Blockchain

Why is everybody freaking out?

Overhyped and Revolutionary...
hype.
Blockchain: Broad applicability but beware the hype

Identified use cases by industry:
- Others: 52%
- Education: 15%
- Energy & Utilities: 10%
- Retail: 8%
- Healthcare: 5%
- Government: 4%
- Legal: 3%
- Media: 2%
- FSS: 2%

Chart Source: Hype Cycle for Blockchain Technologies and the Programmable Economy, 2016, Gartner
Quote Source: The Technology Is Unlikely To Live Up To The Claims Made For It, Published October 16, 2015, Forrester
The Blockchain
To create the experience being demanded by many markets, a new type of economic organization is required – the ecosystem.

Disruption is already here

71% of executives believe consumers will demand more complete experiences¹

Change will only accelerate

64% of executives believe new business models will profoundly impact their industries²

Ecosystems are emerging

Ecosystems are emerging, attracting new flows of value and economic activity

Source: [¹] 2013 Global Digital Disruption Executive Study Q18. To what extent do you agree with the following statements about customer behavior and expectations today, and in five years? Rate on a scale of 1 to 5, where 1 = Strongly disagree and 5 = Strongly agree.
[²] 2013 Global Digital Disruption Executive Study Q12. “Please rate the extent to which the following trends will have an impact on your business” (n = 1089)
As a result of frictions many business transactions remain inefficient, expensive and vulnerable

**Time**

Many business transactions:
- are time sensitive
- require much settlement and reconciliation time
- are process-delay prone

**Cost**

Many business transactions:
- include overheads from multiple intermediaries
- are costly to manage and execute
- require extensive documentation

**Risk**

Many business transactions:
- are ambiguous and non-verifiable
- are prone to errors and tampering
- have no single source of truth

Source: IBM Institute for Business Value analysis
Is not... Bitcoin
Blockchain is

A shared ledger technology allowing any participant in the business network to see THE system of record (ledger)

to 'un-complex' business transactions
Blockchain for Business…

Shared system of record. Permissioned visibility within own copy

Shared ledger

Ensuring appropriate visibility; transactions are secure, authenticated & verifiable

Privacy

Business terms embedded in transaction database & executed with transactions

Smart contract

Consensus

All parties agree to network verified transaction

… Broader participation, lower cost, increased efficiency
Why do we call it “Blockchain”?

Made up of a series of blocks added in chronological order
Essential Properties of a Blockchain

Secure and immutable

Distributed and Sustainable

Transparent and Auditable

Consensus based Transactions

Smart Contracts
Problem...

... Inefficient, expensive, vulnerable
Solution...

Participants have multiple shared ledgers

Participant A’s records
Participant E’s records
Participant C’s records
Participant D’s record
Auditor records
Blockchain Fundamentally Changes the Game

- **Saves Time**: Transaction time from days to near instantaneous
- **Removes Cost**: Overheads and cost intermediaries
- **Creates Transparency**: Access to data among all participants
- **Reduces Risk**: Tampering, fraud & cyber crime
IBM Blockchain Solutions

IBM Differentiators

Deep cryptography:
skills, assets, IP from Research

Hybrid Integration:
WebSphere gateway & connectors

Optimization:
High Secure Blockchain Network with System Z crypto hardware
Industry & domain expertise manifest in IBM solutions
It Takes a Community: Hyperledger Project

- Linux Foundation project announced December 2015 with 17 founders
- The Hyperledger Project is a collaborative effort to advance Blockchain technology by identifying and addressing important features for a cross-industry open standard for distributed ledgers that transform the way business transactions are conducted globally
- Open source and open standards-based

Enable adoption of shared ledger technology at a pace and depth not achievable by any one company or industry
Linux Foundation’s Hyperledger Project

- **Open Ledger Project** announced December 17, 2015 with 17 founders, now over 100 members
- **Hyperledger Project** rebrand in February 2016
- Collaborative effort to advance Blockchain technology by identifying and addressing important features for a cross-industry open standard for distributed ledgers that can transform the way business transactions are conducted globally
- Open source, open standards, open governance

Enable adoption of shared ledger technology at a pace and depth not achievable by any one company or industry

<table>
<thead>
<tr>
<th>QUICK FACTS</th>
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<tr>
<td><strong>Chairman</strong></td>
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<td><strong>Executive Director</strong></td>
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<td><strong>Technical Chair</strong></td>
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<td><strong>Contribution</strong></td>
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<td><strong>Sprint to one codebase with unified thinking</strong></td>
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[www.Hyperledger.org](http://www.Hyperledger.org)
# IBM Blockchain Solutions

## Engagement

IBM Garages **NYC | London | Singapore | Tokyo | *Böblingen**

IBM GBS blockchain consulting practice

IBM iX client use case design

## Bluemix

Services available on Bluemix

- Pluggable architecture
- Smart contracts
- Advanced identity management

**Permission control | Privacy Confidential | Auditable**

## System z

Blockchain on System z

- Additional level of
- **Security | Availability | Auditable**
- Performance
IBM Blockchain Offerings

all running Hyperledger fabric:

**IBM managed on IBM cloud**

- **Starter**
  - Start writing chaincode in seconds
  - Integrated dashboard, logs and tools
  - Community samples, tutorials, and quickstarts

- **High Security Business Network**
  - High performance and reserved capacity
  - Best in Industry security, isolation and spec support
  - Proven Audit environment for compliance and forensics

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**self managed**

- **Docker**
  - Any Docker environment
    - IBM offers technical support for x86, Power and System z

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**IBM Blockchain Starter for Developers**

- Public Beta
  - Provision now on IBM Bluemix!

**IBM Blockchain for High Security Business Networks**

- Generally Available
  - Available on IBM Bluemix!

**Support for Hyperledger Fabric**

- Generally Available
  - [https://hub.docker.com/r/ibmblockchain/fabric/](https://hub.docker.com/r/ibmblockchain/fabric/)
From Talking to Working
State of the art methodology

1. Discuss Blockchain technology
2. Explore customer business model
3. Show Blockchain Application demo

Let’s Talk

1. Understand Blockchain concepts & elements
2. Hands on with Blockchain on Bluemix
3. Standard demo customization

Blockchain Hands-on

1. Design Thinking workshop to define business challenge
2. Agile iterations incrementally build project functionality
3. Enterprise integration

First Project

1. Scale up pilot or Scale out to new projects
2. Business Process Re-engineering
3. Systems Integration

Scale

Remote or face to face       Remote or face to face       Face to face       Face to face
Free of charge               Free of charge               For fee               For fee

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the First Project journey

- **Design Thinking (2 days)**
- **Sprint 0 (- 5 days)**
- **Sprint 1 (2 weeks)**
- **Sprint 2 (2 weeks)**
- **Sprint N (2 weeks)**
the First Project
Team setup

IBM

Client

- IBM Architect & Facilitator
- Subject Matter Expert
- UX-Designer
- Blockchain Developer
- Product Owner
- Subject Matter Expert
Thank you!