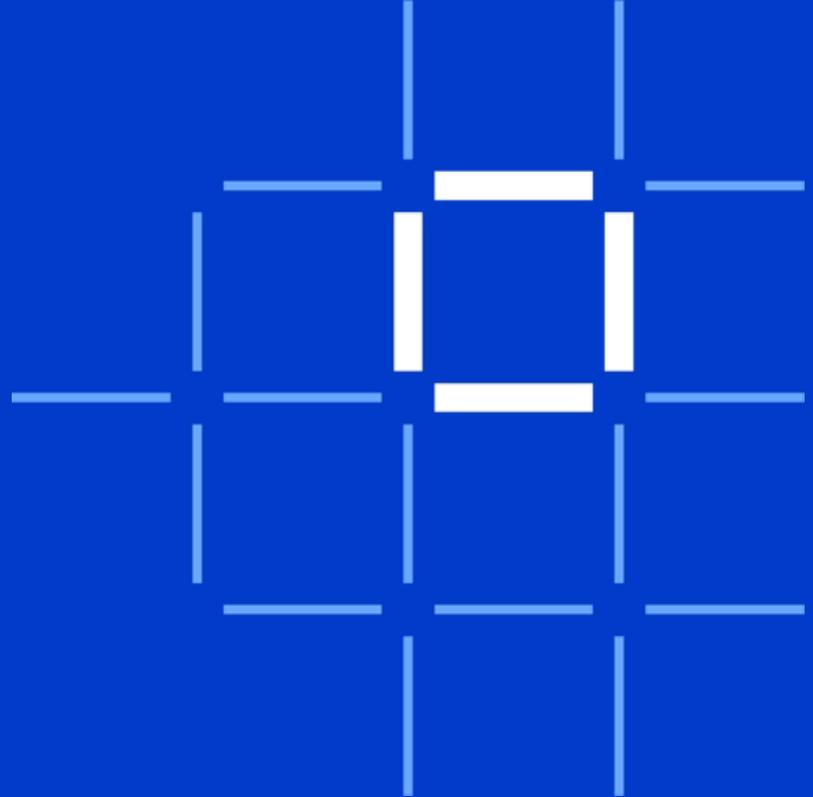


# Blockchain: Building Trust and Transparency in Government Finance

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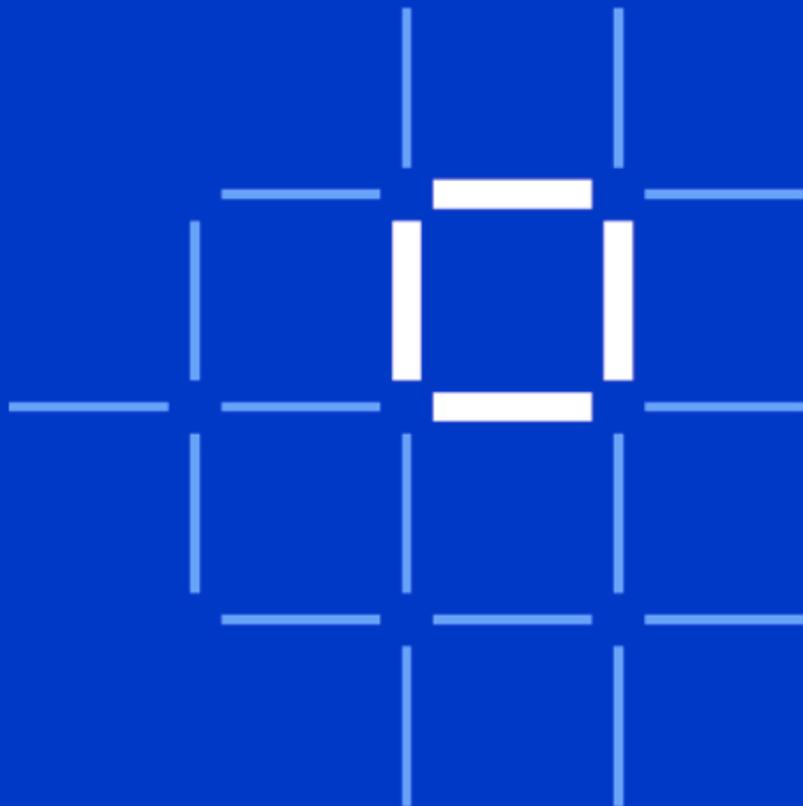
What is Blockchain?



How will it impact me?



