WHAT IS TRADELENS

Global trade has grown to an amazing scale, and with that scale has come inefficiencies and complexities. To resolve these issues — be they information trapped in organizational silos, inefficient manual processing, or cumbersome paper-based approaches; trade needs a digital system to bring all the parts of the supply chain together. TradeLens can unlock these opportunities.
TRADELENS IS AN OPEN, NEUTRAL PLATFORM UNDERPINNED BY BLOCKCHAIN TECHNOLOGY, SUPPORTED BY IBM AND MAERSK.

The platform enables a more efficient, predictable and secure exchange of information; fostering greater collaboration and trust across the global supply chain.

By laying the foundation for digital supply chains, TradeLens addresses many longstanding industry challenges and enables all ecosystem members to benefit.
SECTION 1 – WHAT IS TRADELENS

CONNECTS THE ECOSYSTEM
Brings together all parties in the supply chain — including shippers/BCOs, freight forwarders, inland transportation, ports and terminals, ocean carriers, customs and other government authorities, and more — onto a blockchain-based platform with a secure permission and identity framework.

DRIVES TRUE INFORMATION
Provides for the seamless, secure sharing of instantaneous, actionable supply chain information and visibility across all parties to trade — encompassing shipping milestones, cargo details, trade documents, customs filings, IoT data from sensor readings, and more.

FOSTERS COLLABORATION AND TRUST
Enables the digitization and automation of the cross-organization business processes integral to global trade, including import and export clearance, with blockchain ensuring secure, auditable, and non-repudiable transactions.

SPURS INNOVATION
Lays the foundation for ongoing improvement and innovation through an open, non-proprietary API and the use of standards and promotion of interoperability.
A helpful way to visualize TradeLens is through three primary layers: network, platform, and applications & services. Each layer plays a distinct role in allowing TradeLens members to extract the most value for their businesses.

**NETWORK**

The foundation of TradeLens is its business network – shippers, forwarders, ports and terminals, ocean carriers, government authorities, customs brokers and more, that together bring a wealth of information that you can track, store and share across the ecosystem. This can all be done throughout the entire lifecycle of goods within a shipment process.

**PLATFORM**

The platform layer sits atop of all of the network’s data and manifests itself into a dynamic, functional medium. This open platform is underpinned by Hyperledger Fabric blockchain technology, creating an end-to-end audit trail of important shipment information and a secure vehicle to share critical documentation.

**APPLICATIONS AND SERVICES**

Finally, the application and services layer leverages the network and capabilities of the platform, enabling the creation of a marketplace that will serve the needs of the whole TradeLens ecosystem by offering an open medium where anyone can build, use and sell applications to their own customers to fit the ecosystem’s needs now and into the future.
IBM and Maersk are equal partners in TradeLens. Together they share the responsibility of shepherding a fair and open platform, jointly providing a lean model for agile development that offers benefits to trade participants from across the supply chain ecosystem.

IT IS IMPORTANT TO NOTE THAT TRADELENS IS NOT A COMPANY. INSTEAD, IT IS A SOLUTION FOR THE INDUSTRY - BUILT BY THE INDUSTRY.

To ensure the supply chain industry’s voices are heard, IBM and Maersk are forming a TradeLens Advisory Board, tasked with the goal of helping shape the solution by providing guidance and feedback.
WHY IBM AND MAERSK ARE INVESTING IN TRADELENS

01 LEAD RATHER THAN REACT
The digital transformation of global shipping, like other industries before it, is going to happen one way or another, and both companies want to lead the way rather than react to that change.

02 GROW THE PIE
A more efficient trading ecosystem will drive economic growth and grant everyone greater access to trade, resulting in increased demand for shipping services.

03 ACCELERATE TECHNOLOGY ADOPTION
Technologies like blockchain, IoT and AI are poised to facilitate the sharing of information and drive more widespread adoption in the global supply chain.
The TradeLens ecosystem consists of every organization in the end-to-end journey of a shipment, coming together to share a singular view.

This means that diverse, previously fragmented organizations and government agencies will no longer have the blind-spots that currently exist across the shipping lifecycle — providing richer data, deeper insights and greater value.
The TradeLens ecosystem allows all supply chain entities to join the ranks, putting everyone on a level playing field. Supply chain entities include ocean carriers, inland transporters, terminal operators, ports, customs officials, and even software developers. All members enjoy the benefits of TradeLens in different ways. For example, logistics service providers authorities benefit from a standard approach to information sharing and a platform for innovation.

And as the ecosystem grows, so do the benefits. More participants mean traders can have better visibility across more trade corridors, allowing them to provide better customer service.
Shipping milestones

TradeLens provides a real-time publish and subscribe mechanism for exchanging milestone data between the entities that are involved in the shipment.

Importers and exporters who use TradeLens can easily determine the status of their shipments through its user interface or by publishing and subscribing to shipments. TradeLens publish and subscribe open APIs:

- Purchase order & supply chain management (SCM) software
- Control towers
- Transportation management systems (TMS)
- Enterprise resource planning (ERP) systems
- Terminal operating systems (TOS)

Open source REST APIs and Webhooks, are ready to use today. Learn more about event publishing and subscribing and learn how to get started by visiting our documentation page.
TradeLens also provides permissioned document sharing using a common set of organizational roles that are native to international trade.

