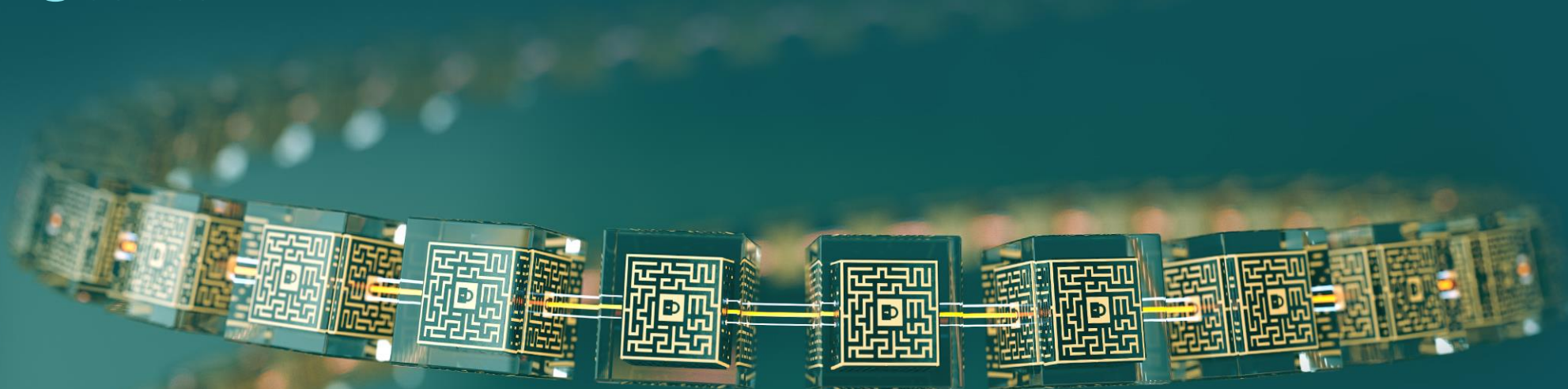


Moving Your Blockchain Project from the Lab to Pilot in 2017

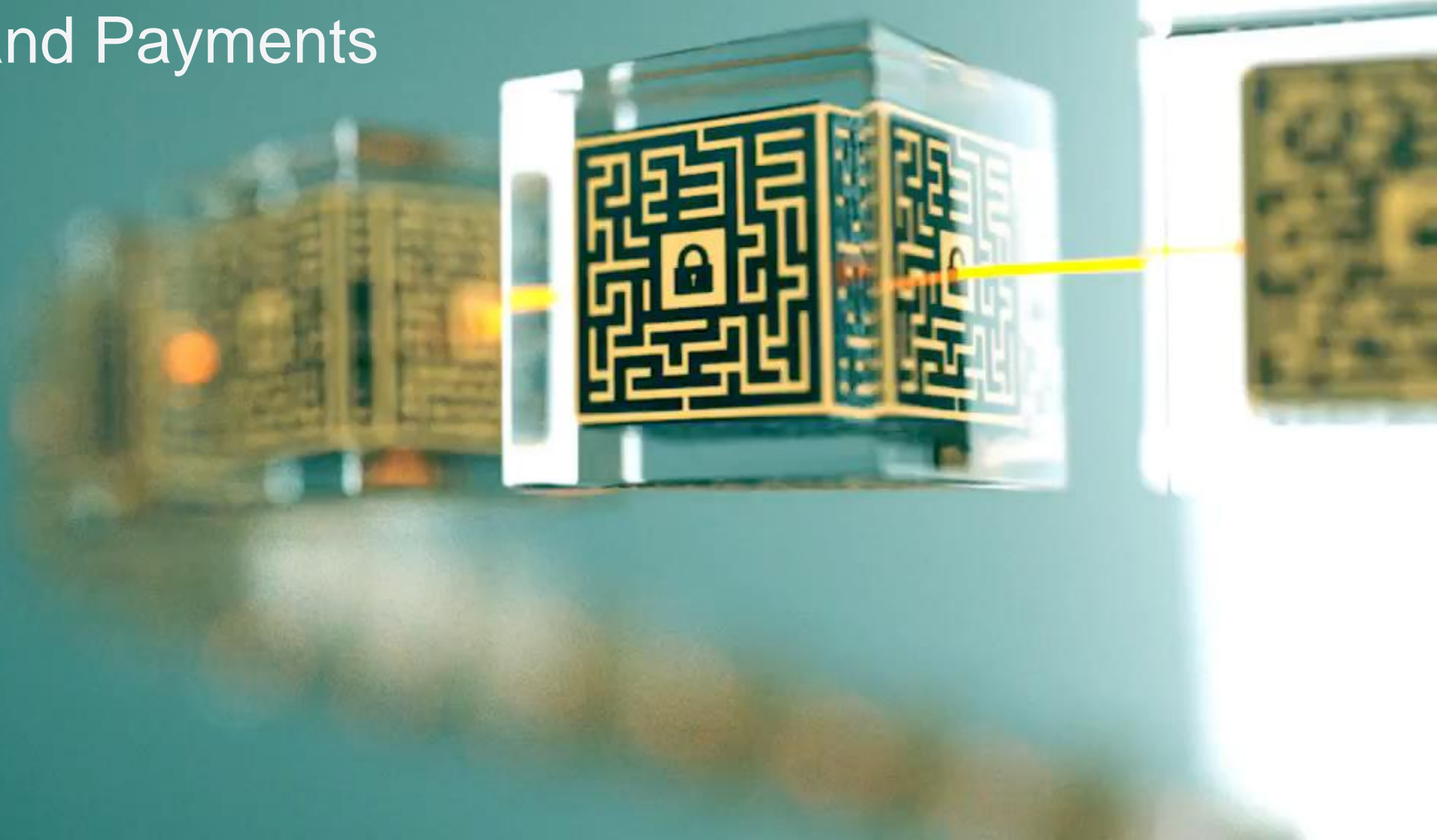
Bart Cant — Blockchain Practice Leader

bart.cant@ibm.com

@bartcant



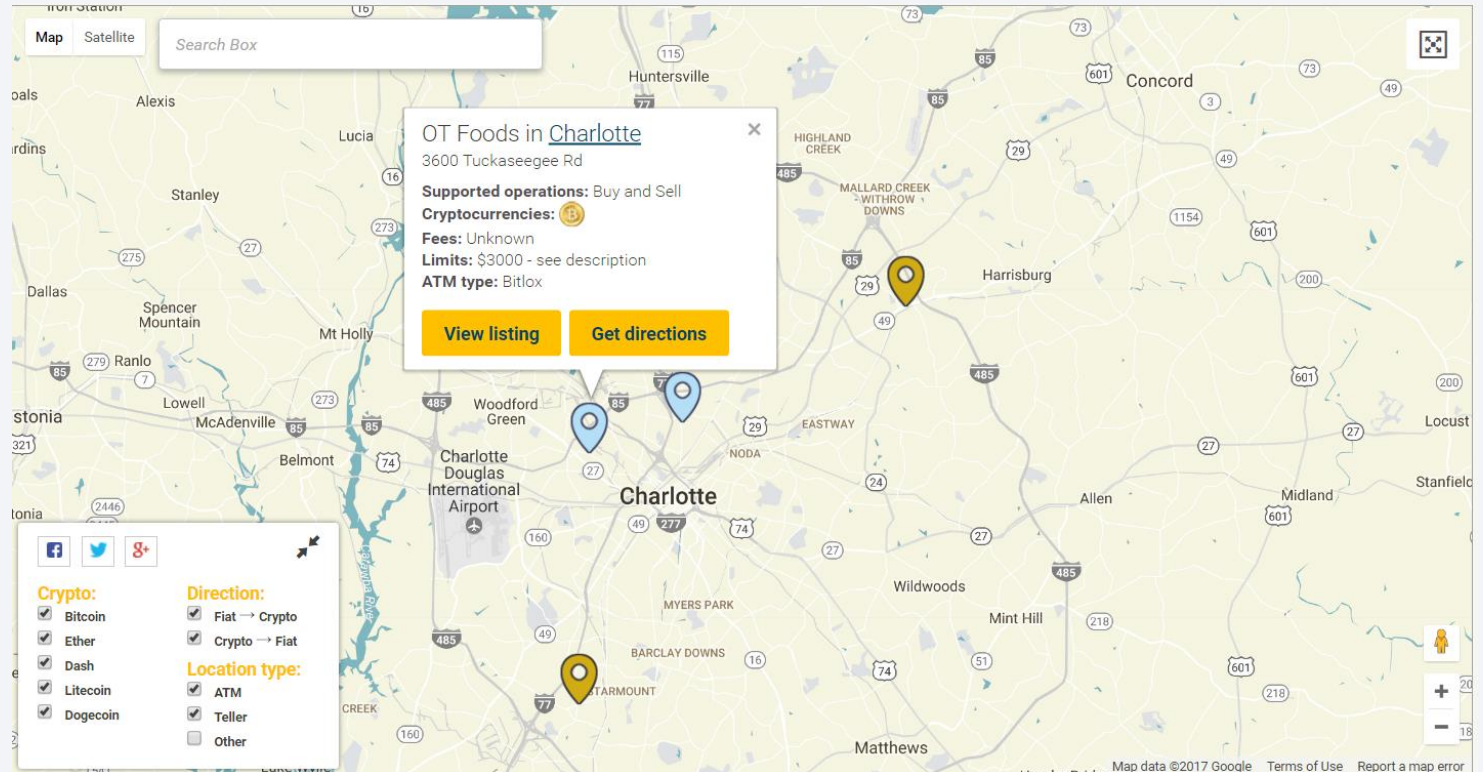
Some Recent Developments in Blockchain and Payments



Welcome to Crypto March Madness.....



The Rise of the BTMs ...



1059
Bitcoin ATMs



36539
Other services



55
Countries



22
Producers



200
Operators

Bitcoin Innovations: Pay me Money... Internationally From a Phone Number

Mobi Wallet from BTCC (Chinese Bitcoin Exchange) offers quick transfer of 60 currencies to any phone number

App Screenshots

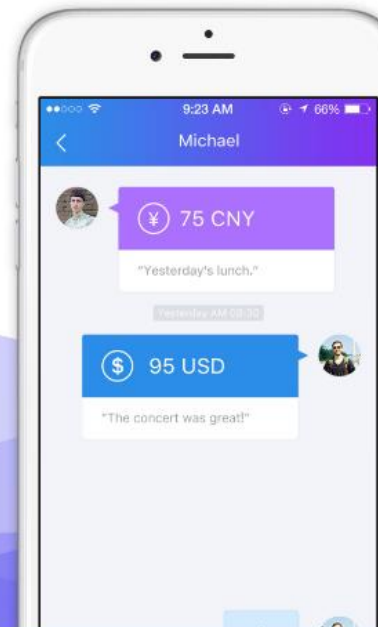
60+ CURRENCIES.
RIGHT AT YOUR FINGERTIPS.



