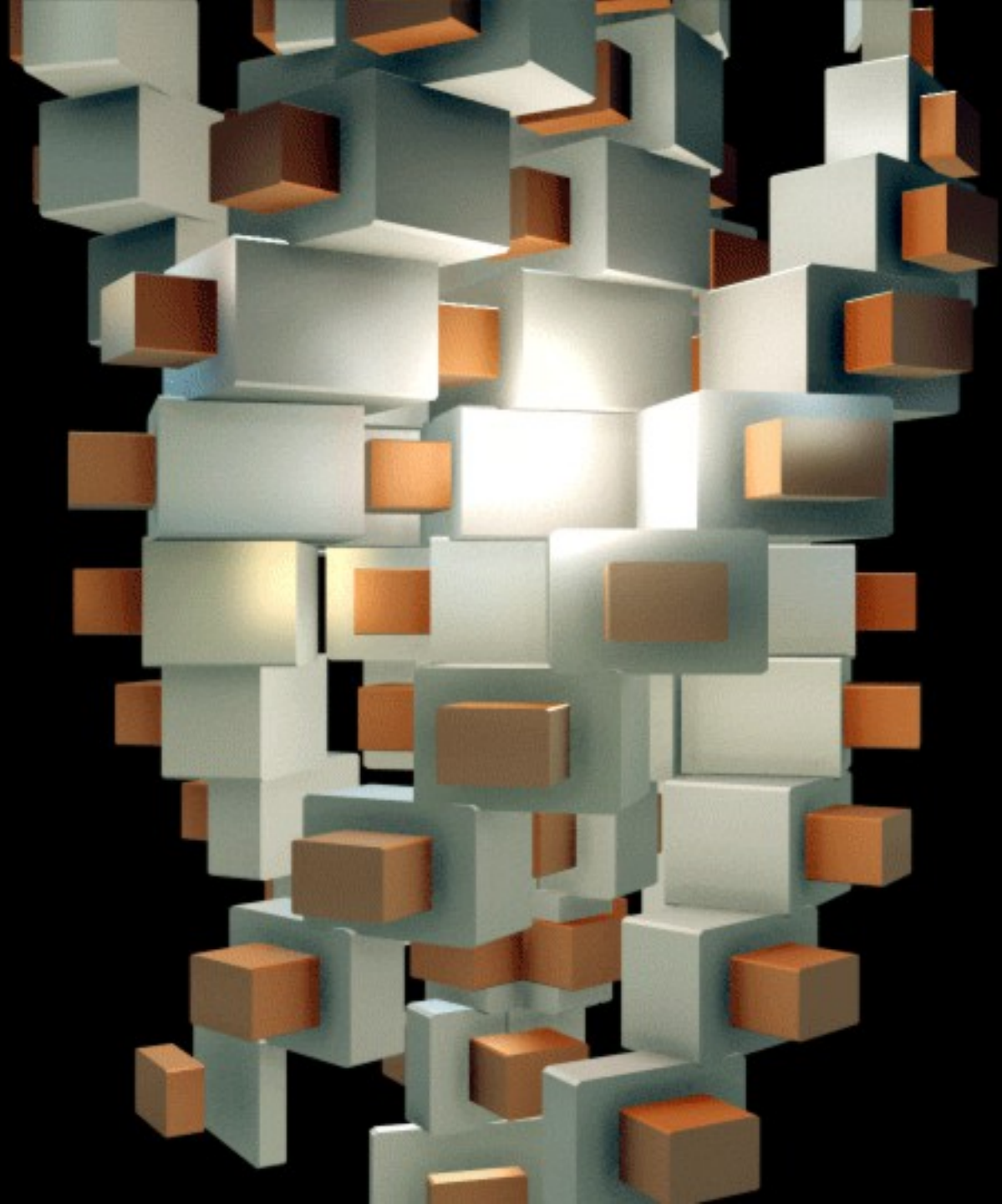


# Blockchain Beyond Finance

André Salem  
IBM Blockchain Research Lab



# Bitcoin: 1ª aplicação em Blockchain



- 2008: Satoshi Nakamoto
- Moeda não regulada
- Primeira aplicação no Blockchain
- Consenso por Mineração
- Recurso intensivo



## Blockchain

- Todo universo transacional
- Aprovação seletiva do consenso
- Ativos ao invés de criptomoeda

INSIDE: A 12-PAGE SPECIAL REPORT ON COLOMBIA

The  
Economist

OCTOBER 31ST-NOVEMBER 6TH 2013 [Economist.com](http://Economist.com)

007 and the spectre of Britain's past  
Turkey votes to the sound of bombs  
Those ever-creative accountants  
America takes the fight to IS  
Coywolves: the new superpredator

# The trust machine

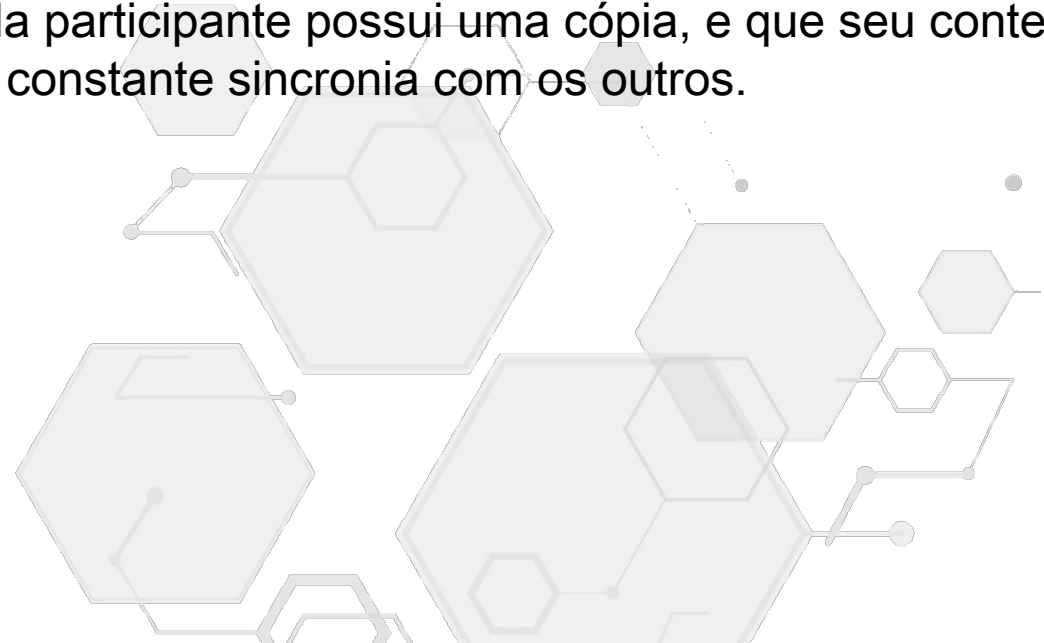
How the technology behind bitcoin  
could change the world



# Introdução ao Blockchain

Blockchain em seus dois principais conceitos:

Uma **rede de negócios segura**, na qual os participantes transferem itens de valor (ativos), por meio de um **ledger (livro-razão) comum distribuído**, o qual cada participante possui uma cópia, e que seu conteúdo está em constante sincronia com os outros.

