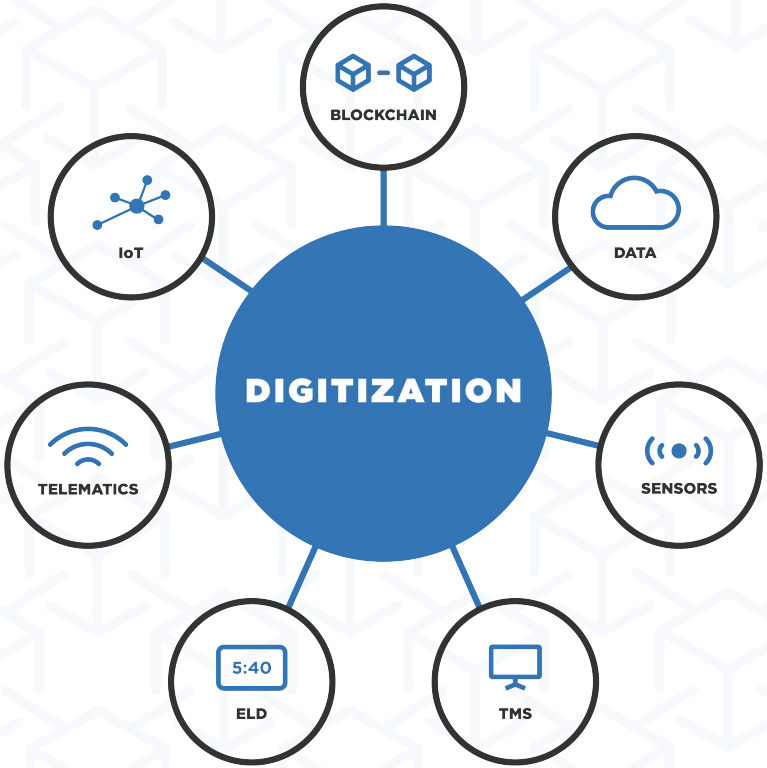
Digitization of Freight and Transport

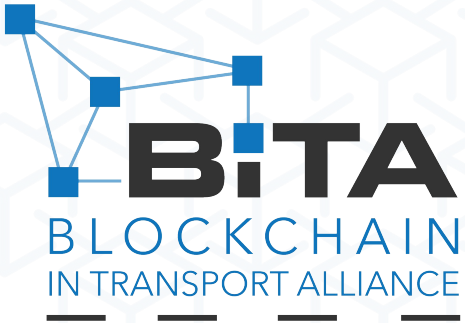
BITA.STUDIO

Digitization

To drive the industry forward, BiTA is committed to the digitization of analog and legacy data. Through the process of digitization, industry-wide benefits are created.



Purpose



Leveraging talent and resources from the world's most influential companies, BiTA is producing open source and royalty free data standards that will allow for interoperability between participants in the global supply chain.

We're a member-driven community focused on education, evangelism, networking and commercial outcomes around blockchain and other emerging technologies, and we're committed to overcoming geographic, language, and cultural hurdles to solve for seamless commerce.

The BiTA Community

BiTA Timeline

AUGUST 2017

BiTA Founded

DEC 2017

1st BiTA Symposium

MAY 2018

Board Standards Committee launched

2nd BiTA Symposium

JULY 2018

Technical Committees set, initiate Working Groups

AUGUST 2018

Working Groups formed

SEPT 2018

Data Format TC: Tracking Document and Location WG's issue charter

OCT 2018

WG chairs lead BiTA efforts on drafts

NOV 2018

3rd BiTA Symposium

Public TC & WG Presentations

DECEMBER 2018

IEEE/ISTO engaged for TC & WG expansion

JAN 2019

Proposed specs to Data Format TC

FEBRUARY 2019

Location Standard & Tracking Data Framework published

Election of 1st BiTA Standards Council Chair

MAY 2019

BiTA Timeline

BiTA Spring Symposium

Patrick Duffy announced President of BiTA

Summer 2019

First use of Location Standard in real world product

Party component specification sent to TC for review.

BiTA Timeline

Fall 2019

BiTA Style Guide Created

Party Specification Draft Spec Under Review

BSC Strategy Session Vision | Mission | Core Values

BiTA Spring Symposium Nov 14 Chicago

BiTA Forecast

EDUCATION, CASE STUDIES, & EARLY ADOPTION

Industry-wide education on use cases outside of cryptocurrency.

Develop industry-wide standards and apply to case studies.

Early adoption within innovative startups and pilot programs at large corporations with extensive resources (i.e., BP, Daimler, and Salesforce).

Regulatory authorities develop auditing and compliance practices.

