The Blockchain Revolution

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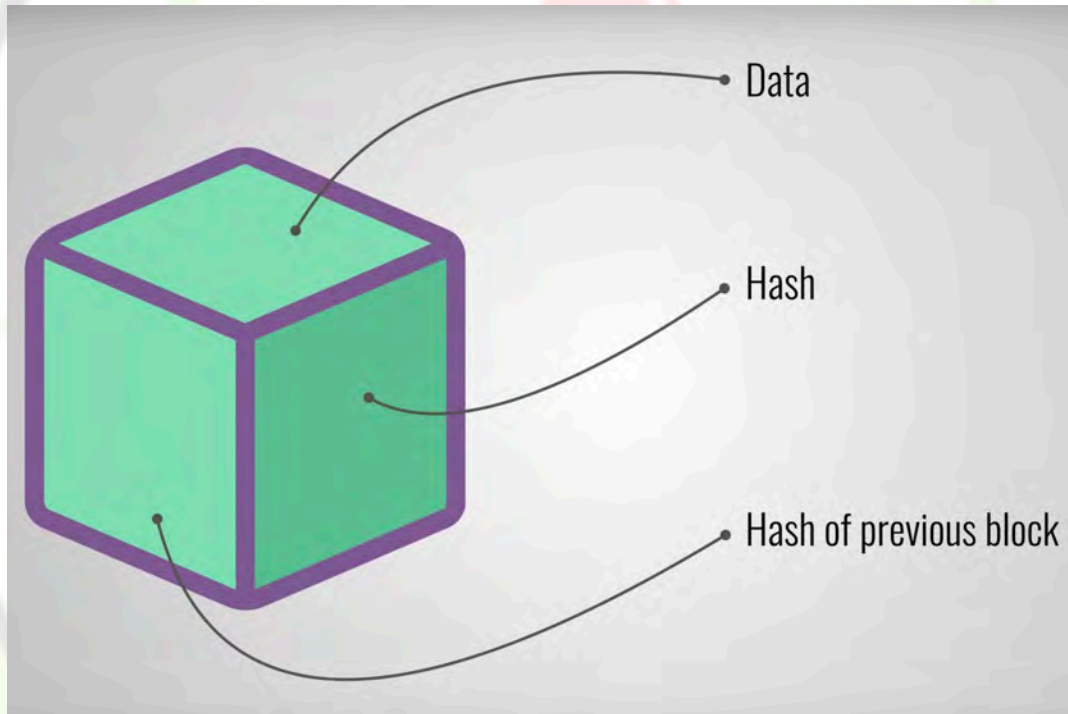
Agenda

- ☐ What is Blockchain

- ☐ How Blockchain works

- ☐ Blockchain History

- ☐ Why it's a new revolution

- ☐ Blockchain Applications

- ☐ Blockchain Limitations
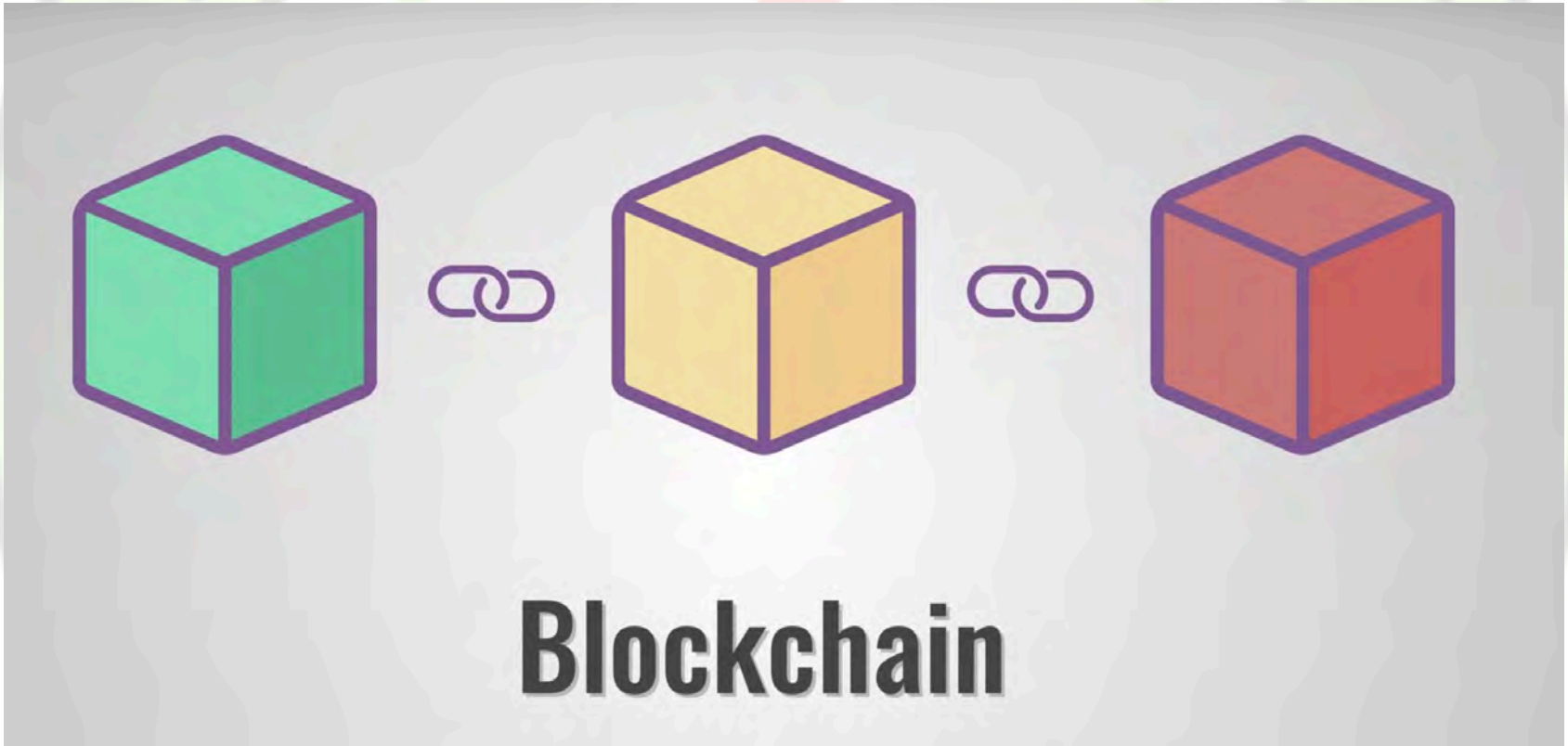
- ☐ Decentralized Web

