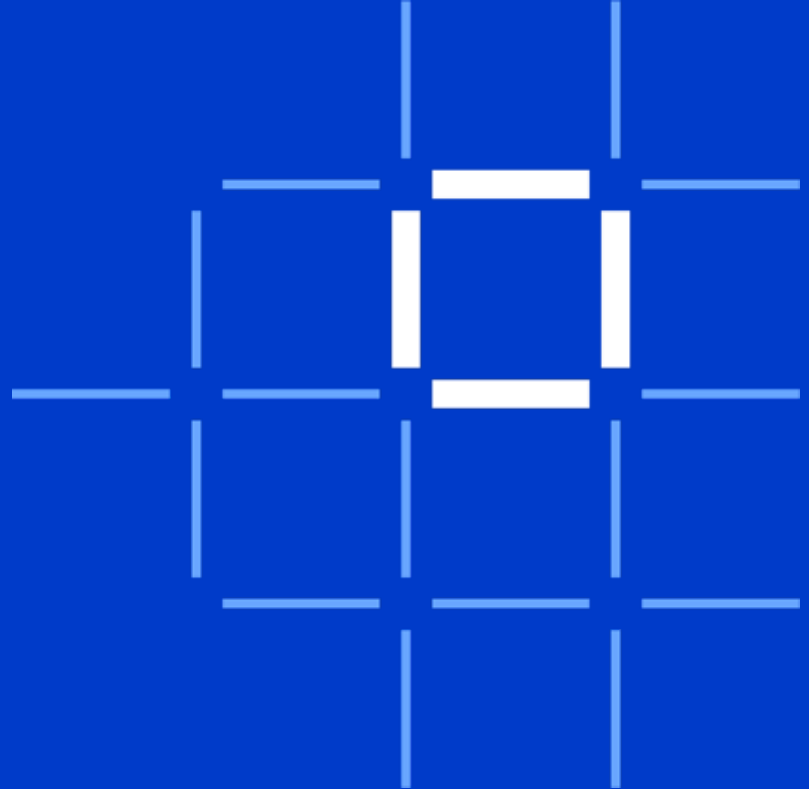


Blockchain: Building Trust and Transparency in Government Finance

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What is Blockchain?



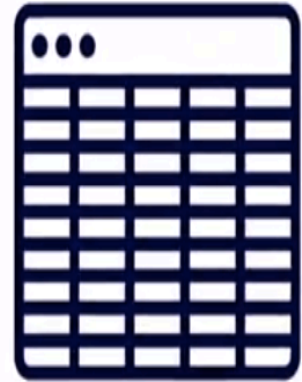
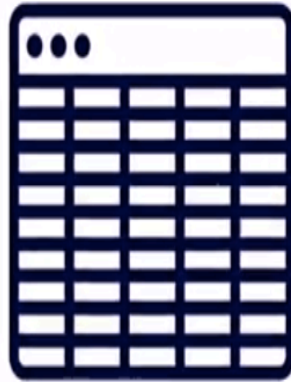
How will it impact me?



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 horizontal water line, is white and labeled 'Cryptocurrency'. The bottom, much larger portion of the iceberg is submerged in the water and is a light blue color, labeled 'Blockchain'. To the right of the iceberg, there are two vertical double-headed arrows. The top arrow spans the height of the visible 'Cryptocurrency' section and points to a list of four bullet points. The bottom arrow spans the height of the submerged 'Blockchain' section and points to a section titled 'Key Attributes' which contains a list of six bullet points.

Cryptocurrency

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

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)

Blockchain

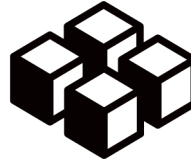
Permission-less vs. Permissioned Blockchains