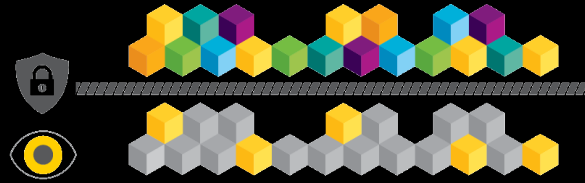


# Principais Conceitos



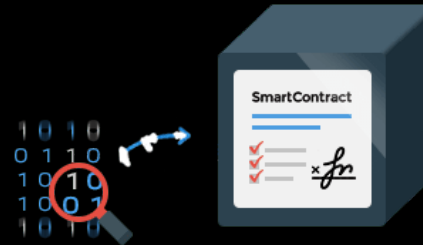
## LEDGER DISTRIBUIDO

Sistema de registro compartilhado por toda a rede.



## PRIVACIDADE

Garantir a visibilidade adequada. As transações são seguras, autenticadas e verificáveis.



## SMART CONTRACT

Termos de negócios incorporados no banco de dados de transações e executados com transações.

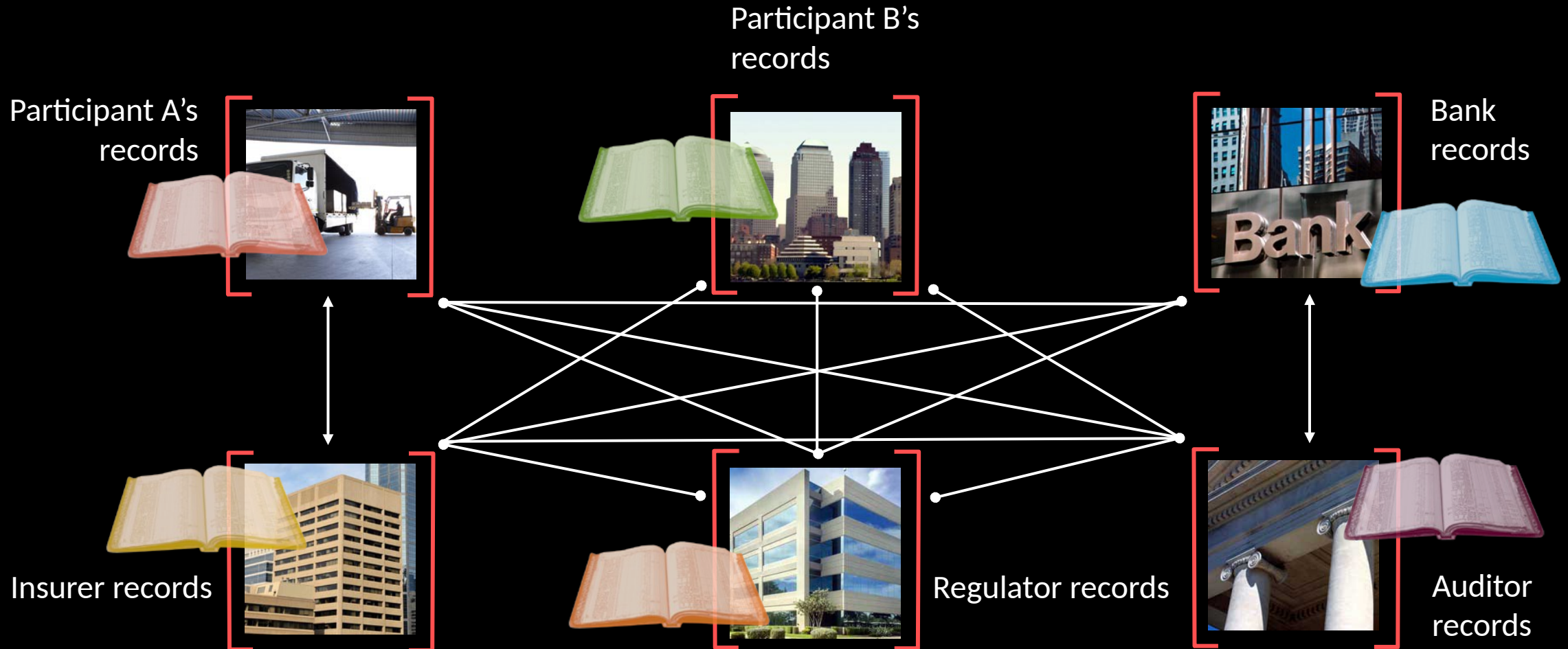


## CONSENSO

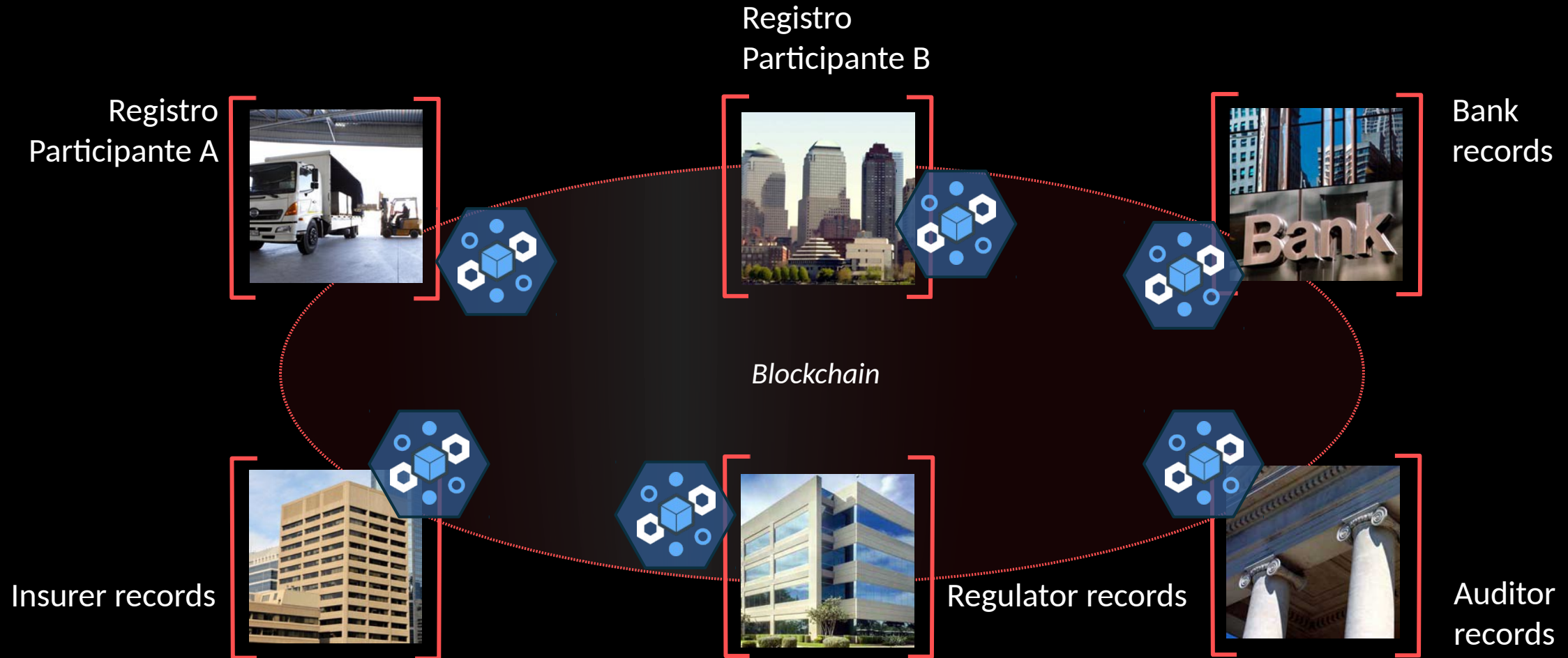
As transações são endossadas por participantes relevantes.



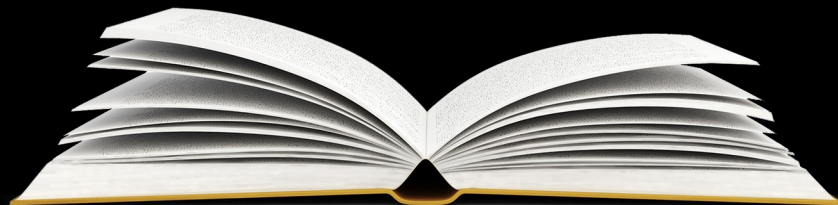
# Problema: Ineficiência, gasto, vulnerabilidade.



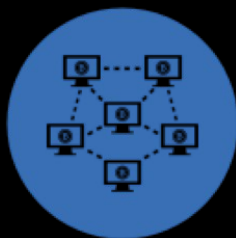
# Solução: Consenso, procedência, imutabilidade e finalidade



# Definição de Blockchain



Blockchain é a tecnologia para uma nova geração de aplicações transacionais que estabelece confiança, responsabilidade e transparência, ao mesmo tempo em que simplifica os processos de negócios. Pense nisso como um sistema operacional para interações. Ele tem o potencial de reduzir custo e complexidade de fazer as coisas.

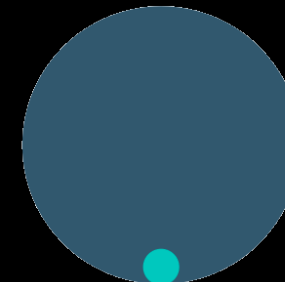


Blockchain é um padrão de design famoso por seu uso em Bitcoin. Mas os usos vão muito além.



Blockchain pode reimaginar as interações de negócios mais fundamentais do mundo e abrir a porta para inventar novos estilos de interações digitais.

Total Blockchain opportunity



Total Bitcoin opportunity

IBM está adotando o Blockchain para uma vasta gama de aplicações de negócios.





