Supply Chain and Logistics with Blockchain

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Traceability and transparency are some of the most important foundations of logistics.

The Problem

Each supply chain participant maintains **their own records** leading to multiple, **inconsistent ledgers**

This current state process is:
- ☐ Time-consuming
- ☐ Inefficient
- ☐ Expensive
- ☐ Susceptible to errors
- ☐ Vulnerable to manipulation of transactions

The solution

Decentralized peer-to-peer networks

Replicas in sync through a **consensus** mechanism

Transactions are **secure, authenticated & verifiable**

Provide guarantees on the **immutability of the ledger**

Blockchain for the Enterprise

A Permissioned blockchain network **requires an invitation** and must be validated by the network starter or by a **set of rules.**

Blockchain for the Enterprise

Existing participants could **decide future entrants**; a regulatory authority could **issue licenses**; or a **consortium** could make the decisions instead.

Blockchain for the Enterprise

Only the entities **participating in a particular transaction** will have knowledge and **access to it.**

Blockchain for the Enterprise

As there is some level of trust between participants, consensus is simpler.

Blockchain for the Enterprise

Permissioned blockchains also permit **greater scalability** in terms of transactional throughput.

Blockchain for the Enterprise

Main objective is to achieve efficiencies on a process in a business network.

Benefits for Supply chain

Reduce or eliminate fraud and errors

Improve inventory management

Minimize courier costs

Reduce delays from paperwork

Identify issues faster

Increase consumer and partner trust

MAERSK

GLOBAL TRADE

More than **$16 trillion in goods** are shipped across international borders each year

80% of the goods consumers use daily are carried by the ocean shipping industry

By reducing barriers within the international supply chain, global trade could **increase by nearly 15%,** boosting economies and creating jobs[1]

1) The World Economic Forum: Enabling Trade Valuing Growth Opportunities 2013

IBM and Maersk have launched TradeLens

An open and neutral supply chain platform
poised to transform the industry

TradeLens is built for the industry and
offers benefits to trade participants from
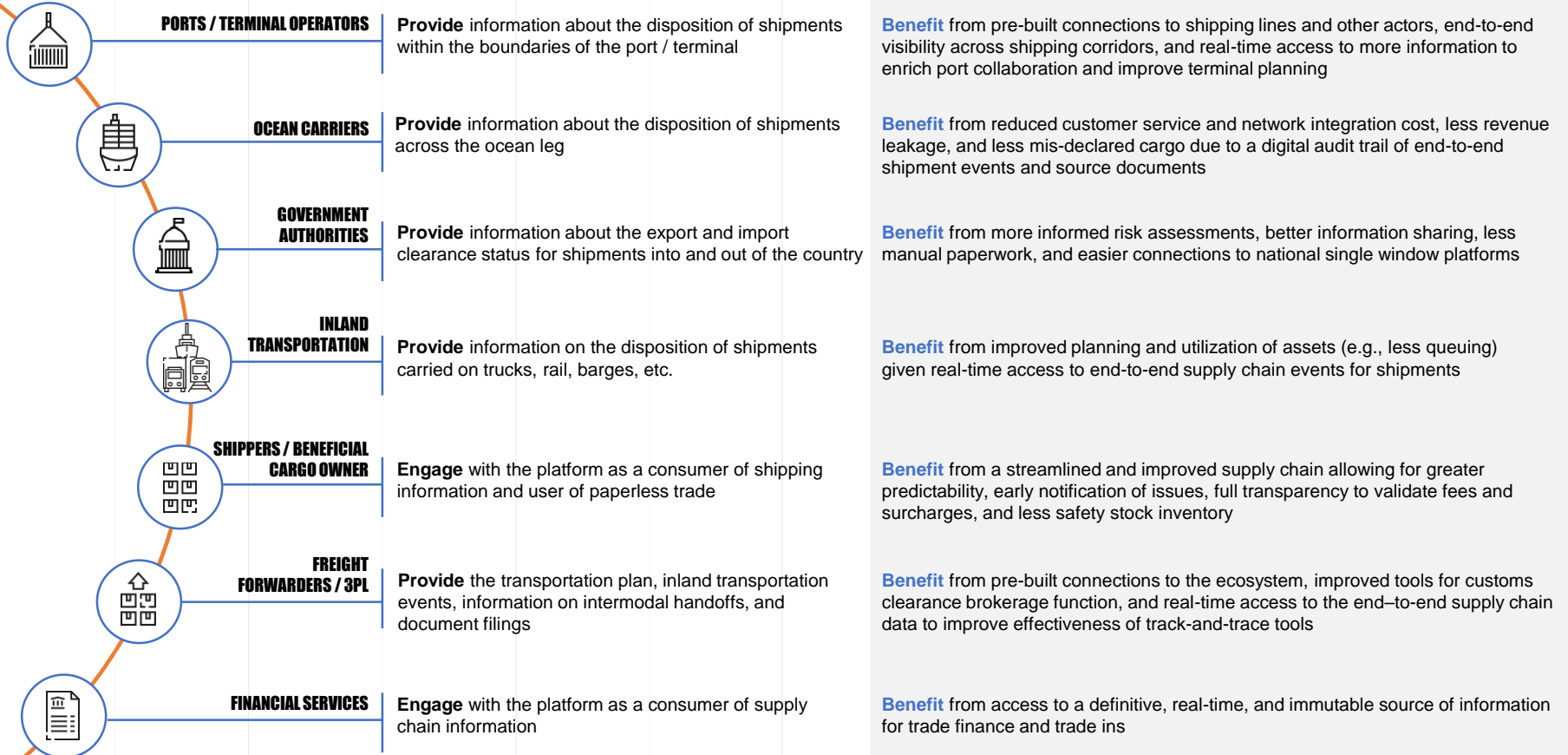across the supply chain ecosystem