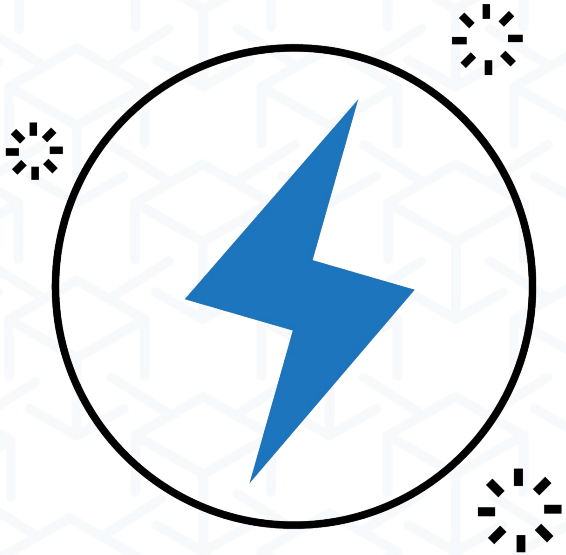
GROWTH

Early adopters and standards activity provide greater clarity and minimize uncertainty, driving widespread adoption.

MATURITY

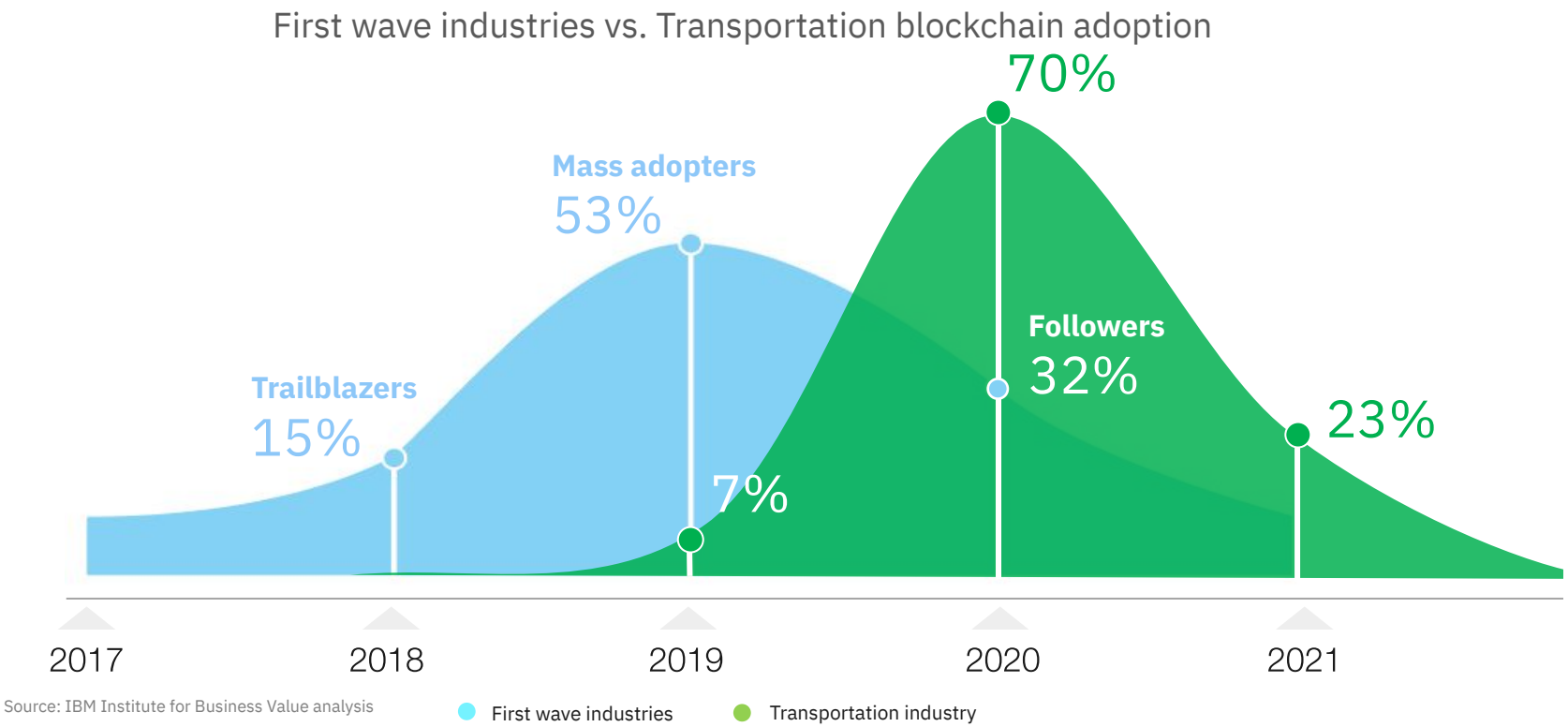
Blockchain is widely adopted and considered an integral part of the supply chain ecosystem.