# Benefícios do Blockchain



## Reduz Tempo

### Ativa a reconciliação

As transações comerciais podem ser realizadas em tempo quase real



## Remove Custos

### Desintermediação

As redes de negócios elimina intermediários e escala facilmente



## Mitiga Riscos

### Conformidade e Fraude

Transações comerciais tornam-se imutáveis, verificáveis e auditáveis



## Novos Modelos de Negócios

### Inovação

Redes de negócios remodeladas e redes de lucro são redefinidas

# Company



**MAERSK**



Crédit Mutuel  
**ARKEA**

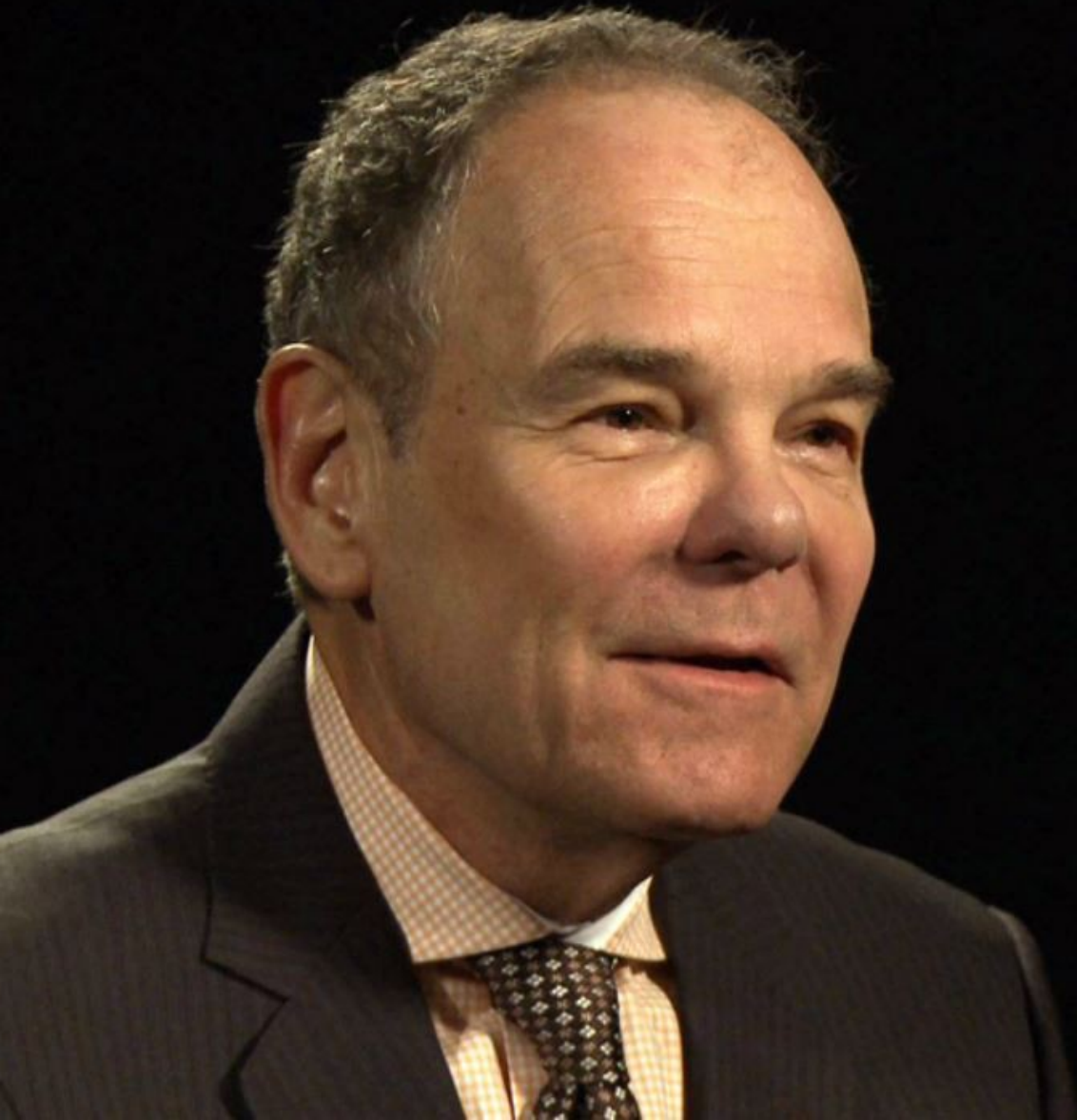
**Walmart** 



**everledger**

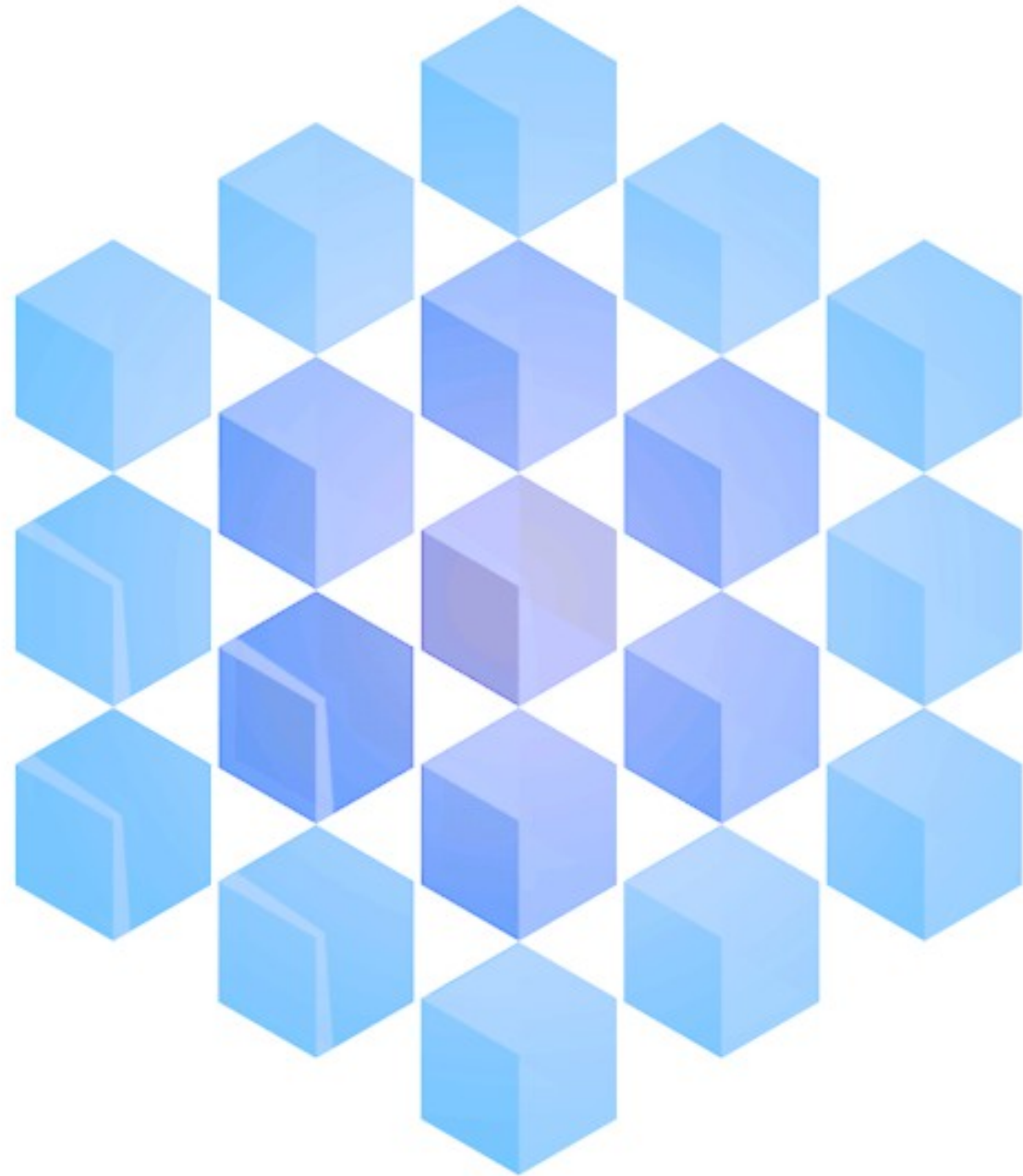


**RDW**



"É esta tecnologia muito maior que, além de ser a base para muita inovação que eu acho que vai acontecer nos serviços financeiros, também é algo que poderia mudar basicamente todas as indústrias do mundo ".

Don Tapscott, Autor do livro Blockchain Revolution.