What is Blockchain?

A blockchain is, an immutable time-stamped series record of data that is distributed and managed by cluster of computers.
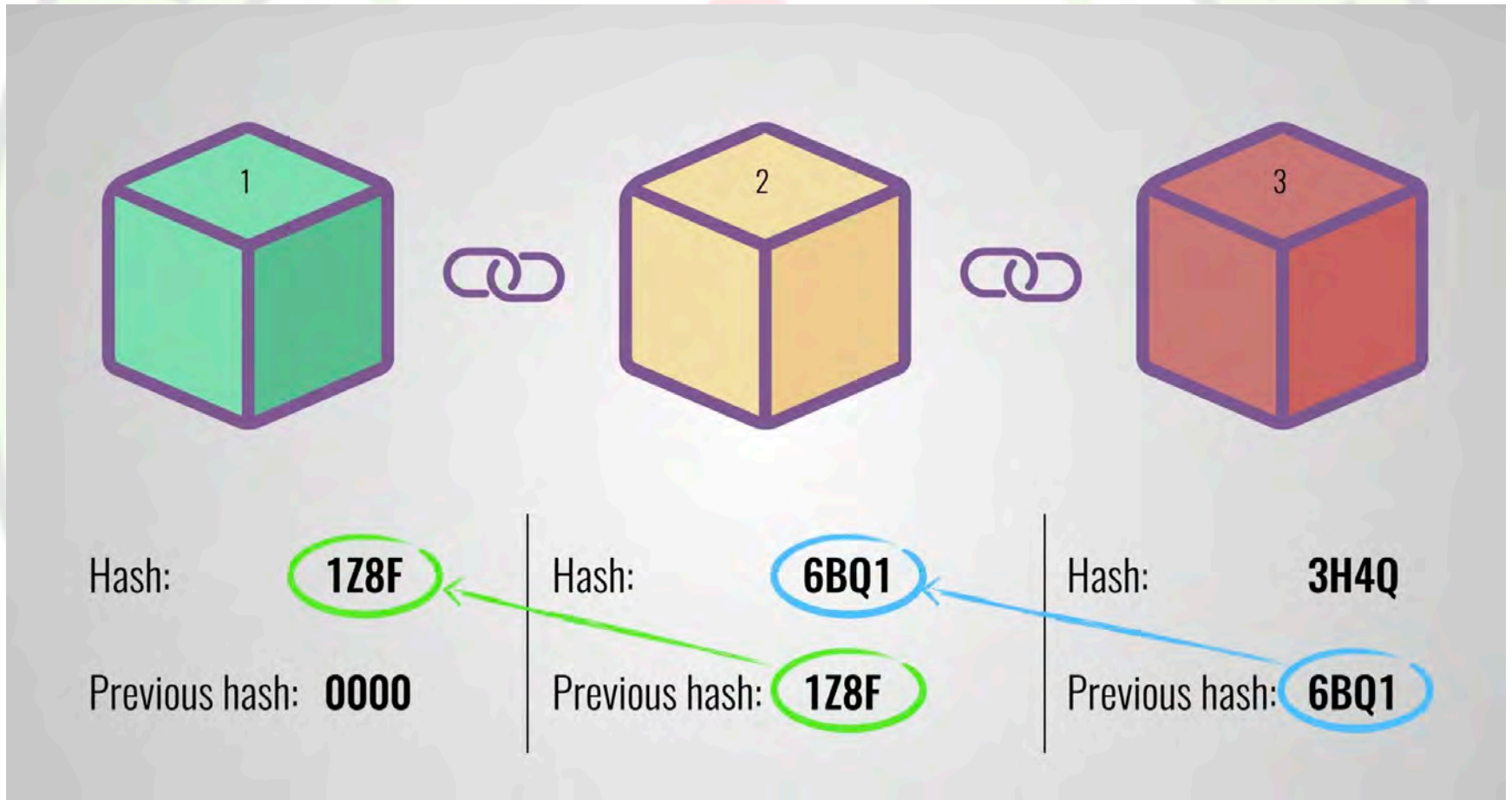
A Block

