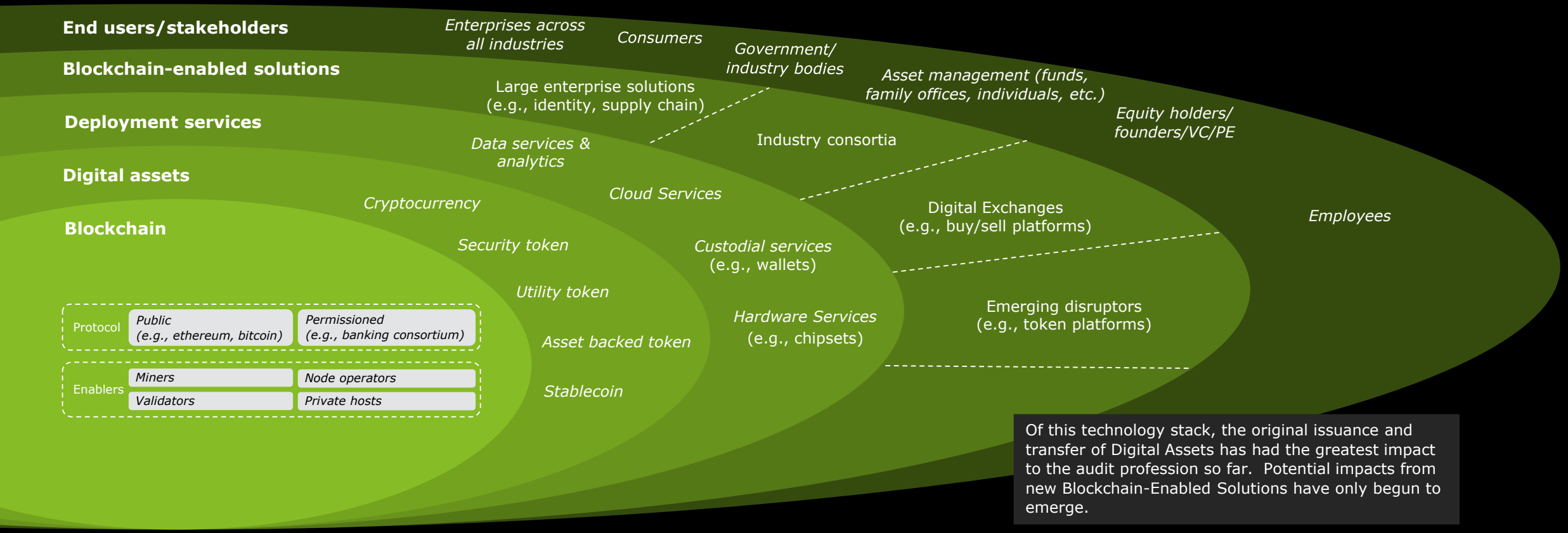
- Automated, high fidelity and low-cost mechanisms for record keeping
- The core mechanism is the maintenance and modification of a distributed ledger
- Requires user-specific "keys" only accessible by authorized users

- A blockchain solution enables secure, near real-time, low-cost transfer of value
- Records can be transferred to other parties using the decentralized distributed ledger

- Automate business logic
- Programmable to trigger transfer of value and information under certain conditions
- Smart contracts can be developed, exchanged, and automatically executed on decentralized systems

A view of the blockchain ecosystem

The blockchain ecosystem can be described as a technology stack with blockchain at its core—supporting the layers; digital assets, deployment services, blockchain-enabled solutions, and end users/stakeholders. Blockchain companies can operate at specific layers of the technology stack or across multiple layers.



Of this technology stack, the original issuance and transfer of Digital Assets has had the greatest impact to the audit profession so far. Potential impacts from new Blockchain-Enabled Solutions have only begun to emerge.

