



# AMTOI Workshop

*Blockchain Overview*

**September 20<sup>th</sup>, 2017**

# Table of Contents

---



**Introduction to Blockchain**



**Cross Industry Blockchain Applications**



**Key Takeaways**



**Q& A**



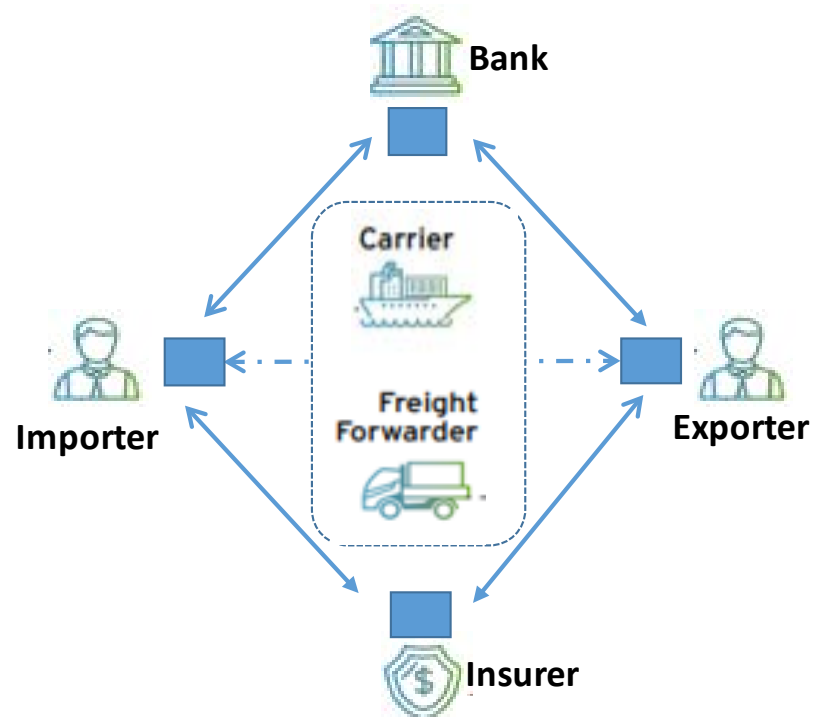
# Introduction to Blockchain

# Current State of the logistics industry in India

## High Level AS – IS Flow

### Key Facts

- Total logistics costs form **13 % of GDP**
- **1% decrease** in costs increases **GDP by 2.9 %**
- Ease of doing business India ranks **130 out of 189**



### Key Challenges

- Lack of **Standardized data formats**
- No **real time information sharing**
- **High documentation**
- **Information silos**
- Limited **stakeholder interaction**

### Need of the hour.....

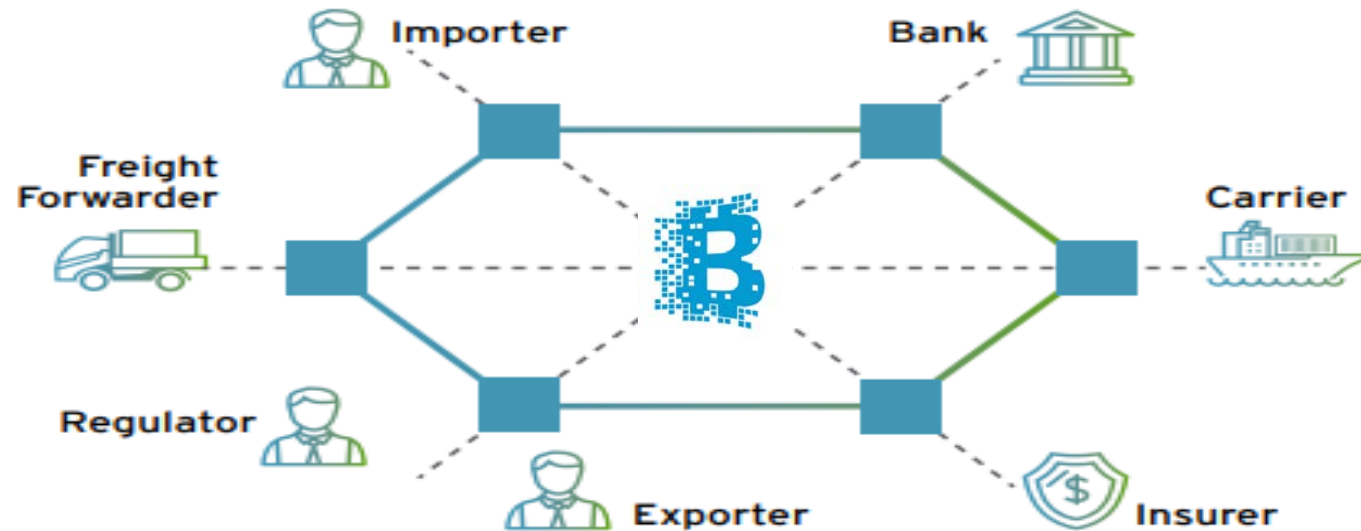
- Build a Nationwide cargo community system
  - Adoption of PCS
- Document rationalization
- System interoperability