Maersk Line and Hamburg-Sud are
participants under the same terms as
other network members

Industry-wide collaboration announced in January advances as more than 90 organizations participate in the global trade solution.

More than 154 million events captured on the platform and growing by one million per day.

PORTS / TERMINAL OPERATORS

Provide information about the disposition of shipments within the boundaries of the port / terminal

Benefit from pre-built connections to shipping lines and other actors, end-to-end visibility across shipping corridors, and real-time access to more information to enrich port collaboration and improve terminal planning

OCEAN CARRIERS

Provide information about the disposition of shipments across the ocean leg

Benefit from reduced customer service and network integration cost, less revenue leakage, and less mis-declared cargo due to a digital audit trail of end-to-end shipment events and source documents

GOVERNMENT AUTHORITIES

Provide information about the export and import clearance status for shipments into and out of the country

Benefit from more informed risk assessments, better information sharing, less manual paperwork, and easier connections to national single window platforms

INLAND TRANSPORTATION

Provide information on the disposition of shipments carried on trucks, rail, barges, etc.

Benefit from improved planning and utilization of assets (e.g., less queuing) given real-time access to end-to-end supply chain events for shipments

SHIPPERS / BENEFICIAL CARGO OWNER

Engage with the platform as a consumer of shipping information and user of paperless trade

Benefit from a streamlined and improved supply chain allowing for greater predictability, early notification of issues, full transparency to validate fees and surcharges, and less safety stock inventory

FREIGHT FORWARDERS / 3PL

Provide the transportation plan, inland transportation events, information on intermodal handoffs, and document filings

Benefit from pre-built connections to the ecosystem, improved tools for customs clearance brokerage function, and real-time access to the end–to-end supply chain data to improve effectiveness of track-and-trace tools

FINANCIAL SERVICES

Engage with the platform as a consumer of supply chain information

Benefit from access to a definitive, real-time, and immutable source of information for trade finance and trade ins

TRADELENS

Current Network Participants*

Ports and Terminals

- PSA Singapore
- Patrick Terminals
- ICTSI
- Holt Logistics
- Modern Terminals
- Houston, Texas
- Rotterdam, NL
- Mobile, Alabama
- Lazaro, Mexico
- Buenos Aires, Argentina
- Itajai, Brazil
- Callao, Peru
- Gothenburg, Sweden
- Izmir, Turkey
- Onne, Nigeria
- Cotonou, Benin
- Felixstowe, Great Britain
- Newcastle upon Tyne, Great Britain

- Avonmouth, Great Britain
- Liverpool, Great Britain
- Teesport, Great Britain
- Sydney, Australia
- Melbourne, Australia
- Brisbane, Australia
- Freemantle, Australia
- Singapore, Singapore
- Hong Kong, SAR China
- Halifax, Canada
- Philadelphia, Pennsylvania
- Apapa, Nigeria
- Algeciras, Spain
- Aqaba, Jordan
- Cartagena, Colombia
- Los Angeles, California
- Miami, Florida
- Tangier, Morocco
- Port Said, Egypt
- Pecem, Brazil

Government Authorities

- ► Australia Home Affairs
- ► Dutch Customs
- ► SUNAT, Peru Customs
- ► Saudi Customs
- ► Singapore Customs

* Selected participants; not all shown

According to IDC, by 2021, **20% of Top 3.000 companies in Latin America** will use blockchain services as foundation for reliable scale platform.

