



“On the Internet, nobody knows you’re a dog.”

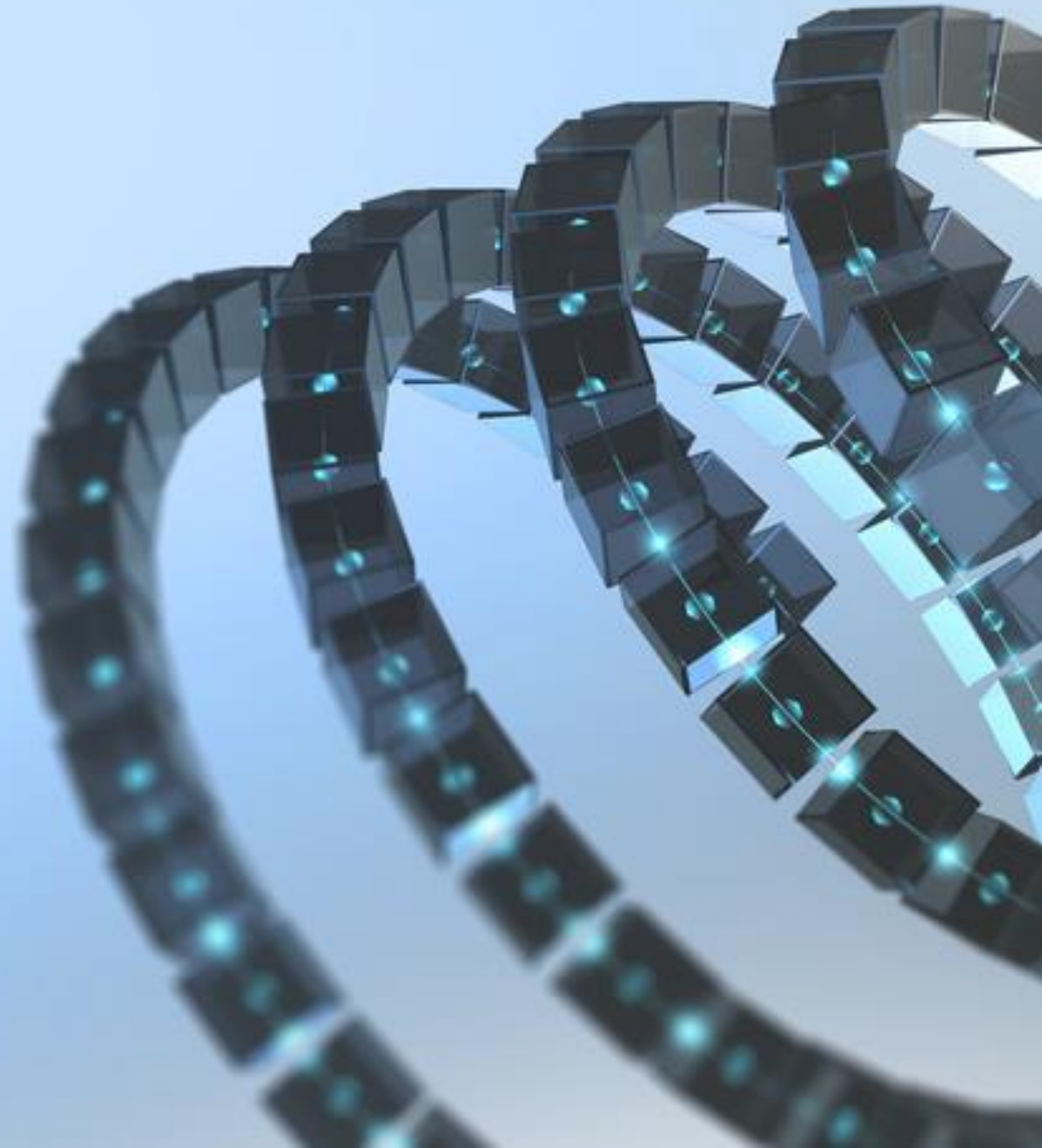
Blockchain

The Chain of Trust and its Potential to
Transform Industries

Speaker:

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@sriniattili



Agenda



The Conversation

Why? What? How ?

Industry challenges and transformation potential

Case studies

How do you get started?

Q&A

A decorative graphic consisting of a green dotted line that starts from the top-left corner, passes through a green-outlined hexagon, and continues towards the bottom-right corner. The hexagon is positioned to the left of the text.

Why Blockchain?



What is it?