Source : World Bank Report

# What is Blockchain ?

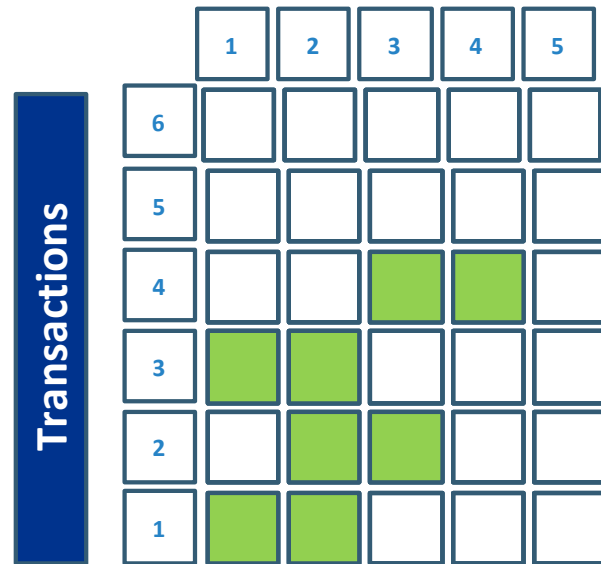
Blockchains are a way of **ordering and verifying** transactions in a **distributed ledger**, where a network of computers **maintains and validates** a record of consensus of those transactions with a **cryptographic audit trail**

## Blockchain Flow – Building a single source of trust

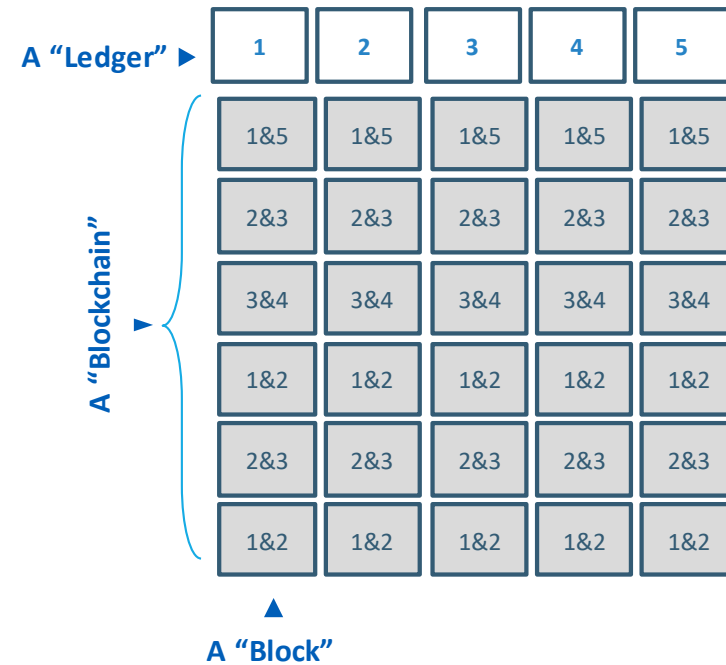


# How Blockchain works ?

## Counterparties Transacting



## Counterparties Recording



1  Exporter

3  Issuing Bank

2  Importer

4  Advising Bank

5  Logistics

ILLUSTRATIVE

# Type of Blockchains - Public

(1/2)

AT THIS STAGE OF MARKET DEVELOPMENT, THERE IS SCOPE FOR MULTIPLE WINNERS. THE EARLY LEADERS HAVE MOMENTUM AND EMERGING CLEAR VALUE PROPOSITIONS.

