



# CROSS-BORDER INSTITUTE

# FUTURE OF COMMERCIAL BORDER CROSSINGS: LEVERAGING EMERGING LOGISTICS TECHNOLOGIES

- *Key messages*
  - *Supply Chain / Logistics Technological Transformation*
  - *Border should Leverage existing/emerging technology in logistics*
  - *Make land crossings more like airports*
  - *Continuously update risk assessment*
  - *Border integrated into supply chain rather than as outside regulator*



# TECHNOLOGY BOOM IN LOGISTICS

The Amazon logo, featuring the word "amazon" in white lowercase letters with a curved orange arrow underneath, all on a black square background.The Walmart logo, consisting of the word "Walmart" in blue and a yellow six-pointed starburst icon.The IBM logo, featuring the letters "IBM" in a blue, horizontally-striped font.

MAERSK

UBER FREIGHT



elementum

inovex



FLEXPORT



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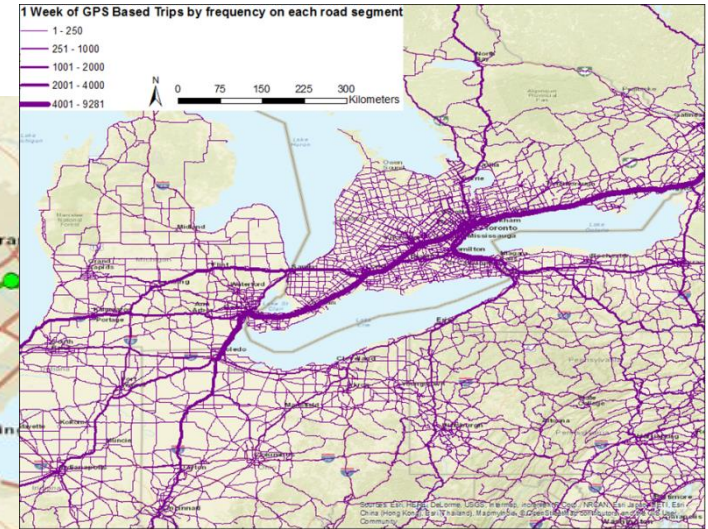
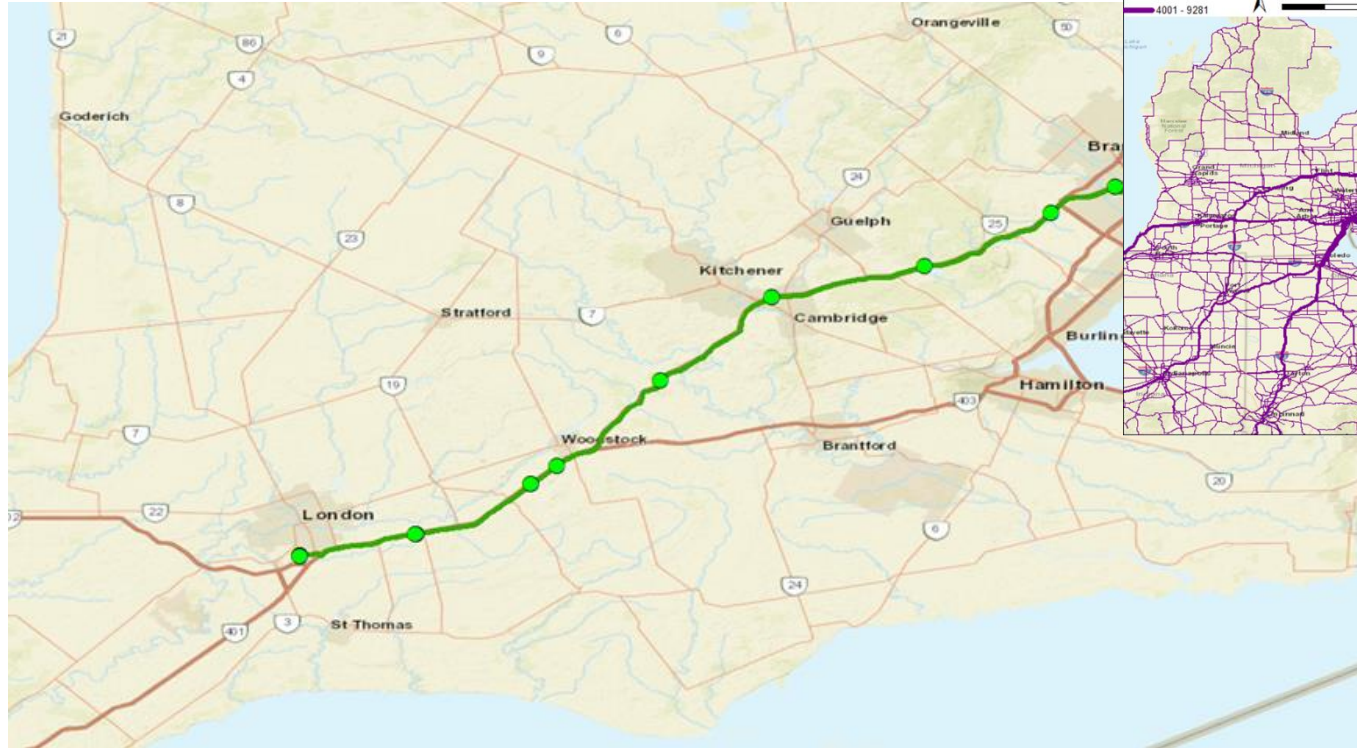
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## ■ KEY TECHNOLOGIES

