

Deloitte

Blockchain Overview

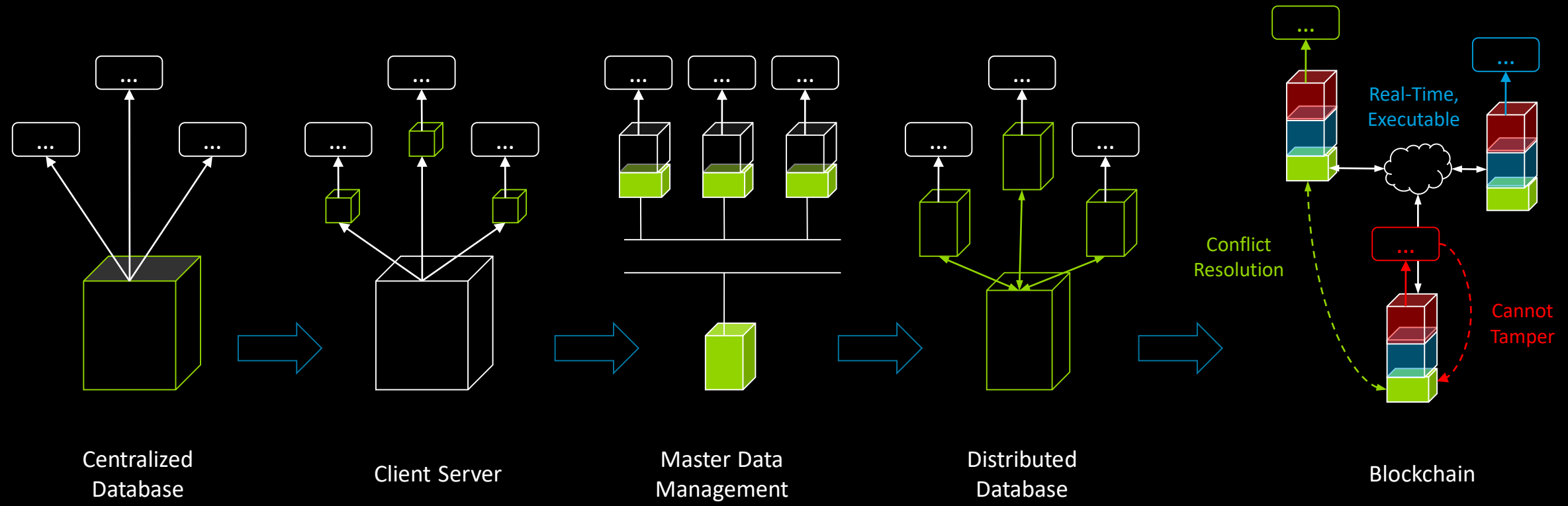
Paul Sin, Ph.D.

Partner, Deloitte Consulting

Asia Pacific
BLOCKCHAIN LAB

Evolution of Data Distribution

Blockchain is a network for distributed ledger with data integrity ensured through real-time synchronization and consensus. It is the result of decades of development on data distribution.



Blockchain Applications



Banking



Insurance



Supply Chain



Healthcare



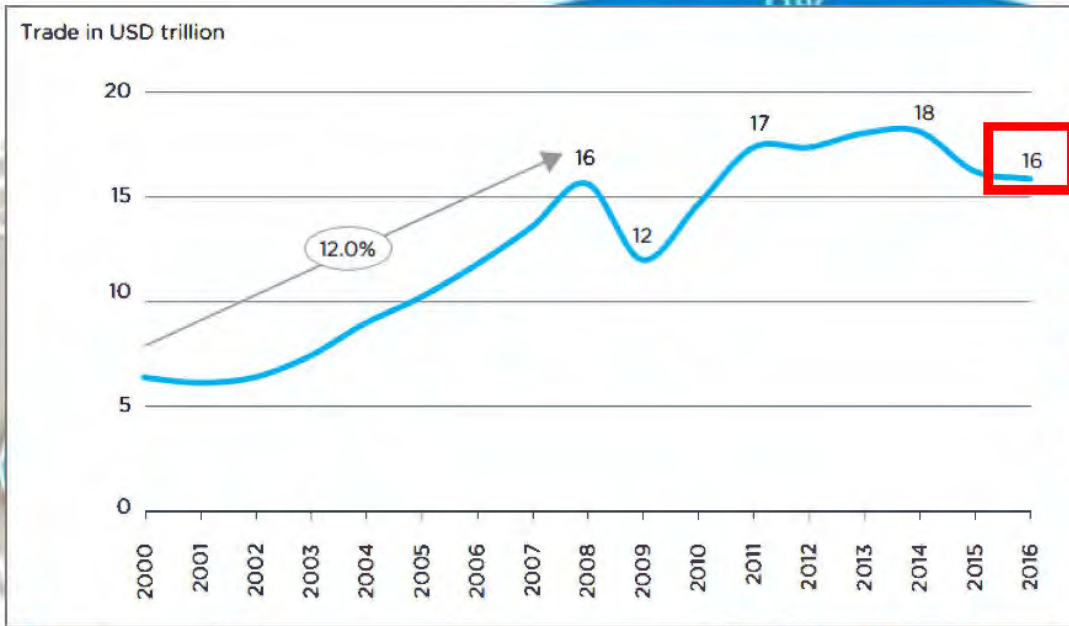
Digital Right



Regulator

Trade Finance

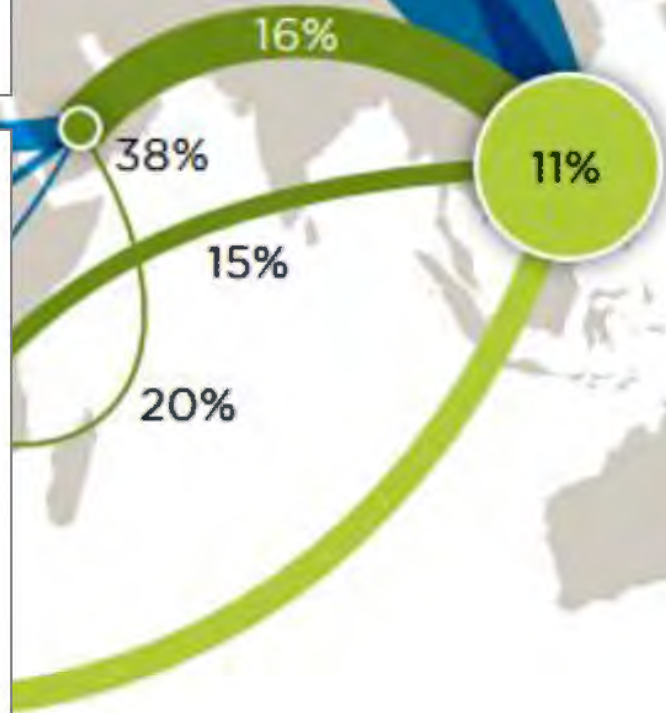
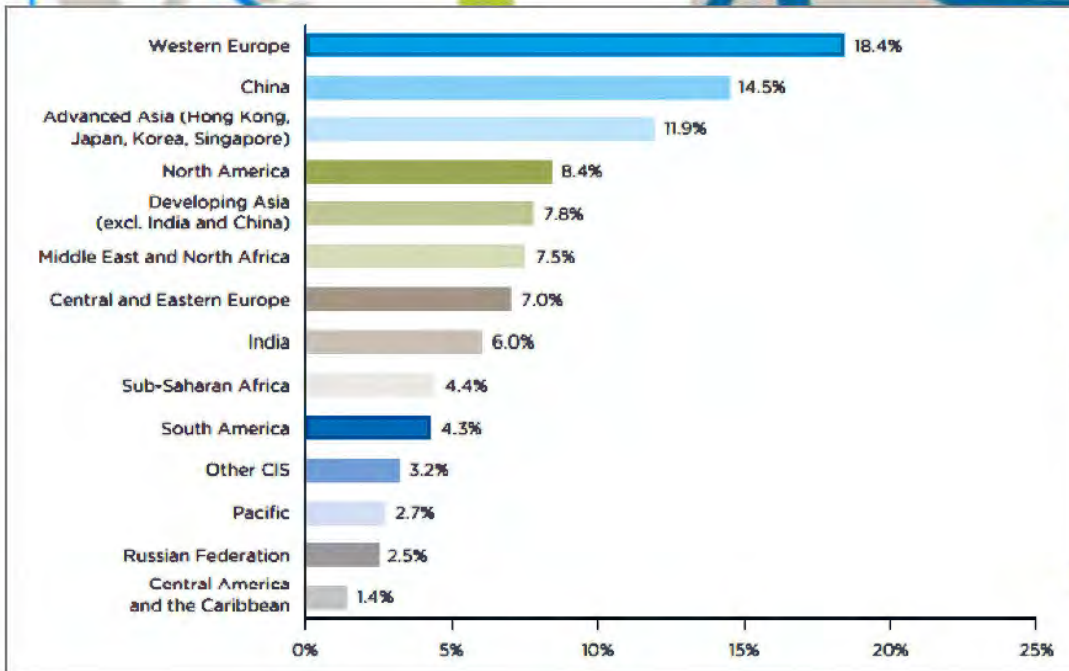