Its Software, No physical Objects

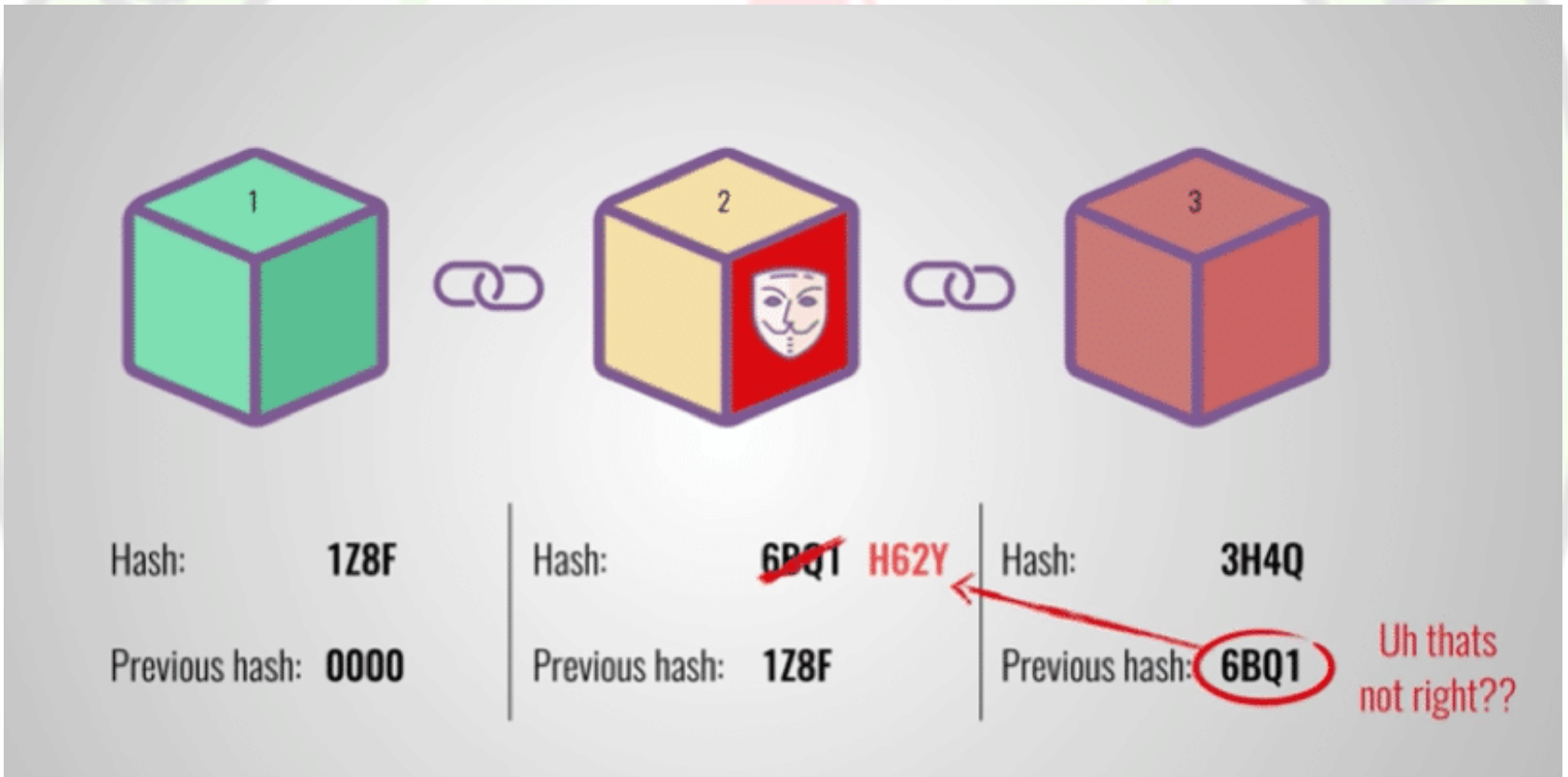# Blockchain

An Online Open ledger

Blockchain

Hash: **1Z8F**

Previous hash: **0000**

Hash: **6BQ1**

Previous hash: **1Z8F**

Hash: **3H4Q**

Previous hash: **6BQ1**

Blockchain Characteristics

- ☐ Decentralized – Distributed
- ☐ Transparency & Privacy
- ☐ Immutable – Closed for change
- ☐ Concept of Mining
- ☐ Proof-of-Work