- Geomatics (Global Positioning Systems)
- Internet of Things (IoT)
- Artificial Intelligence / Machine Learning
- Distributed Ledger Technology (Blockchain)



# GPS DATA



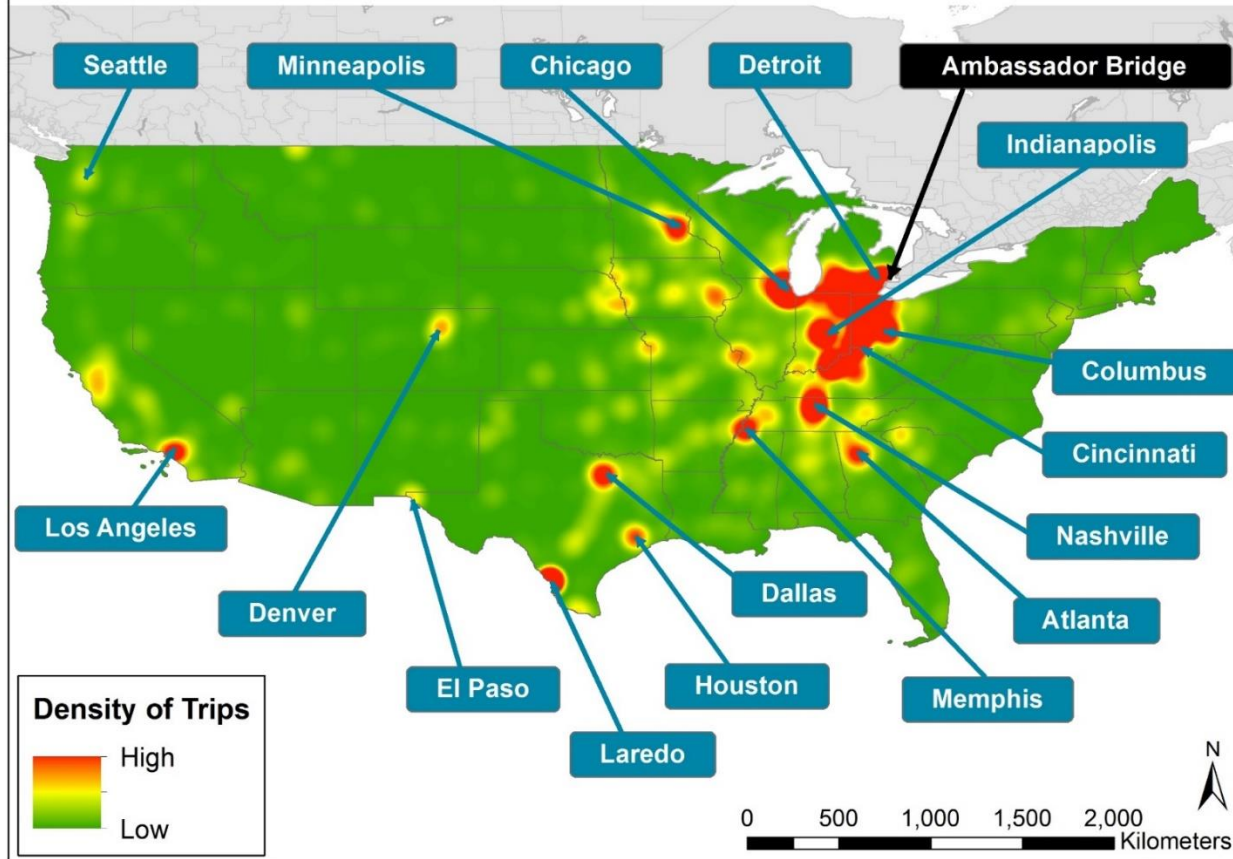