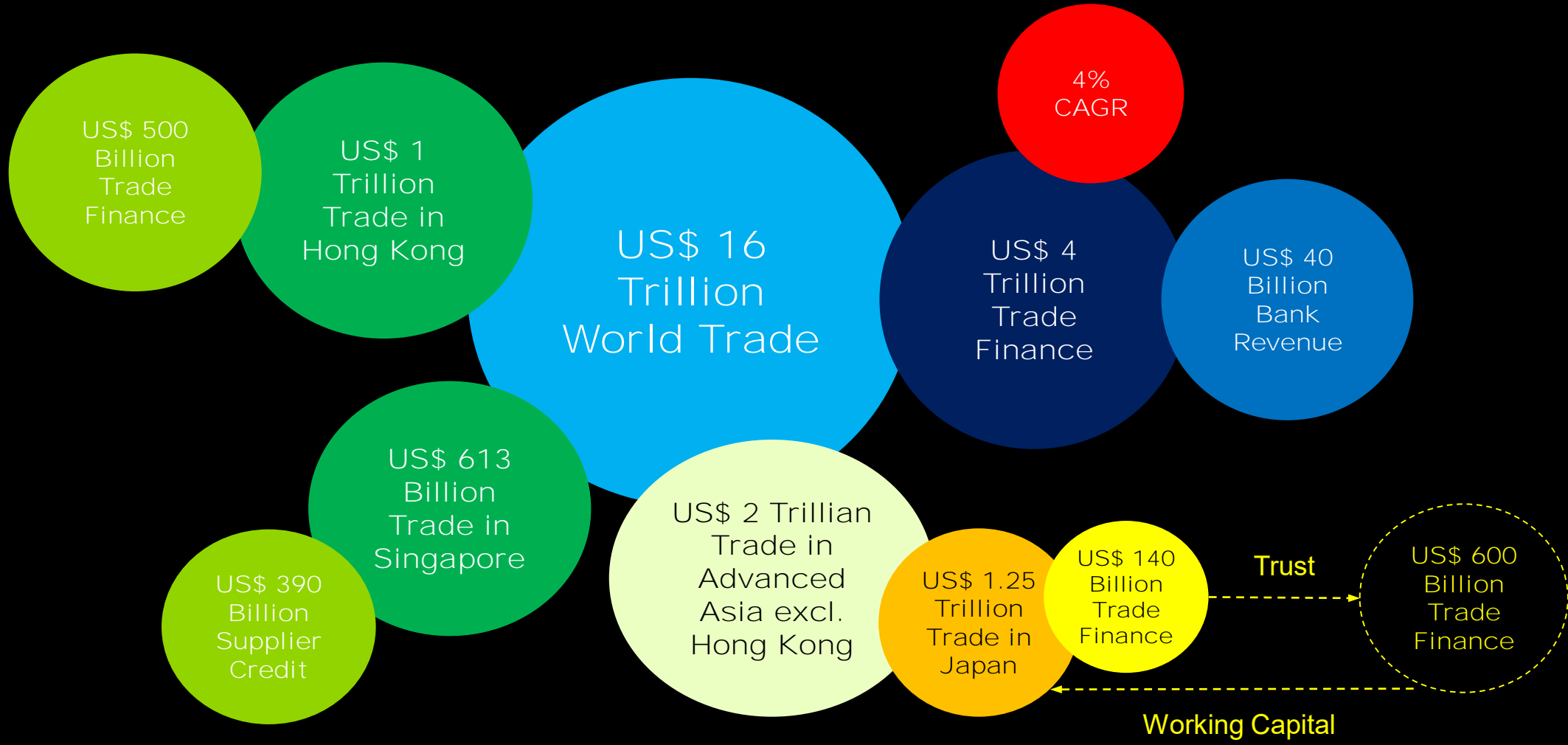
Line size depicts cross-region trade volumes