Disruptive Impact



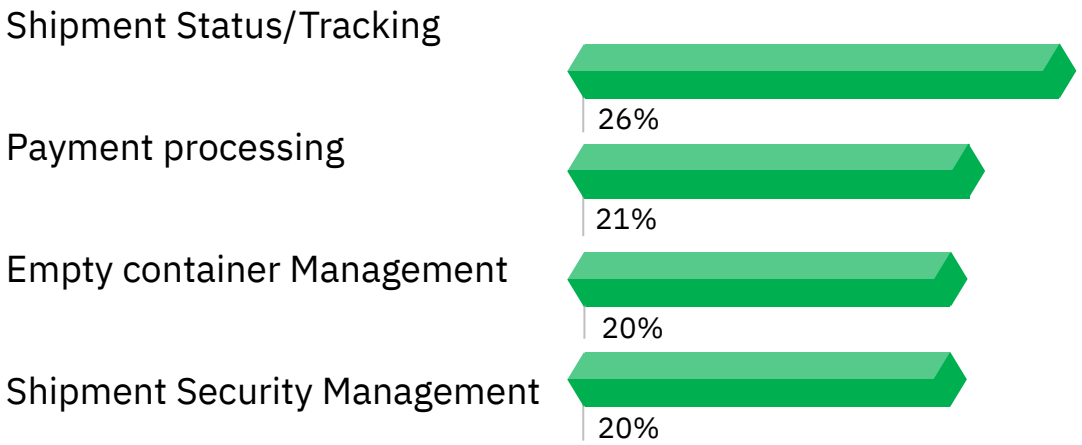
As blockchain digitizes, decentralizes, secures and incentivizes the validation of transactions, it will fundamentally change the industry.

Despite its initial reluctance, the transportation industry anticipates a widespread embrace of blockchain technology by 2020



Transportation executives' initial investments in blockchain are focused on improving existing operational processes

Top 2017 blockchain investment areas – all transportation firms

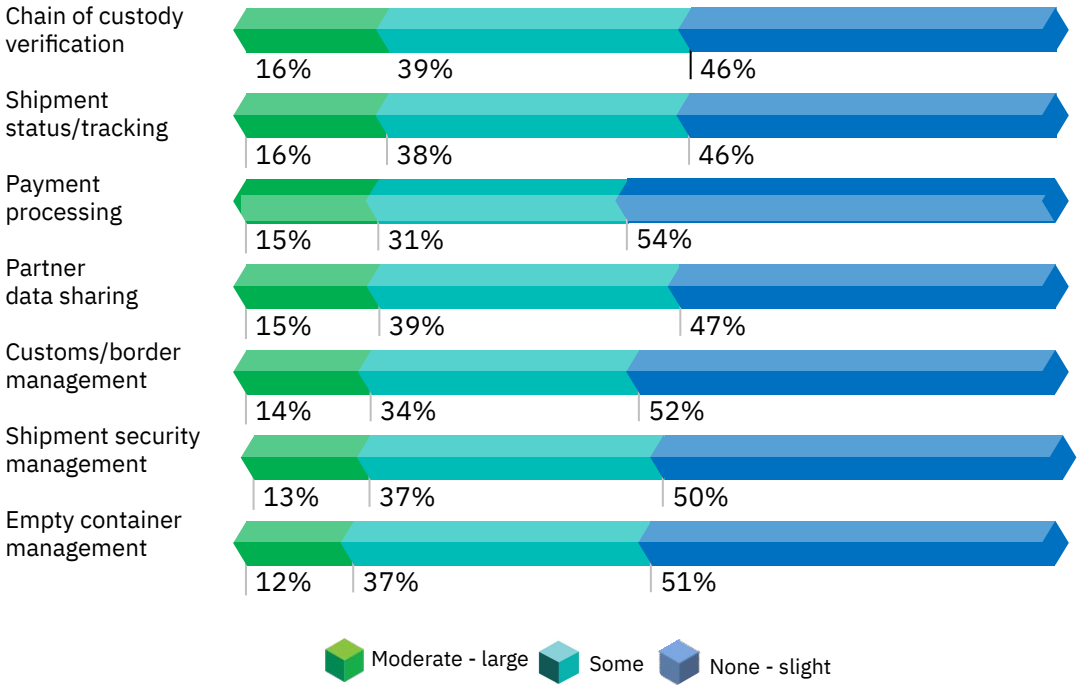


- Transportation executives surveyed, revealed that their initial focus will be on fixing the foundational processes critical to their operations.
- These processes are deliberately chosen as a prerequisite to disruption in this manually intensive, coordination heavy industry.

Source: IBM Institute for Business Value analysis

But executives also believe that blockchain disruption opportunities exist across several areas of the transportation value chain

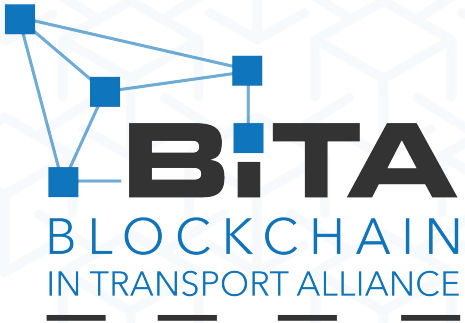
Anticipated disruption across all transportation organizations



Source: IBM Institute for Business Value analysis

* Percentages may add up to over 100% due to rounding

BiTA Standards Council (BSC)

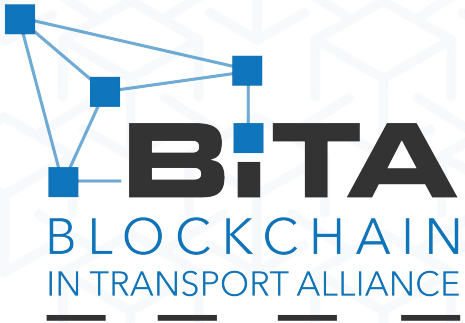


Vision: Provide the open-source standards powering blockchain-enabled global commerce.