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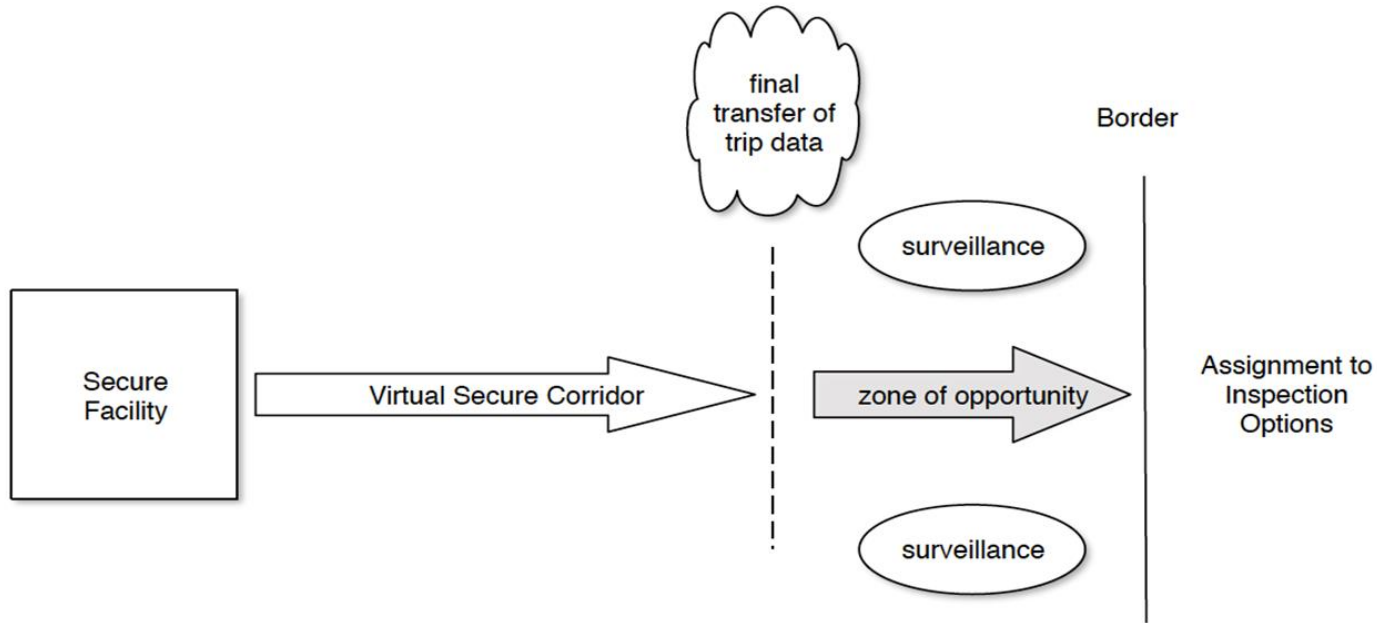
## Origin Density of Truck Trips Crossing the Ambassador Bridge (2013)