Bubble size depicts intra-region trade volumes

- <7%
- 8-9%
- 10-12%
- >13%



120 Billion Shortage of Trade Finance



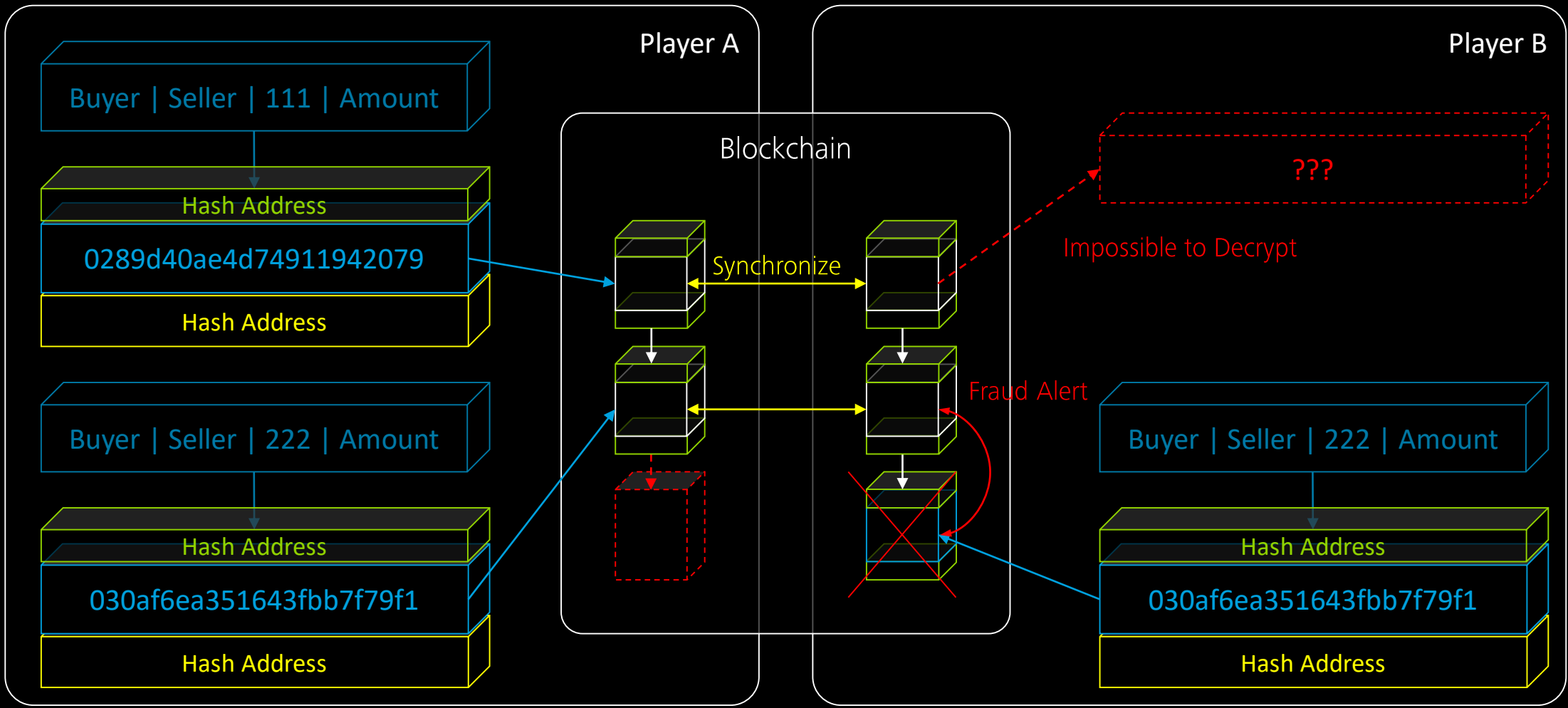


Identity Theft, Double Financing, Forged Invoice

FRAUD

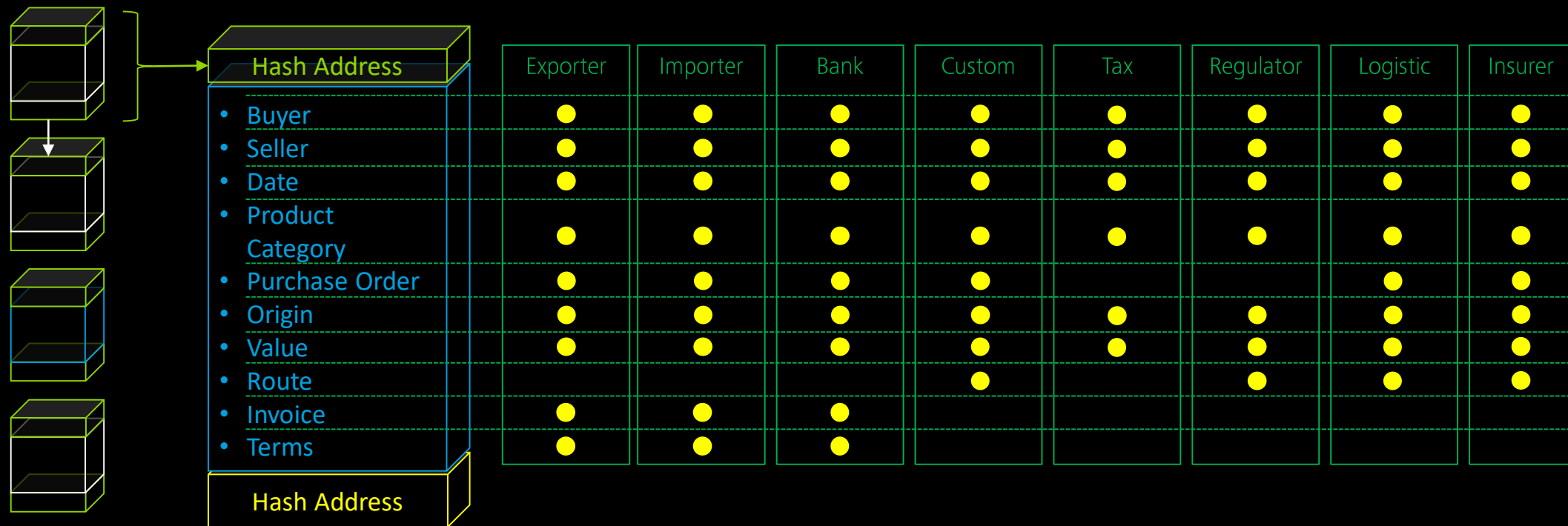
Fraud Prevention

Blockchain allows detection of double spending or financing without exposing sensitive information.

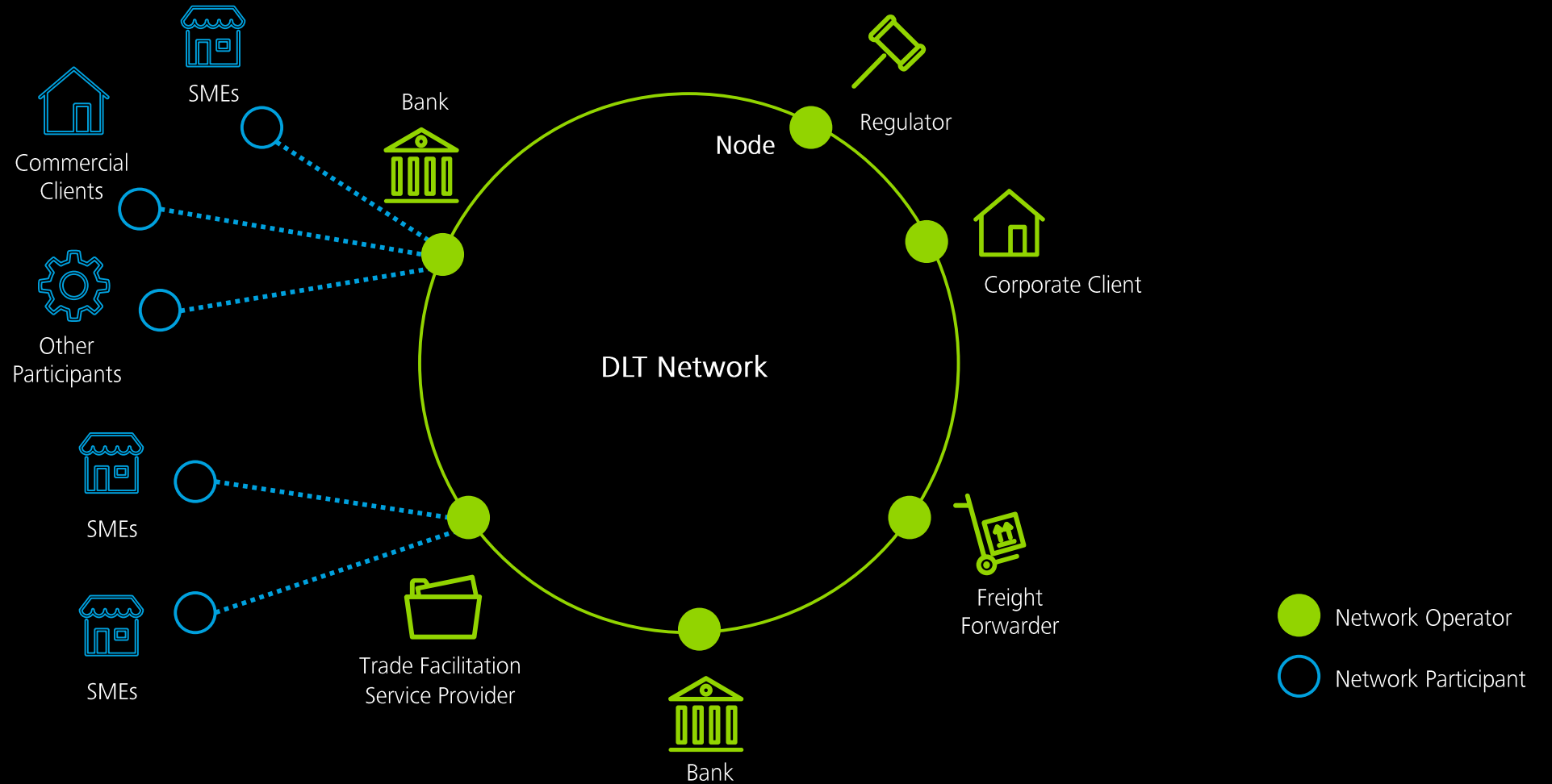


Gold Mine in Blockchain

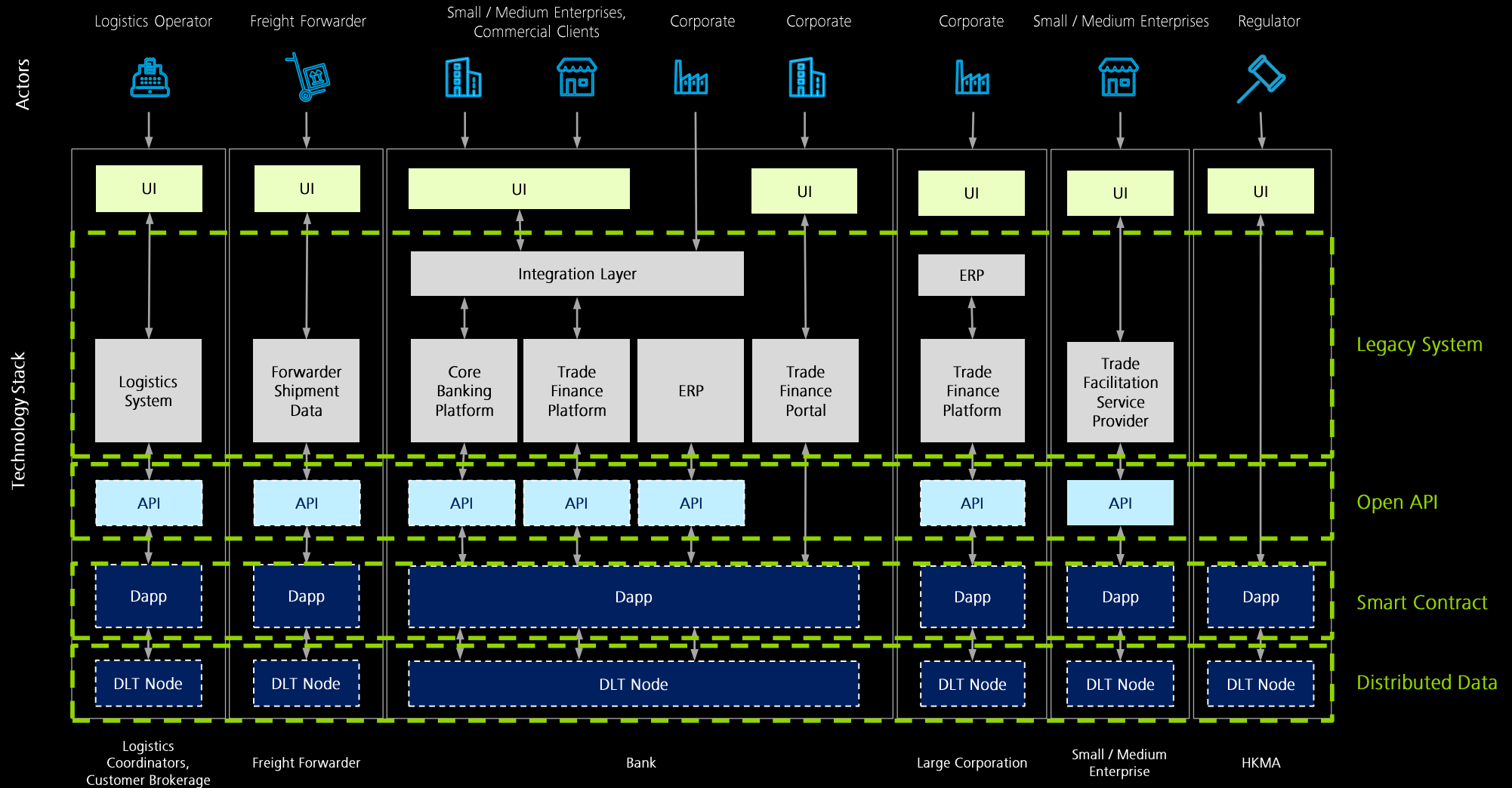
The transparency of data in Blockchain enables tons of business case.