Use case examples



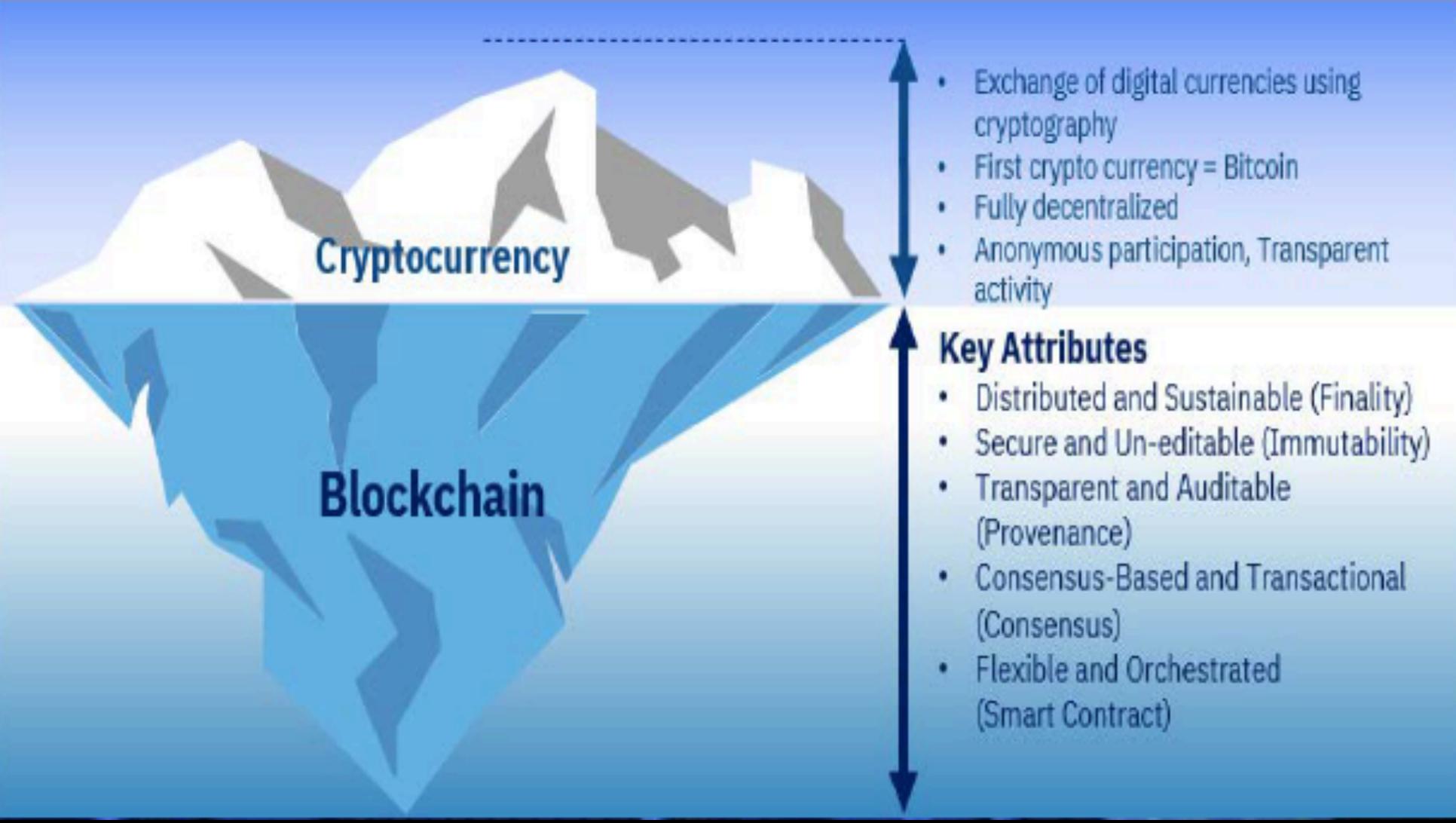
# First Blockchain



Blockchain solves for

**1. TIME**

**2. TRUST**



The diagram features a stylized iceberg floating in a blue gradient background. The top portion of the iceberg, which is above the water line, is white and labeled 'Cryptocurrency'. The bottom portion, which is submerged, is a darker blue and labeled 'Blockchain'. A horizontal dashed line separates the two sections. To the right of the iceberg, there are two vertical double-headed arrows. The top arrow spans the height of the 'Cryptocurrency' section and points to a list of four bullet points. The bottom arrow spans the height of the 'Blockchain' section and points to a section titled 'Key Attributes' followed by a list of six bullet points.

**Cryptocurrency**

- Exchange of digital currencies using cryptography
- First crypto currency = Bitcoin
- Fully decentralized
- Anonymous participation, Transparent activity

**Blockchain**

### **Key Attributes**

- Distributed and Sustainable (Finality)
- Secure and Un-editable (Immutability)
- Transparent and Auditable (Provenance)
- Consensus-Based and Transactional (Consensus)
- Flexible and Orchestrated (Smart Contract)

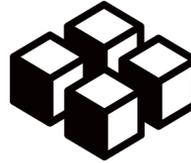
# Permission-less vs. Permissioned Blockchains

Some use-cases require anonymity, others require privacy, some may require a mixture of the two depending on the characteristics of each participant

## Permission-less blockchains



- Network members are anonymous
- Transactions are public
- Concept of “mining” or “proof of stake” e.g. – Ethereum, Bitcoin, Cryptocurrencies



## Permissioned blockchains

- Network members are known but transactions are private
- Consensus vs. Proof of Stake
- For example, Hyperledger Fabric

### **Most business use-cases require private, permissioned blockchains**

- Network members know who they're dealing with (required for KYC, AML etc.)
- Transactions are (usually) confidential between the participants concerned
- Membership is controlled

For traditional enterprises, more than 85% of all blockchain initiatives today lack compelling, viable and sustainable business cases - Gartner “Hypecycle for Blockchain 2018”

**85%**

Slido: Who's business process only involves trusted entities?