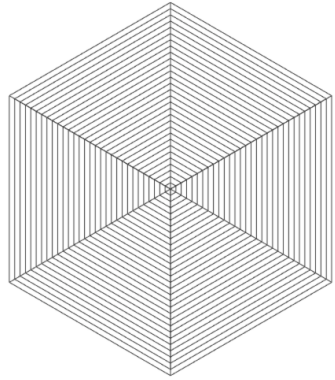




# HYPERLEDGER

- Consórcio para avançar com a tecnologia Blockchain cross-industry
- Anúnciado 2015, agora com 120+ membros
- Open Source, Standards, Governance
- **IBM membro premier**





## Principais Plataformas



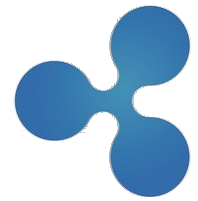
**HYPERLEDGER**



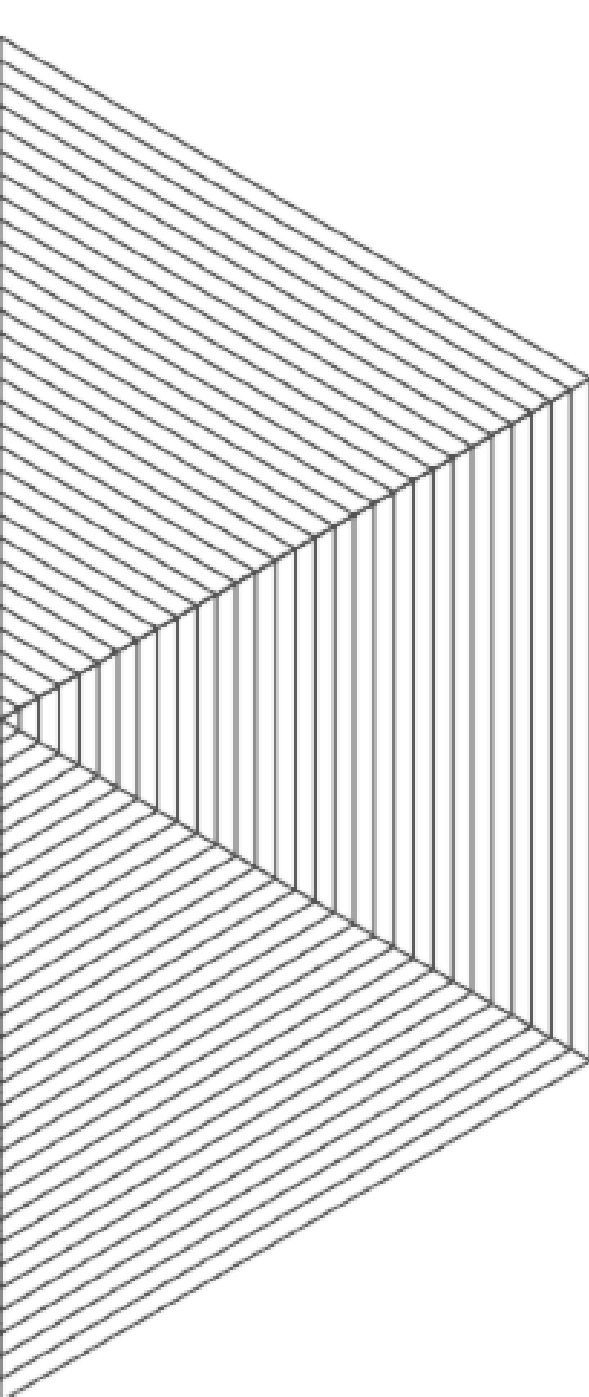
ethereum




***bitcoin***



**ripple**



 **ethereum**

411 dapps listed Sort: Updated

<p><b>Userfeeds</b> <b>Maciej Olpinski</b> The Content Ranking System for Blockchain Communities</p> <p>Demo 2017-04-22</p>	<p><b>xcontract</b> <b>James Sangalli</b> An easy to use web application that allows you to run dapps onsite</p> <p>Live 2017-04-22</p>	<p><b>Qliq</b> <b>Qliq Team</b> Online advertising and analytics platform on the Ethereum blockchain</p> <p>Work In Progress 2017-04-20</p>	<p><b>Bbiller</b> <b>Bbiller</b> Purchase Orders and Invoice Settlement</p> <p>Concept 2017-04-19</p>	<p><b>Game Legends</b> <b>Dylan J.W. Erdahl</b> Free, Decentralized, Open Source E-Sports &amp; Gaming Platform</p> <p>Demo 2017-04-18</p>	<p><b>Golem</b> <b>Piotr Zieliński</b> Distributed computation</p> <p>Work In Progress 2017-04-17</p>
<p><b>Digon</b> <b>Plan A Health Consulting Ltd</b> Provider/Patient Contract Currency</p> <p>Concept 2017-04-16</p>	<p><b>imToken</b> <b>Consenlabs</b> Light-weight smart digital wallet</p> <p>Live 2017-04-14</p>	<p><b>OASIS UBL</b> <b>Australian Market Sales</b> Universal Business Language</p> <p>Work In Progress 2017-04-14</p>	<p><b>KYC-chain</b> <b>KYC-Chain Ltd.</b> KYC onboard for banking, blockchains, and DAPPS</p> <p>Live 2017-04-13</p>	<p><b>Bits App</b> <b>Bitsoko</b> Bits is a mobile wallet</p> <p>Working Prototype 2017-04-12</p>	<p><b>Probiquery</b> <b>Amiya Behera</b> Personalized Education</p> <p>Concept 2017-04-12</p>
<p><b>TheCoin</b> <b>TheCoin</b> Payment system with commission income</p> <p>Live 2017-04-10</p>	<p><b>Simple Shop</b> <b>RED ZION d.o.o.</b> Universal invoice Point of Sale software</p> <p>Live 2017-04-10</p>	<p><b>Smart Market Protoc...</b> <b>Kaula Inc.</b> Decentralized marketing and trade functions are offered</p> <p>Demo 2017-04-10</p>	<p><b>Charitychain</b> <b>Charitychain.io</b> Inspire your friends by doing an outstanding action.</p> <p>Work In Progress 2017-04-09</p>	<p><b>Myblockchaincorner</b> <b>raycar5</b> Buy your own html tile in the blockchain, It's yours forever!</p> <p>Live 2017-04-08</p>	<p><b>APPII</b> <b>APPII</b> CV verification - Maximising the potential of everyone</p> <p>Working Prototype 2017-04-07</p>