Mission: AS a global community, we produce, publish, and certify BSC standards.

Core Values: Trust | Inclusion | Transparency

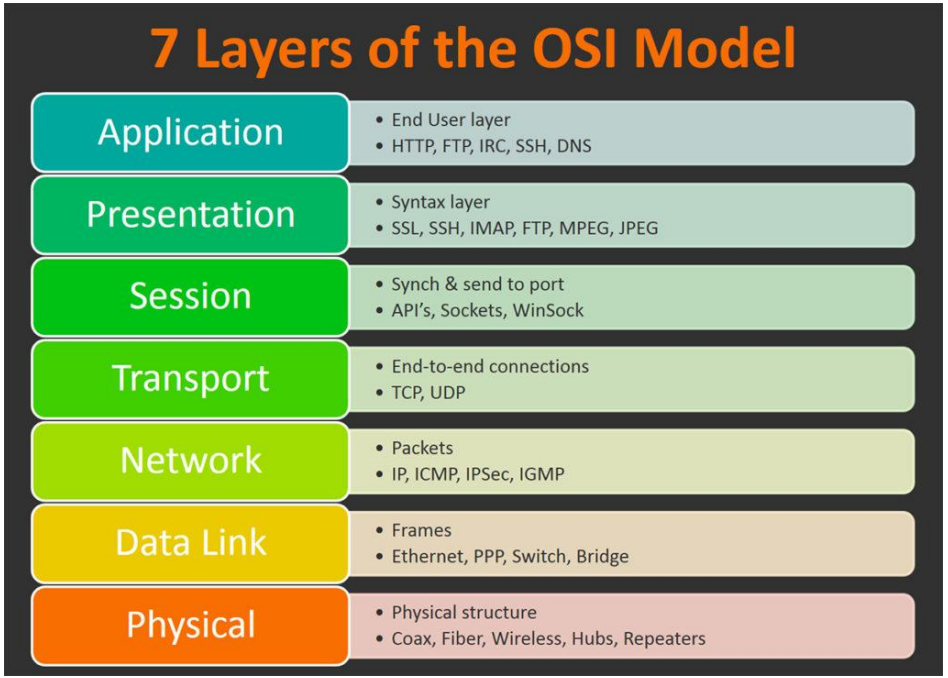
BSC Working Groups



- Location Specification Working Group (Published and Paused)
- Tracking Documentation Working Group (Published and Paused)
- Party Specification Working Group
- Shipment Specification Working Group
- Bill of Lading Specification Working Group
- Standards Review Working Group
- Smart Contracts Working Group (Q4 19)
- Equipment Working Group (Q4 19)
- Commodities Working Group (Q4 19)