*ie. Would you give these entities editor rights to your data?*

# An Enterprise Blockchain is NOT...

## A product

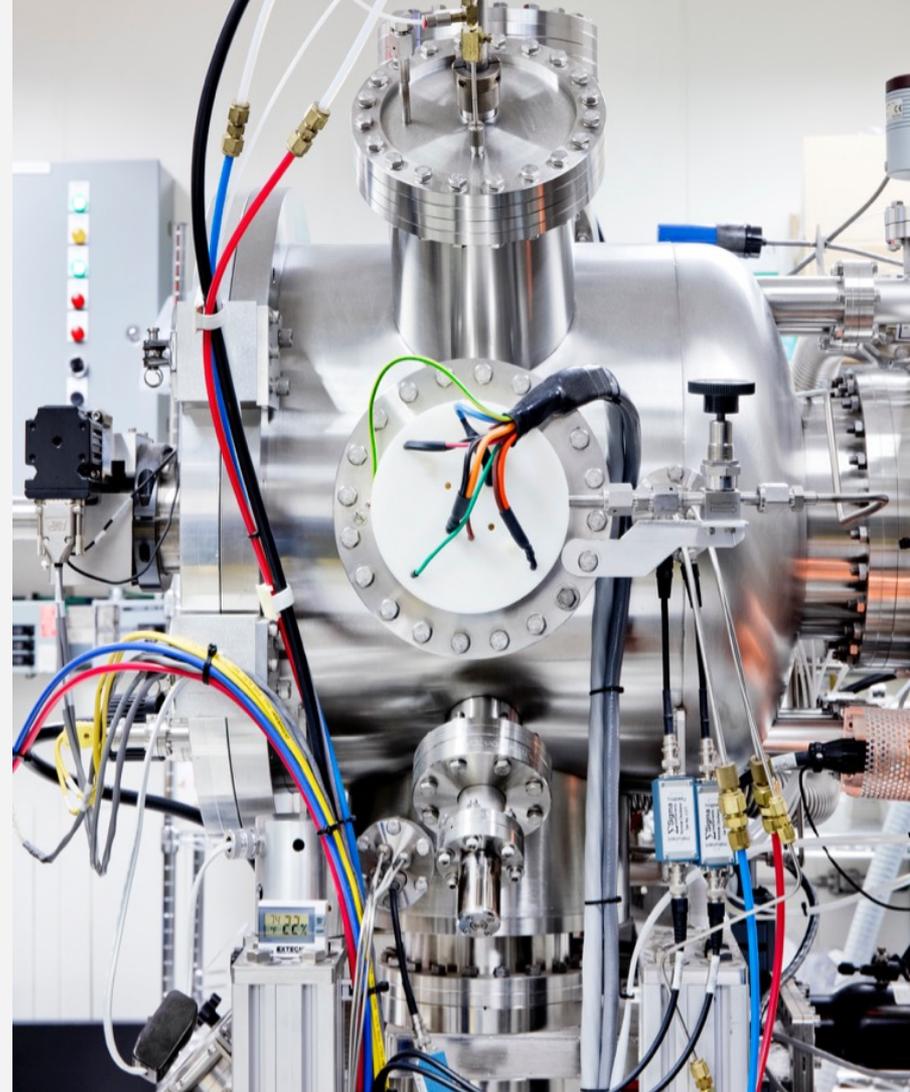
You cannot install Blockchain into your architecture like an ERP system. It is NOT a "commercial off the shelf" product.

You are re-engineering your business processes.

## Of value if there is trust

Is there a conflict of interest?

Unless you have a lack of trust between business stakeholders, you do not need a Blockchain, you need a traditional database.



# An Enterprise Blockchain is IS...

## A distributed Ledger

There is no “rip and replace” of existing back-end systems.

Imagine a portal that sits on top of existing systems that pulls information from the backend.

Where everyone has access to the same information as soon as it is posted...

## Single source of immutable truth

.... and this information cannot be edited.

Once it is submitted, the information is final since all entries are cryptographically linked, hence the “chain” in Blockchain.