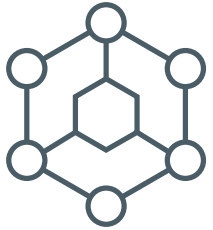
How does it work?

Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
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www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to

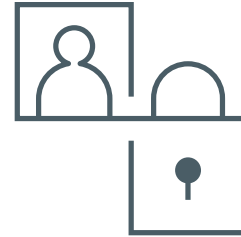
The Hyperledger Fabric



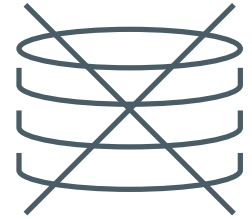
Permissioned
network



Programmable



Confidential
transactions

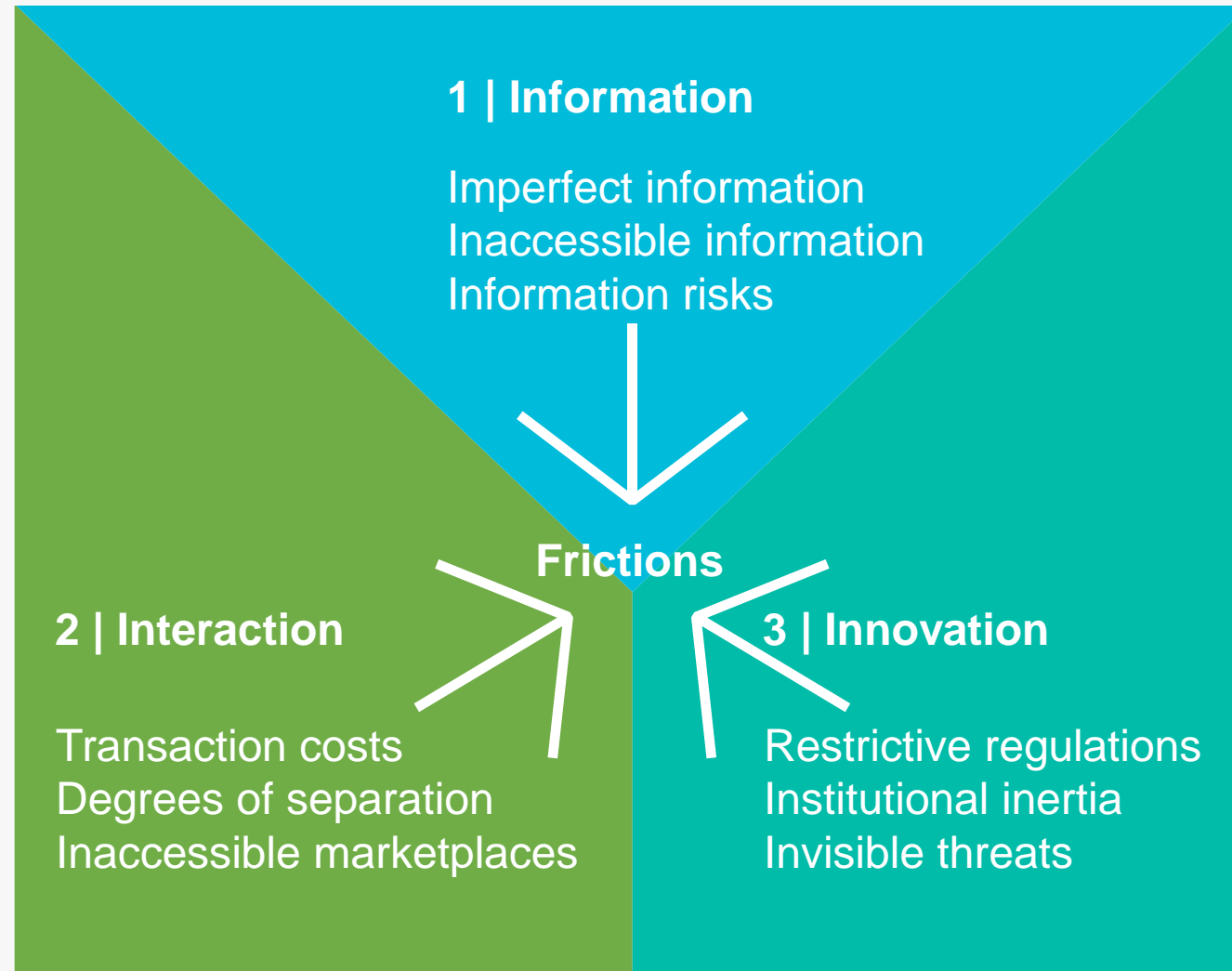


No cryptocurrency

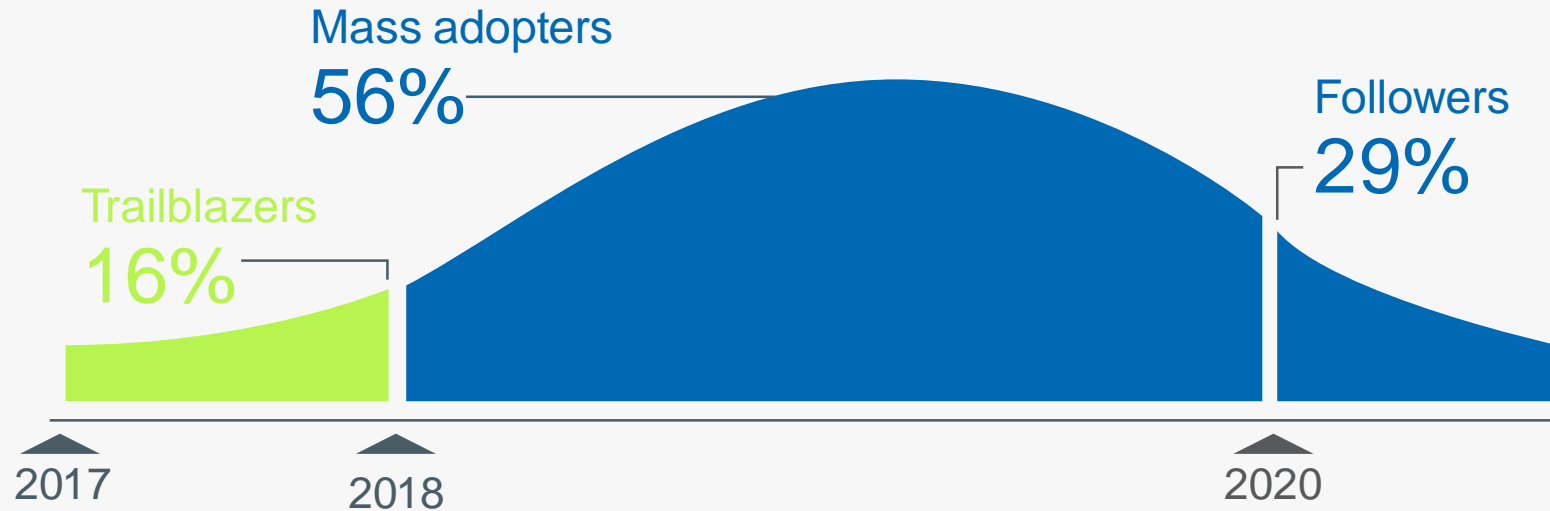
The Comparison...

	Bitcoin	Ethereum	Hyperledger
Cryptocurrency required	bitcoin	ether, user-created cryptocurrencies	none
Network	public	public or permissioned	permissioned
Transactions	anonymous	anonymous or private	public or confidential
Consensus	proof of work	proof of work	PBFT
Smart contracts (business logic)	none	yes (Solidity, Serpent, LLL)	yes (chaincode)
Language	C++	Golang, C++, Python	Golang, Java

Industry Pain Points



A new study from the IBM Institute for Business Value identified three key findings on Blockchain from healthcare executives...



16% of healthcare respondents – the Trailblazers – expect to have a commercial blockchain solution at scale in 2017.