Source: GPS sample data - Cross-Border Institute





# VIRTUAL SECURE CORRIDOR



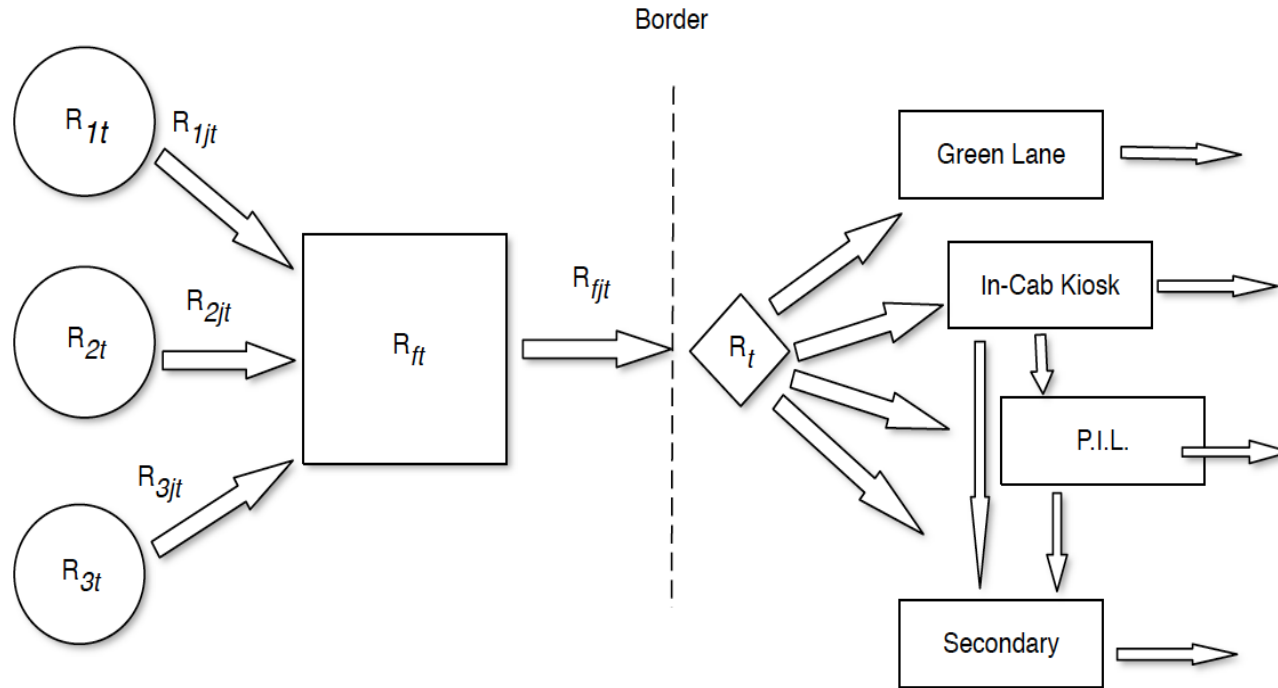
# INTERNET OF THINGS

- Things other than computers and smart phones connected to Internet
- Coffee pots, thermostats, home lighting, home security
- Tire pressure, g-force, engine diagnostics
- Seals, gates, doors, surveillance cameras, sensors in cargo