Trade Finance Eco-System



Eco-System Architecture



Global Supply Chain & Trade Finance DLT Network

UBS, Bank of Montreal (BMO), CaixaBank, Commerzbank, and Erste Group developed Batavia on Hyperledger, starting with LC

Ireland Dairy Board, Ornuu, and Seychelles Trading used Wave for Dairy Product Trading and LC

Walmart leveraged Traceability on DLT for Food Safety, using Hyperledger

NTT Data, MUFG, and Other Banks, Insurance, Firms, Logistics Companies Developed eTrade on Hyperledger for LC

Deutsche Bank, HSBC, KBC, Natixis, Rabobank, Societe Generale, and Unicredit formed We.Trade and built DTC on Hyperledger

ING, Easy Trading Connect, Mercuria, Societe Generale conducted Ethereum POC on Oil

Maersk aims to eliminate paper trail on supply chain with Hyperledger

BNP Paribas, Commerzbank, ING, and RBS developed Macrò Polo on Corda (TradelX) for Open Account

Ping An and Bank of China conducted Trade Finance POC on Hyperledger

Dubai Customs, Dubai Trade, Emirates NBD, Banco Santander, Du, and Aramex started Trade Finance DLT on Hyperledger for LC

HKMA, HSBC, HASB, BOCHK, SCB, and HKBEA conducted POC on Deloitte Mercury, Hyperledger

Kotak Mahindra Bank conducted a Ethereum POC in Document Financing on Deloitte Mercury

MAS, IDA, and Customs built NTP with GTCN in the Roadmap

Brighann Cotton, Commonwealth Bank of Australia, and Wells Fargo conducted First Trade on Hyperledger, starting with Open Account Financing

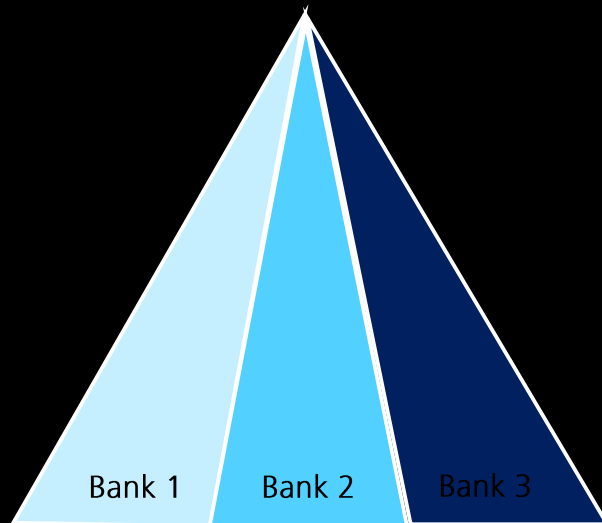
Bangkok Bank, BBVA, BNP Paribas, HSBC, ING, Intesa Sanpaolo, Mizuho, RBS, Scotiabank, SEB, and US Bank tested R3 Voltron on Corda for LC