Documents can be shared in both structured and unstructured data formats. Structured data formats have specific fields and values where all changes made can be seen and key pieces of information can be quickly found when needed.

Unstructured formats are often the copy of an scanned paper document. Users can upload and share these documents via the TradeLens user interface or other existing applications using APIs.

This precludes the need for inefficient, manual paper-based processes and simplifies cross-organizational document management - unlocking the potential for digitization and an easier way to manage your documentation.

**KEY VALUE AND BENEFITS OF DOCUMENT SHARING:**

- Provides documents on-demand versus one way, point-to-point communication, allowing all permissioned network participants immediate access to information.
- Delivers comprehensive transparency and security through version controls, storage and blockchain technology. This allows for full understanding of where the document is in the content lifecycle.
- Offers knowledge sharing capabilities between network participants.
The logistics of international containers generate a multitude of documents which are primed for digitization. Examples include:

- Commercial invoice
- Packing list
- Booking confirmation
- Purchase order
- Bill of lading
- Dangerous Goods Declaration
- Import / export declarations
- Certificates of origin
- Inspection certificate
- Insurance certificate

TradeLens enables organizations to move away from traditional documentation (such as a scanned bill of lading) to structured data formats. This shift facilitates greater automation of existing business processes by allowing computers to use the information without the need for costly manual inputting or error-prone OCR tools.

**TRADELENS IS ON A MISSION TO BRING INDUSTRY STANDARD DOCUMENTS TO EXPAND THE USE OF DOCUMENTS ACROSS THE DIGITAL SUPPLY CHAIN**
Lack of visibility across specific supply chains often leads to a reliance on a network of point-to-point communications. This makes it very challenging to create end-to-end views of complex, multi-party, cross-border transactions.

**TRADELENS PROVIDES A NETWORK-BASED APPROACH FOR HANDLING THIS INFORMATION AND A FLEXIBLE MODEL FOR SHARING INFORMATION WITH ORGANIZATIONS THAT PARTICIPATE IN A SHIPMENT OR CONSIGNMENT.**

This model can be used right out of the box or can be customized based on your sharing preferences and business needs. View the TradeLens data sharing specification documentation.
TradeLens is committed to building a platform that is open to everyone and easy to engage with.

To that end, TradeLens will continuously evolve to support new members and connect with other networks and systems.

To add to our ethos of collaboration, TradeLens is committed to leading and embracing open data standards across the globe. We are working hand-in-hand with the UN/CEFACT model.

All TradeLens functionality is surfaced via non-proprietary, publicly available APIs that are designed specifically for consumability and ease of integration.

Lastly, TradeLens supports open standards and sharing of its documentation, allowing members and third parties to build on, around and within the solution.
Communication between organizations in our industry is filled with friction. One source of friction is the approach to connecting systems through expensive and drawn out integrations.

This results in high IT setup and maintenance costs for any sort of integration and automation because each project involving another organization has to essentially start from scratch.

Large importers and exporters invest in point-to-point connectivity with their major logistics service providers that result in high setup and high switching costs.

Network-based communication approaches such as TradeLens can reduce the need for customization, monitoring, and maintenance of these point-to-point connections, providing a more efficient use of participant’s IT resources.
The TradeLens blockchain is a shared, immutable ledger that records transactions and assets, both tangible (a shipping container) or intangible (a digital document). Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

**WHILE THE POWER OF TRADELENS COMES FROM ITS MEMBERS — BLOCKCHAIN TECHNOLOGY ENABLES THE SECURE DISTRIBUTION AND STORAGE OF THE VITAL INFORMATION THAT IS THE HEARTBEAT OF THE PLATFORM.**

Blockchain affords us the ability to build a shared system of record that cannot be altered or tampered with – creating a single source of truth.

TradeLens not only keeps your data secure, but it also allows you to set high level characteristics and permissions to ensure you are only sharing the information you want other parties to have access to.

Lastly, TradeLens blockchain is based on Hyperledger Fabric OASIS open source project. [Learn more about it.](#)
**KEY BLOCKCHAIN COMPONENTS FOR TRADELENS**

**SHARE LEDGER**
A network of industry participants maintains a distributed, permissioned ledger with copies of document filings, relevant supply chain events, authority approval status, and full audit history. Every change results in a new, immutable block.

**PRIVACY**
Cryptography enables permissioned access so only the parties participating in a specific shipment can submit, edit or approve related data.

**SMART CONTRACT**
Cross-organizational business processes, such as import and export clearance, are pre-programmed and built into blockchain and distributed to and executed on the network, preventing any member from changing the business logic.

**TRUST**
Information such as documentation filings and authority approvals can only be changed if endorsed by the parties taking part in the shipment. The full audit history is maintained on the blockchain.
TRADELENS

BECOME A PART OF THE FUTURE OF GLOBAL TRADE

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