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

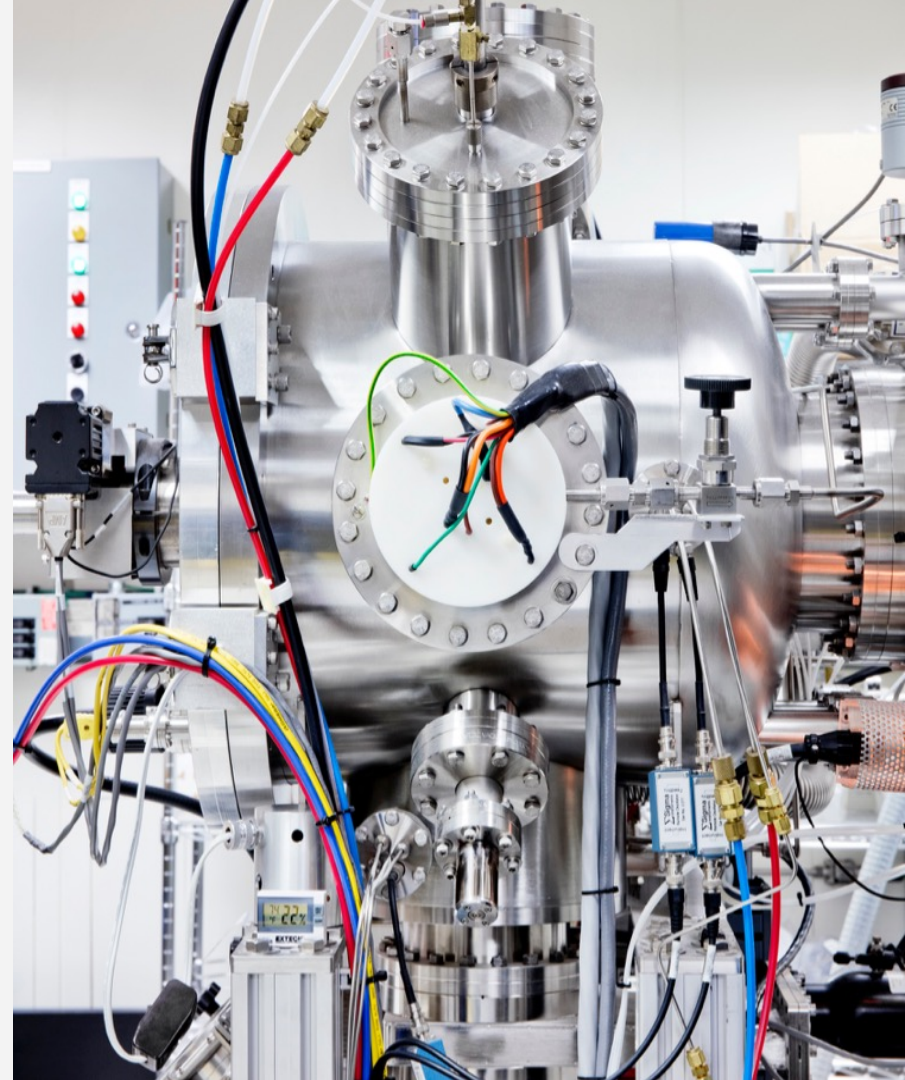
You cannot install Blockchain into your architecture like an ERP system. It is NOT a "commercial off the shelf" product.

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

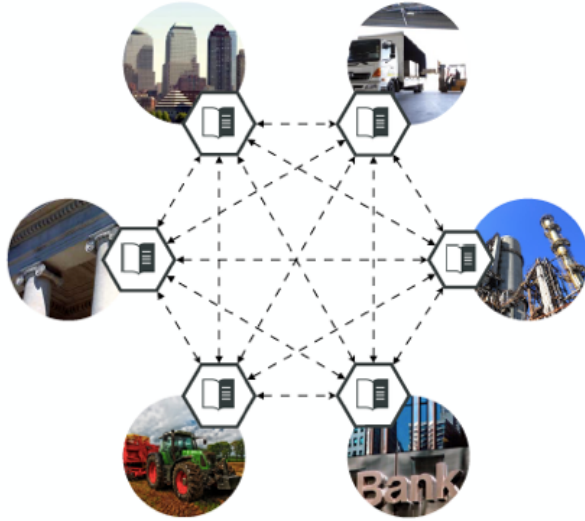
Ecosystem the business exists in.
Suppliers, Banks, Regulators...