## Public Distributed Ledger

Permissionless ledger — anyone can use it and innovate with it

'Proof of work' consensus using public nodes

The central bank loses critical measures to control money supply.

Cost of using it is low

Offers 'near' real-time settlement

Proven and tested platform (e.g. Bitcoin)



Merged mining could also be used to aggregate security of multiple permissioned blockchains to decouple security and transaction processing

# Type of Blockchains - Private

(2/2)

## Private Distributed Ledger

Permissioned ledger — only a closer group of organizations can participate

Custom consensus engine that uses private nodes — rules set by the participating organizations

Banks continue to be fundamental to money transfer

Cost of developing is high

Offers real-time settlement

Unproven platform - has challenges – Implementation, Interoperability, Integration, etc.



*“IoT-driven blockchains to bolster aviation ecosystem from asset management to customer transparency”*



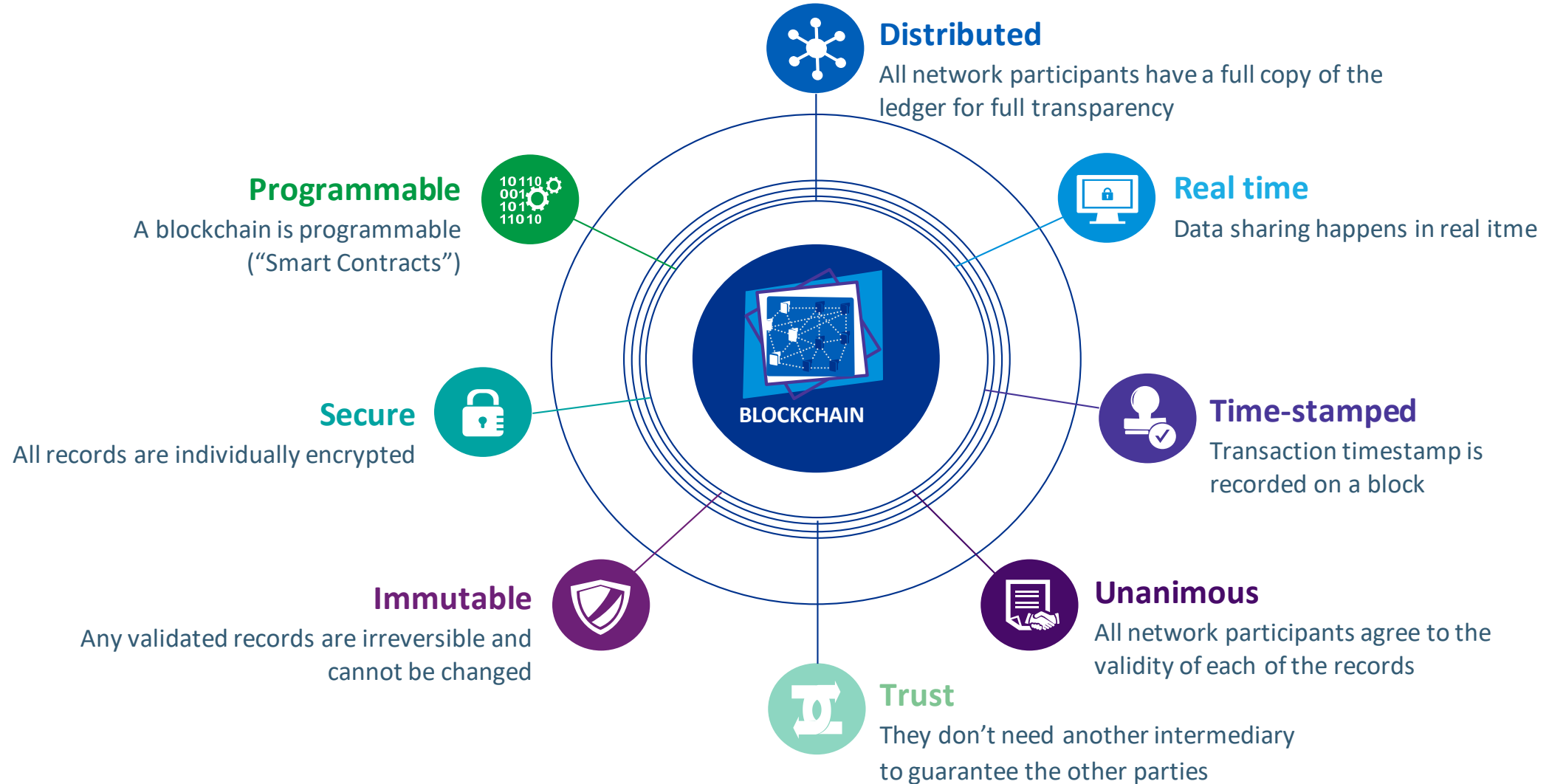
**MAERSK**

*“Digitizing, managing, and tracking shipping transactions using Blockchain technology”*



# Benefits of using Blockchain in logistics

(1/2)



# .....can be of substantial value (Illustrative industry figures)

(2/2)

## INCREASED Efficiency

**20-40%**

*STP and digitisation benefits. Increased efficiency from single source of truth.*

## REDUCED Capital consumption

**0-75%**

*Quicker settlement of trades and STP benefits. Reduction of op risk capital requirements.*

**Benefits  
Levers**

## Revenue ENHANCEMENT

**0-25%**

*Better customer experience, faster processing and digital channels. New markets.*

## Loss REDUCTION

**85-95%**

*Reduced reconciliations and errors. Redeployment of resources to most complex cases.*

Source : KPMG Internal Research



# Cross Industry Applications of Blockchain

# Ecosystem of Blockchain applications



## Digital Content/Documents, Storage and Delivery

— Proof of ownership for digital content storage and delivery



## Reviews/Endorsements

— Enables authenticity of a review by helping users engage, share reputation and collect feedback



## IoT

— Platform which links home and business networks to the cloud and electric devices