Public Sector Driven

Financial Sector Driven

Corporate & Logistic Driven

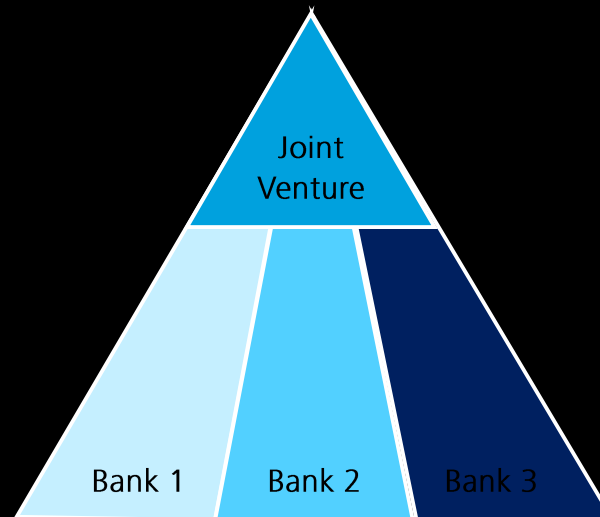
Governance Structure



Consortium

Scalable

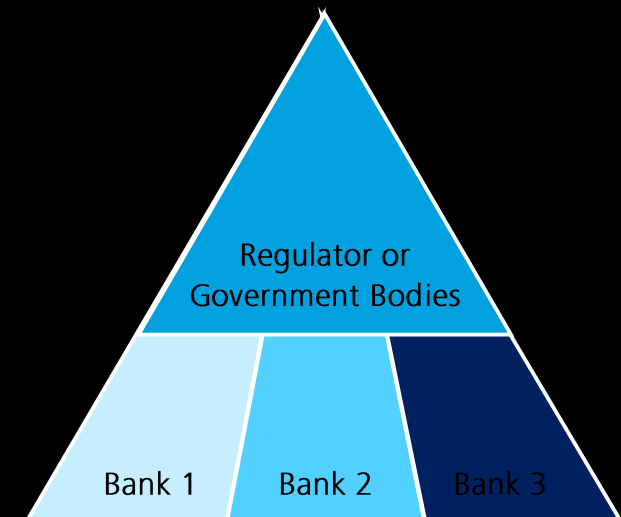
Share



Private Entity

Speed

Ownership



Hybrid

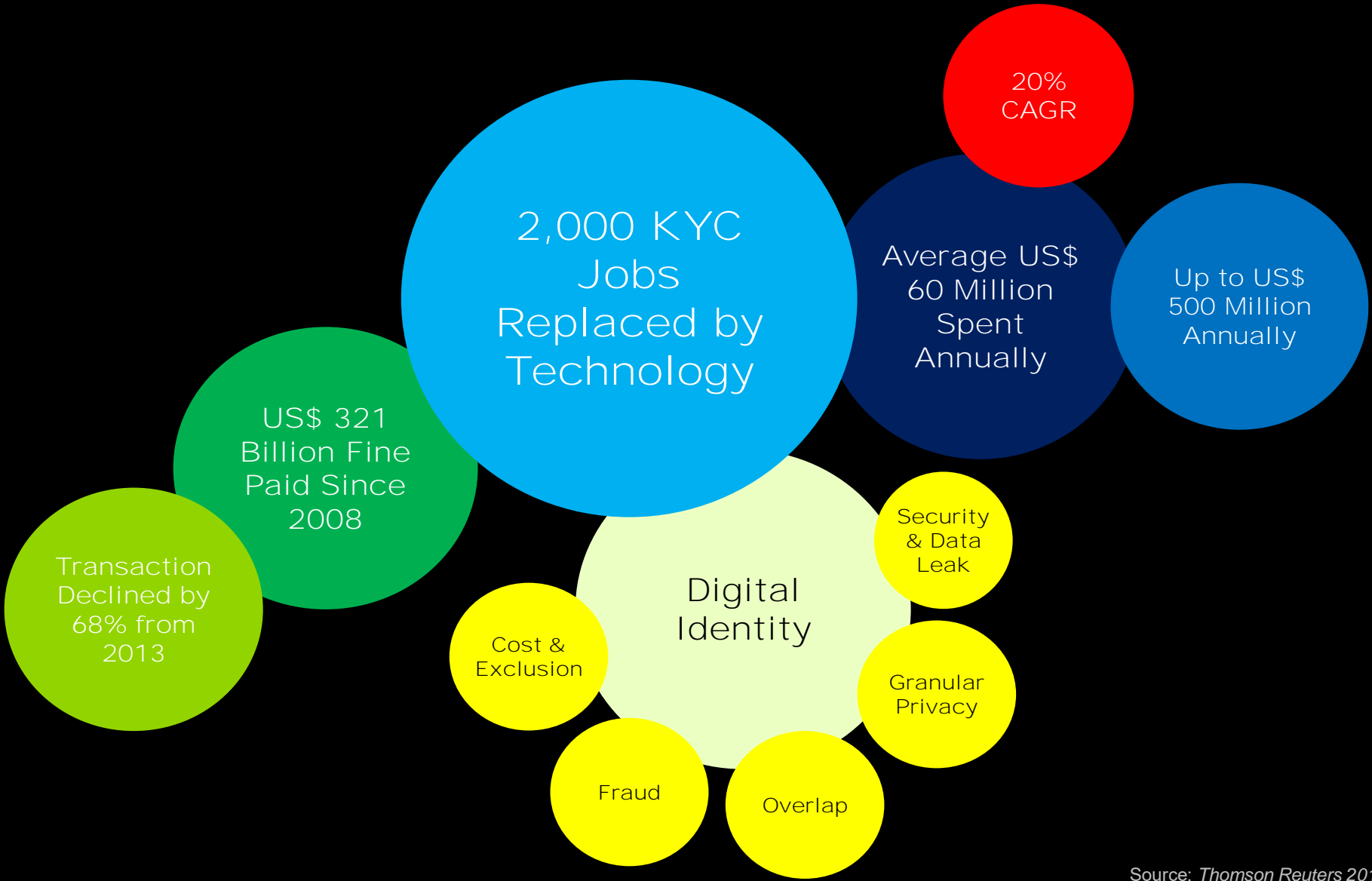
Transparency

Collaboration



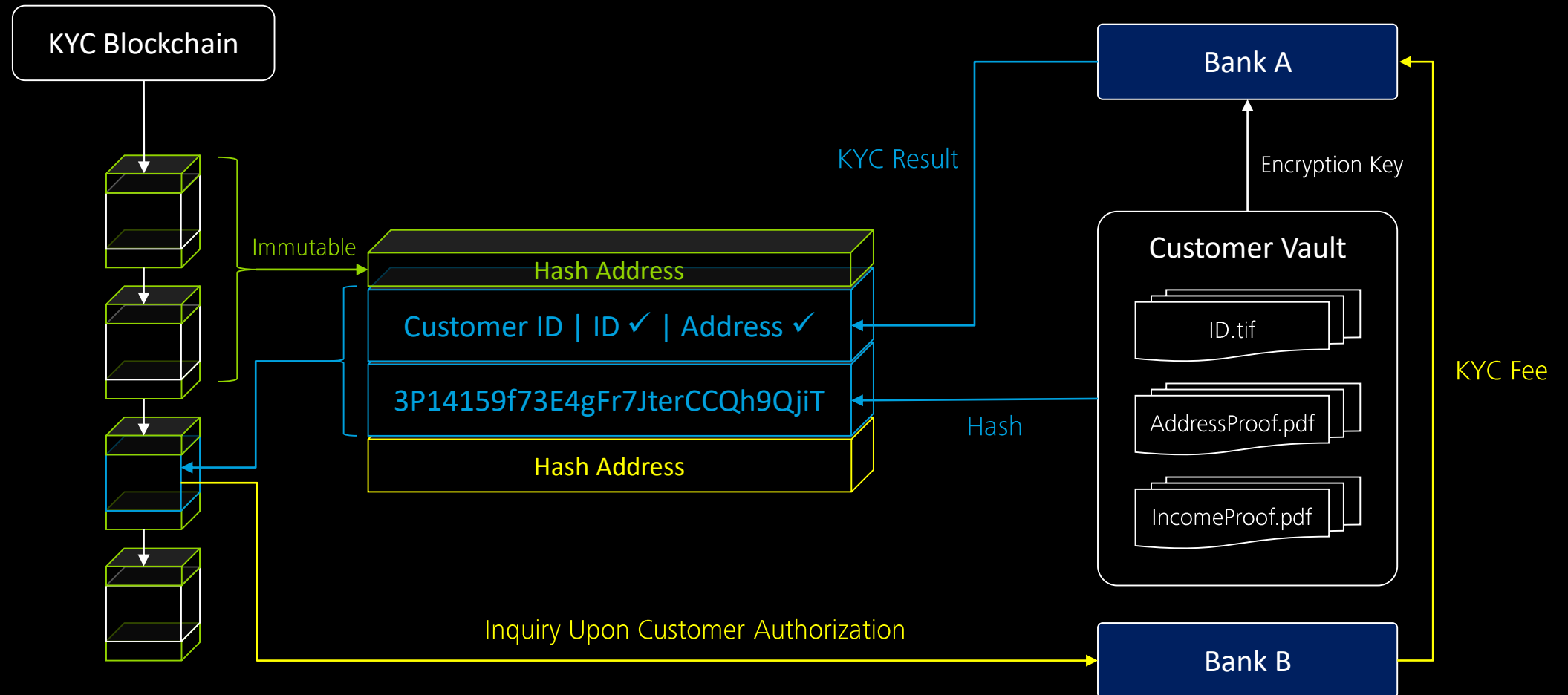
Know Your Customer (KYC)