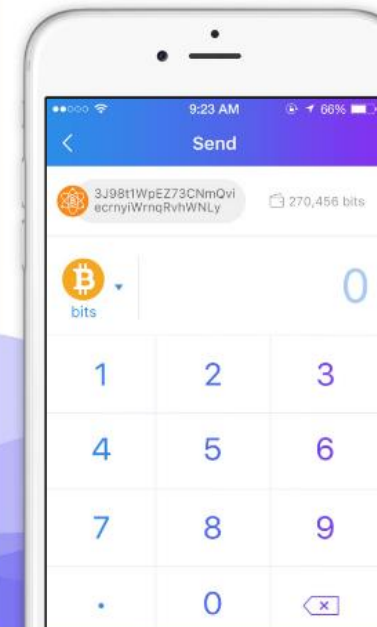
WORKS WITH ALL YOUR
CONTACTS. RIGHT AWAY.



SENDING MONEY IS
EASY LIKE TEXTING.



BITCOIN AT HEART.
FOREVER.

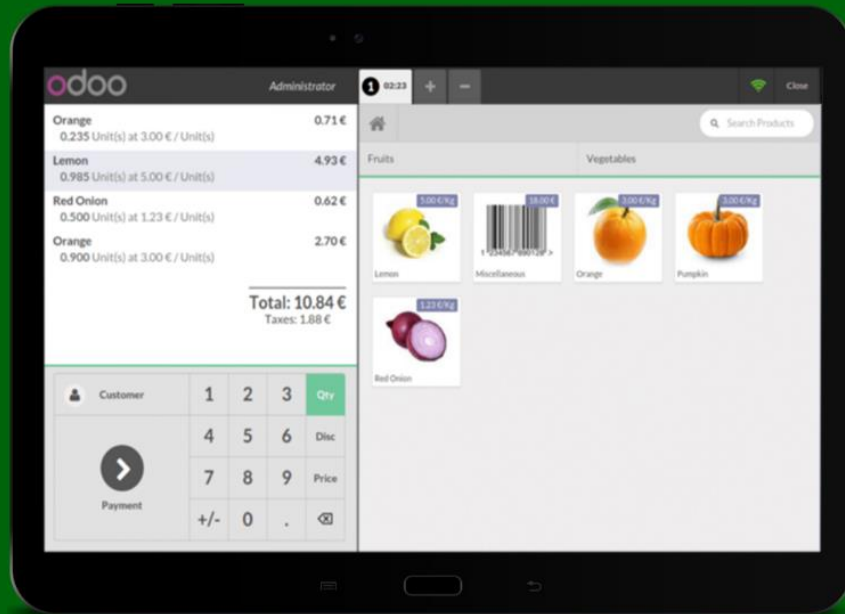


THE MOBI VISA CARD.
BRINGING BITCOIN TO LIFE.



New Solutions are targeting merchants to accept Crypto Currencies at no Cost and... Price Guaranteed