— Description



## Digital Identity

— Provides digital identity that protects consumer privacy



## Smart Contracts

— Digitizing company incorporations, transfer of equity/ownership and governance



## Authentication and Authorization

— Digitizing assets: Improves anti-counterfeit measures



## Marketplace

— Marketplace for sales and purchase of digital assets



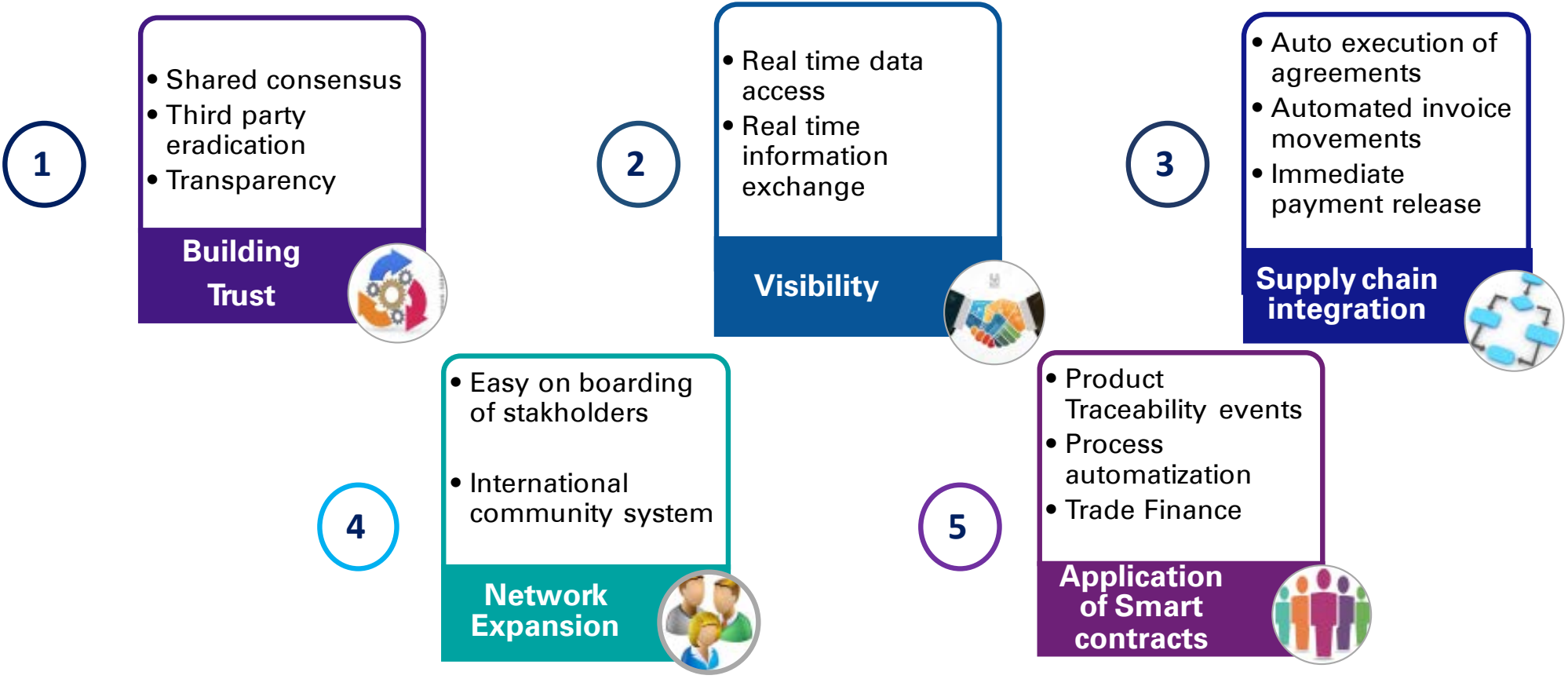
## Development Platforms and APIs

— Easy integration with the existing systems



# Case - Creation of Port community system embracing Blockchain (1/3)

Implementing Blockchain for the improvement of port logistics and development of port community system