Cost of KYC & Challenge of Digital Identity

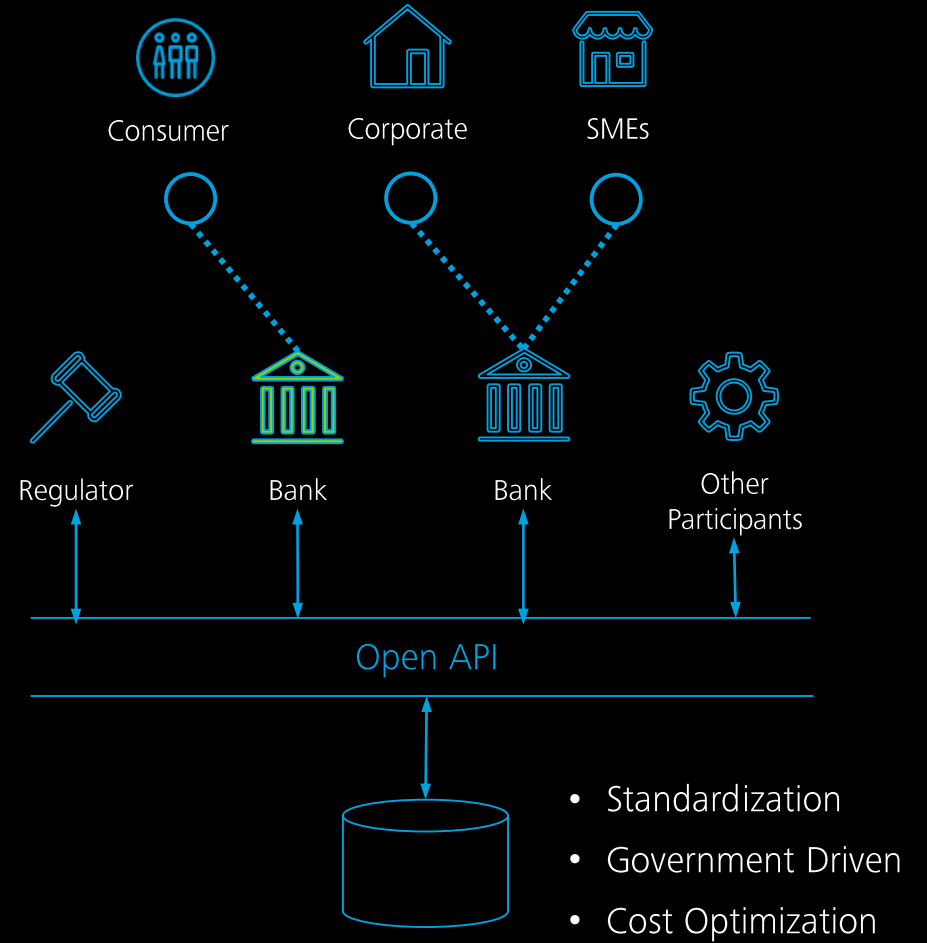
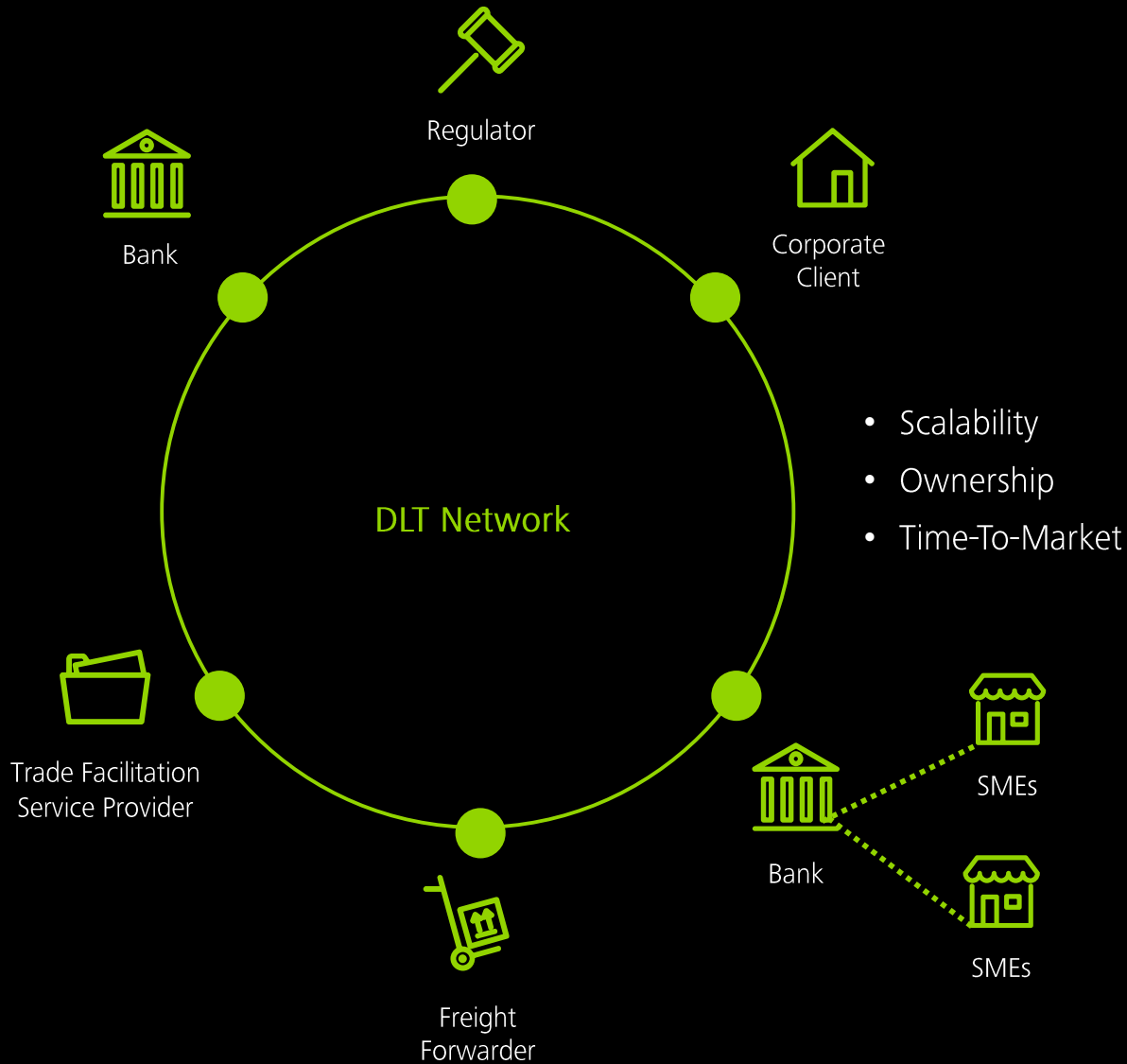


Digital Identity on Blockchain

Once a qualified participant completes the KYC process for one customer, another one can on-board the same customer quickly.



KYC Blockchain vs. KYC Utility



Other Banking Applications



US\$ 8~12 Billion
Cost Saving



US\$ 70 Billion
Exposure Reduced
By Shortening
20d Settlement



US\$ ~4.5 Billion
Fraud Affecting 18 Banks,
Out of US\$ 0.5 Trillion
Cross-Border Guarantee