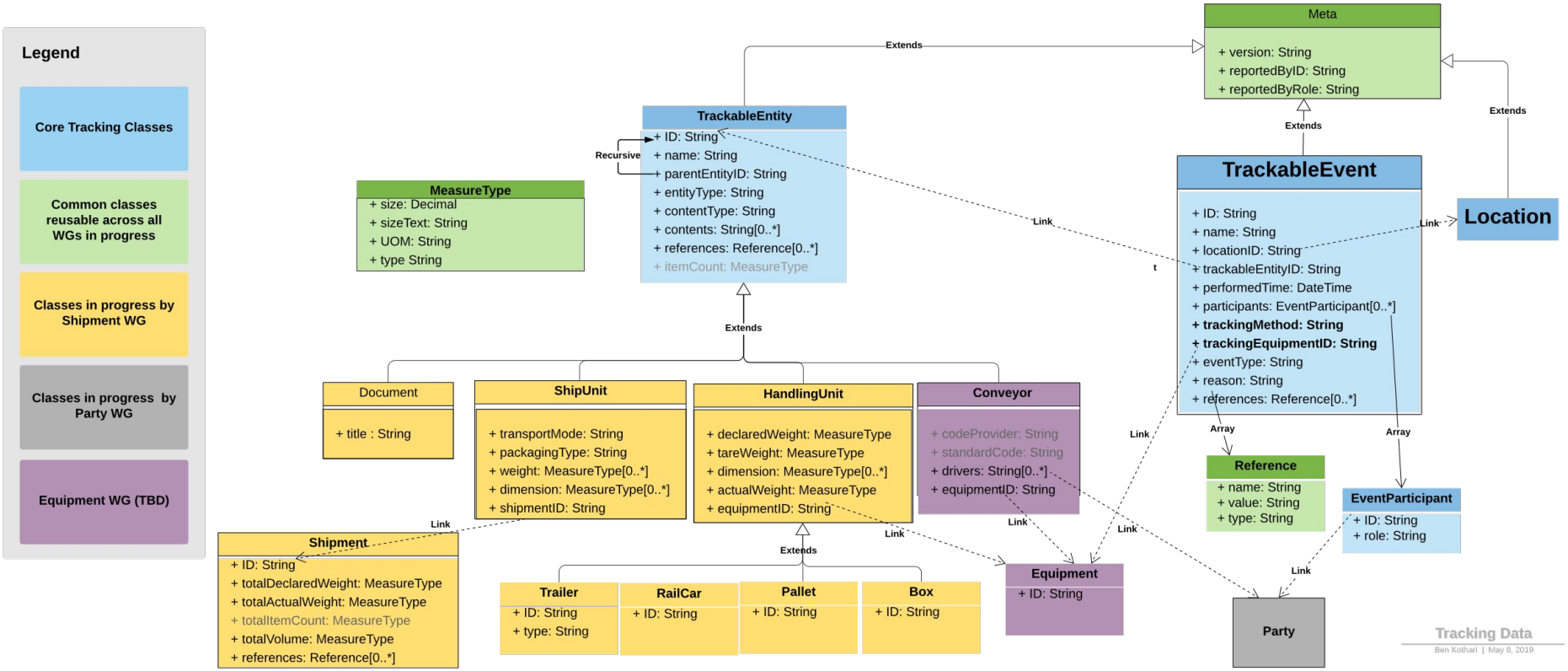
Foundation Profile – Layered Model

Physical	**ShipUnit, HandlingUnit,** Conveyor
Data link	**TrackableEntity**, **TrackableEvent**, Link
Network	**Location, Position, Address,** Lane, Route
Transport	Trip, Service Offers
Session	**Party**, ShipOrder, ScheduledOrder, Rates
Presentation	**BOL**, BUBBA/EMIT
Application	Traceability, Chain of Custody



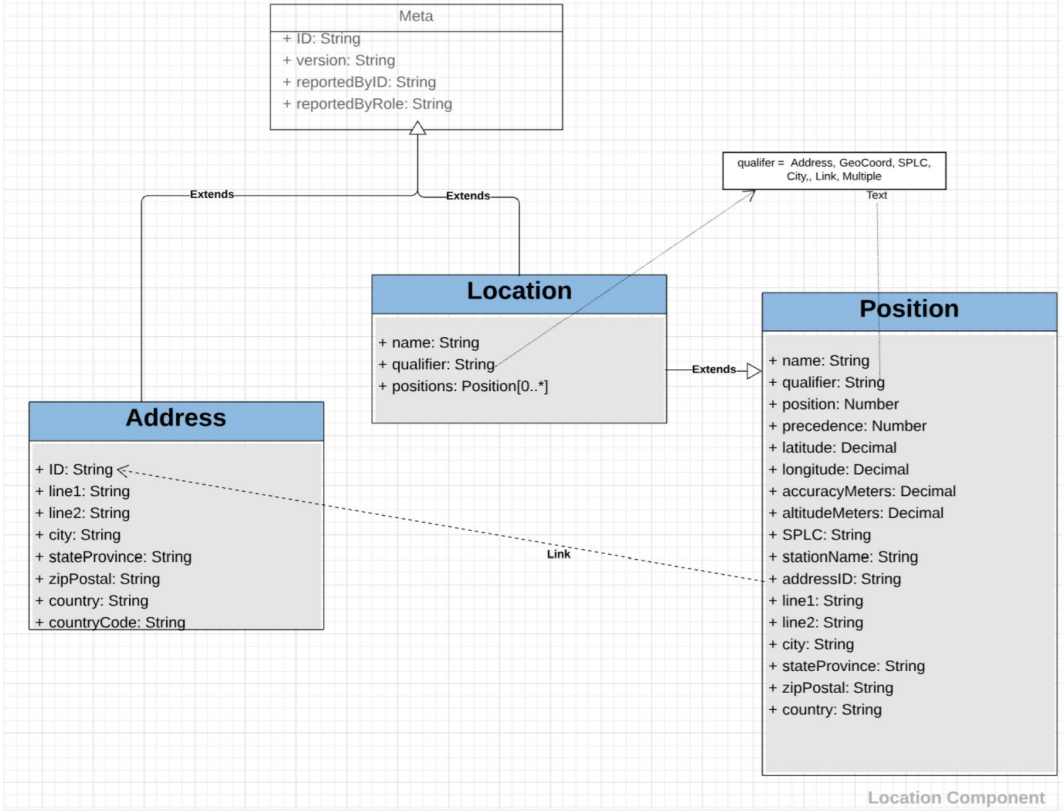
Source: Ben Kothari, Ampliflex

Tracking Foundation Profile



Source: Ben Kothari, Ampliflex

Location

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location = {
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    "name": "SERVPROV-5_413-426",
    "qualifier" : "Mulitple",