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 navigation bar containing 'Designs', 'Subscription Management', and 'Account'. The main heading is '3127413 CONSIGNMENTS FOUND'. Below this is a search bar with a tip: 'Select a consignment below to see its transport equipment activity. Tip: Add a "*" at the start and/or the end of your input to see a close match.' The search bar has a 'SEARCH' button. Below the search bar are filters: 'FILTER OR SEARCH BY' with radio buttons for 'Booking Number' (selected), 'Bill of Lading Number', 'Equipment Number', and 'Delegation ID'. There is also a 'Filter by' section with dropdowns for 'Country or Port', 'Reference #s or Codes', and 'Date'. A 'REFINER' button is on the left. The results show a list of consignments. The first one is highlighted: '582232320'. It shows 'Origin: Hamburg, HH, DE' and 'Destination: Nhava Sheva (Jawaharlal Nehru), MH, IN'. Below this are fields for 'CBN: 582232320', 'Consignment References: MANH013638-MACHARG001/SEH', and 'HS Code: 810'. A 'VIEW DETAILS' button is at the bottom right.

The screenshot shows the 'EVENTS AND ADDITIONAL INFORMATION' page for consignment 'C7689JHKLOP7'. It has a 'RETURN TO CONSIGNMENT' button. The page displays 'Origin: INPNO' and 'Destination: BEAMS'. Below this are four boxes: 'Carrier Booking Number: C7689JHKLOP7', 'Terminals: INPNO-APMT', 'Commodity Description: Paper', and 'Transport Equipment Details: 1 x 40G1'. There is an 'EVENTS' tab. Below it is a 'FILTER BY' section with a dropdown set to 'Transport Plan' and buttons for 'Latest Events' and 'All Events'. An 'EVENT KEY' section shows 'PLANNED' (selected), 'ACTUAL', and 'LATEST'. A note states: 'Times reflected are local times of the event occurrence location'. The events list shows 'Planned vessel arrival: Apr 6, 2019, 6:30:00 AM' and 'Planned vessel departure: Mar 27, 2019, 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

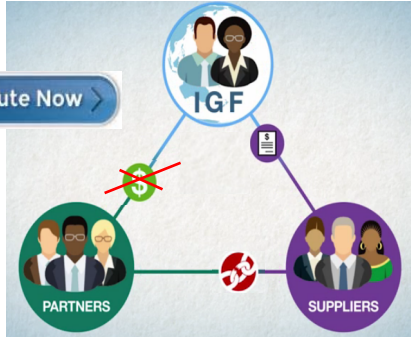
By having a single source of immutable transaction data, there is an opportunity to streamline reporting:

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

Accounting Transactions

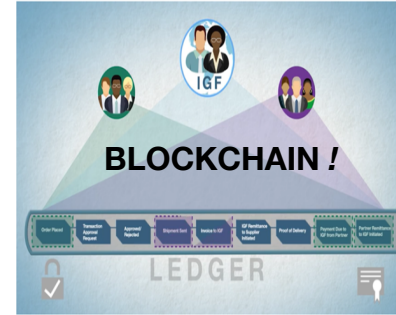


Background



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

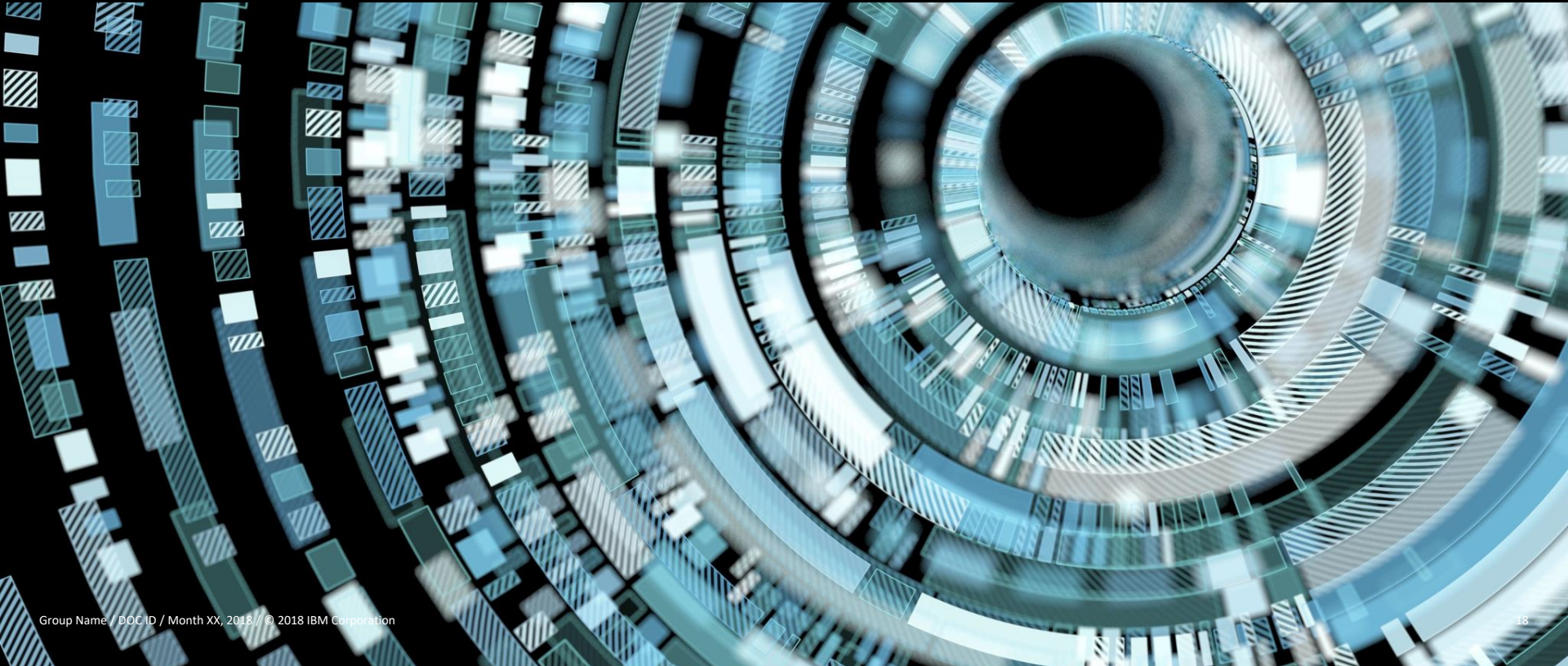
