SOLUTION BRIEF

TABLE OF CONTENTS
OVERVIEW
ECOSYSTEM
PLATFORM
HOW TO JOIN
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 from adoption.
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 others — onto a blockchain-based platform with a secure permission and identity framework

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

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

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

Lays the foundation for ongoing improvement and innovation through an open, non-proprietary API, 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, sharing the lead in developing TradeLens, offering 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 collaboration.

TradeLens’ direction will be guided by the industry. To ensure the supply chain industry’s views 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 to drive open and fair standards.
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.

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.

ACCELERATE TECHNOLOGY ADOPTION

Technology 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, **coalescing to share a singular, granular view of the global supply chain.**

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 instant value and true information sharing to partners across the global supply chain.
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 and authorities benefit from a standard approach to information sharing and a platform for future innovation.

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

Participants need not join as full TradeLens members: the platform can also facilitate more discrete sharing of information between parties on a case-by-case basis, furthering information sharing.
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 subscribing to an event feed and integrating TradeLens data into their existing systems, such as:

- Purchase Order & Supply Chain Management (SCM) software
- Control towers
- Transportation management systems (TMS)
- Enterprise resource planning (ERP) systems
- Terminal operating systems (TOS)

These subscriptions are made available by open source REST APIs and Webhook, ready to use today. Learn more about subscribing to events and getting started by visiting our documentation.
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 data format and unstructured data format. Structured data formats have specific fields and values where all changes made can be seen.

Unstructured data formats are the copy of an actual paper document such as a PDF or JPEG. Users can upload and share these documents via the TradeLens user interface or other existing applications using APIs.

This precludes the need for inefficient and manual paper-based processes and unlocks the potential for digitization and automation in the supply chain.

**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
TradeLens enables organizations to move away from traditional documentation (such as paper or PDFs) 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 HAS THE FUTURE GOAL OF BRINGING MORE STANDARD STRUCTURED DOCUMENT OPTIONS FOR WHAT ARE TYPICALLY UNSTRUCTURED DOCUMENTS TODAY.**

The logistics and execution of international container movements generate a multitude of documents. 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
The inability to view each participant’s position in the shipping process, along with the various existing systems used for global trade, leads to a reliance on traditional point-to-point communication technologies (i.e. EDI) and manual processes.

This makes it very challenging to create end-to-end views of the complex, multi-party, cross-border transactions that make up today’s supply chains.

TRADELENS PROVIDES A NETWORK-BASED APPROACH FOR HANDLING THIS INFORMATION AND PROVIDES A FLEXIBLE MODEL FOR IDENTIFYING THE 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 offers a neutral platform that is available to the entire industry. This approach offers an exceptional foundation for all major logistics and shipping participants to join and extract value from TradeLens immediately.

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

It’s important to note that while Maersk is a stakeholder as well as member of TradeLens, the platform does not provide any competitive data to Maersk.

TO ADD TO OUR ETHOS OF COLLABORATION, TRADELENS IS COMMITTED TO LEADING AND EMBRACING OPEN DATA STANDARDS ACROSS THE GLOBE. THE TRADELENS DATA MODEL AND ACCESS CONTROL SCHEME ALIGNS DIRECTLY 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 for its documentation, allowing members to build on, around and within the solution.
Communication between organizations in our industry is filled with friction. One of the sources of friction is the approach of connecting systems through point-to-point integrations.

This results in high IT setup and maintenance costs for any sort of integration and automation because each integration 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 costs 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 participants IT resources.
The TradeLens blockchain is a shared, immutable ledger that records transactions and tracks assets, tangible (a shipping container) or intangible (a commercial invoice). Virtually anything of value can be tracked and traded on a blockchain network, reducing risk and cutting costs for all involved.

**SO 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.

This level of permission is guaranteed with blockchain technology. Lastly, TradeLens blockchain is based on Hyperledger Fabric OASIS open source project. [Learn more about it.](#)
KEY BLOCKCHAIN COMPONENTS FOR TRADELENS

**SHARED 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; full audit history maintained on the blockchain.
TRADELENS SOLUTION BRIEF

SECTION 4 – JOIN

JOINING TRADELENS
HOW TO BECOME A PART OF THE FUTURE OF GLOBAL TRADE

TradeLens is available today. Anyone can join the ecosystem to start collaborating with clients and business partners, and quickly gain access to instantaneous, high fidelity shipping information via the TradeLens web portal or via APIs. Shippers and BCOs can also provide and subscribe to data. Interested participants should contact their local IBM or Maersk sales representatives or fill out the contact form on our website.

JOIN NOW