BlockPay Integrated

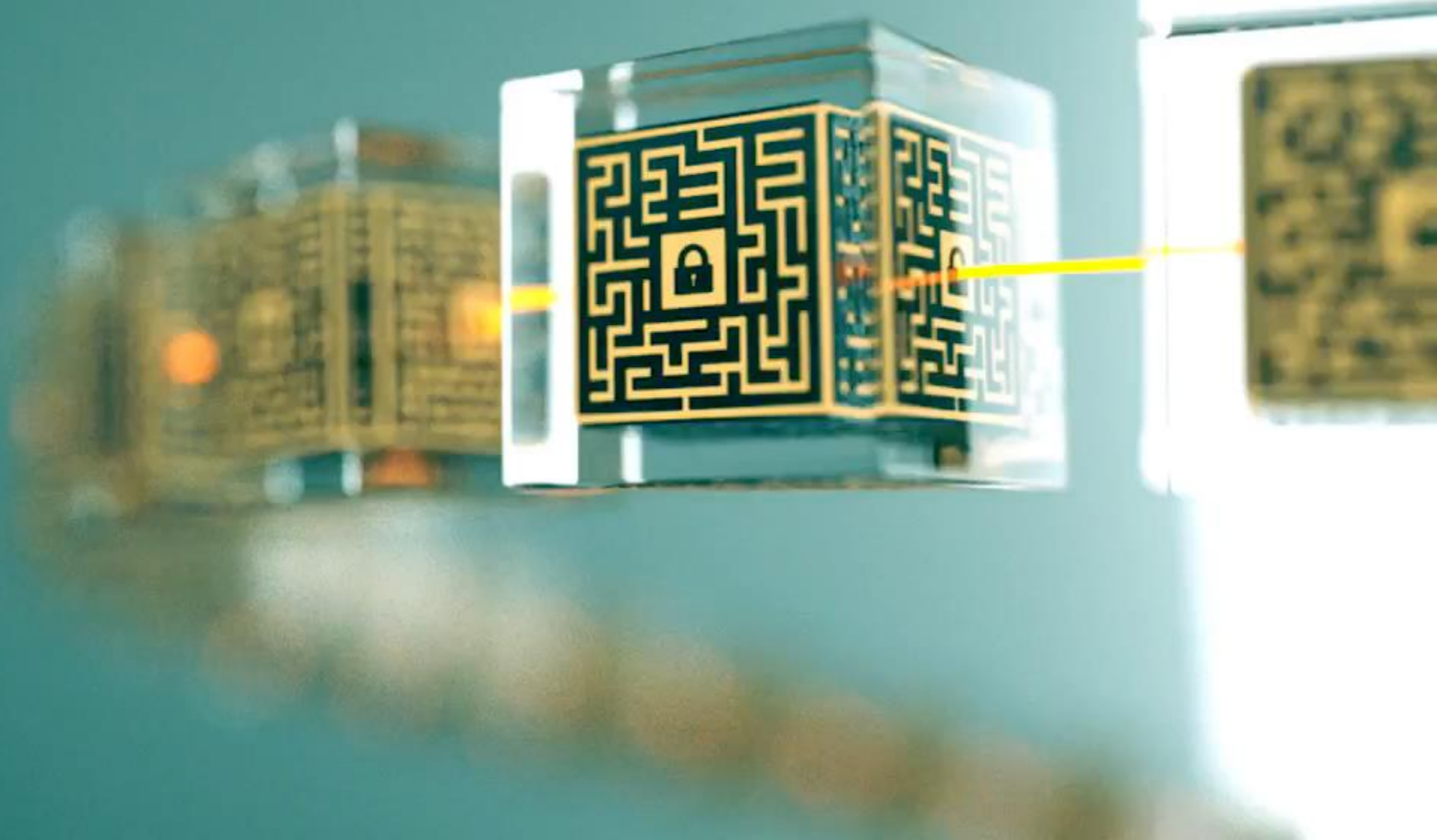


Accept Digital Payments for zero costs
No new hardware – works on all platforms
Custom integration into your ERP



<https://youtu.be/bcuV5jR6gkk>

The state of Blockchain in 2017



How real is Blockchain?

To understand how blockchains will revolutionize Financial markets we surveyed 200 firms



- In cooperation with the Economist Intelligence Unit (EIU)
- Firms across 16 countries
- Respondents: CFO, CTO, CIO offices
 - Working with, or planning to work with blockchains within a year
 - Familiar with their organization's blockchain strategy

Source: IBM Institute for Business Value analysis

Summary Findings

First movers:

Trailblazers set a fast pace and new direction

Just a handful of firms are operating on blockchains today. **By 2017, 14% of financial markets institutions in our study expect to have blockchains in production.** These trailblazers are prioritizing blockchain efforts to focus on new access to trusted information and new business models

Opportunity seekers:

Trailblazers prioritize key business areas for best benefits

Cost, immutability and transparency benefits: Trailblazers focus blockchains on four areas – clearing and settlements, wholesale payments, equity and debt issuance, and reference data

New business models: Trailblazers expect blockchains to yield the greatest effect in opening up new business models in three of the four same areas: equity and debt issuance, clearing and settlements, and wholesale payments

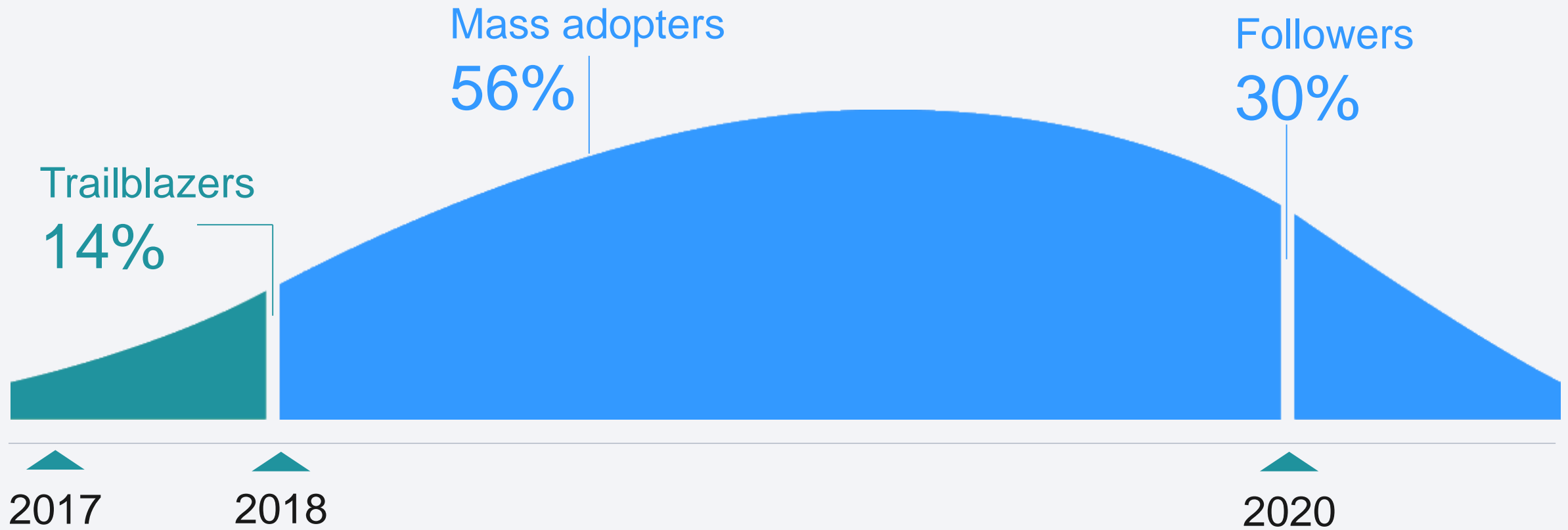
Shifting profit pools:

New vectors for growth and disruption

Investing for growth: Financial markets institutions are investing most heavily in identity and know your customer (KYC), clearing and settlements, collateral management, reference data and corporate actions.