↑ **40%**

Capital Efficiency
in disputes

Resolution

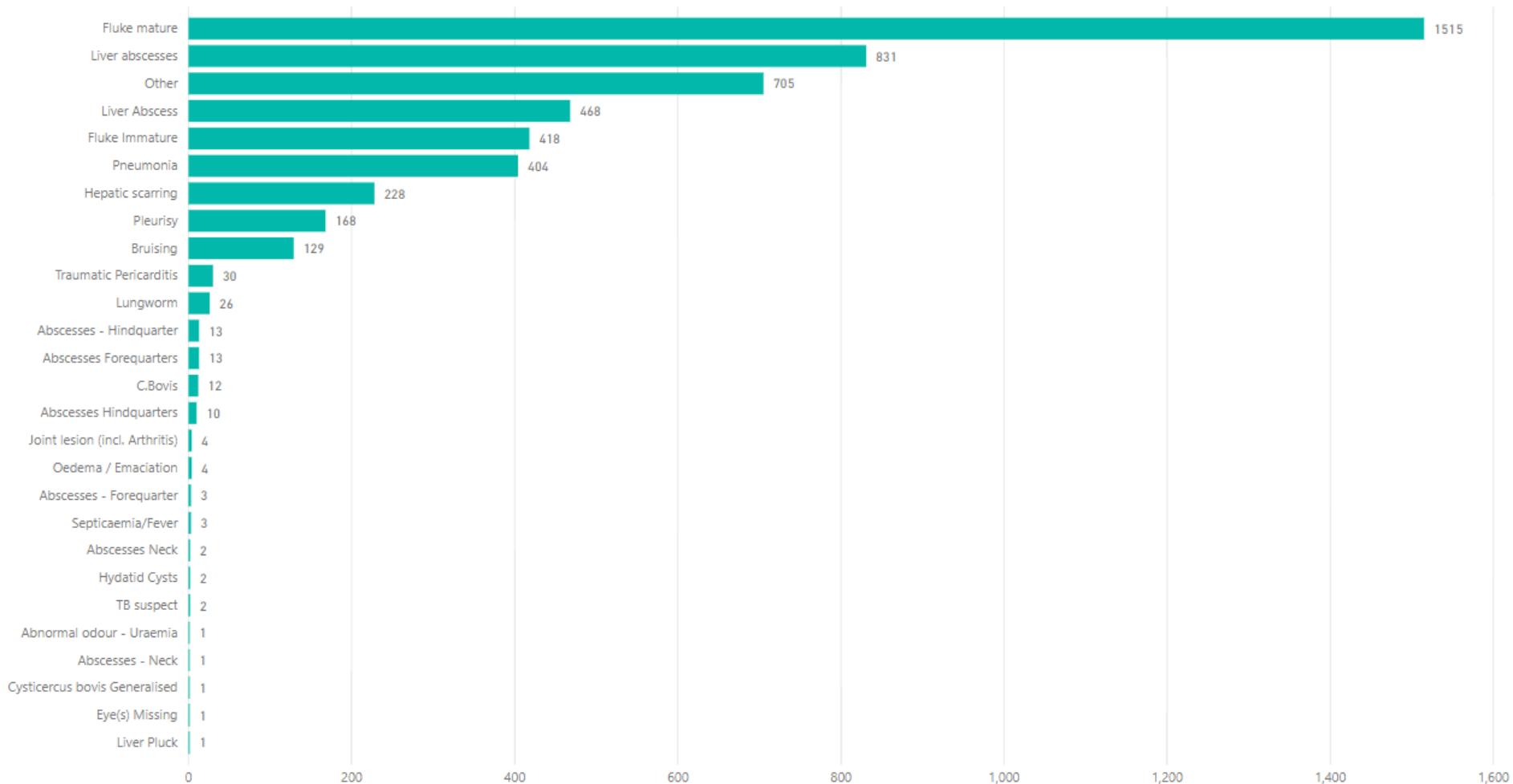


Analytics applied to Blockchain

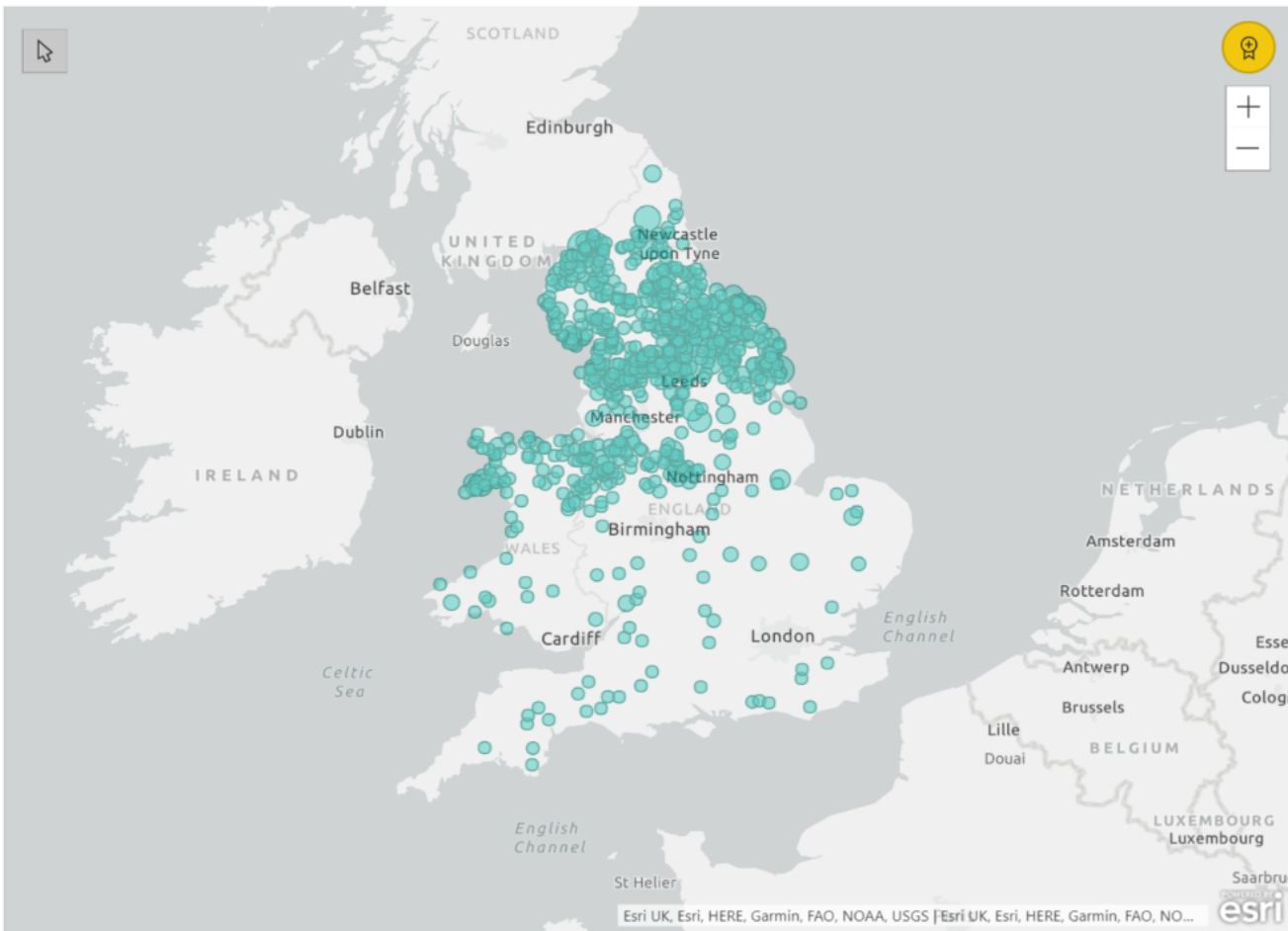