Blockchain

Blockchain History

- ☐ 1983 Digicash, 1995 NSA, 1998 Szabo Bit Gold
- ☐ 2008 Satoshi Nakamoto – Blockchain & Bitcoin
- ☐ 2009 Satoshi Nakamoto – Open Sourced
- ☐ 2011 Satoshi Nakamoto Offline. Gavin Wood
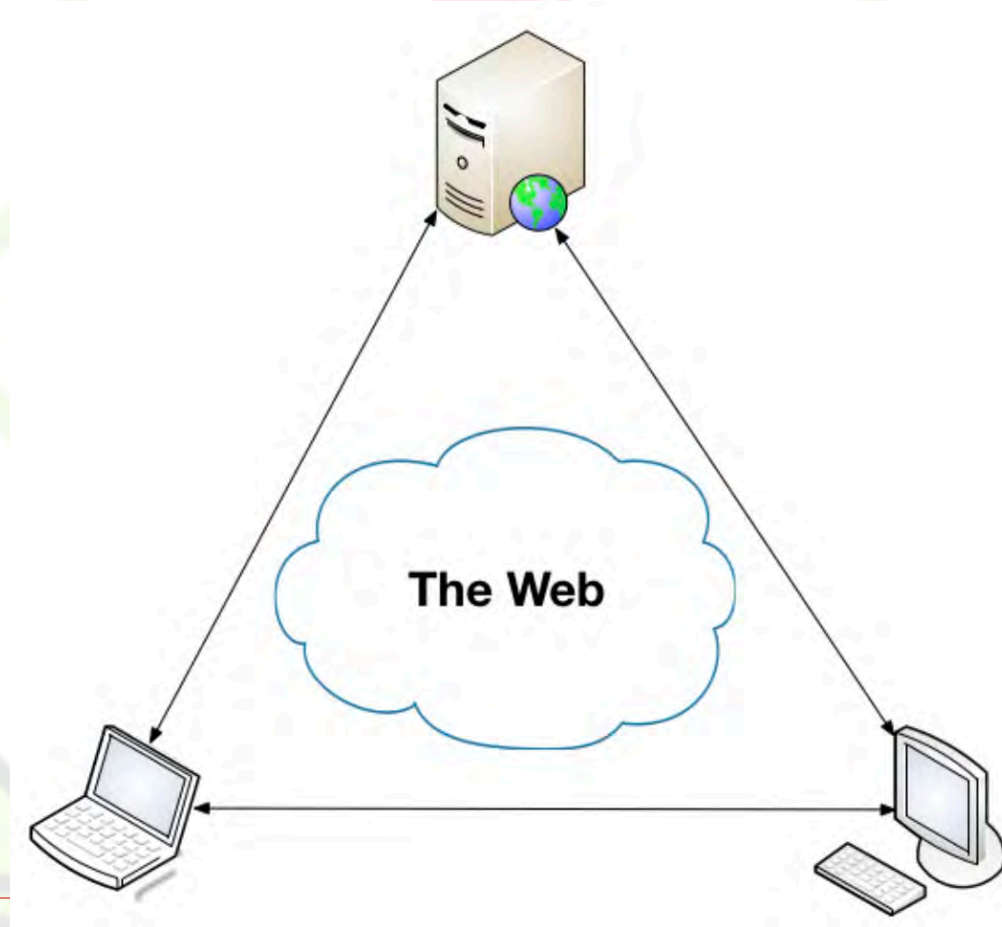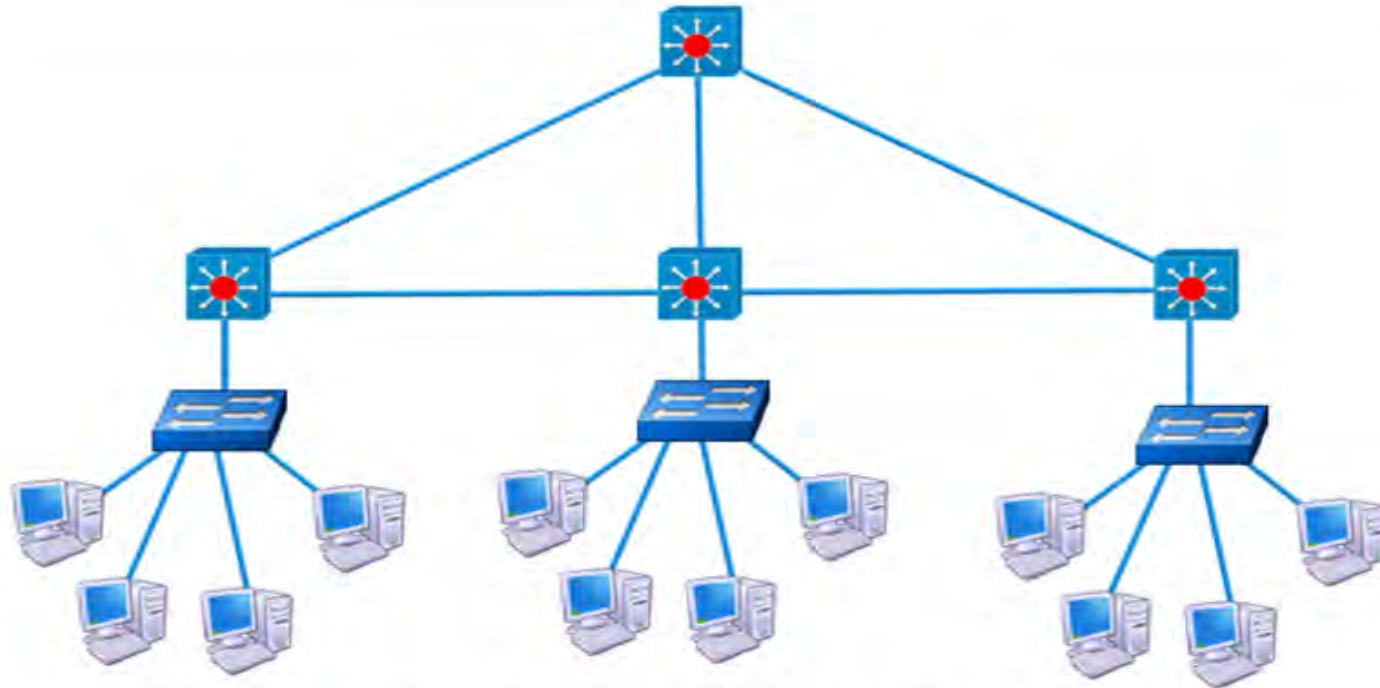- ☐ 2014 Tracked by Journalists LA, CA

980,000 Worth $10B

Revolution?