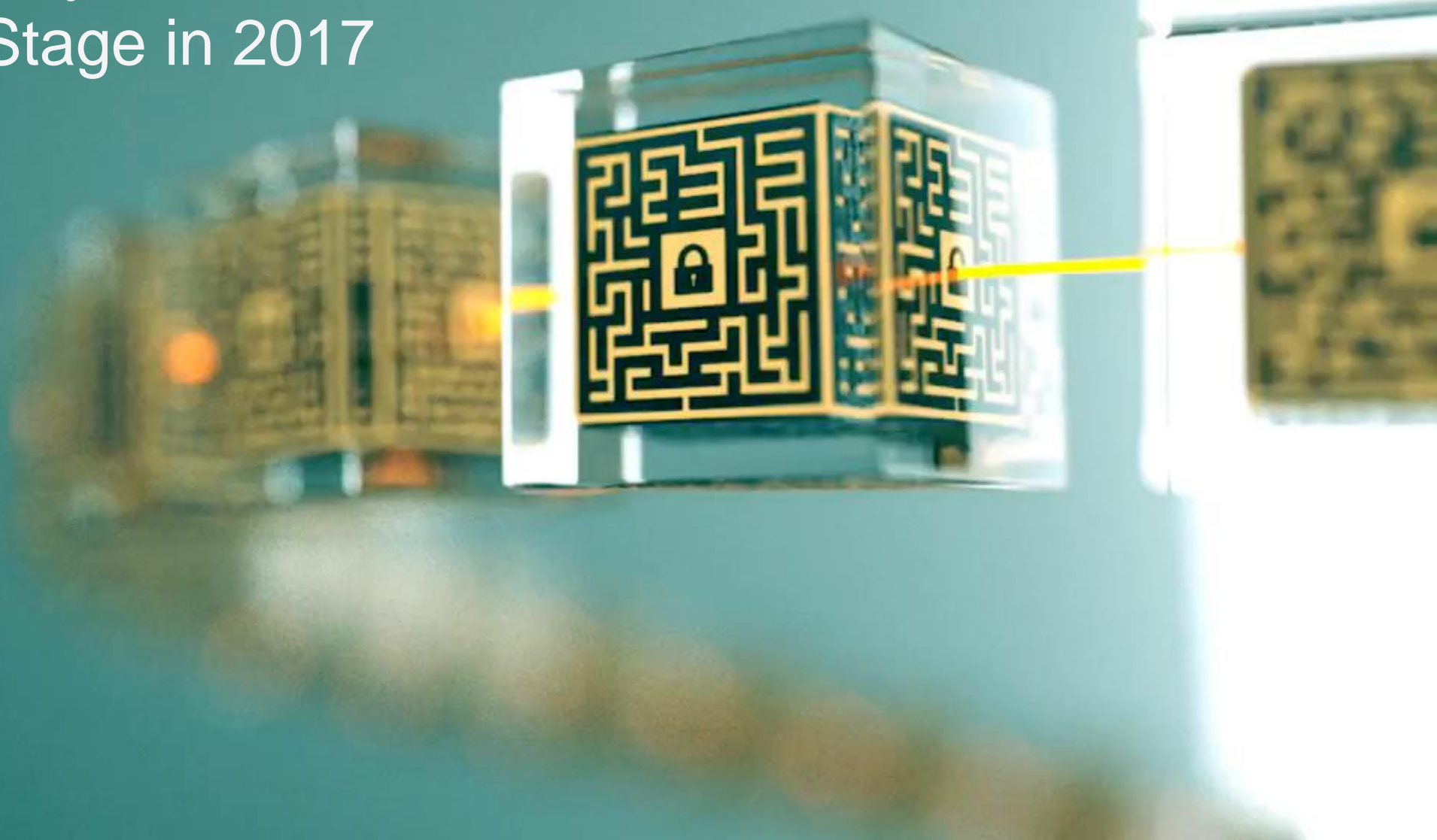
Ignoring disruption? Most firms, including those in the trailblazer section, aren't anticipating disruption from blockchains, in large part due to regulation

70% of the respondents expect to leverage Blockchain by 2020



Source: IBM Institute for Business Value analysis

8 Decisions to Move Your Blockchain Project from the Lab to Pilot Stage in 2017



1. Define a Minimal Viable Product



1. Understand user view of business challenges(s) where Blockchain can make a difference
2. Explore (& define) maximum of three Hills which will be first solution(s) to the business challenges
3. Apply High Impact Areas (Compliance Ledger -> Consortium Ledger -> Asset Exchange -> High Value Market)
4. Determine Prototype, Validation and Testing