And **25%** of large global **banking** transactions; **30%** of **manufacturers and retailers**; and **20%** of **health** organizations will use blockchain networks by 2021.
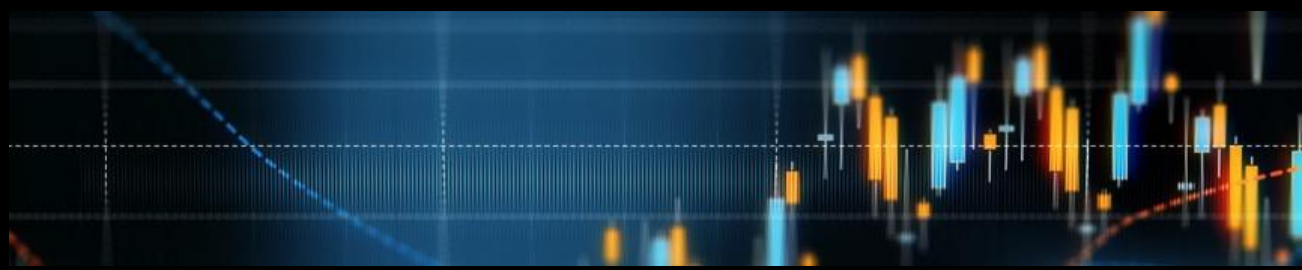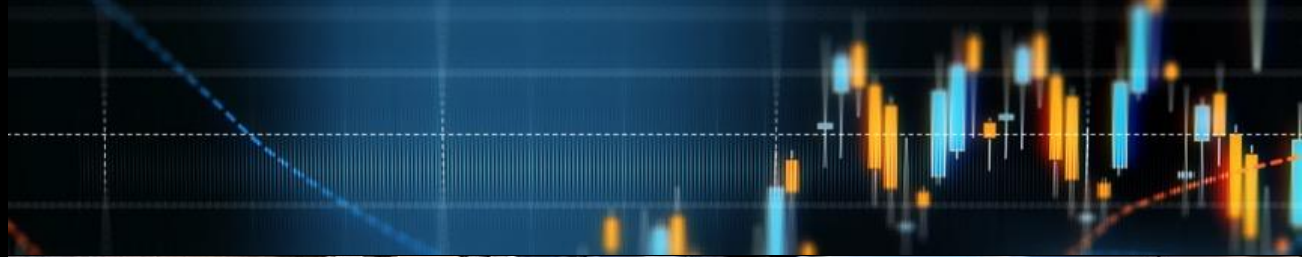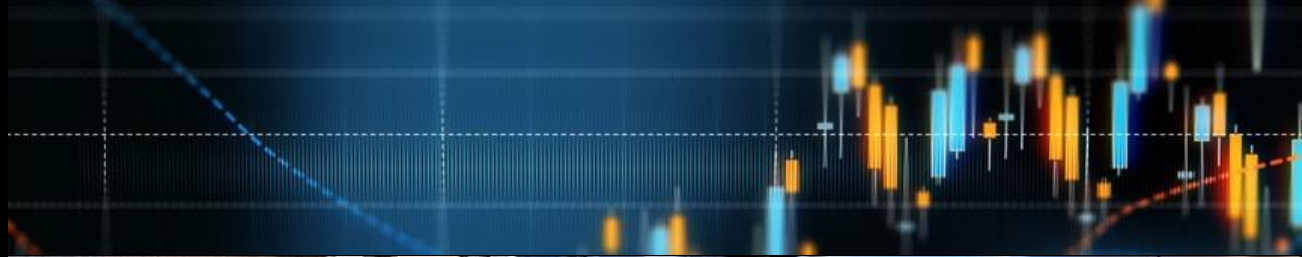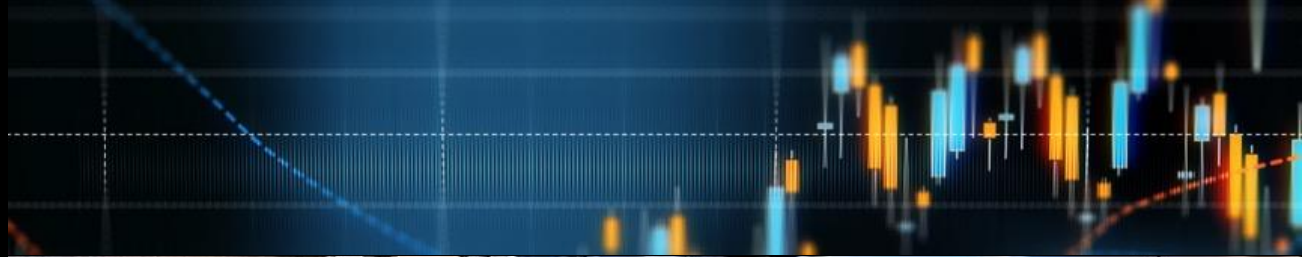
"Blockchain will do for transactions what the internet did for information"

Ginni Rometty
IBM CEO

Thank you | Gracias

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