Blockchain for Business - Explained
Digitech
Wednesday, 28 Nov 2018

Andre Jenie
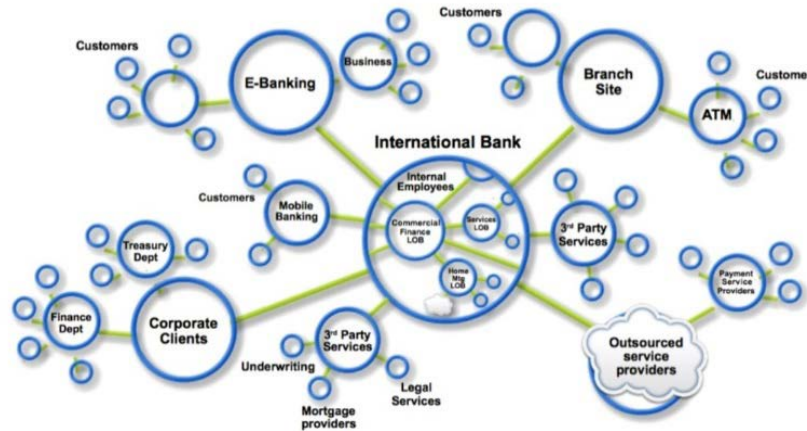*Client Technical Leader for Banking and Financial Services*
Country Blockchain Leader
jjenie@id.ibm.com

Business Network, Market, and Wealth

Business Networks

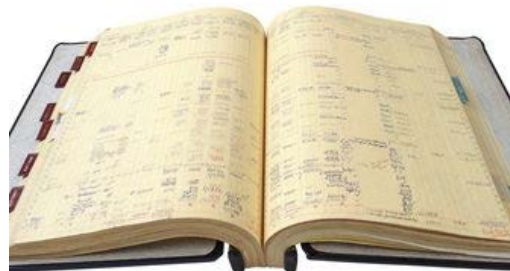Business participants come together in a network