# Blockchains | Business Networks



## **Business Network**

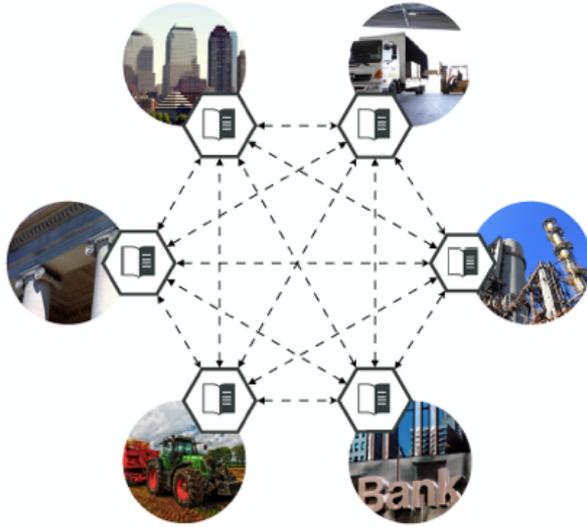
Ecosystem the business exists in.  
Suppliers, Banks, Regulators...



## **Assets**

Anything that can be  
manipulated to produce value

# Separate vs. Shared Ledgers



- Inefficient:** Duplication of information
- Expensive:** Point-to-point communication is slow
- Vulnerable:** Single point of failure



- Consensus:** Transactions must be collectively approved
- Immutability:** Once a transaction is recorded it cannot be removed
- Finality:** Single source of truth

# But what does it look like? Imagine a Portal.

## The Shipment Manager User Interface

Consignments can be identified by booking, equipment, bill of lading and client reference numbers.

View shipping events, documents and transportation plan.

Events are sourced directly from carriers, ports, terminals and other parties to the shipment.

The screenshot shows the TradeLens portal with a search for consignments. The header includes the TradeLens logo and navigation links for Consignments, Subscription Management, and Account. Below the header, it displays "3127413 CONSIGNMENTS FOUND" and a search bar with a "SEARCH" button. The search criteria are set to "Booking Number". Below the search bar, there are filters for "Country or Port", "Reference #s or Codes", and "Date". A list of search results is shown, with the first result for consignment number 582232320. The details for this consignment include Origin (Hamburg, HH, DE), Destination (Nehru Sheva (Jawaharlal Nehru), MH, IN), CBN (582232320), Consignment References (MANE13636MACHARGOL/SHL), and HS Code (919).

The screenshot shows the TradeLens portal with a view of shipping events and additional information for a specific consignment. The header includes the TradeLens logo and navigation links for Consignments, Subscription Management, and Account. Below the header, it displays "EVENTS AND ADDITIONAL INFORMATION" and a "RETURN TO CONSIGNMENT" button. The consignment number is C7689JHKLOP7. The details include Origin (INPQ), Destination (BEANR), Carrier Booking Number (C7689JHKLOP7), Terminals (INPQ-APMT), Commodity Description (Paper), and Transport Equipment Details (1 x 45C1). Below the details, there is an "EVENTS" section with a "FILTER BY" dropdown set to "Transport Plan" and buttons for "Latest Events" and "All Events". The event key is set to "PLANNED". The events listed include "Planned vessel arrival" for Antwerpen, BE on Apr 6, 2019, at 6:30:00 AM, and "Planned vessel departure" for Pune, MH, IN on Mar 27, 2019, at 12:00:00 PM.

# So what?

# Blockchain will not replace you. It is a new source of data.

Recording a transaction in a blockchain may or may not provide sufficient appropriate audit evidence related to the nature of the transaction. In other words, a transaction recorded in a blockchain may still be:

- unauthorized, fraudulent or illegal
- executed between related parties
- linked to a side agreement that is “off-chain”
- incorrectly classified in the financial statements.



# Blockchain is a powerful tool

By having a single source of immutable transaction data, there is an opportunity to streamline reporting:

- Provide evidence that a transaction has occurred
- Account reconciliation
- Transparency
- Enhanced Security
- Improved traceability
- Increased efficiency and speed
- Reduce Cost