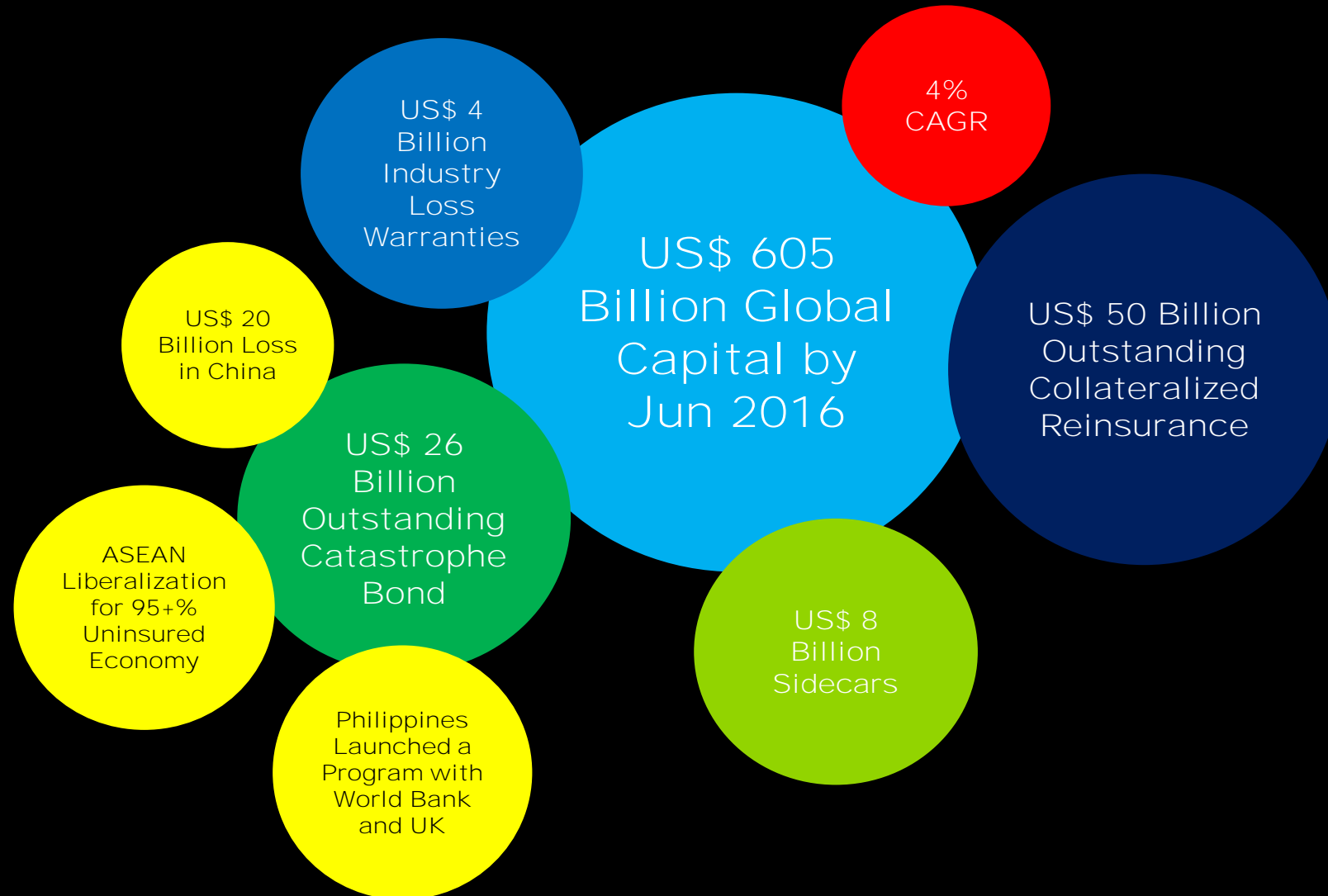


Just-In-Time
ESMA, FSB, EMIR,
Dodd Frank, BASEL III

Reinsurance

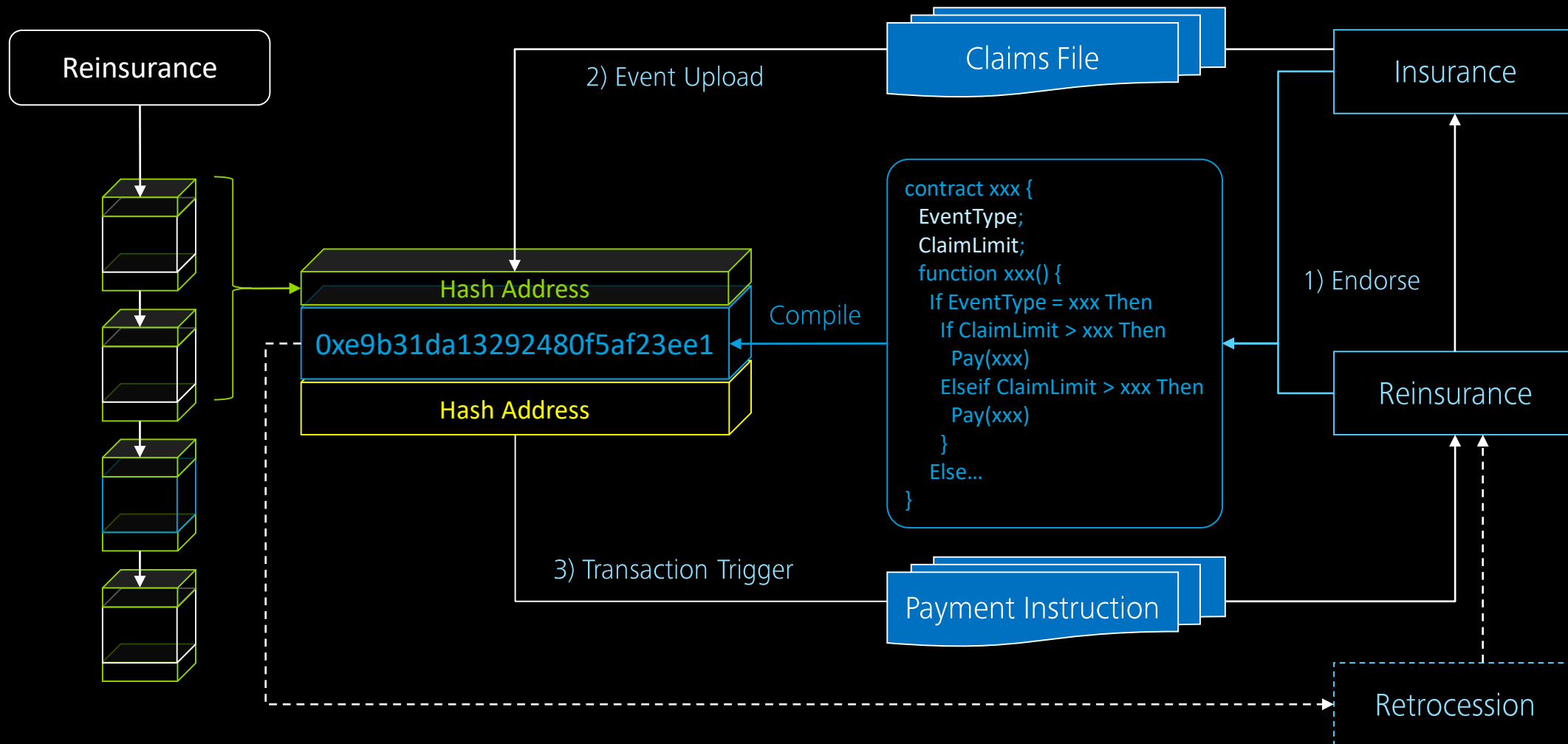


Strong Appetite for Reinsurance Investment



Smart Contract

Smart contract is essentially a program, and the Ethereum is becoming a global virtual machine.



Reinsurance Platform

Reinsurer MY WALLET 🔔 👤

New Contract

[Submit](#)

Title

Term

Coverage

Premium

Post-Contract Adjustments

Reinstatement Provision

Free and Unlimited

1st Reinstatement 0 %

2nd Reinstatement 100 %

Contracts Details for

Digital Signature ✕

By submitting this contract - 'Aviation - Layer 1' for the coverage amount of \$1,000,000, you are agreeing to the terms and conditions of this contract.

Name: **John Smith** Title: **Senior Under Writer**

Doc ID: 2016244 AM

[Cancel](#) [Submit](#)

Retract **Approve**

TITLE

Cedant
AGCS

Line of Business
Aviation

TERM

Coverage Basis
RA

Inception Date
12/01/2016

Expiration Date
12/01/2017

Coverage

Risks Covered
All Risks

Per Risk Limit
\$75,000,000.00

Per Event Limit
\$75,000,000.00

Priority Type
Fiat

Priority
\$25,000,000.00

USD

EUR

Reinstatement Provision

Free and Unlimited

1st Reinstatement

Primary Insurer MY WALLET CLAIMS 🔔 👤

Claims

[Upload](#)

Line of business	Peril	Claim ID	Event ID	Loss Date	Incurred	Paid	Reserved	Report Date
Aviation	All risk	131-1	1	6/1/2016	100,000,000	100,000,000	0	9/1/2016
Aviation	All risk	132-1	2	6/1/2016	100,000,000	100,000,000	0	9/1/2016
Aviation	All risk	133-1	3	6/1/2016	75,000,000	75,000,000	0	9/1/2016
Aviation	All risk	134-1	4	7/1/2016	50,000,000	50,000,000	0	9/1/2016
Aviation	All risk	135-1	5	7/1/2016	120,000,000	120,000,000	0	9/1/2016
Aviation	All risk	136-1	6	7/1/2016	50,000,000	50,000,000	0	9/1/2016



Bancassurance

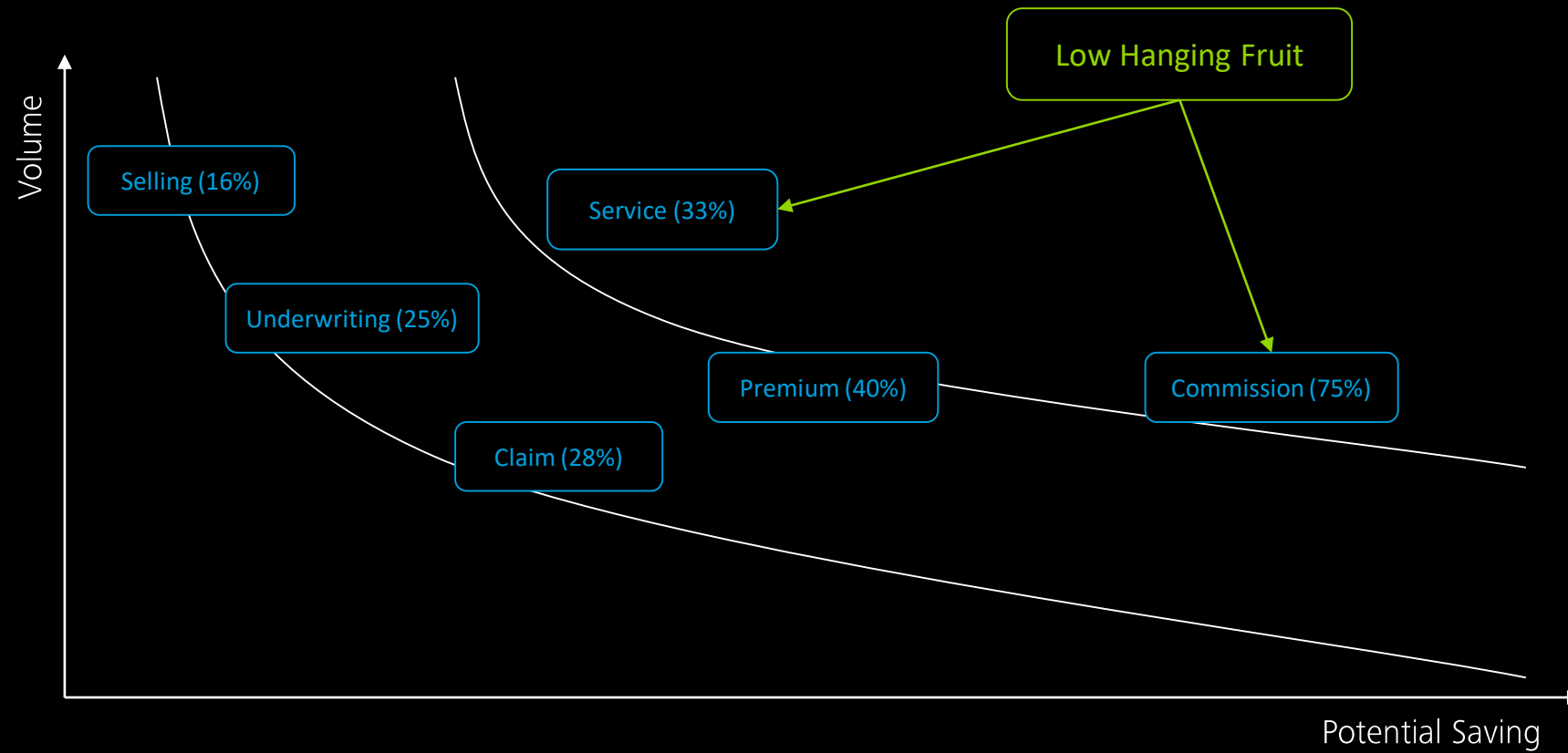


Bancassurance on the Rise



Project Prioritization

The common quick wins are at interface between bank and insurance on customer service (e.g. call center) and commission calculation, where substantial effort is spent in reconciliation.