Assets

Tangible
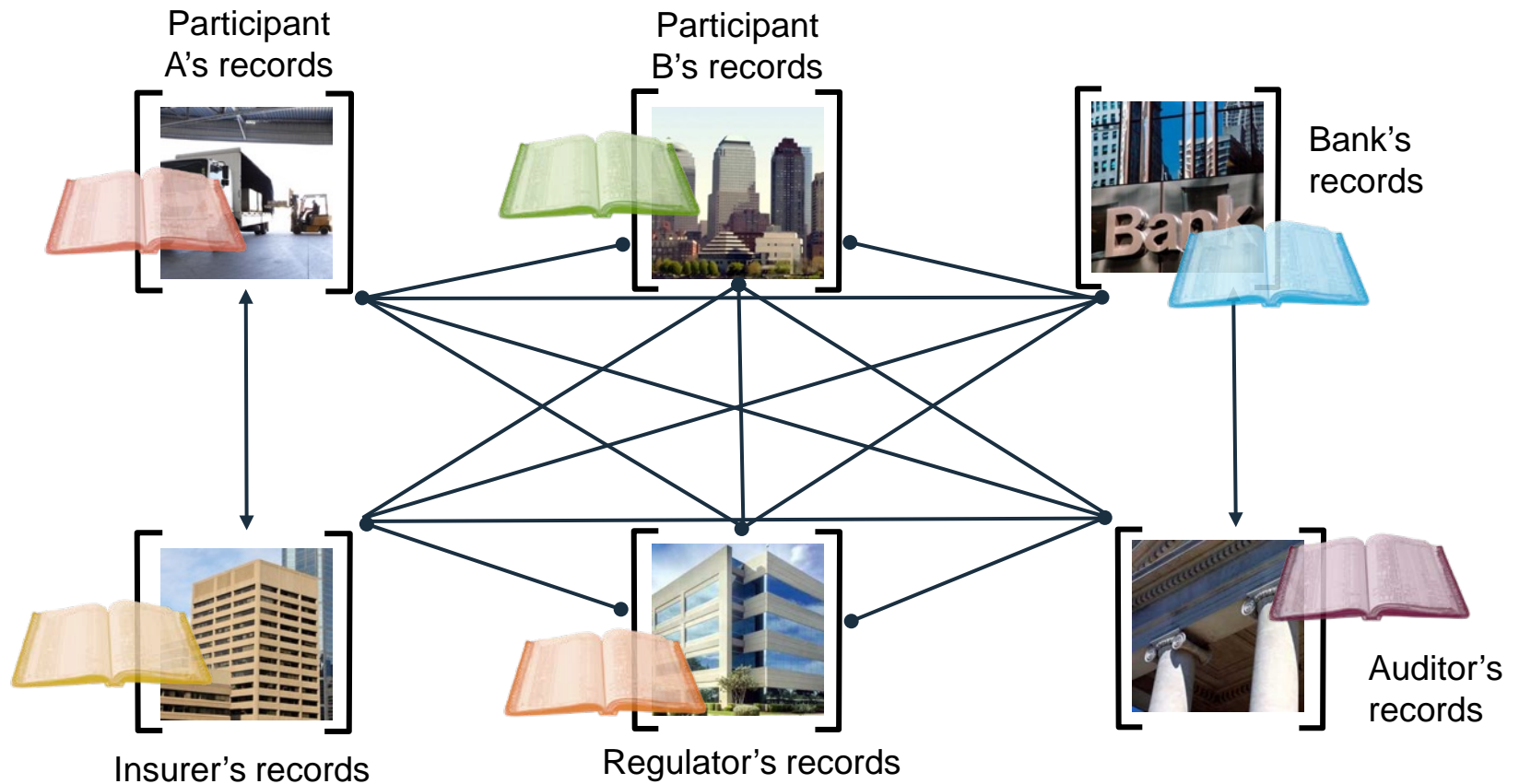*e.g.* house, car

Intangible
e.g. digital music, photos

Assets are transferred across the network

Ledger

The system of record for a business.

![IBM]

Problem…

Participant A's records

Participant B's records

Bank's records

Insurer's records

Regulator's records

Auditor's records

… inefficient, expensive, vulnerable

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A Shared, Replicated, Permissioned Ledger

Participant B's records

Participant A's records

Bank's records

Blockchain

Insurer's records

Auditor's records

Regulator's records
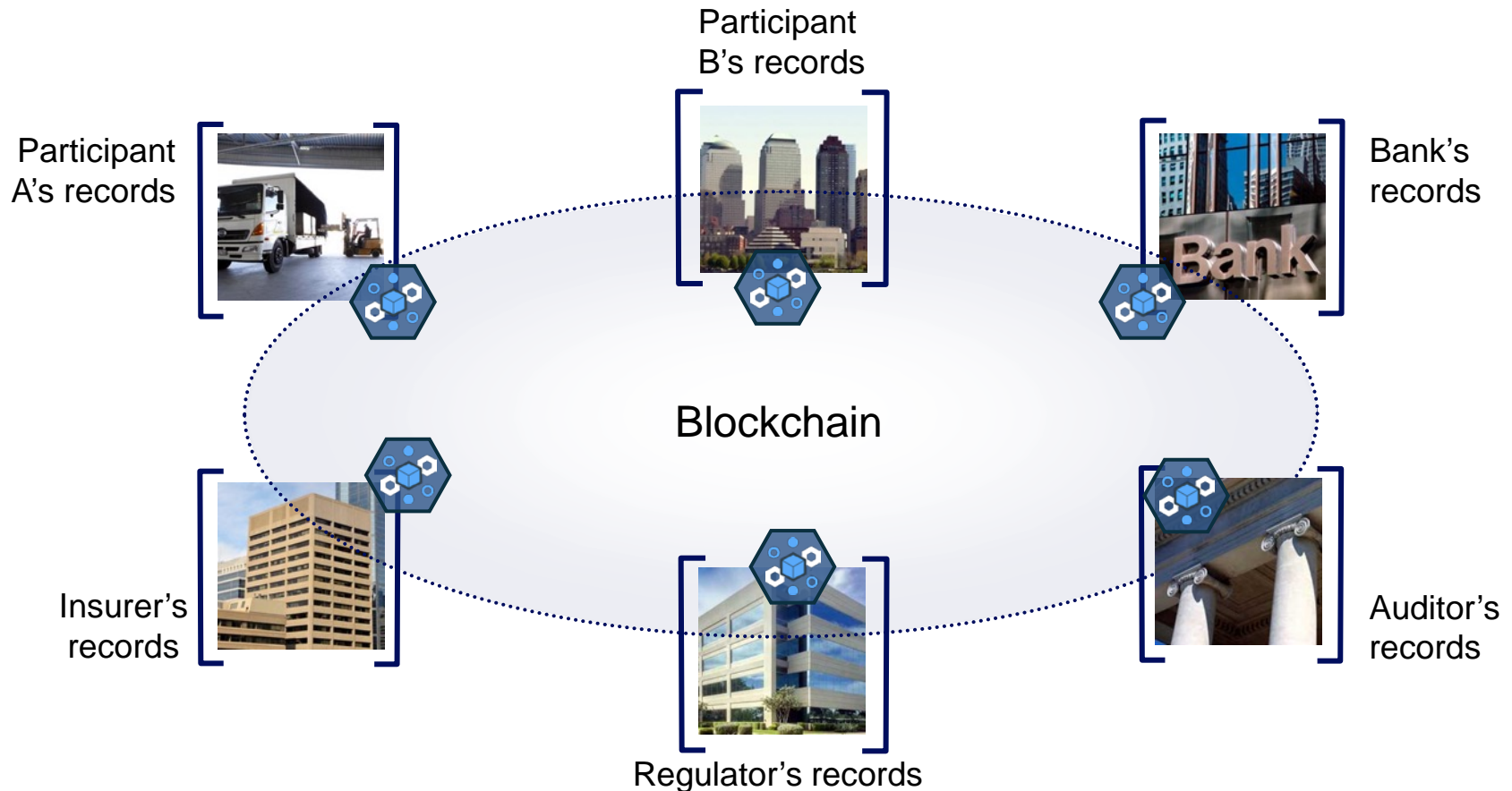
… with consensus, provenance, immutability and finality