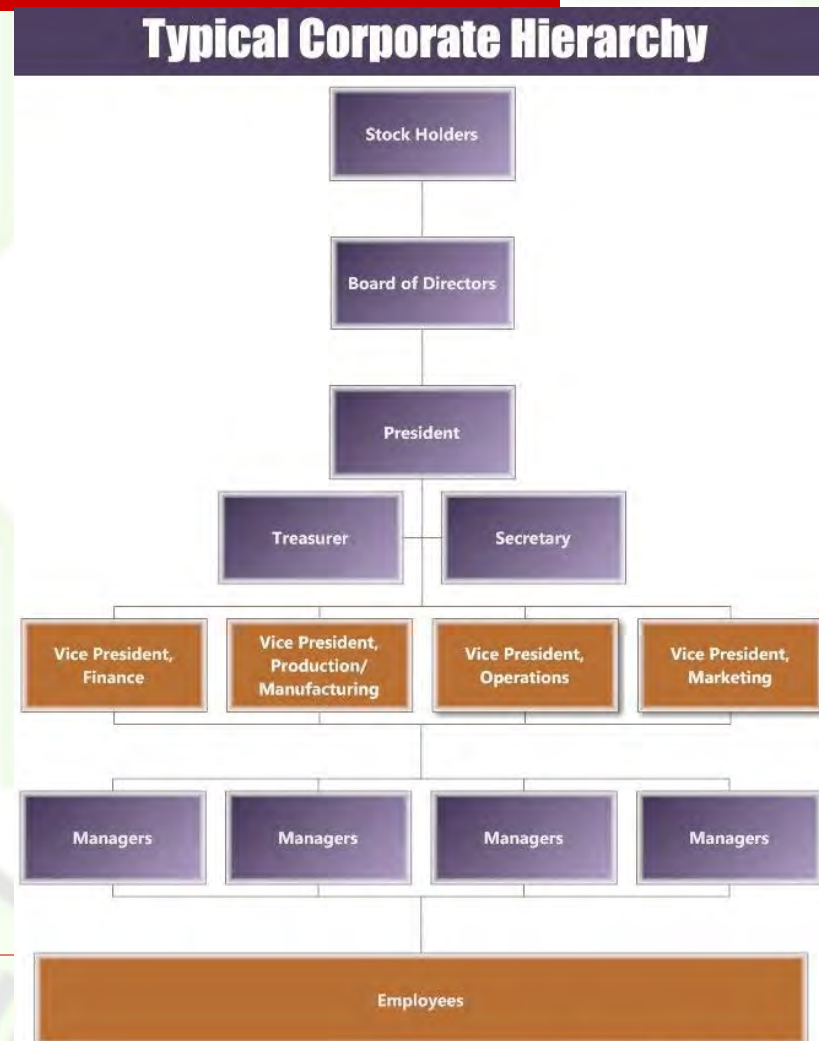# The current Web Model

The Web

The Centralized Networks

Standard hierarchical network (figure 3)

Hierarchical Structures

Typical Corporate Hierarchy

Stock Holders

Board of Directors

President

Treasurer — Secretary

Vice President, Finance | Vice President, Production/ Manufacturing | Vice President, Operations | Vice President, Marketing

Managers | Managers | Managers | Managers
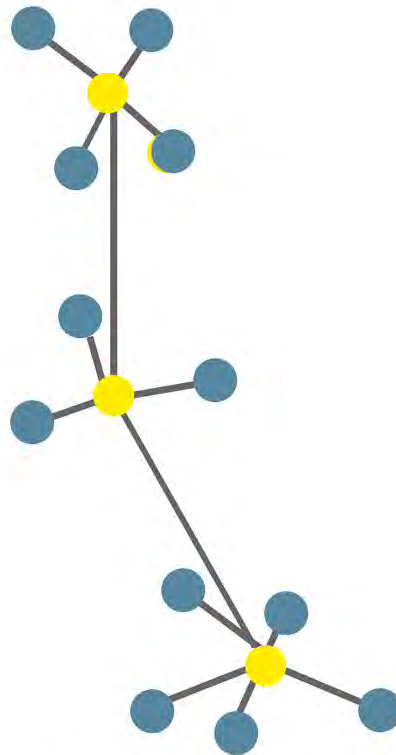
Employees