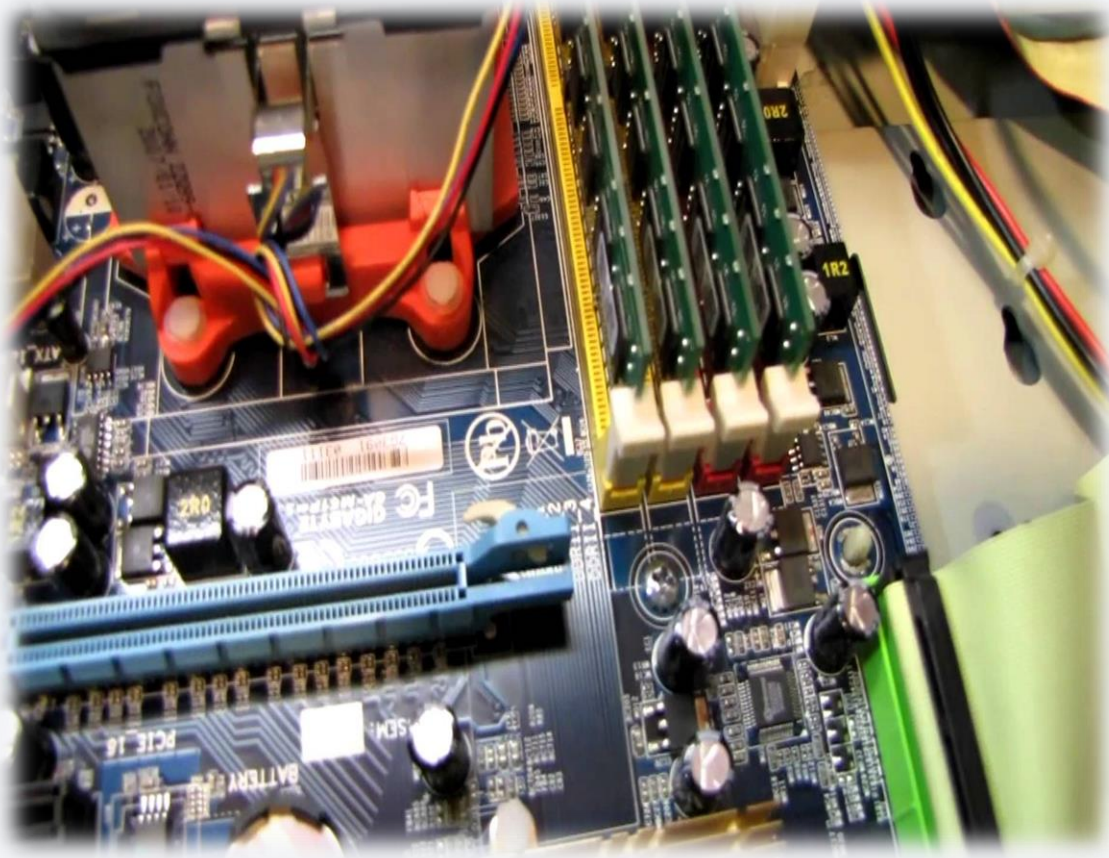
2. Create a Speedboat

Sweetspot for Blockchain Projects involves participation of 2-5 different stakeholders

- Involve participants from your business network (Core and peripheral)
- Sometimes competitors, sometimes geographically spread
- Get executive management support
- Set aggressive goals (eg. Conference in next 2 Q)
- Network adoption will follow if successful
- Gain agreement on IP



3. Select a Platform



Various Platforms available:

- Hyperledger Fabric
- R3-Corda
- Chain
- Enterprise Ethereum (Recent Announcement)
- Digital Asset Holding
- BigChainDB
- Application Specific Blockchains

Factors to Consider:

- Architecture and Design
- Market Adoption
- Development Community

4. Verify the Scalability of your Solution

Blockchain Objective to Scale to Enterprise Level
Transaction output (10K tps)

Scaling is severely limited by Consensus
Mechanism (eg. Proof of Work)

Various Scalability techniques:

- Faster Blocks
- Only communicate transactions to participating nodes in the transaction
- Leveraging an Ordering Services or Channel instead of full broadcast to all peers to reach consensus



5. Select a Hosting Platform



Several vendors offer a **rapid, low-cost, low-risk, and fail-fast** platform for organizations to collaborate together by experimenting with new business processes—backed by a **cloud platform**

Key Capabilities:



Dedicated Compute

Four connected peers and a CA in an isolated partition on dedicated compute



Secure Service Container

Protection from horizontal and vertical tampering with all code running in a secure virtual appliance