## Accounting Transactions



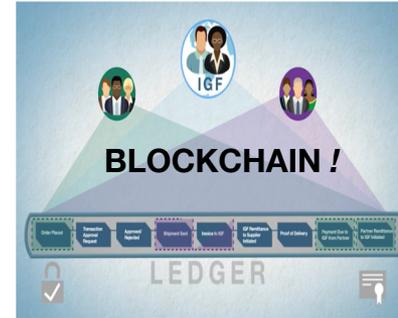


## Background



**4,000+**  
Business Partners

**25,000**  
Disputes/year



Permissioned  
Secure  
Trusted  
Distributed

## Potential Benefits

### Proof of Delivery

4 out of 9 manual steps eliminated with immediate resolution

### Tax

Eliminate Tax Disputes completely by flagging invoices billing tax

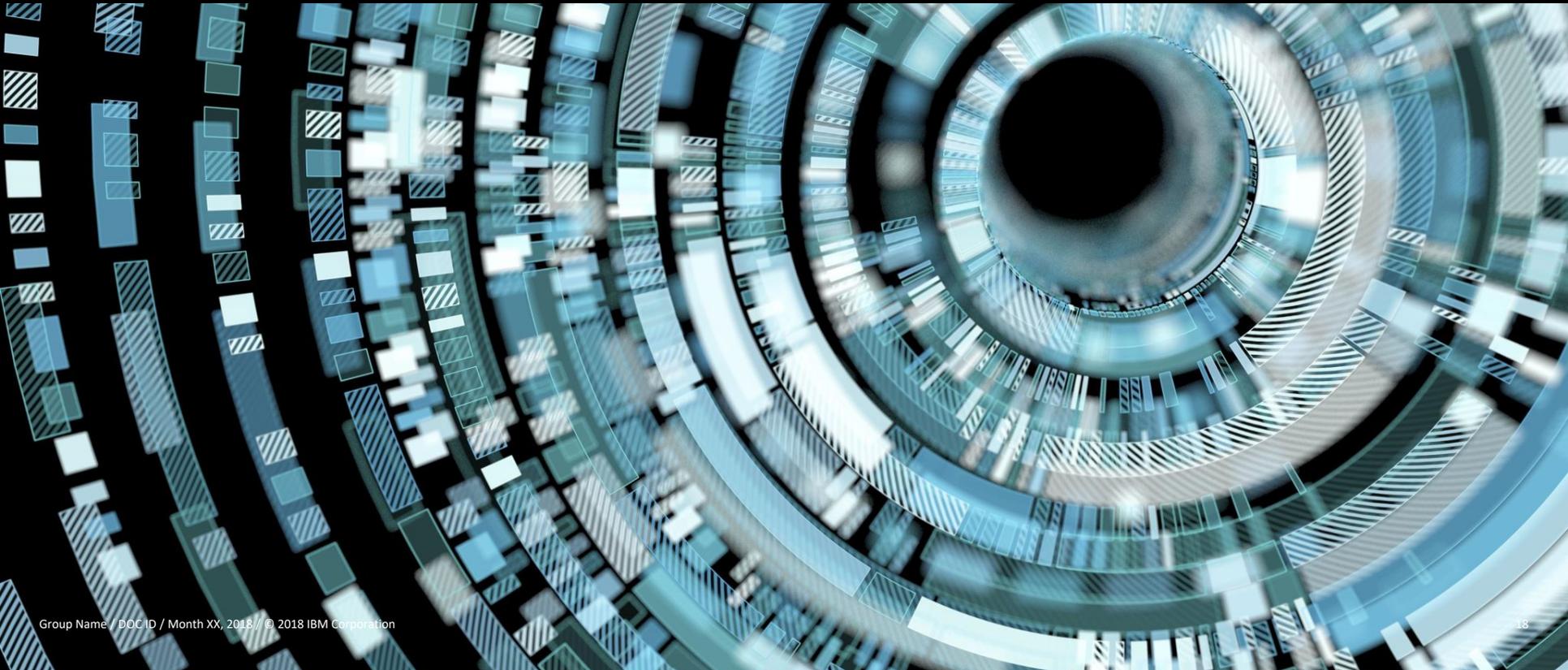