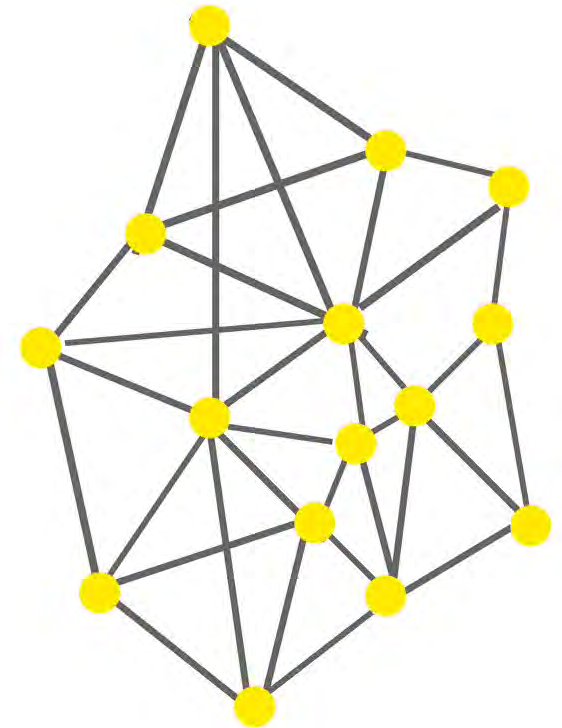hierarchystructure.com

Three stages of computer network evolution
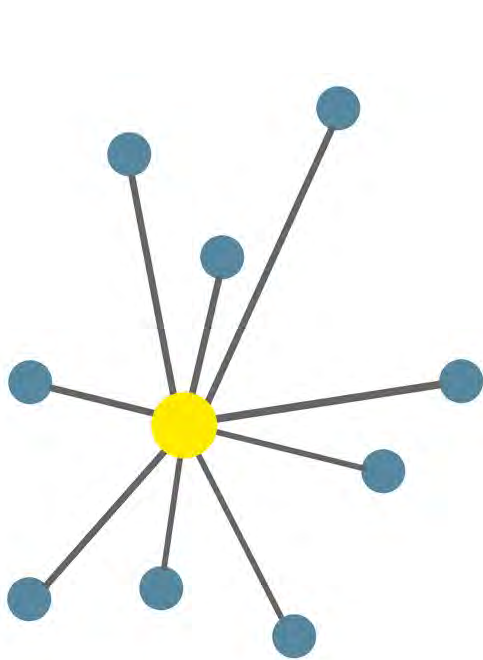
Centralized

Decentralized

Distributed

Source: Daxx.com

Eliminating Middlemen

☐ Peer-to-Peer trades – Brokers?

☐ People own their data – Facebook?

☐ Exchange money – Banks?

☐ Exchange services – Uber , Airbnb?