Different types of blockchain

- All blockchains aim to provide irrefutable proof that a set of transactions occurred between participants
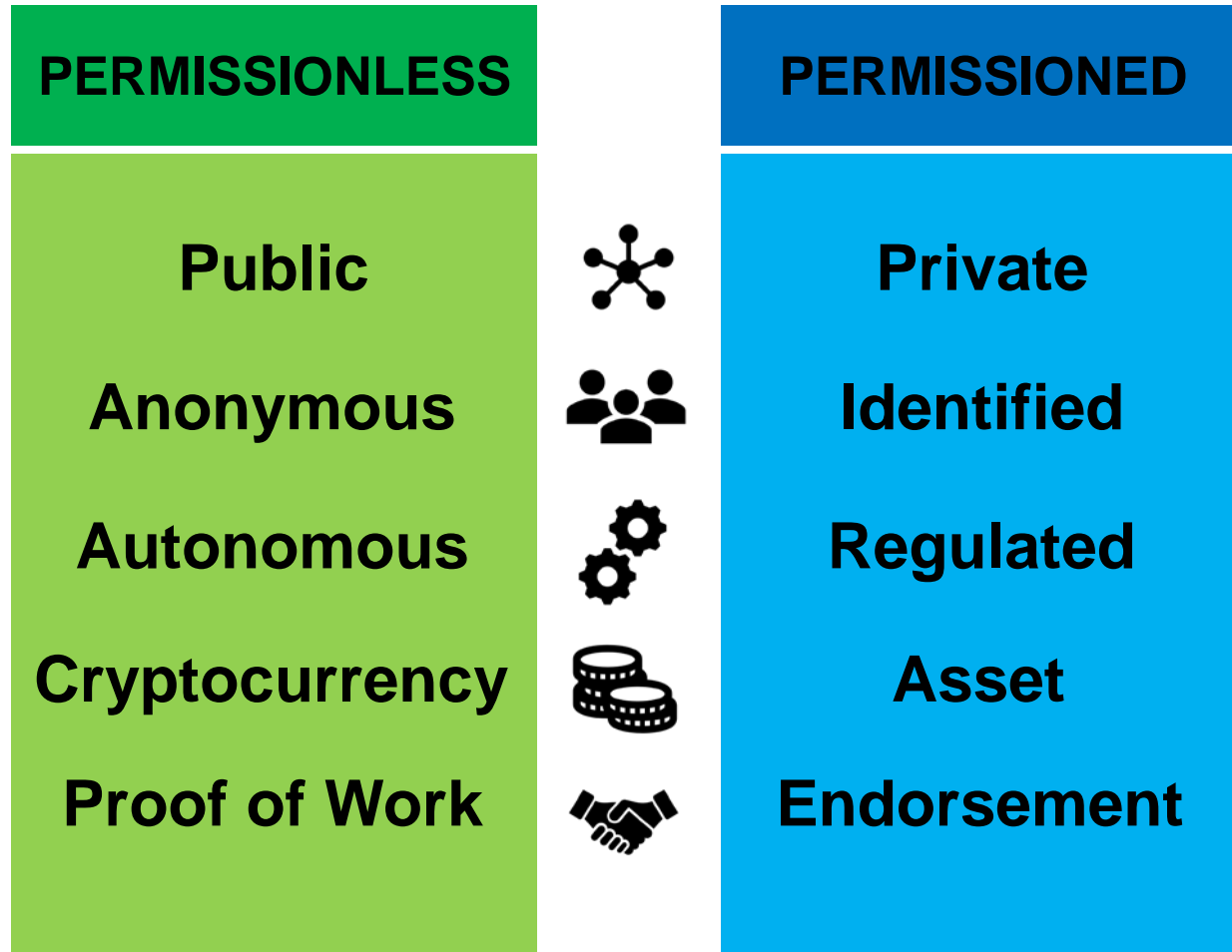
- Different types of blockchain exist:

  bitcoin is an example of an unpermissioned, public blockchain
  – The first blockchain application
  – Defines a shadow-currency and its ledger
  – Resource intensive

- **Blockchains for business** are generally permissioned and private, and prioritize:
  – Identity over anonymity
  – Selective endorsement over proof of work
  – Assets over cryptocurrency

Public vs Private Blockchain

PERMISSIONLESS		PERMISSIONED
Public		**Private**
Anonymous		**Identified**
Autonomous		**Regulated**
Cryptocurrency		**Asset**
Proof of Work		**Endorsement**

Requirements of blockchain for business

Participants decide which assets to share
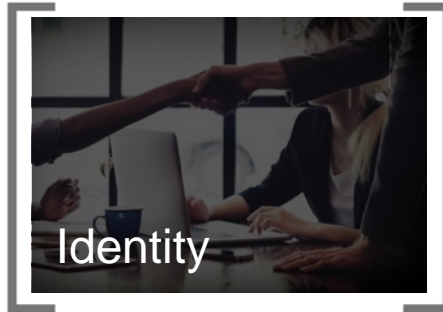
Choosing what to share
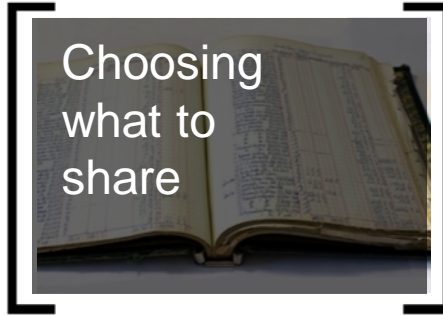
Transaction Endorsement

Participants give *provable* endorsement

Participants know who they are dealing with
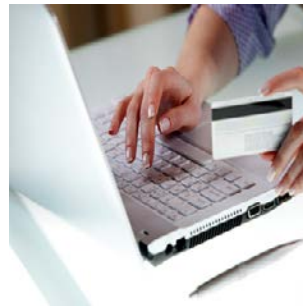
Identity

Privacy and Confidentiality

Information shared via need-to-know

Real example of blockchain networks

Network Name	Founders	Description	Industry	Participants	Benefits
Trade Lens	IBM, MAERSK	A global trading blockchain platform for Shipping Information Pipeline (SIP) and Paperless Trade.	Global trade, Supply chain	Ocean Carriers, Freight Forwarders, Logistics, Ports & Terminals, Customs, Authorities, etc.	1) Provides end-to-end supply chain visibility in a global shipping transaction; and 2) Digitizes and automates paperwork filings for the import and export of goods.
World Wire	IBM	A universal payments platform, built to support a network of interoperable financial services networks.	Financial, Global payments, Remittance	Banks, Payment Service Provider, Money Transfer Operators, FinTechs, etc.	1) Reduced settlement time 2) Cost savings 3) FX liquidity capabilities 4) Automated compliance
LedgerConnect	IBM, CLS trusted market solutions	A distributed ledger technology platform for the financial services industry designed to enable participants to deploy, share and consume services.	Financial, Capital markets	Banks, Buyers, Sellers, FinTechs, Software vendors.	1) KYC processes 2) Collateral management 3) Derivatives post-trade processing 4) Reconciliation 5) Market Data
We.Trade	Deutsche Bank, Rabobank, HSBC, IBM	A global blockchain platform for Trade Finance – Invoice Discounting	Trade finance	SMEs, Banks, Suppliers, Anchors	1) Greater transparency to eliminate fraud 2) Share lending risk for banks 3) Near-real time information exchange 4) Continual business & compliance readiness 5) Scalability that allows for rapid international expansion
IBM Food Trust	IBM, Walmart	A modular solution that provides secure access to end-to-end food supply chain information. Food products can be traced and authenticated, from fork back to farm in seconds	Food supply chain	Retailers, Suppliers, Logistics, Authorities	1) Trace products end-to-end in minutes 2) Conduct targeted recalls 3) Give brand confidence to customers 4) Instil trust between retailers & suppliers 5) Reduce costs by automating manual processes 6) Automate certificate management sharing