We are seeing traction on transformational use cases from across industries

Consumer Business

- Digitizing warranties for improved management
- Preventing trade of stolen goods
- Distributing and trading in digital assets

Media

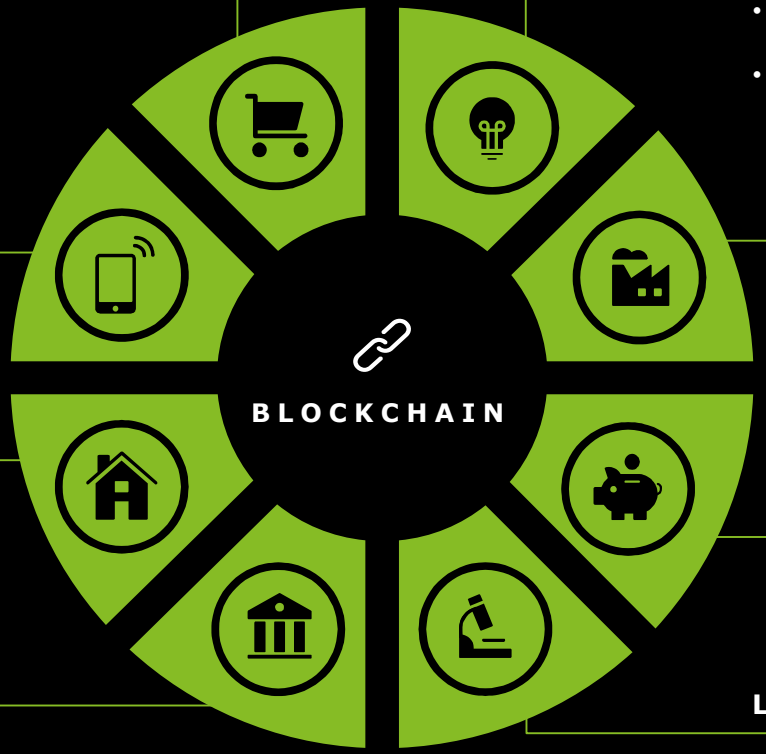
- Verifying media authenticity
- Transforming phones to portable blockchain wallets

Real Estate

- Transferring existing land deeds
- Migrating the land registry onto a transparent, immutable ledger

Public Sector

- Managing registered IDs
- Creating secure voting platforms
- Time stamping of certifications



Energy & Resources

- Leveraging blockchain for physical post-trade activity management & reconciliation
- Digitizing the trade finance processes through integrated banking marketplace

Manufacturing

- Managing devices such as sensors
- Creating transparency and secure traceability of materials
- Enabling machinery to autonomously manage service times and supply schedules

Financial Services

- Supporting seamless cross-currency transactions
- Facilitating direct peer-to-peer payments

Life Sciences & Healthcare

- Preventing medical data forgery
- Tracing and preventing counterfeit pharmaceuticals

Potential benefits to accounting and auditing
Data standardization and transparency

Financial Statement Preparation

- Continuous feed of structured data
- Automate financial statement preparation and reporting
- "Automate" counterparty reconciliation
- Continuous monitoring
- Advanced analytics

Auditing Techniques

- Independent data extraction
- Real-time monitoring and exception reporting
- Memorialize evidence through time-stamping on the blockchain
- Advanced audit analytics of public data scalable to multiple engagements
- Large training data for artificial intelligence

Unique digital risks

Financial risk

Loss of digital assets due to cyber attacks on (or failure of) system protocol, networks, digital wallets and end points. Market demand for reporting of real-time information.

Technological risk

Verification of transactions may be interrupted by an unreliable blockchain protocol. A new framework of controls needs to be adopted by organizations.

Operational risk

Blockchains may have complex identity verification systems, including cryptographic keys. Loss or theft of keys can mean permanently losing access to digital assets.

Regulatory risk

There are unclear, evolving and varying regulations across jurisdictions.
Companies continue to struggle with regulatory understanding and compliance.

Some areas of focus for auditability

Moving Forward

Questions?

Deloitte.