# CONTINUOUSLY UPDATED RISK ASSESSMENT

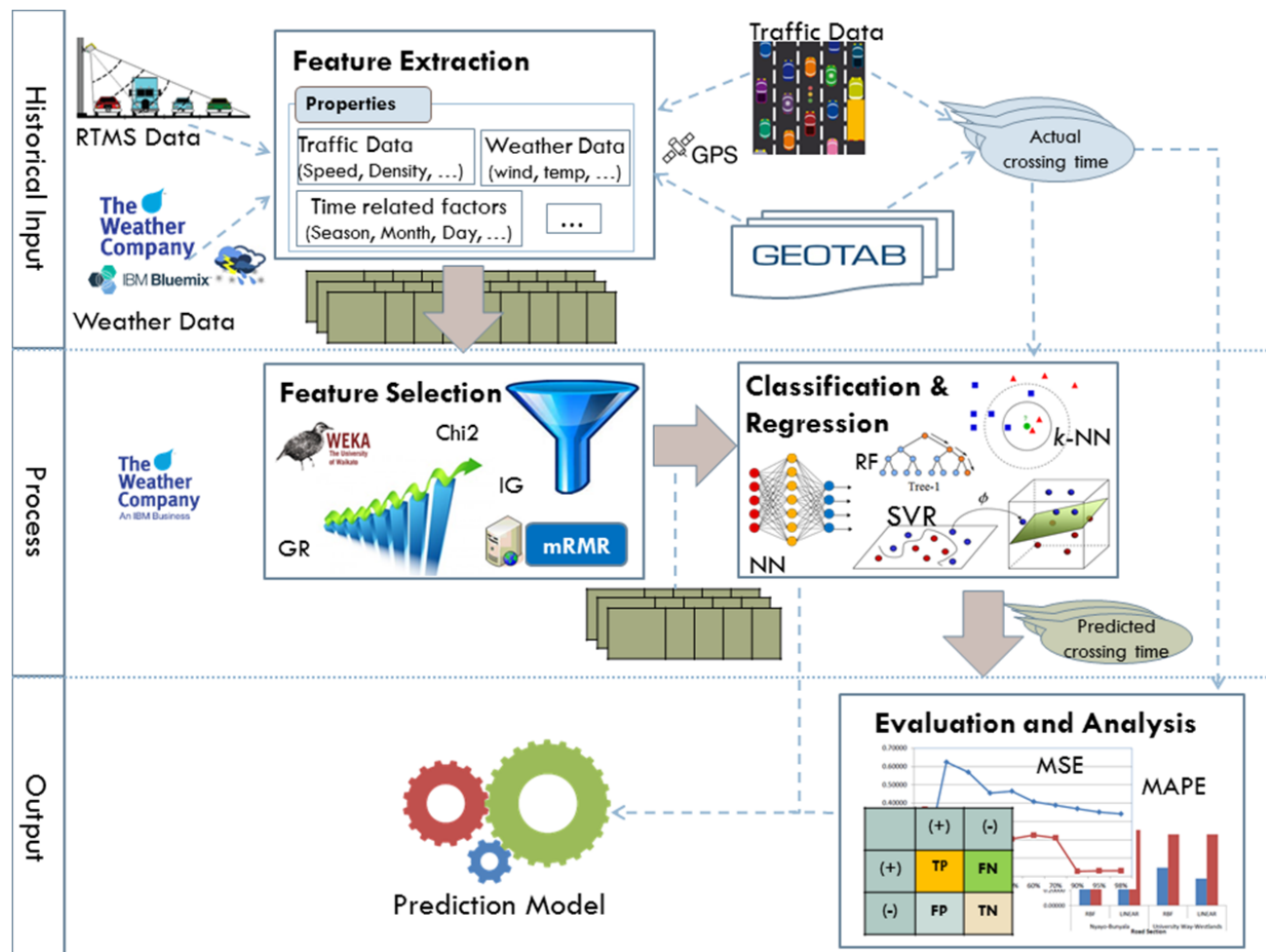


# ARTIFICIAL INTELLIGENCE / MACHINE LEARNING

- Fully autonomous systems make decisions
- Machine learning and related methods make predictions or fill in data gaps
- Geomatics and IoT generate data, machine learning derives information based on the data, autonomous systems make decisions based on the information