    "positions": [ // positions array begin
        {
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            "qualifier" : "Address",
            "Address1" : "10 Alpine Dr",
            "Address2" : "",
            "City" : "Closter",
            "stateProvince" : "NJ",
            "zipPostal" : "07627",
            "country" : "USA"
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            "accuracyMeters": 10,
            "altitudeMeters": 5
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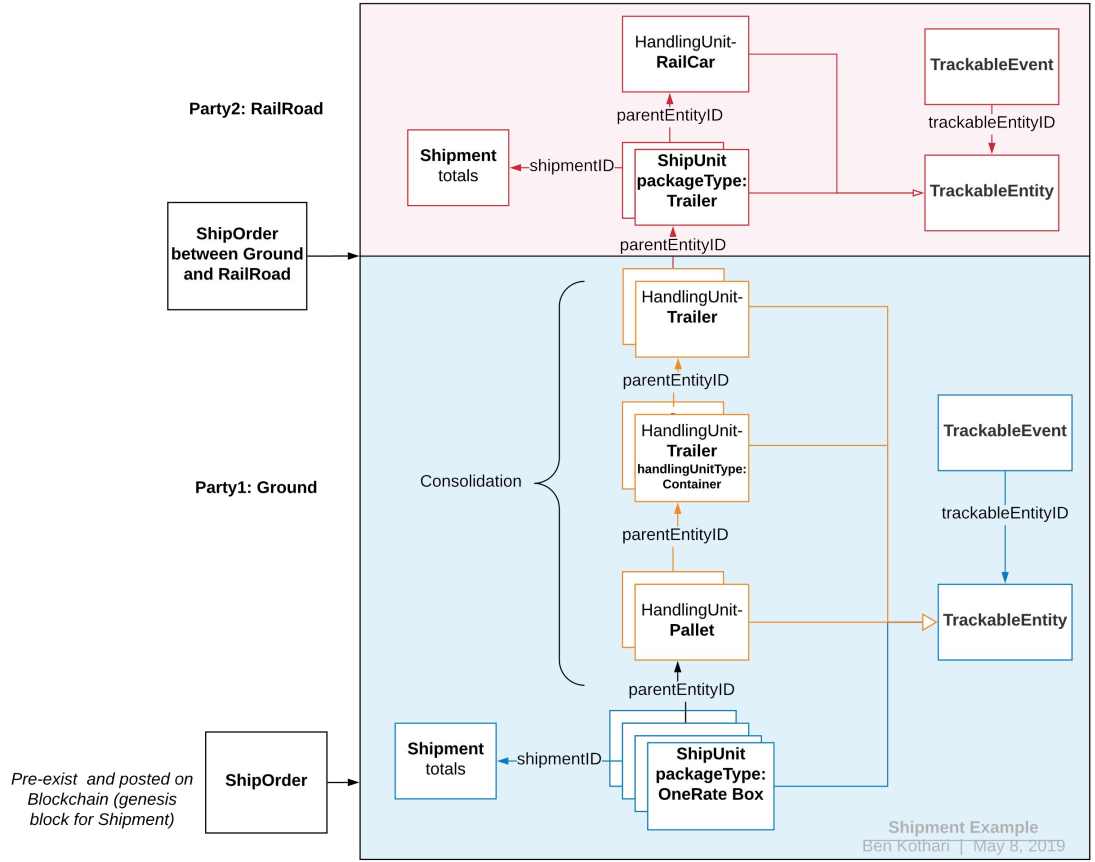
            "stateProvince" : "NJ",
            "country": "USA"
        },
        {
            "position": 5,
            "qualifier": "Link",
            "addressID":  8907  // link to address shown below
        }
    ] // positions array end
} // location end
```

Source: Ben Kothari, Ampliflex

Shipment Example

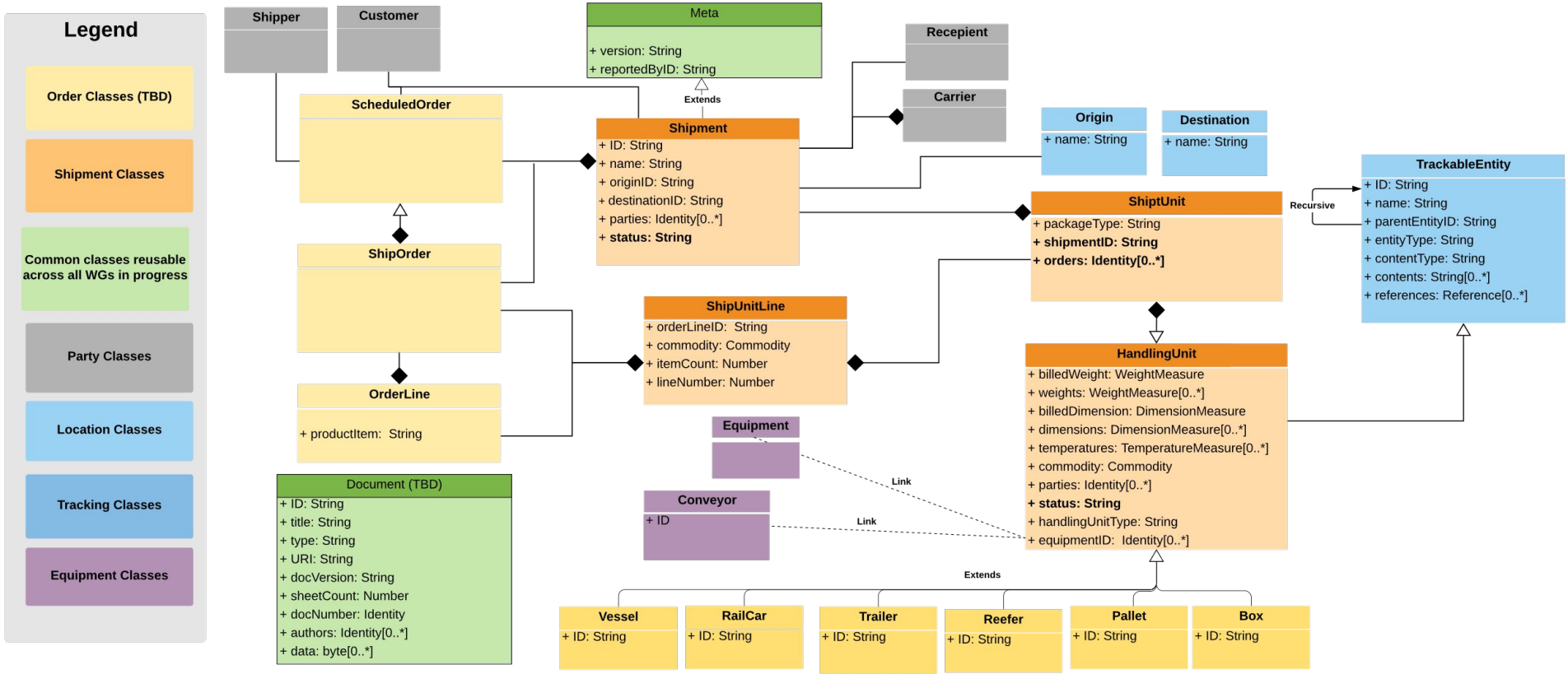
Passive vehicle resources which are responsible for bearing or storing the load of ShipUnits are collectively referred to as HandlingUnit (HU). HandlingUnit is a recursive/hierarchical representation; Each HU may be tracked separately, or an HU group may contain multiple HUs which may be tracked together as a single entity.

A Shipment is Goods or Products that may be transported under the terms of an Agreement (TBD) authorized by two or more Parties. As a grouping of Ship Units, the shipment is moved at the same time and transported by means of a transportation service offered by the Carrier or any Transportation Service Provider (Party) and requested by the Shipper (Party) who