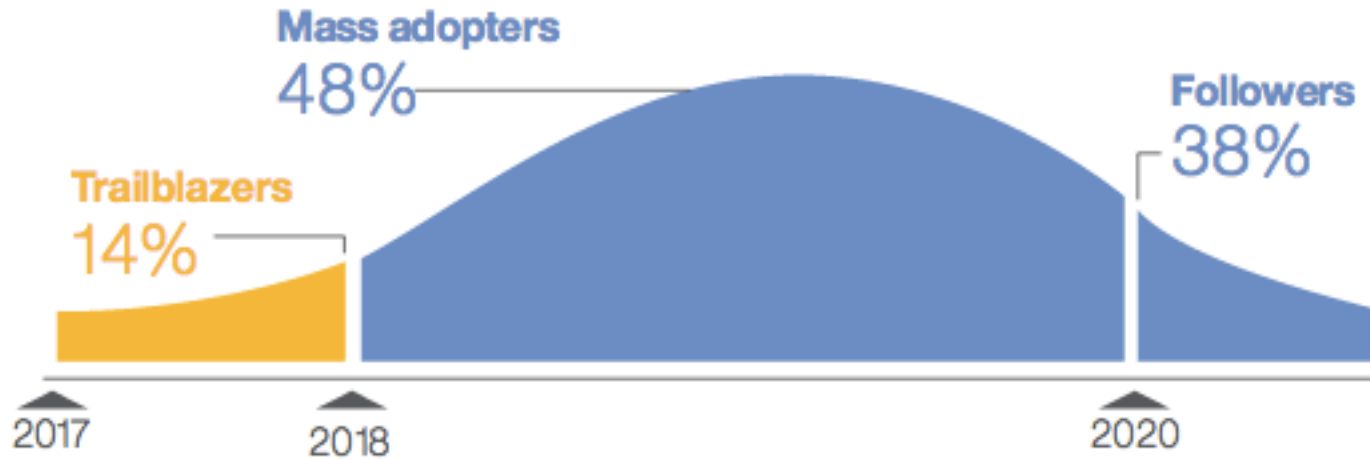


6 in 10 healthcare Trailblazers anticipate blockchains will help them access new markets, and new and trusted information they can keep secure.



7 in 10 healthcare Trailblazers expect the greatest blockchain benefits to be in clinical trial records, regulatory compliance and medical/health records.

Similar study from the IBM Institute for Business Value identified three key findings on Blockchain from Government executives...



14% of Government institutions— the Trailblazers – expect to have a blockchains in production and at scale by 2017.



7 in 10 Government executives anticipate blockchains will deliver the greatest cost, time and risk reduction benefits in the regulatory compliance.



9 in 10 Government executives plan to make blockchain investments in financial transaction, asset management, contract management and regulatory compliance by 2018.

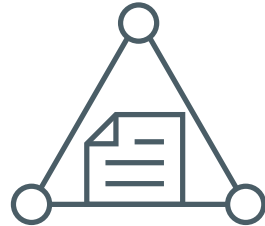
Key Use Cases

We identified use cases across Healthcare and Government to drive highest impact

Healthcare and Life Sciences:



Patient consent and
health data exchange



Payment and
claims



Drug supply chain
provenance
and traceability



Rethinking clinical
trial management

Government:

- Identity
- National Land Registry
- Corporate Registry
- Vehicle Registry / Leasing
- Supply Chain (IBM Dispute Resolution)
- Supply Chain Management (Farm to Fork)
- Trade Supply Chain
- Trade Finance