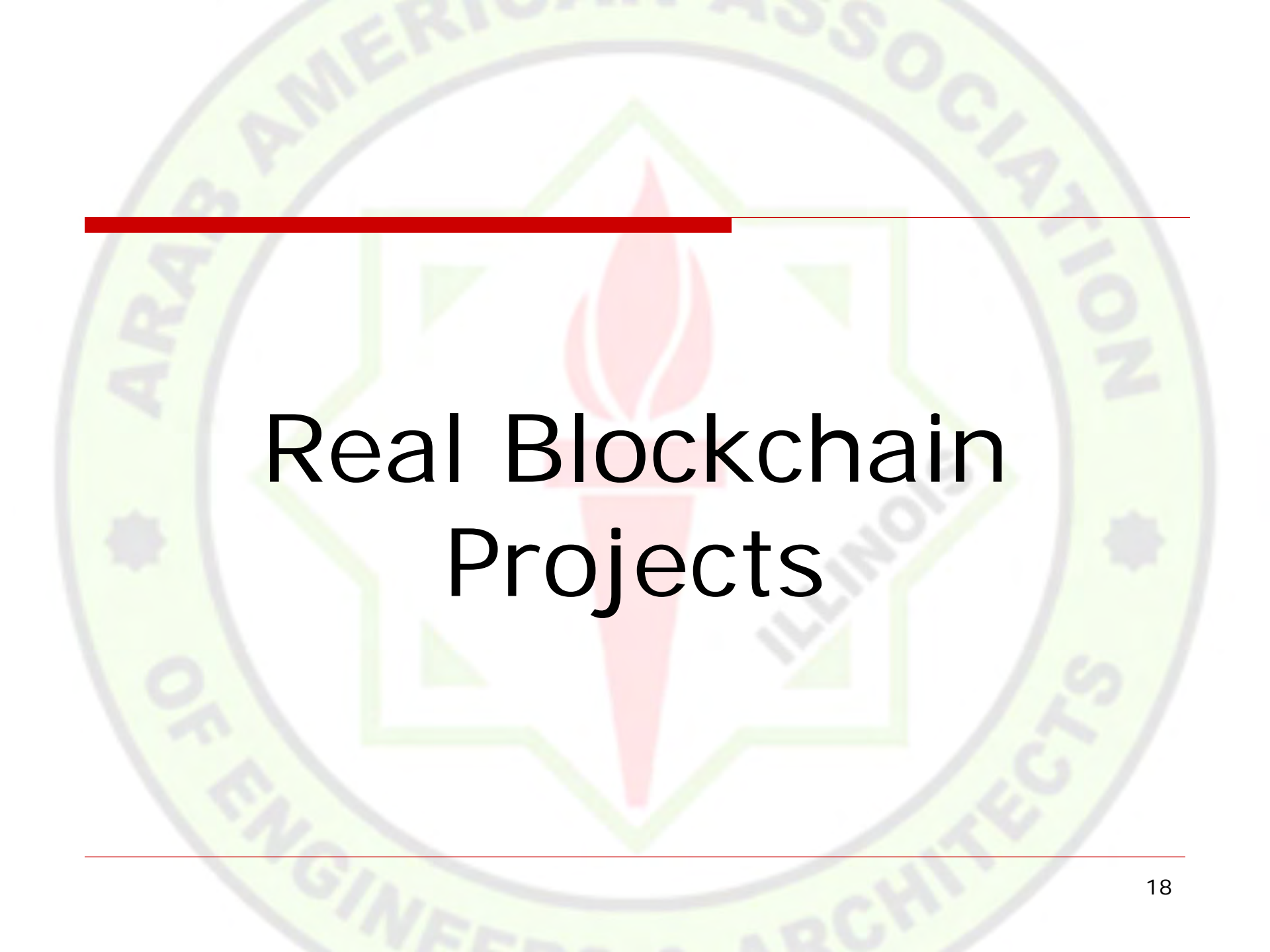☐ Recording Asset ownerships

☐ Goods origins & supply chains

Blockchain Manifestations

- ☐ Bitcoin

- ☐ Altcoins (litecoin, Zcash, Dash ..1500+)

- ☐ Ethereum (Ether)

Blockchain Business Value Gen.

☐ $176 billion in 2025

☐ $3.1 Trillion by 2030

Gartner Consulting

Real Blockchain Projects

IDENTIFICATION

Voter registration is being facilitated via a blockchain project in Switzerland spearheaded by **Uport**.

uport

SUPPLY CHAINS

IBM and **Walmart** have partnered in China to create a blockchain project that will monitor food safety.

IBM

Walmart

INSURANCE

A smart contract-based blockchain is being used by Insurer **American International Group Inc** as a means of saving costs and increasing transparency.

AIG

NATIONAL SECURITY

For the past two years, the **US Department of Homeland Security** has been using blockchain to record and safely store data captured from its security cameras.

REAL ESTATE

Blockchain is now being used to complete real estate deals, the first of which was conducted in Kiev by **Propy**.

PROPY

RAILWAYS

Russian rail operator **Novotrans** is storing inventory data on a blockchain pertaining to repair requests and rolling stock

грузовая компания НОВОТРАНС

MOBILE PAYMENTS

The blockchain ledger that **Ripple** uses has been latched onto by a group of Japanese banks, who will be using it for quick mobile payments.
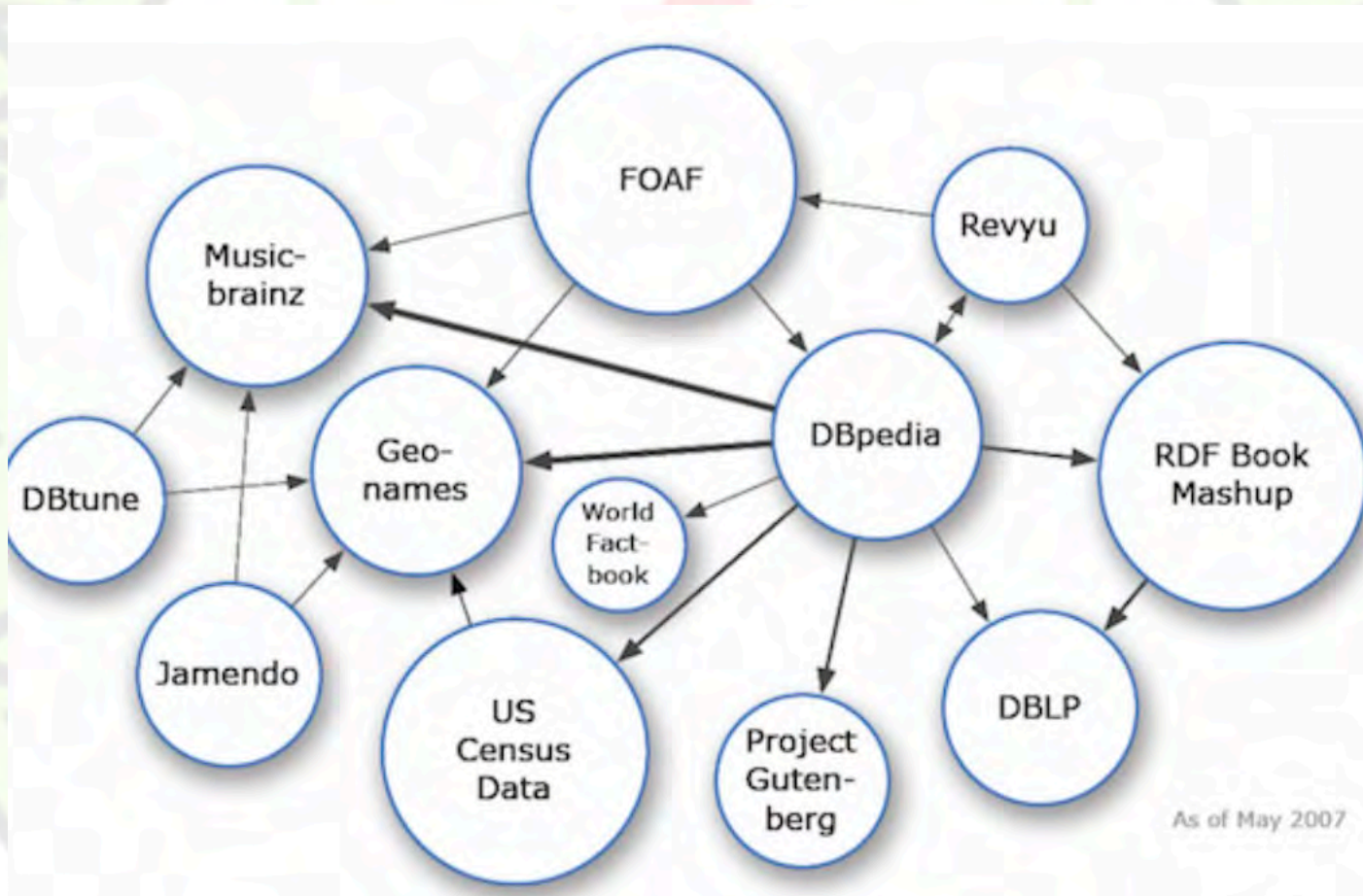
ripple