Use Cases by Industry

Financial	Public Sector	Retail	Insurance	Manufacturing
• Trade Finance • Cross currency payments • Mortgages	• Asset Registration • Citizen Identity • Medical records • Medicine supply chain	• Supply chain • Loyalty programs • Information sharing (supplier – retailer)	• Claims processing • Risk provenance • Asset usage history • Claims file	• Supply chain • Product parts • Maintenance tracking

5 Blockchain Principles

Mutual benefits through a community

Sharing of common trusted data, information, processes, application map and services (APIs) - where it makes sense – to benefit all in a fair way (consensus, immutable)
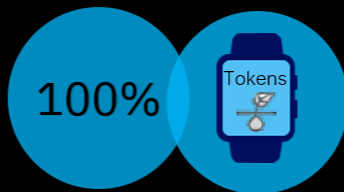
Risk of Centralisation (otherwise)

This is why blockchain is needed, not a Cartel, decentralised power

Funding Model – who owns, pays?

Founder, Joint Venture, Consortium, Solution Provider, Tokenised Market?

Market Utilities & New Models

100%

Tokens

Half a blockchain is no use – you need both (all) parties of a transaction. Standards and interoperability matter e.g. enabling new business models, KYC with banks
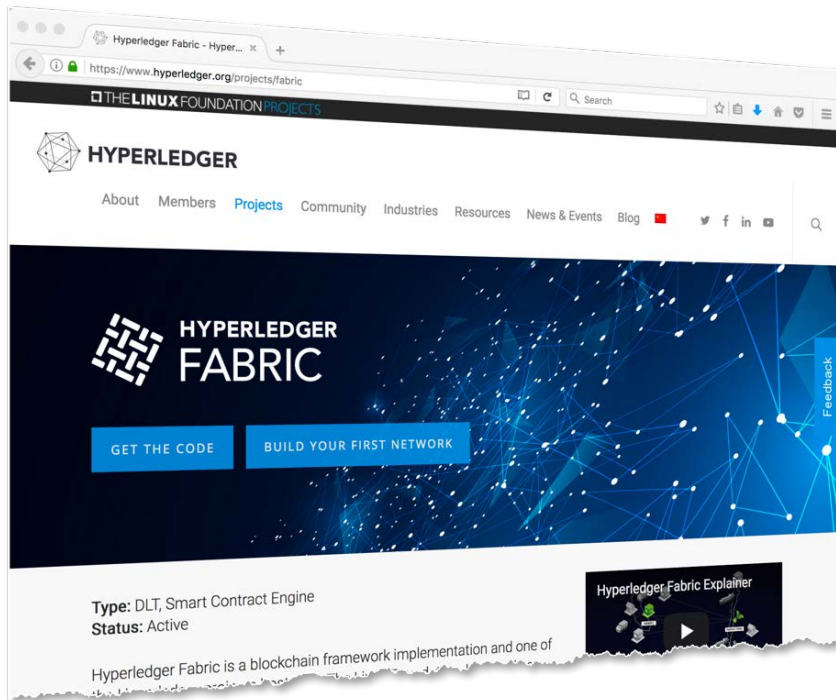
Optimise Shared Processes

B2B
B2C
C2B

Improve visibility (provenance), remove inefficiencies – autonomous business with smart contracts (finality)

Hyperledger Fabric

Distributed ledger platform

- An implementation of blockchain technology that is a foundation for developing blockchain applications

- Emphasis on ledger, smart contracts, consensus, confidentiality, resiliency and scalability.