HOME

VISION

BUILD

CONTACT



ARCADE CITY



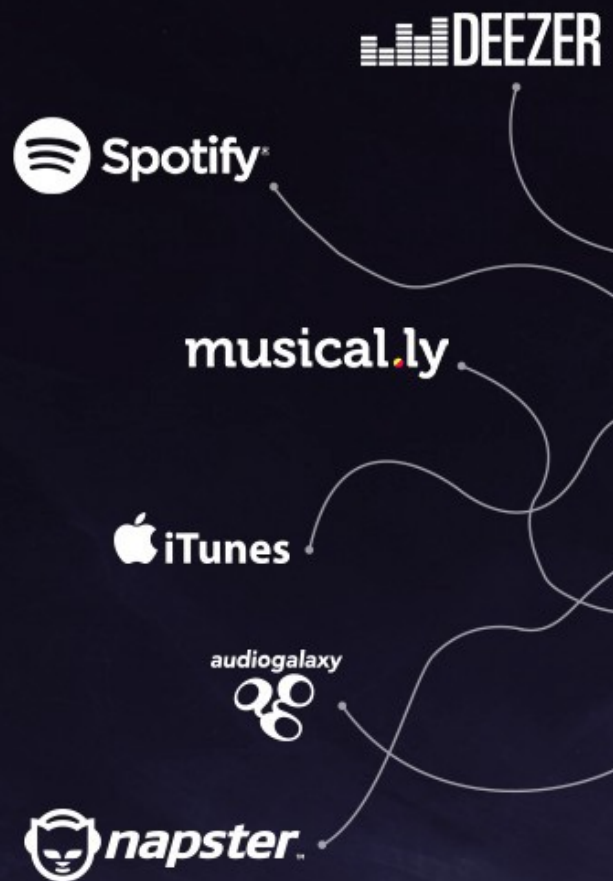
## Ridesharing for the people.

Arcade City is peer-to-peer everything — with networks built by local communities, not corporations.

Join us.









Introducing a secure and transparent online voting solution for the modern age:

# FOLLOW MY VOTE

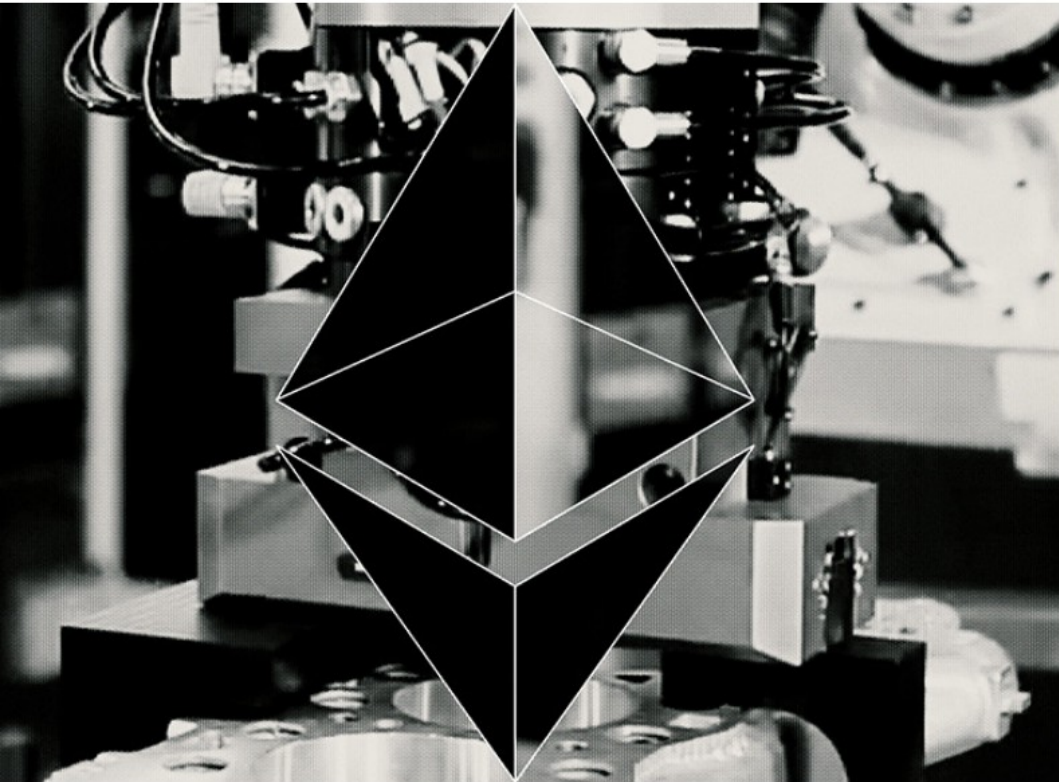
Join Our List Of Supporters!

Support Us!

**DONATE NOW!**

## Technology

Slock.it is the world's trailblazer in creating Blockchain Infrastructures



### Autonomous Objects

Connecting all things, the Universal Sharing Network will form a financial Internet where machines can not only sell and rent themselves, but also pay for each other services. For example, an office door can open itself when paid, while a fridge could order its own repairs.

Slock.it aims to address security, identity, coordination and privacy across millions of devices by making them autonomous. Slock.it gives connected objects an identity, the ability to receive payments, enter into complex agreements and transact without intermediary, leading to cost savings.

Our technology lends itself very well to deeper IoT integration, both in the commercial and industrial sectors, where we are piloting networks of autonomous devices operating as part of an **Economy of Things**, engaging in contracts with each other, paying each other for their services, yet never having to be centrally managed.



# Introducing

The world's first global platform for peer-to-peer carbon trading.