Blockchain Cons

- ☐ Power consumption $450M/Year
  - ■ 1 Bitcoin Proof-of-work = 1 Month or house electricity
- ☐ Transaction Per Second (27 TPS)
  - ■ VISA is doing 2000 TPS
  - ■ MC around 2000 TPS
  - ■ Chase is at 10,000 TPS
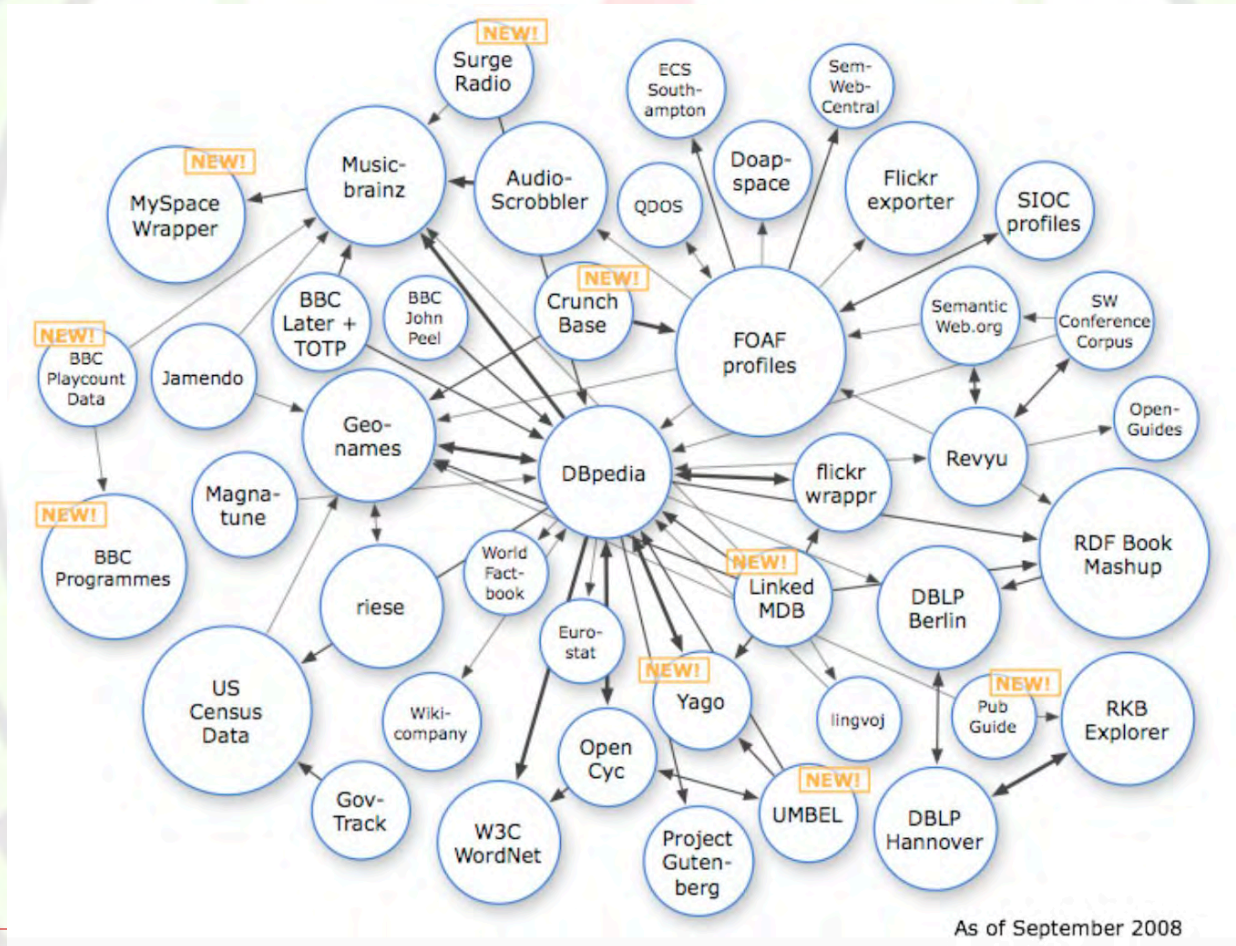- ☐ Bitcoin is mostly used in illegal transactions (Drugs, Trafficking, Smuggling

Decentralized Web

- http://www.alexandria.io
- http://cubeslam.com
- http://lod-cloud.net
- https://storj.io
- https://fastcast.nz

DBpedia

As of May 2007

DBpedia

As of September 2008

DBpedia

https://lod-cloud.net/

Thank you