is at one Origin (Location) to one Recipient (Party) who is at one Destination (Location), and with respect to the total number of Ship Units and their respective piece counts, total weight, total cube, pallet counts etc. A shipment is also uniquely identified from among a set of Shipments at any given time, but tracking occurs at the individual Ship Unit level.



Source: Ben Kothari, Ampliflex

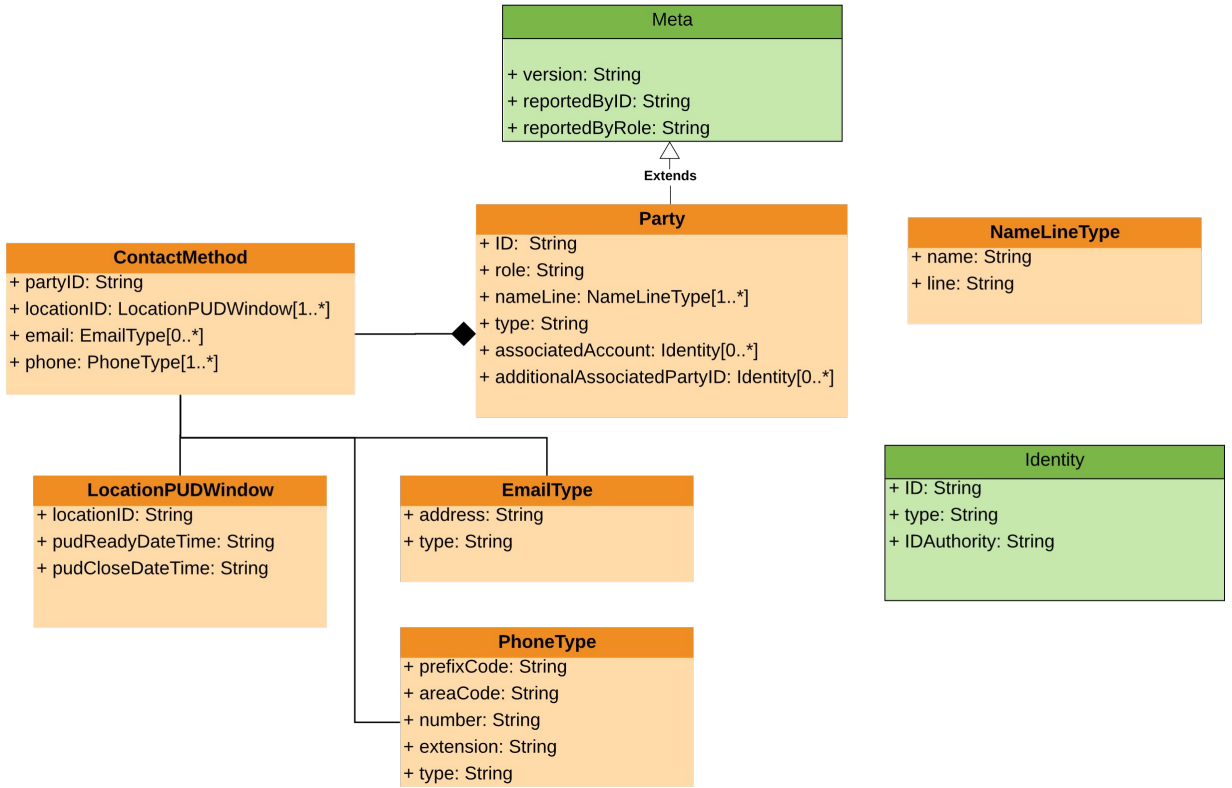
Shipment Model



Source: Ben Kothari, Ampliflex

Party Model

Party can be any Enterprise (Company, Corp, LLC, etc.) that participates in or provides products and/or services within the transportation network.
Party may also represent any individual person or organization who participates within the network or fulfils a general role related to the products and/or services offered.



Source: Ben Kothari, Ampliflex

Benefits to Enterprise

- Frees up capital
- Lowers transaction costs
- Speeds up processes
- Provides security and trust
- Market transparency
- Operational efficiency
- Carbon friendly
- Risk management
- Promotes interoperability

Cost of Trust

- **Processes and procedures for integrity**
  - Duplicate records, audit, investigation, antifraud, penalty structures, etc.

- **RMIT University Blockchain Innovation Hub**
  - Preliminary study on cost of trust
  - As high as 35% ($30T)
- **WTO analysis that smart contracts on blockchain can**
  - Increase world GDP by 5%
  - Increase world trade volume by 15%

Source: Dean Tribble, Agoric

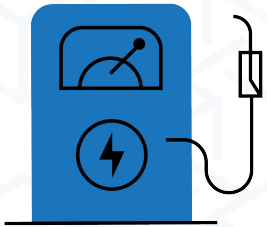
Use cases build on each other

- **Driver credential verification (authentication)**