LOB ENERGY



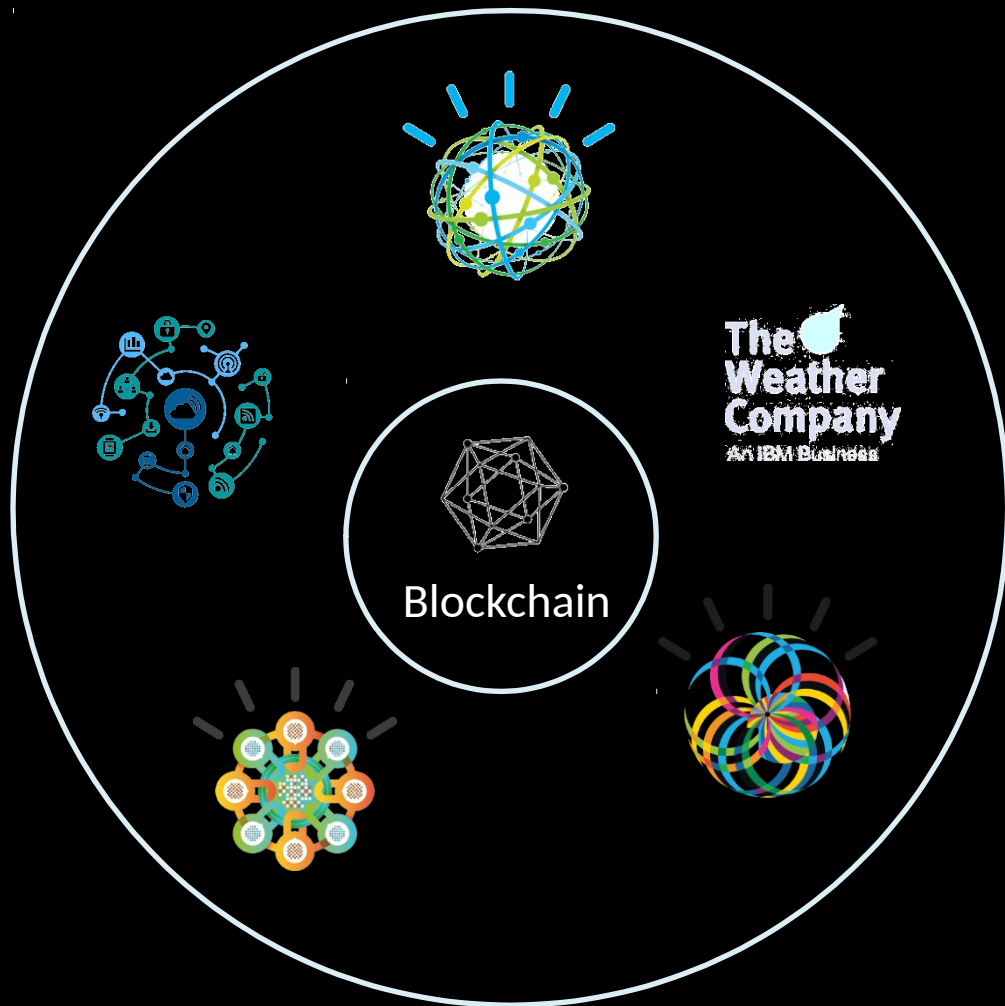
PROJECTS



TEAM



PRESS

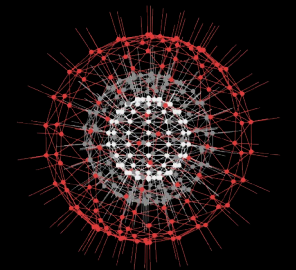


## FUTURE TREND

*“Blockchain as a transaction Infrastructure”*

**IoT + Blockchain + Cognitive**

SmartContracts towards Live  
“CognitiveContracts”



# The IMF Just Finished its First 'High Level' Meeting on **Blockchain**

Michael del Castillo (@DelRayMen) | Published on April 19, 2017 at 23:30 BST

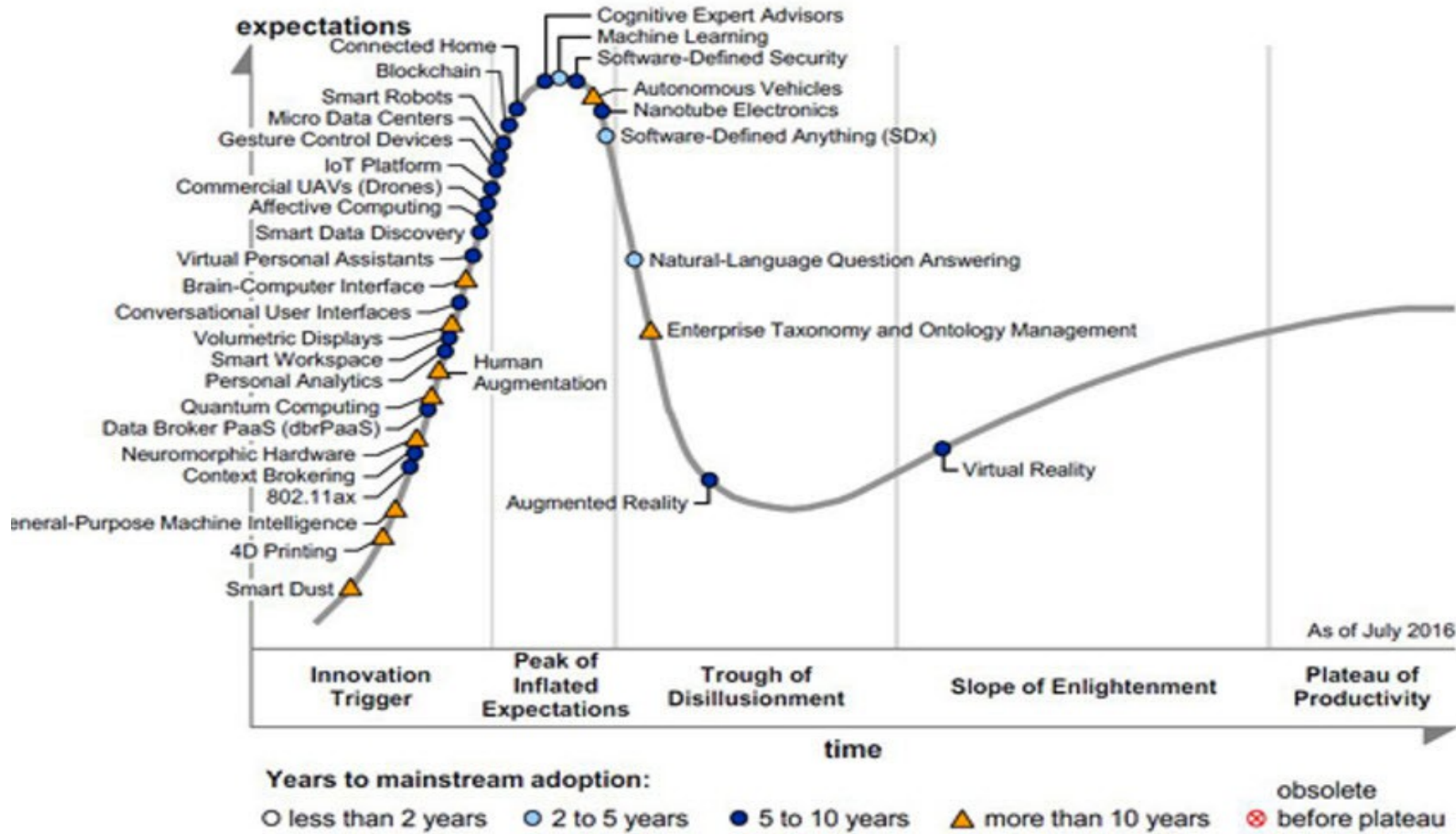
FEATURE



The International Monetary Fund (IMF) concluded the first-ever meeting of its High Level Advisory Group on FinTech today, a group that features a significant contingent of senior-level blockchain executives.