SecureKey and HSM

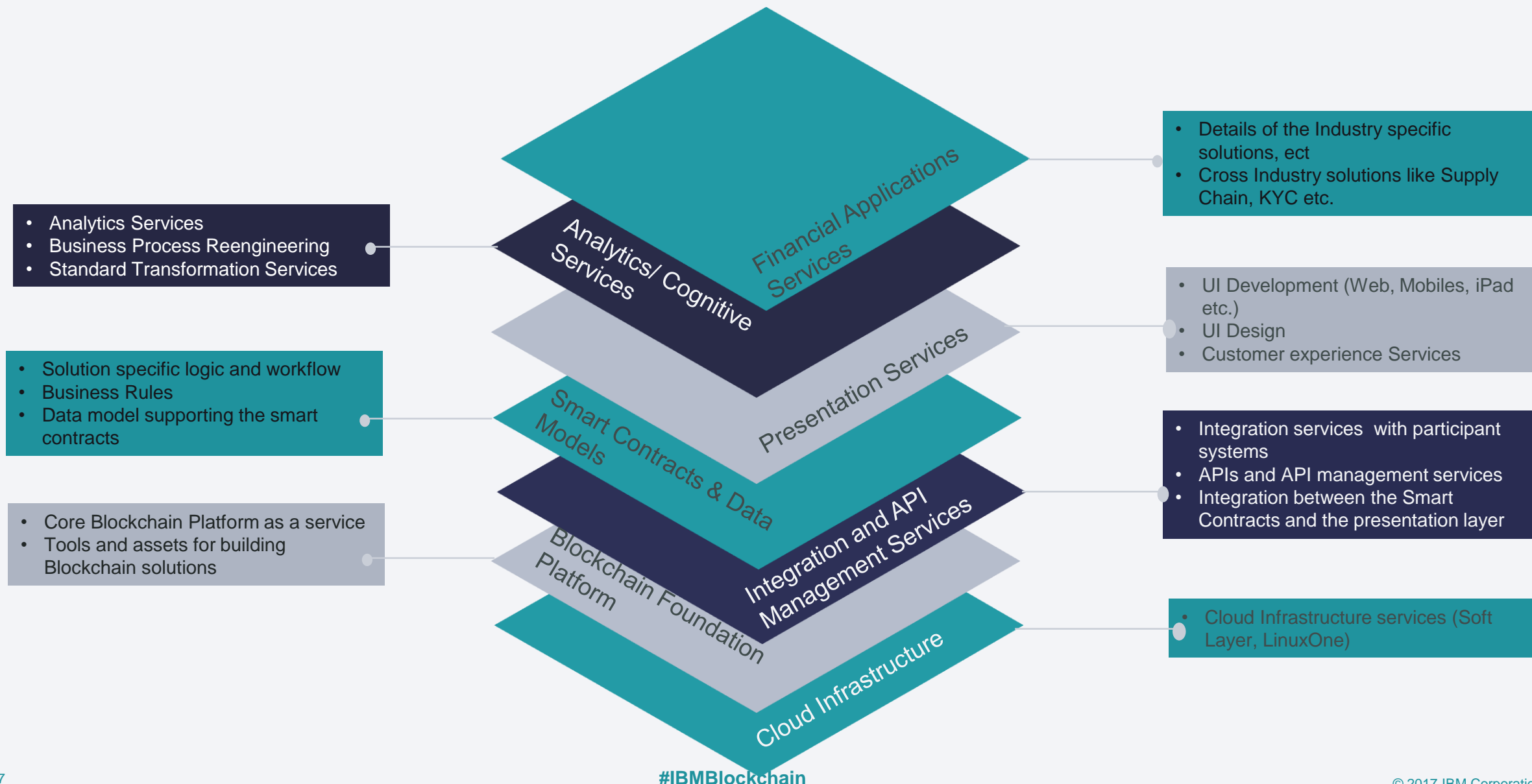
On board HSM with tamper resistant cards providing up to FIPS 140-2 Level 4 security



Performance Optimized

Crypto acceleration, high speed network all running on the worlds fastest Linux system

6. Breakdown the Development / Effort and... Go Agile....



7. Validate your Proposition

Traditional Business Case Method

- Benefits and Costs pertinent to Blockchain
 - Benefits — What Are the Key Sources of Value?
 - Costs — What Are the Key Cost ?
 - Build / Bootstrap / Run
- Risks in Blockchain Projects



VS

A “Garage” Method



8. Work with an Experienced Partner / Community



Blockchain Experience



Partnership Approach



Accelerated Time to Market



Alignment to Vision



A-team ready to start



Trusted Network



Culture of Innovation



Cross Industry Knowledge



Real World Example: DTCC Derivatives Distributed Ledger

What?

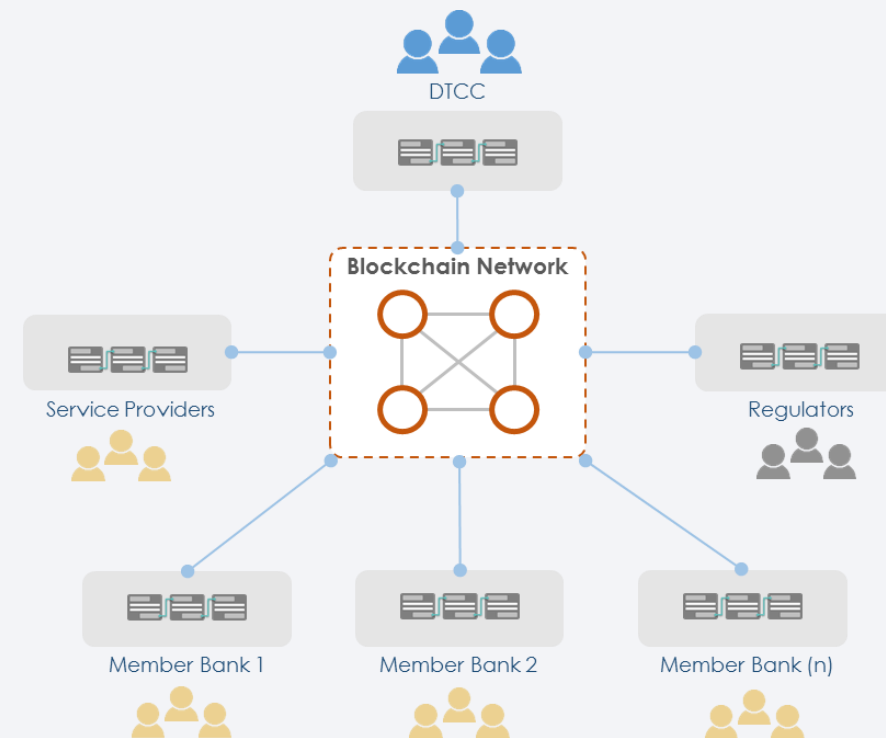
- Depository Trust Clearing Corporation (DTCC), the premier post-trade market infrastructure for the global financial services industry, currently provides “Trade Information Warehouse (TIW)” service which automates the record keeping, lifecycle events, and payment management for more than \$11 trillion of cleared and bilateral credit derivatives (98% of all Credit Derivatives traded globally)

How?