Number of animals found to have the condition at inspection



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

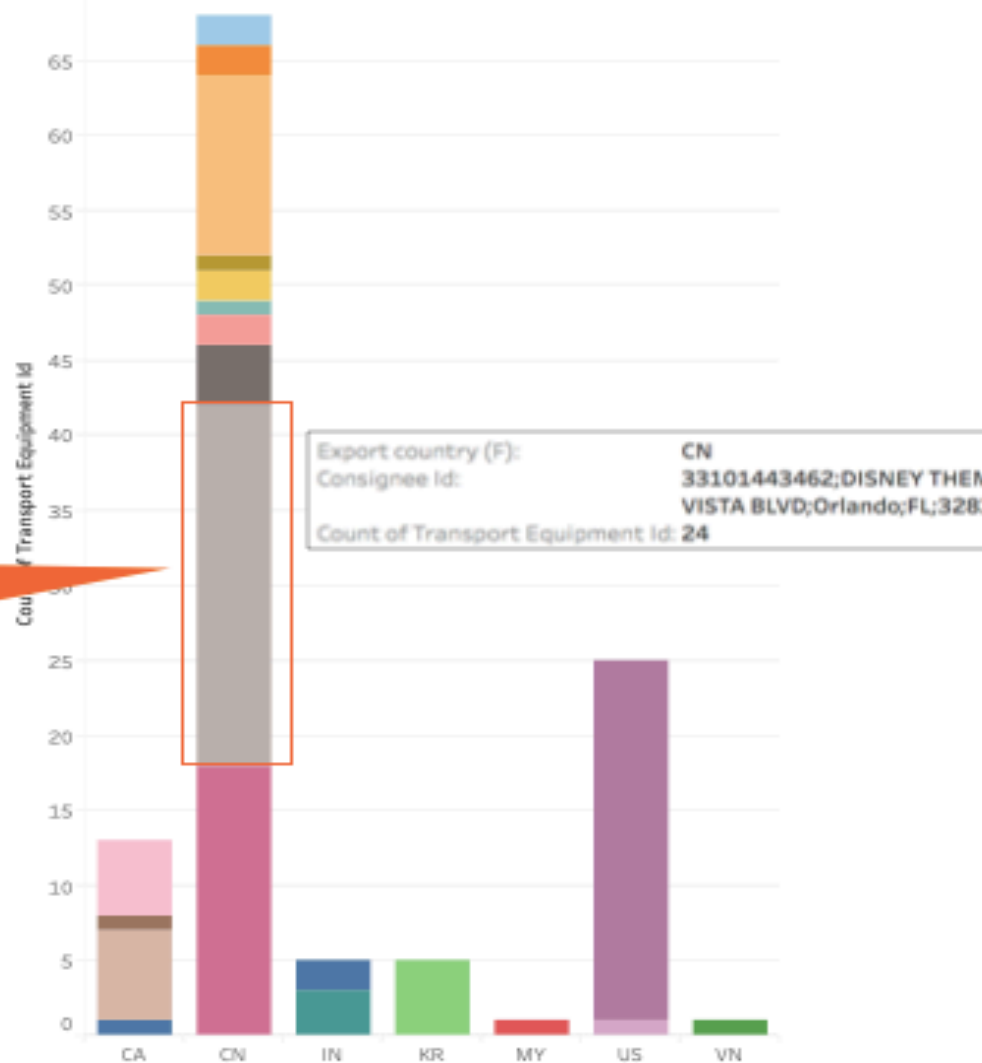
Trade Lens



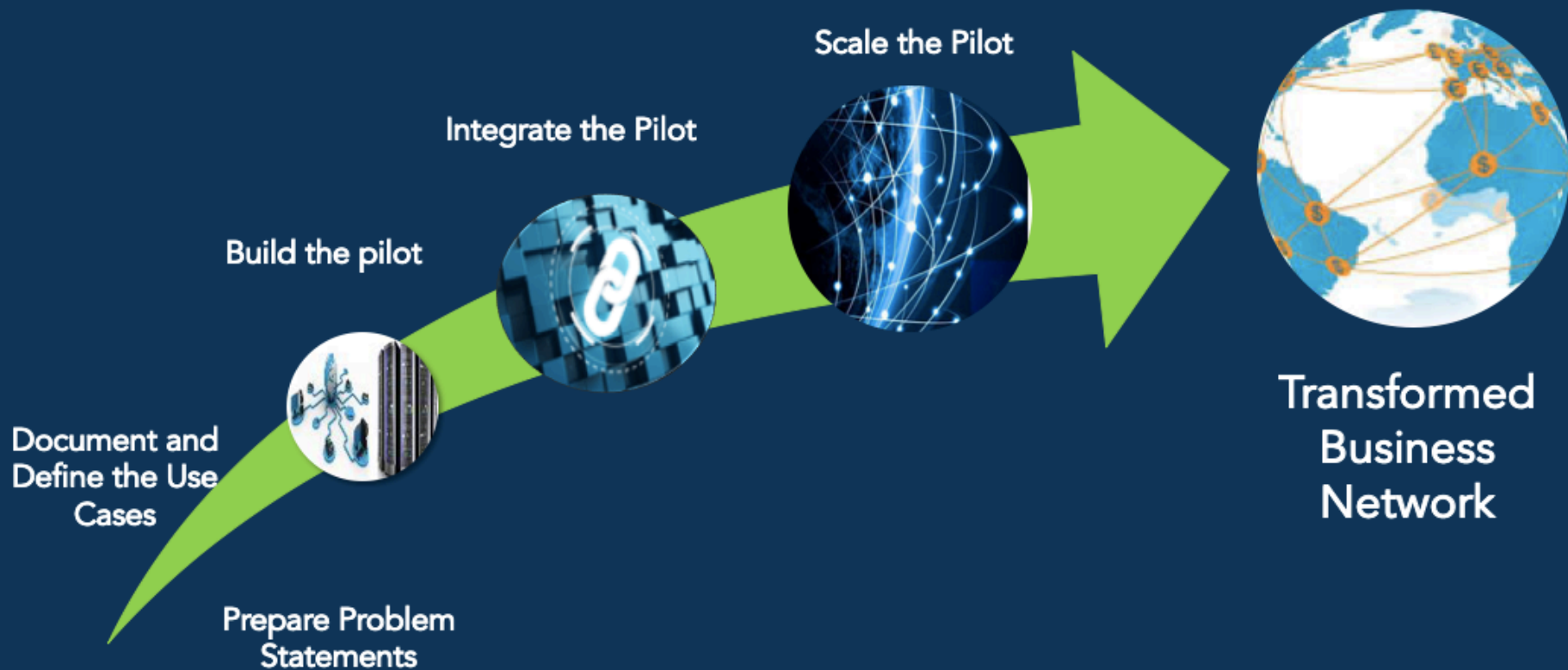
This dashboard shows # of containers, by country, and by Consignee ID

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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—
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