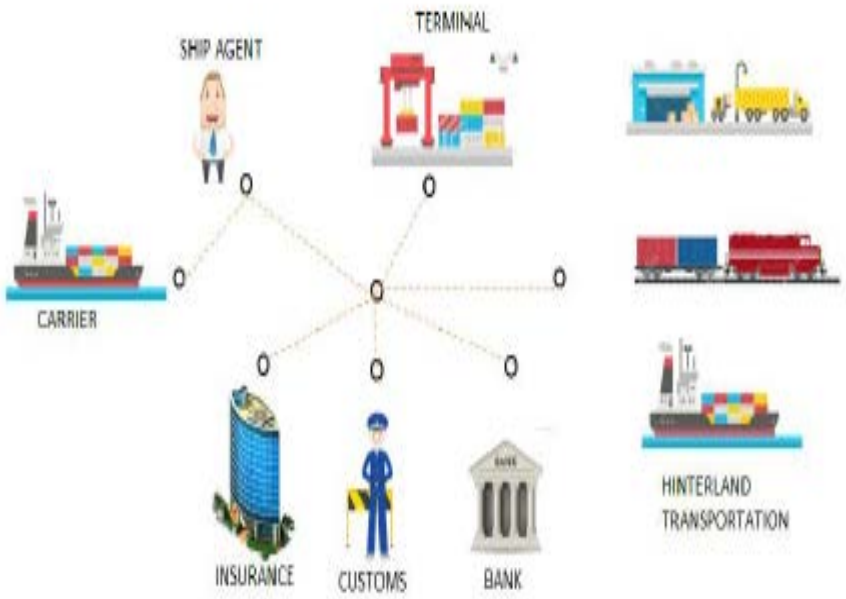


# Case - Creation of Port community system embracing Blockchain (2/3)

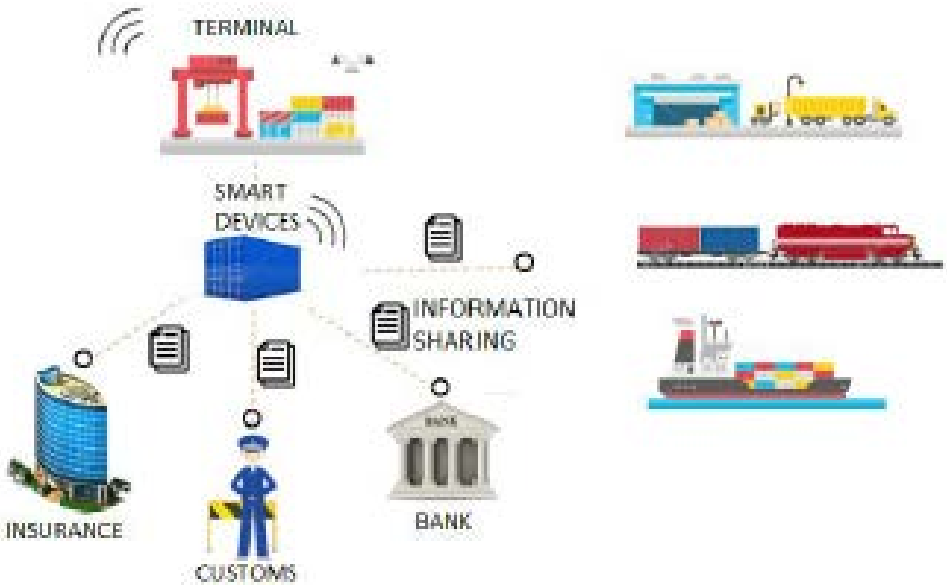
**Scenario :** When a carrier enters the port

**Scenario with Blockchain & IoT :** When a carrier enters the port

**BEFORE**



**AFTER**



**ISSUES :**

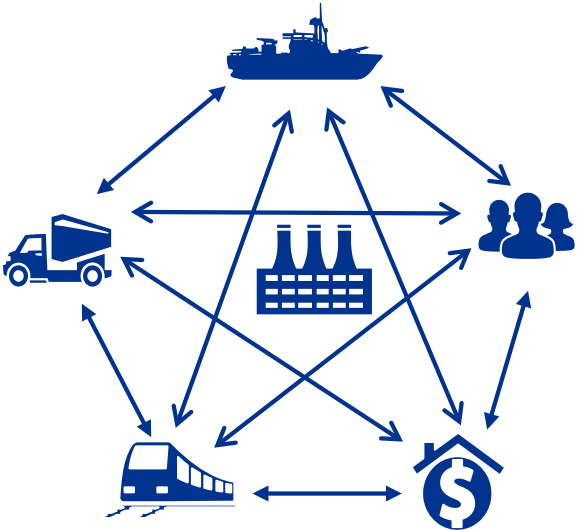
- a) High manual effort
- b) Participant onboarding
- c) No centralized mechanism
- d) High lead time for information flow

**IMPACT :**

- a) Automated flow of information
- b) Easy onboarding
- c) Consensus approvals
- d) Real time data sharing

# Case - Creation of Port community system embracing Blockchain (3/3)

| Identified problems                                 |
|---|
| Problem of trust and transparency                   |
| Risk of insolvency of cargo owner                   |
| Risk of hidden damage                               |
| Task evasion risk and currency risk                 |
| Underinsurance                                      |
| Problem of information barriers and thus high price |
| Problem of standardization in data formats          |



## Solutions through Blockchain technologies

Cargo is monitored on Blockchain till closing of the deal. All actions are recorded on the Blockchain thereby eliminating trust issues