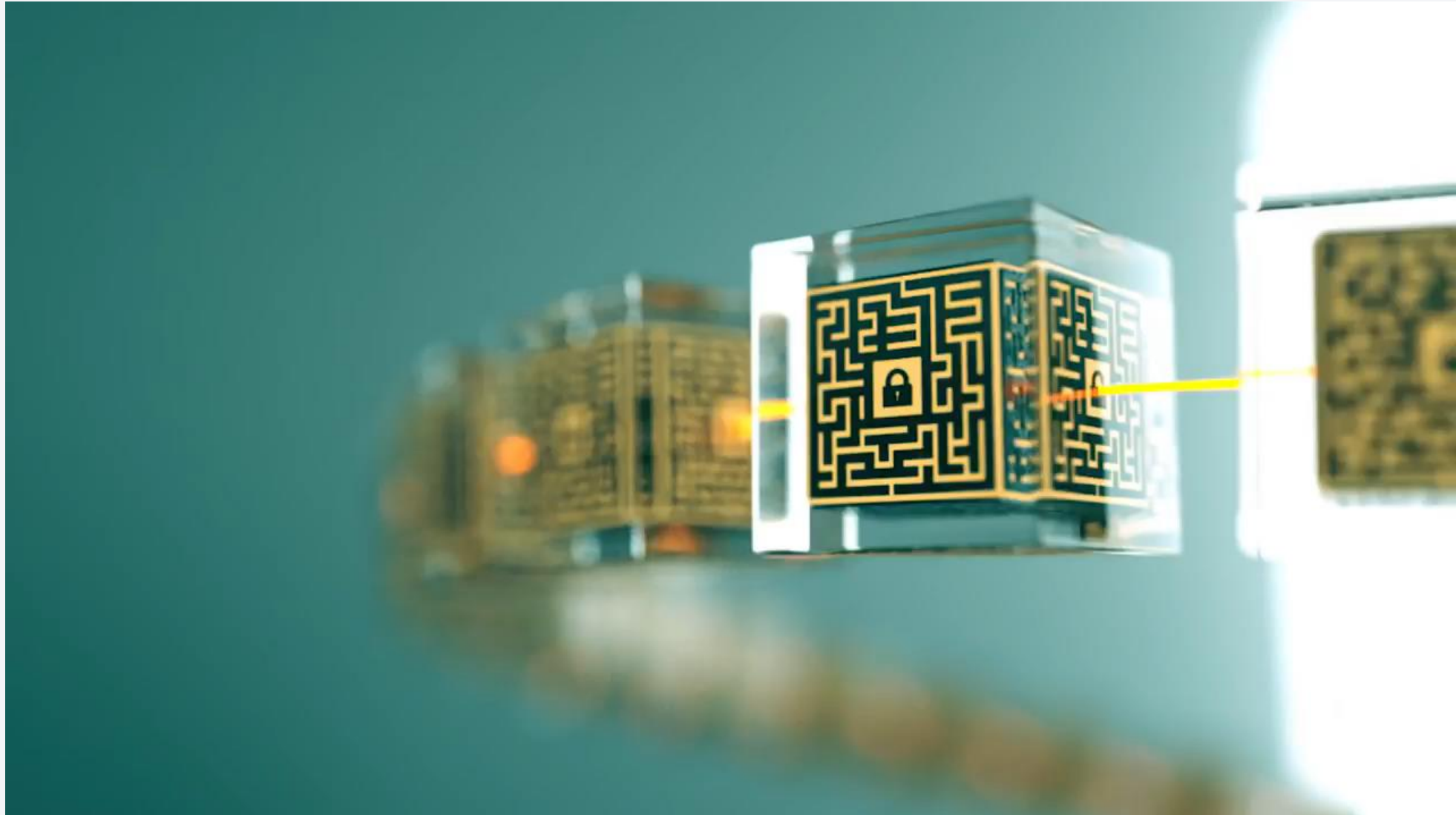
- DTCC is building a permissioned distributed ledger solution for post-trade processing based on existing TIW capabilities and interfaces.
- The decentralized peer-to-peer network to go-live by Q2 2018 will be governed by industry-owned DTCC with peer nodes at its member banks such as JPMC, Citi, Barclays, Credit Suisse etc.

Benefit

- Drive efficiencies by streamlining and automating post-trade processing
- Reduce the cost of derivatives processing across the industry by eliminating the need for disjointed, redundant processing capabilities and the associated reconciliation costs
- Scalable platform to onboard other Derivative asset classes (e.g. Rates, FX, Equity etc.) onto the platform for asset servicing and regulatory reporting



Sample Blockchain Live Product Implementation



Where are you in driving value from Blockchain?