- V1.1 released March 2018
  - Includes significant performance, security, migration and smart contract improvements
- V1.2 release July 2018
  - Includes private data collection, access control for peer functions, pluggable endorsement, etc.
- V1.3 release October 2018
  - Includes key-level endorsement policy, Chaincode in Java, Peer channel-based event services

- IBM is one of the many contributing organizations

IBM Blockchain Strategy

Drive the development of **applications** for specific business use-cases, to be deployed to active **blockchain networks**

Services

Collaborate with services teams from ideation all the way to production

Ecosystem — Tap into our diverse ecosystem to develop strategic partnerships and create your competitive advantage

Solutions — Solve critical industry challenges by building and joining new business networks and applications

Platform — Develop, govern and operate enterprise blockchain networks with speed and security

HYPERLEDGER — A founding, premier member of Hyperledger, IBM is committed to open source, standards & governance

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Why IBM

IBM is making huge strides across many ecosystem

Trade Finance

HSBC and Bank of America Merrill Lynch use Hyperledger Project for blockchain-based trade finance
By Ian Allison August 10, 2017

The banks plus Infocomm Development Authority of Singapore proves Letter of Credit transactions can be executed on blockchain.. …

http://www.ibtimes.co.uk/hsbc-bank-america-merrill-lynch-use-hyperledger-project-blockchain-based-trade-finance-1575269

SOURCE: ibtimes.co.uk

UBS and IBM To Build Blockchain-Based Trade Finance System
By Kim S. Nash
Sep 29, 2017 5:06 pm ET

Working with International Business Machines Corp., UBS chose the open-source Hyperledger blockchain platform for the project, in part for its deft handling of smart contracts, Alex Batlin, senior innovation manager at UBS, told CIO Journal...

http://blogs.wsj.com/cio/2017/09/29/ubs-to-build-blockchain-based-trade-finance-system/

SOURCE: WSJ.COM

Supply Chain Finance

IBM & Mahindra to Develop Blockchain Supply Chain Finance Solutions in India

Samburaj Das on 30/11/2017
Technology giant IBM has announced a partnership with Indian conglomerate and multinational Mahindra to develop blockchain solutions to revolutionize supply chain finance in the country.

https://www.cryptocoinsnews.com/ibm-mahindra-develop-blockchain-supply-chain-finance-solutions-india/

SOURCE: CRYPTOCOINSNEWS.COM

YES BANK Implements Multi-Nodal Blockchain Solution in India

Mumbai, January 03, 2017:
YES BANK, India's 5th largest private sector bank today announced that they have implemented a multi-nodal Blockchain transaction to fully digitize vendor financing for Bajaj Electricals.,....

https://www.yesbank.in/media/press-releases/fy-2017-17/yes-bank-implements-multi-nodal-blockchain-solution-in-india

SOURCE: YESBANK.COM

Digital Identity

IBM and Crédit Mutuel Arkéa Announce Identity Verification Project Built on Hyperledger Blockchain

IBM has unveiled another Bluemix project launched in collaboration with a high-profile client. IBM and Crédit Mutuel Arkéa have announced the completion of their first blockchain project to improve the bank's ability to verify customer identity...

http://www.redchalk.com/feature/ibm-and-credit-mutuel-arkea-announce-identity-verification-project-built-on-hyperledger-blockchain/

SOURCE: Red Chalk

IBM Blockchain Helps FinTechs and Banks Address KYC Challenge
SINGAPORE - 14 Nov 2017

Requirements that banks and financial institutions comply with Know Your Customer (KYC) requirements is a global challenge. Blockchain holds potential to help address this need to prove the identity of a person or organization, source of funds, business interests, history and also monitor for changes …

https://www-03.ibm.com/press/us/en/pressrelease/51054.wss

SOURCE: IBM

Network / Consortium Solutions

IBM Set to Launch One of the Largest Blockchain Implementations to Date
By Kim S. Nash and Rachael King
Jul 29, 2017 5:17 pm ET

IBM Global Financing will use blockchain, touted as a way to make many markets and functions more efficient by removing the middleman, to free up capital tied in customer disputes...

http://blogs.wsj.com/cio/2017/07/29/ibm-set-to-launch-one-of-the-largest-blockchain-implementations-to-date/

SOURCE: Wsjonline.com

Dubai's Government Launches Blockchain Trade Finance Trial With IBM
By Stan Higgins (@mpmcsweeney) | Published on February 7, 2017

Dubai's government is testing blockchain tech for trade finance in partnership with IBM.ADVERTISEMENTDubai Customs, the emirate's customs office, and Dubai Trade, an electronic trade services hub...

http://www.coindesk.com/dubai-ibm-blockchain-trade-finance/

SOURCE: Coindesk.com

Thank You!