Blockchain work to-date – Sample Case Studies

Walmart 



DTCC



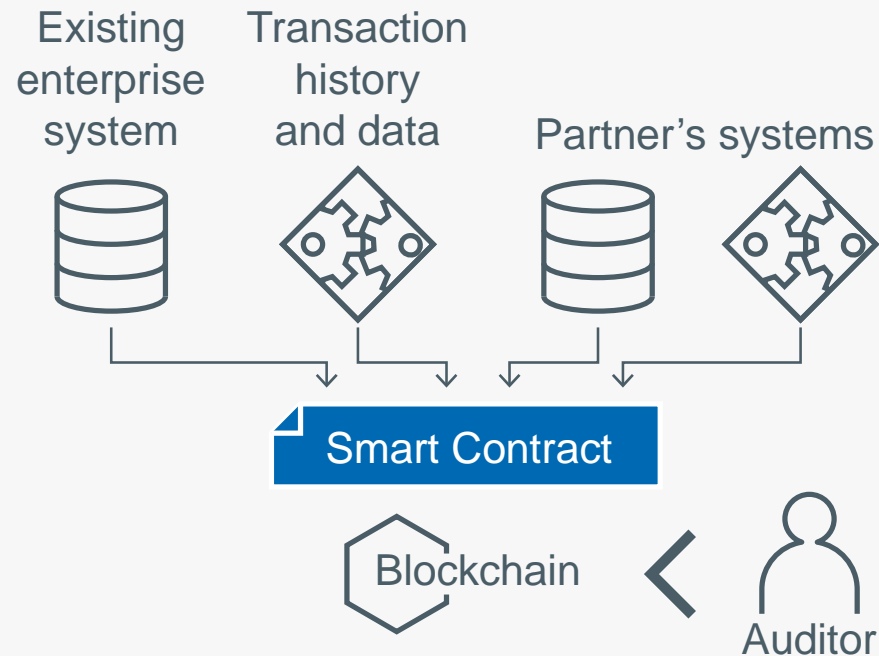
Anatomy of a Blockchain Project



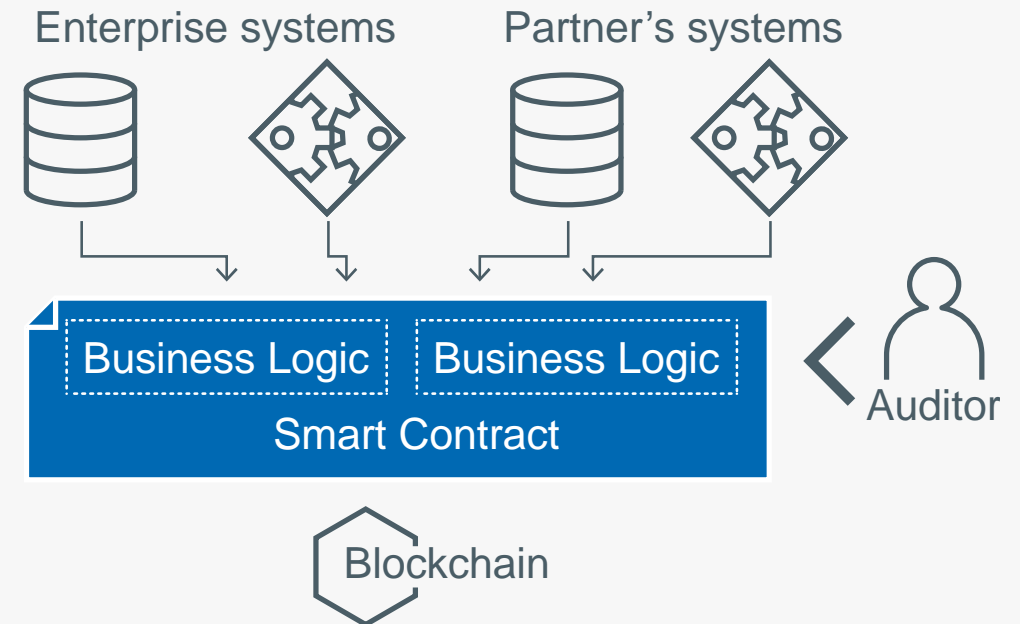
Industry solutions
Analytics/Cognitive
Process definition
Presentation layer
Smart contracts and data models
Integration and API management
Blockchain Foundation platform
Cloud infrastructure

Two Approaches for Creating Blockchain Solutions

1 Simple Augmentation of Existing Solutions



2 Creating a new function or solution with Blockchain and Smart Contracts for business logic



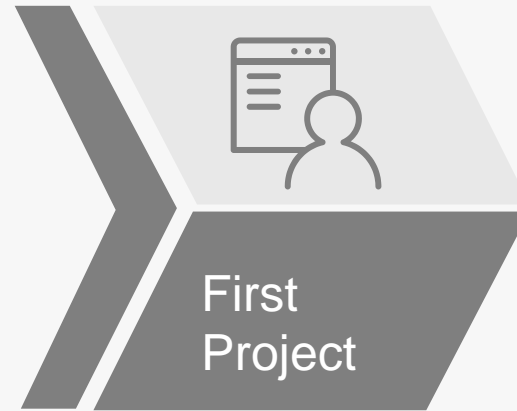
Engagement model overview



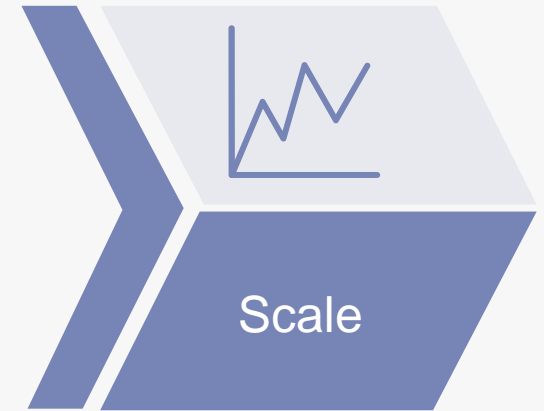
One hour



One day



4-12 weeks



12 weeks and more

Get Started...

Build out your use cases with these blockchain technologies



Build with an IBM signed and tested image from Docker Hub



**Foundational
Technology**

Linux Hyperledger Project



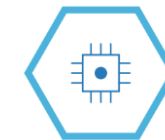
Run a blockchain network in a secure Cloud environment



Cloud



Watson Internet of Things with Blockchain



IoT with Blockchain

“Progress occurs when courageous,
skillful leaders seize the opportunity
to change things for the better.”

Harry S Truman, 33rd President of the United States

Thank you!