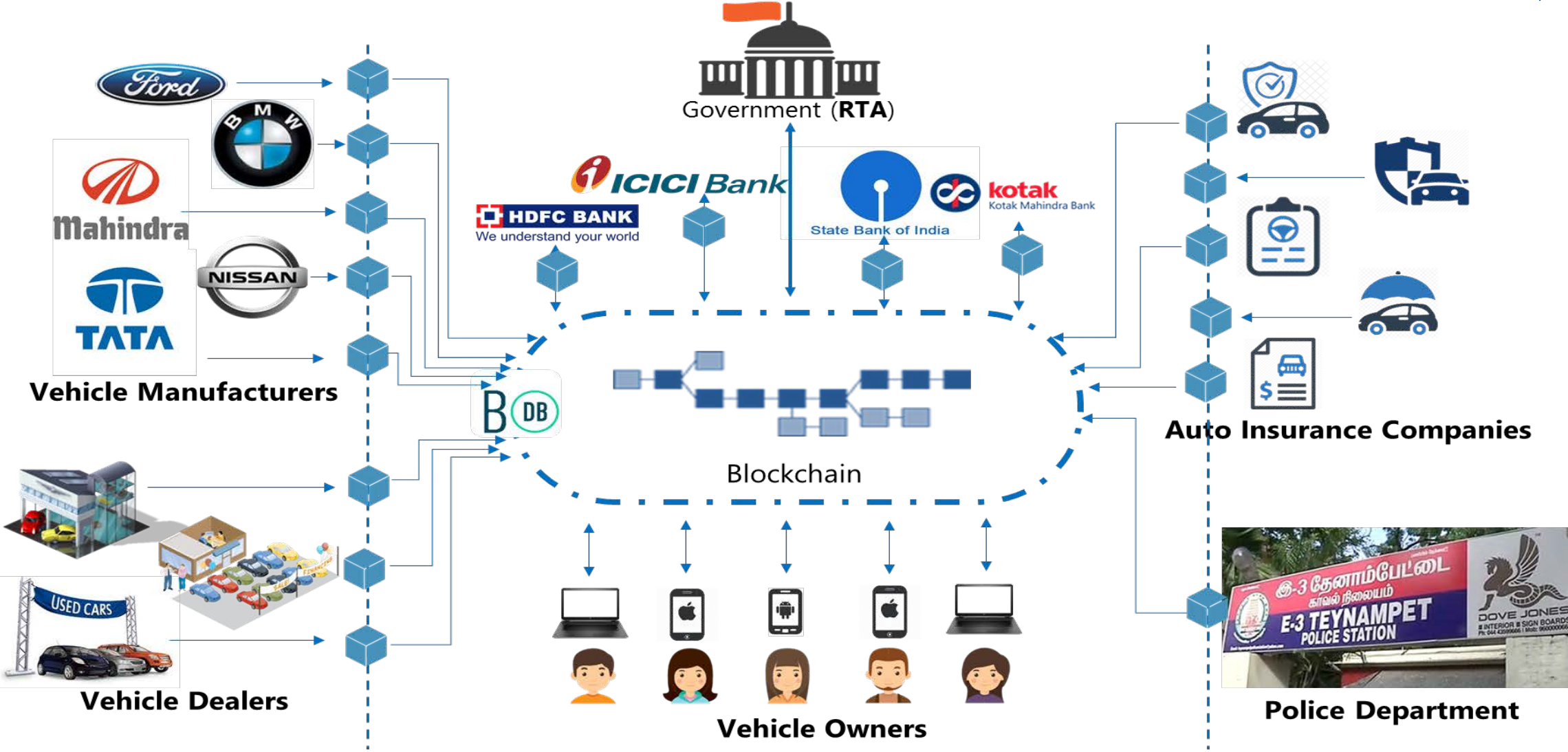
Online GPS tracking of cargo location, and the status of damage can be tracked with Blockchain

Licenses issuance to suppliers and cargo owners can happen through Blockchain, which increases overall accountability

End to end Payments can be tracked on Blockchain

Blockchain enables data conversion, thereby enabling community members to share the same formats

# Case: Implementation of Blockchain for Vehicle Lifecycle Management







# Key Takeaways

# Key Takeaways from the workshop

---

- Basic understanding of Blockchain and the way it works
- Flow of information in Blockchain
- Key challenges faced by the logistics industry
- High level brief on the use cases for which Blockchain can be useful in logistics industry
- Key Benefit propositions of Blockchain
- Brief understanding on the other application areas of Blockchain



Thank you