↑ **40%**

Capital Efficiency in disputes

### Resolution

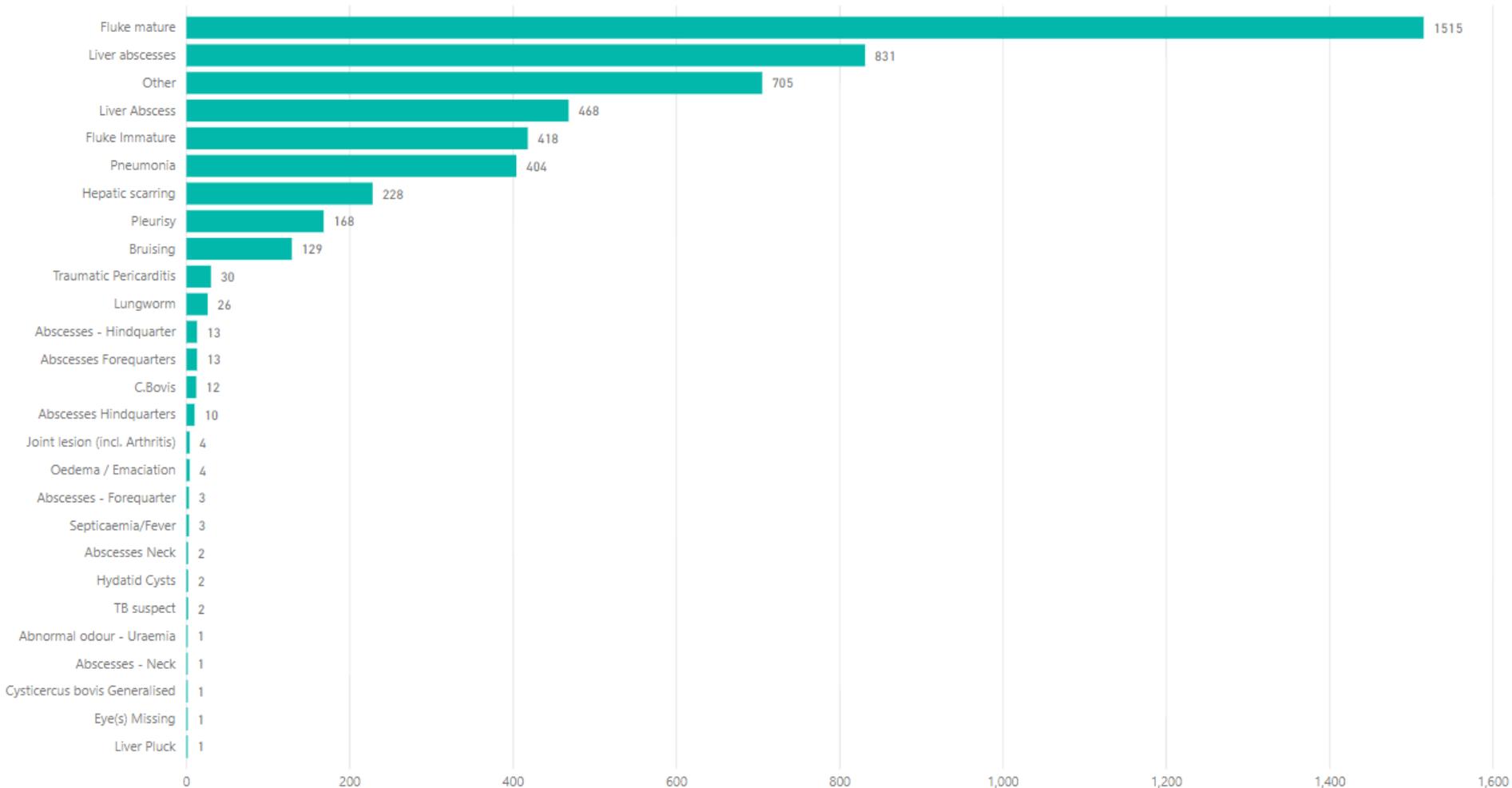


# Analytics applied to Blockchain

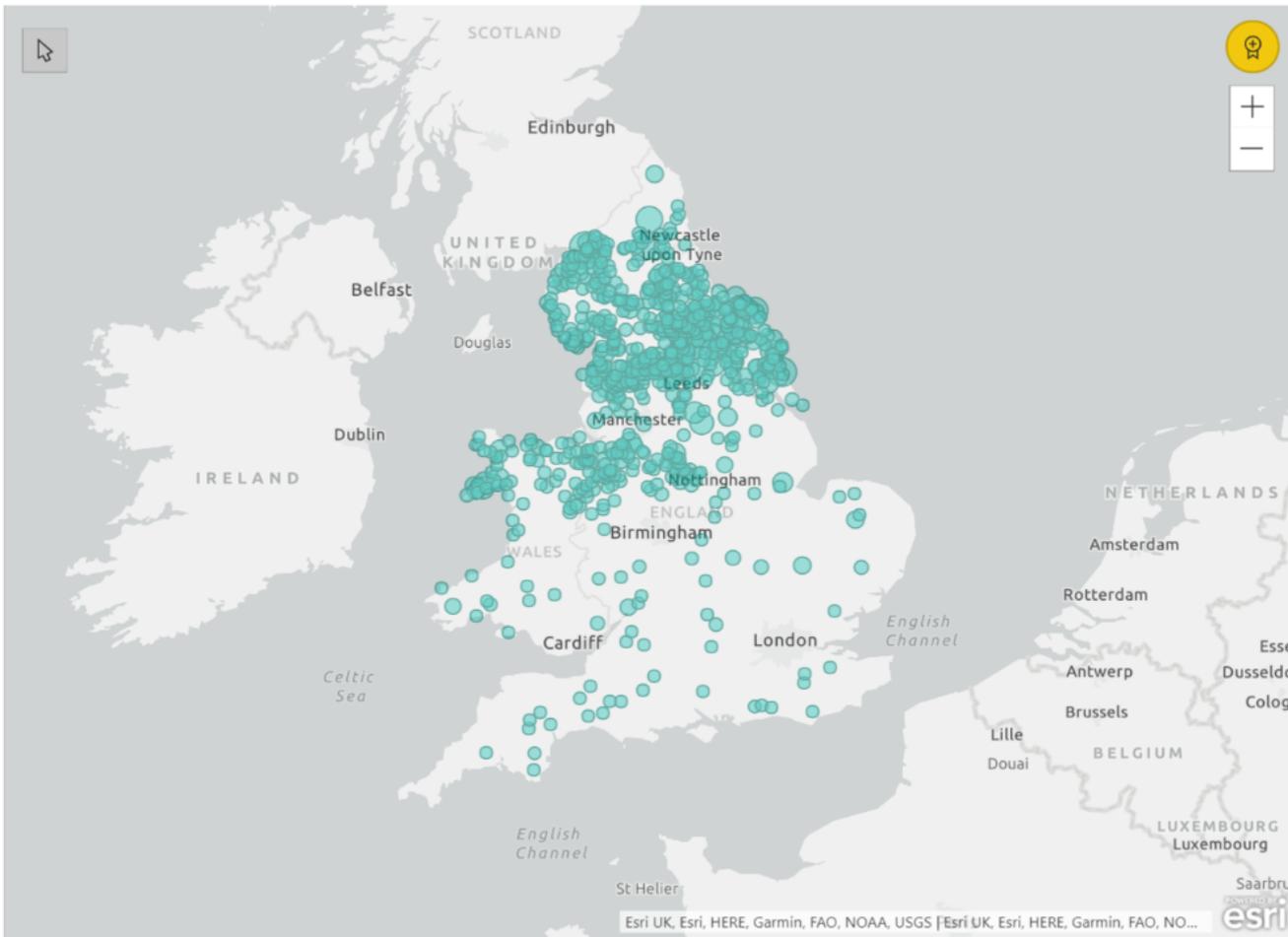




Number of animals found to have the condition at inspection



## Animals inspected - detailed data



## Condition found at inspection

- (Other)
- Abnormal odour - Uraemia
- Abscesses - Forequarter
- Abscesses - Hindquarter
- Abscesses - Neck
- Abscesses Forequarters
- Abscesses Hindquarters
- Abscesses Neck
- Bruising
- C.Bovis
- Cysticercus bovis Generalised
- Eye(s) Missing
- Fluke Immature
- Fluke mature
- Hepatic scarring
- Hydatid Cysts
- Joint lesion (incl. Arthritis)
- Liver Abscess
- Liver abscesses
- Liver Pluck
- Lungworm
- Oedema / Emaciation
- Other
- Pleurisy
- Pneumonia
- Septicaemia/Fever
- TB suspect
- Traumatic Pericarditis