- **Chain of custody transitions (data)**
- **Payment in shipping transactions**
  - Currency conversion
  - Automated (partial) payment release
  - Automated A/R loans for completed delivery
- **Links to associated financial transactions**

Source: Dean Tribble, Agoric

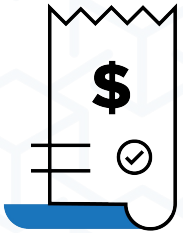
Use Case 1

EDI Communications



Fuel Repayments and Repricing Without the Need for a Processor

Immutable record of agreed financial transaction(s)



Payment and Settlement Solutions

Use Case 2

Contracts executed and arbitrated using blockchain, lowering risks and costs for both carriers and shippers.

Verifiable provenance with long supply chains.

Recorded on blockchain, available to relevant parties.

What is a Smart Contract?

A contract-like arrangement, expressed in code, where the behavior of the program enforces the terms of the contract

Source: Dean Tribble, Agoric

It’s not all or nothing

Hybrid smart contracts

- **The real arrangement includes both *code* and *prose***
  - Code portions are enforced by the smart contract system
  - Prose portions are enforced by people
- **Oracles**
- **Dispute resolution**
- **Exceptions**

Source: Dean Tribble, Agoric

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Stay up-to-date

Visit **BiTA.studio** to join the BiTA Blockchain in Transport Alliance

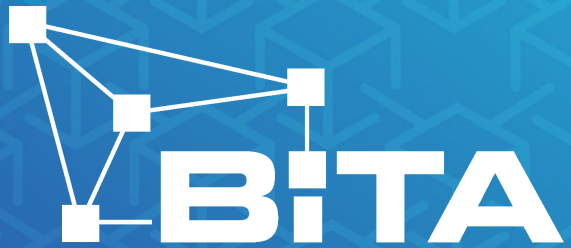
CONCLUDING THOUGHT

It's not just a tech play,

it's a business model change.

Oliver Bussmann

Source: Hilary Carter, Blockchain Research Institute



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