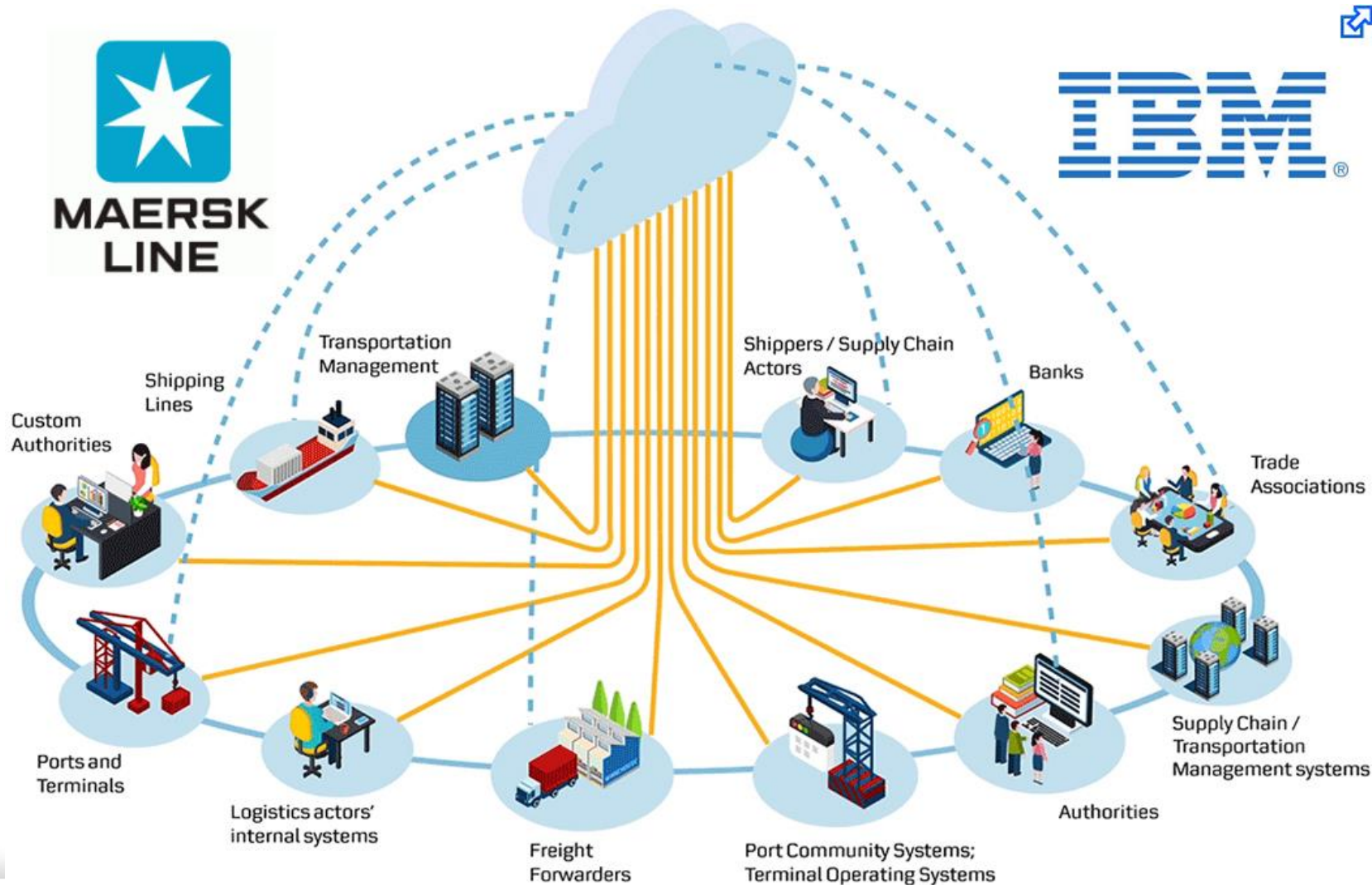
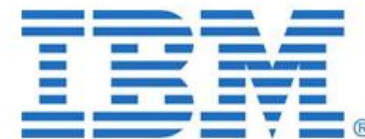
# CROSSING TIME PREDICTION



# BLOCKCHAIN / DISTRIBUTED LEDGER

- A shared, immutable (tamper evident) ledger
- Permissioned blockchain for business
- Smart contracts
- ***Disintermediation, elimination of document transfer***
- ***Traceability (provenance)***
  - Food pathogens
  - Component flaws
  - Certified (organic, fair traded, child labour-free, etc.)
  - Counterfeits
  - Rules of origin





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# THANKS TO CBI PARTNERS



Federal Economic  
Development Agency  
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