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# Trade Lens

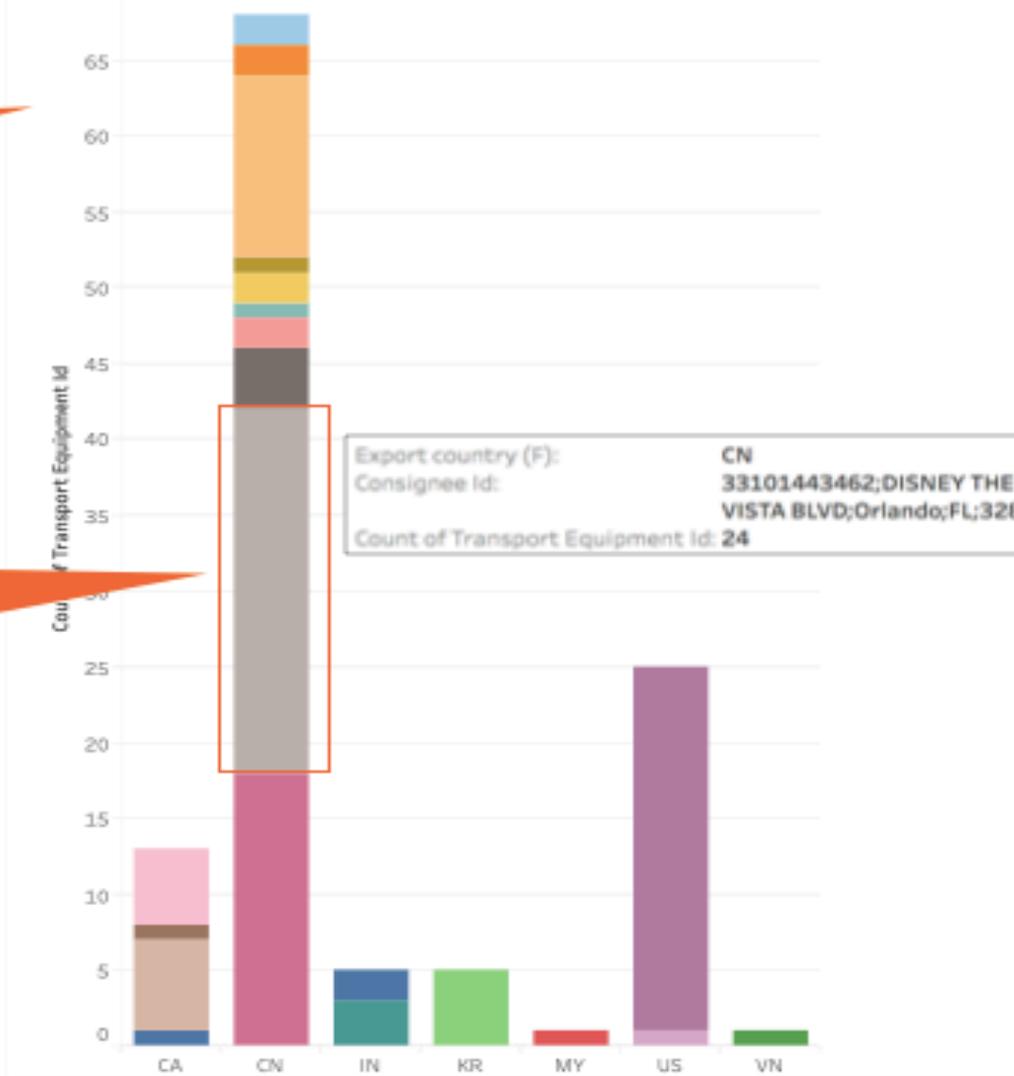
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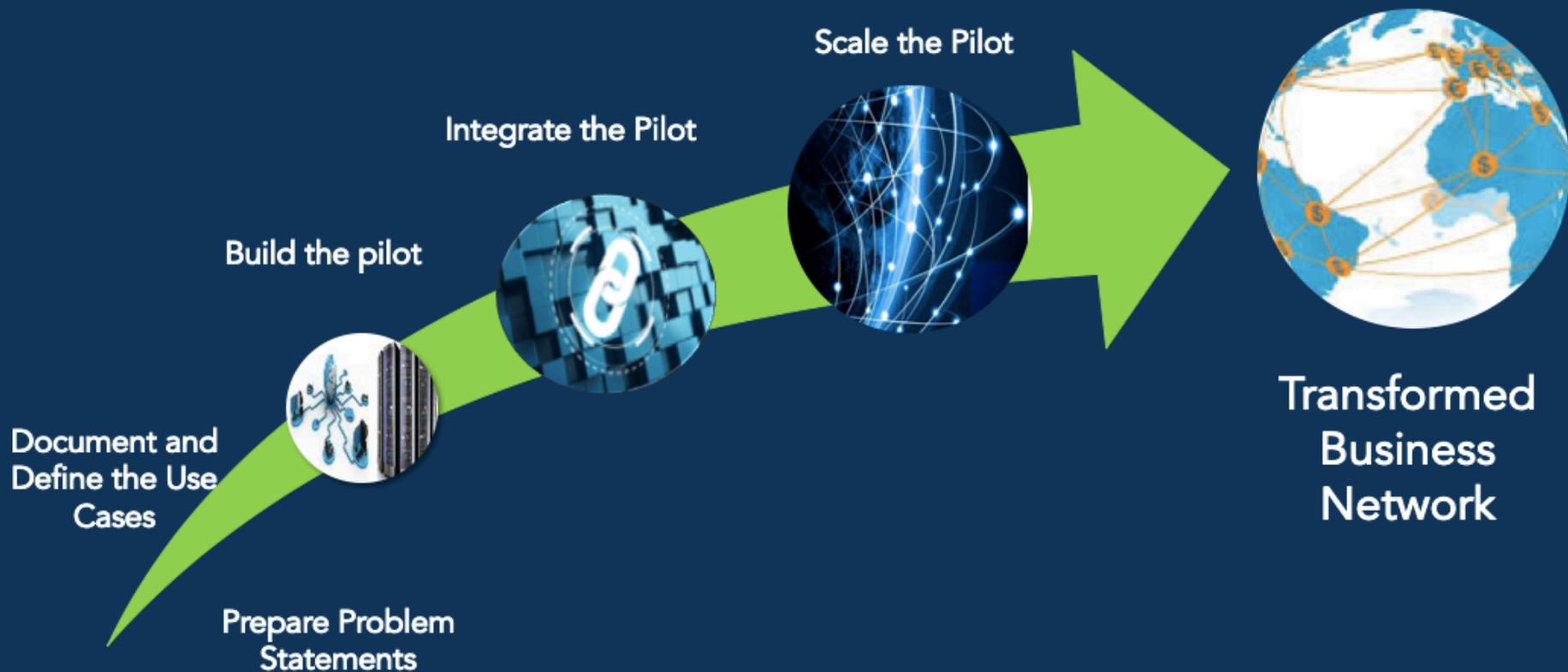
This dashboard shows # of containers, by country, and by Consignee ID

This dashboard shows # of containers, by country, and by Consignee ID.

When hovering over a bar, you can see the consignee details, export country, and number of containers in the data set.



# The Blockchain Journey from Idea to Delivery is easier than you think



“What the internet did for communications,  
Blockchain will do for trusted transactions.”

**Ginni Rometty**

*IBM CEO*

# Thank you

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