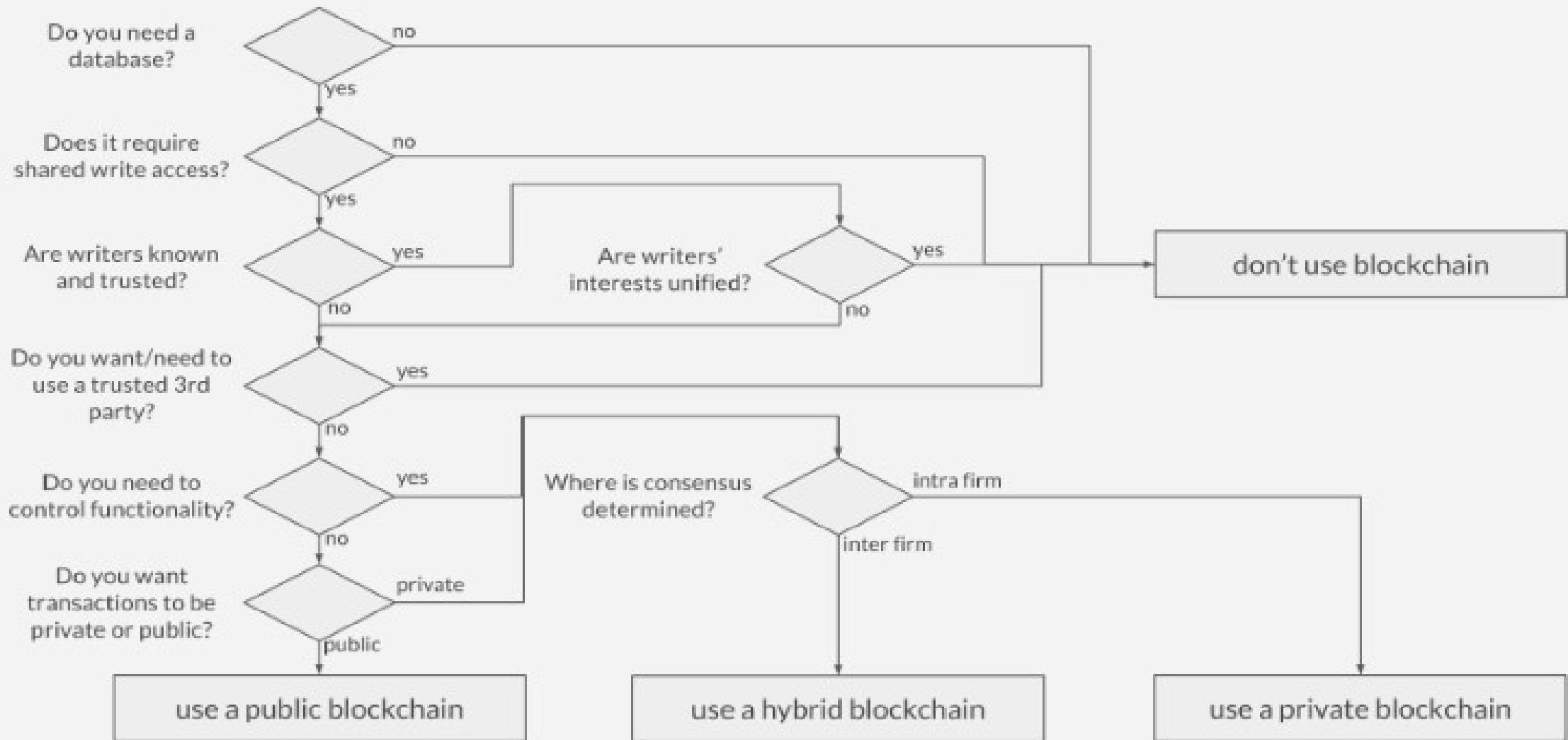
Figure 1. Hype Cycle for Emerging Technologies, 2016

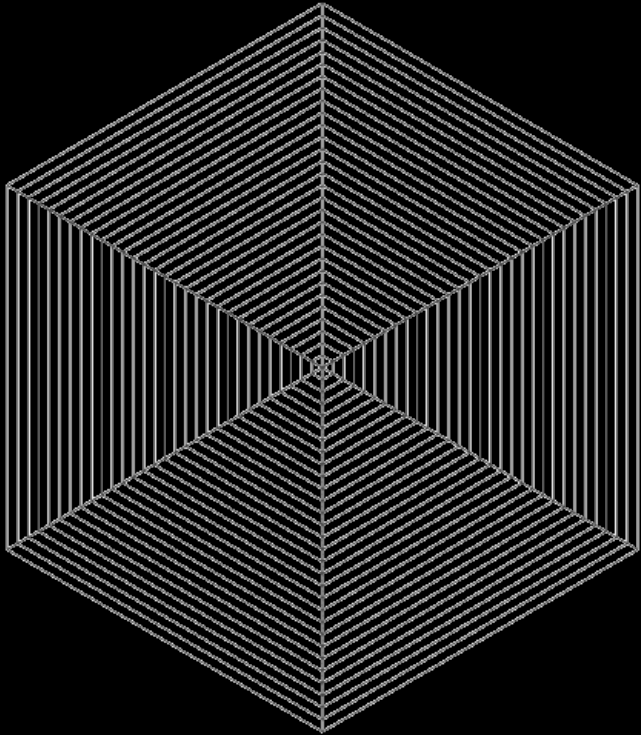


Source: Gartner (July 2016)

Source: Gartner (August 2016)

# Do you even need Blockchain?





## WHAT IF \_

E se, mirando o máximo de impacto positivo na sociedade do futuro de Luna, você pudesse escolher um aspecto da sua vida pessoal hoje para aplicar a transformação da integração e confiança em rede do blockchain.

Pensando na transformação sistêmica.

**Qual aspecto da sua vida você aplicaria?**

**Por quê?**

# Obrigado!

André Salem  
IBM Research Lab

[asalem@br.ibm.com](mailto:asalem@br.ibm.com)

[www.ibm.com/blockchain](http://www.ibm.com/blockchain)

[developer.ibm.com/blockchain](http://developer.ibm.com/blockchain)

[www.hyperledger.org](http://www.hyperledger.org)



## APÊNDICE

### Comparação Plataformas

	Hyperledger Fabric	Ethereum	Ripple	Bitcoin
Description of Platform	General purpose Blockchain	General purpose Blockchain	Payments Blockchain	Payments Blockchain
Governance	Linux Foundation	Ethereum Developers	Ripple Labs	Bitcoin Developers
Currency	None	Ether	XRP	BTC
Mining Reward	N/A	Yes	No	Yes
State	Key-value database	Account data	None	Transaction data
Consensus Network	Pluggable : PBFT	Mining	Ripple Protocol	Mining
Network	Private	Public or Private	Public	Public
Privacy	Open to Private	Open	Open	Open
Smart Contracts	Multiple programming languages like Java, GO.	'Solidity' programming language	None	Possible, but not obvious