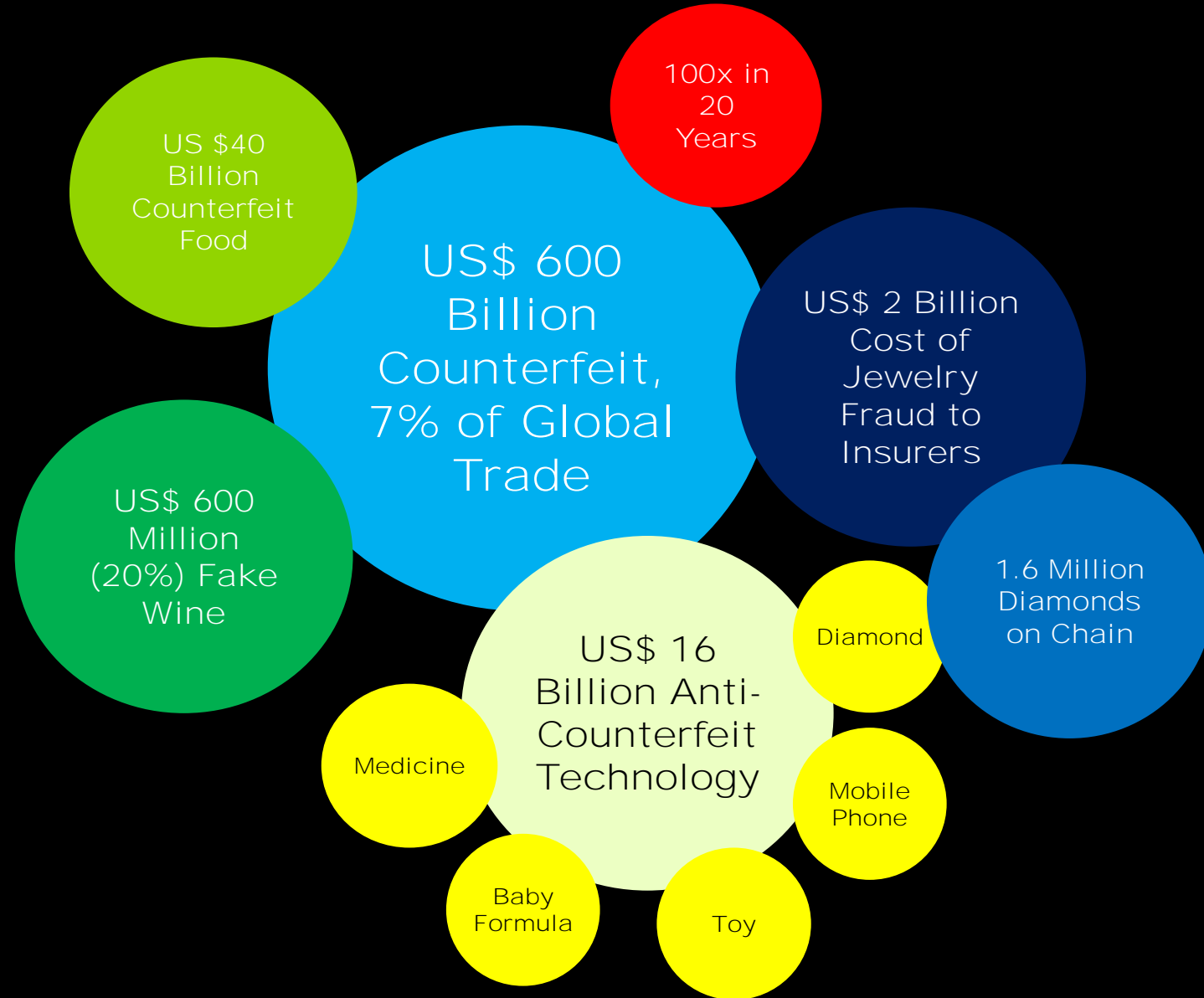
Other Insurance Applications





Supply Chain Traceability

Traceability



Traceability on Chain

Deloitte Tracechain

HIJ Co. Inc. | Supply Chain Overview

Date Range: Last 30 Days | Product Name / ID: Aluminum Cans

Filter Results: Region, Country, Company Type, Variant

Key Traceability Metrics:

- 4 Open Displays
- 1 Late Shipments
- 11 Outstanding Orders
- 9 Associated Companies
- 2 Products

Companies:

Company Name	Type	ID	View Profile
ABC Co. Inc.	Supplier	183928	View Profile
HIJ Co. Inc.	Manufacturer	294829	View Profile
LMN Co. Inc.	Manufacturer	183928	View Profile
XVZ Co. Inc.	Distributor	294829	View Profile
Retailer A	Retailer	183928	View Profile

Traceability Diagram

Transaction History - HIJ Co. Inc. (3)

Trans. ID	Date	From	To	Transaction Type	Unit ID	Label	Flag
111221	5/1/2017	ABC Co. Inc.	HIJ Co. Inc.	Ownership transferred	444333222	100lbs aluminum	
111222	5/2/2017	HIJ Co. Inc.	HIJ Co. Inc.	Unit registered to blockchain	444333222	100 aluminum cans	UPS-12 989 AAH 4R 2M45ATN
111223	5/3/2017	HIJ Co. Inc.	LMN Co. Inc.	Ownership transferred	444333222	100 cans	

Deloitte Tracechain

HIJ Co. Inc. | Create PO

Purchase Order: Item for Approval, PO Confirmed

Pre-Shipment Financing: Applied, Approved

Shipment: Shipping Requested, Shipping Confirmed, Goods Departed, Goods Arrived

Invoice: Submitted, Accepted

Post-Shipment Financing: Applied, Approval

Payment: Invoice Paid

Create New Purchase Order

Upload Purchase Order Excel (Optional)

CREATE

Transaction History - HIJ Co. Inc. (3)

Trans. ID	Date	From	To	Transaction Type	Unit ID	Label	Flag
111221	5/1/2017	ABC Co. Inc.	HIJ Co. Inc.	Ownership transferred	444333222	100lbs aluminum	
111222	5/2/2017	HIJ Co. Inc.	HIJ Co. Inc.	Unit registered to blockchain	444333222	100 aluminum cans	

Transaction Details - 111222

Date: 5/1/2016 | Transaction Type: Unit registered to blockchain
 From: HIJ Co. Inc. | Transaction Attachments: ABC Co. Attachment (PDF)
 To: HIJ Co. Inc. | Flag: None

Unit ID	Label	Unit Owner	Unit Creator	Flag
444333222	100 aluminum cans	HIJ Co. Inc.	HIJ Co. Inc.	

Geographic Overview

Company Types

Trans. Number: ZAB291 | Actual Departure Date: | Actual Delivery Date:

Place of Loading: | Place of Discharge: Toronto | Place of Destination:

Mark and Number: | Gross Weight: 100 | Package Type:

Line Items

Item No.	Style No.	Quantity	Items	Measure Unit	Unit Price	Total Price
Grand Total:						

DECLINE | CONFIRM



Product Warranty



Patient Record



Imogen Heap

Mastering Engineer



Intellectual Property Right

Tiny Human

Brass Ensemble

David Harrington (violin)

John Sherba (violin)

Hank Dutt (viola)

Sunny Yang (cello)

String Ensemble

Choreographer

↓
download
\$1.00

Other Digital Assets





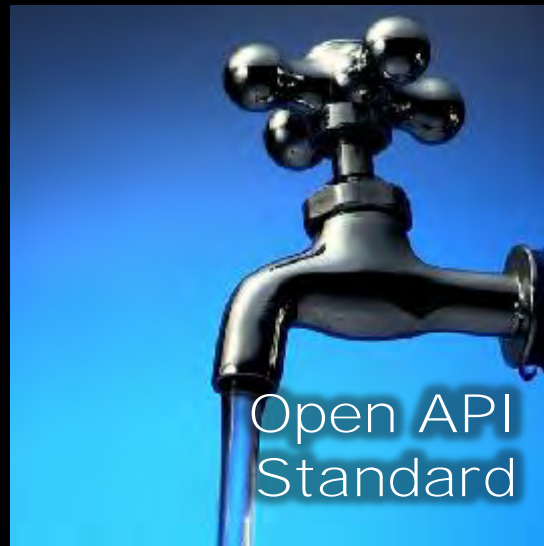
Public Sector Implication



Public Sector Application



Government Facilitation



Vision

