



Visualizing Your Digital Supply Chain with MINT

tracelink[®]
NETWORK FOR GREATER GOOD

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Visualizing Your Digital Supply Chain with MINT

Learning Objectives

At the end of this course, you will be able to:

- Explain the constraints of the current supply chain business process.
- Explain the concept of end-to-end supply chain digitalization and its key components.
- Provide an overview of TraceLink's network and list its advantages.
- Explain TraceLink's Multienterprise Information Network Tower (MINT) solution and its capabilities.
- Solve the challenges of current supply chain business processes and orchestrate the business transactions with MINT.



Overview

In this course, you will dive deeper into TraceLink's network along with TraceLink solutions that enable you to digitalize your supply chain.



The Constraints of the Current Supply Chain Business Processes

In the pharmaceutical supply chain, the core supply chain business transactions process covers orders, procurement, production and inventory management, transportation and logistics, and payment settlement.

Each area involves several steps and workflows that companies have traditionally managed through manual efforts, diverse systems, and isolated information.

The constraints of the current supply chain business processes are:

- Manual processes and paper-based documentation
- Traceability issues

- Transparency issues
- Difficulties with regulatory compliance
- Difficulties coping with global demand fluctuations and supply disruptions

These types of inefficiencies can have a significant impact on your company's agility, customer service, and overall supply chain performance.

Think about your own experiences and the specific pain points you encounter within your company's supply chain processes and try to find answers of the following questions:

- Are there any communication gaps?
- Is the information you receive always up-to-date?
- How does the lack of real-time visibility impact your business?

Consider these questions as you explore how TraceLink's network along with TraceLink solutions can help address these challenges.



End-to-End Supply Chain Digitalization

The solution to the constraints of the current supply chain business process lies in the digitalizing of your supply chain. Digitalization is turning your paper-based, manual processes into digital ones. Currently, there are very few digital transaction exchanges happening across the supply chain in the form Electronic Data Exchange (EDI), for example. The challenge is end-to-end visibility of all the processes across the supply chain and integration with partners.

The following are the key components that help achieve end-to-end supply chain digitalization:

- **Collective Intelligence:** Leverage real-time, collective industry intelligence for better business decisions by proactively identifying and mitigating risks.
- **End-to-end Visibility:** With end-to-end supply chain digitalization, you can improve visibility across the supply chain.

- **End-to-end Orchestration:** Connects your end-to-end network, giving you the critical data, collaboration, and intelligence you need to manage and optimize your supply chain process.
- **End-to-end Track and Trace:** The digital transformation enhances your ability to ensure regulatory compliance and maintain the integrity of your supply chain data.

The TraceLink Network Overview

TraceLink’s network is the first step in the journey of your end-to-end supply chain digitalization. TraceLink’s digital network platform and structure provide critical capabilities for pharmaceutical supply chain partners.



Point-to-Point Model vs TraceLink Network.

Following are the differences between the traditional point-to-point model and TraceLink network:

Point-to-Point Network Model:

A point-to-point model connects one trade partner to another trade partner via a B2B connection. In this model, each company is responsible for establishing, mapping, and maintaining a connection between its other trade partners. This model is time-consuming, requires multiple resources, and can include additional costs.

Traditionally with a point-to-point model, companies must map 1:1 for every trading partner.

Company “A” in this example, wants to connect to a trade partner that only supports EPCIS 1.0. This means Company "A" must map EPCIS 1.0 for that connection. Then if they connect to another trade partner that only supports EPCIS 1.2, they must map EPCIS 1.2 to that other trade partner. They now need to maintain two maps for two different Trade Partners.



The TraceLink Network:

The TraceLink network platform eliminates point-to-point integrations by enabling all customers and trading partners to integrate only once and then interoperate with anyone else on the network with a point-and-click configuration. The TraceLink "Integrate Once, Interoperate with Everyone™" capability means companies can establish a single connection into the network using their preferred transaction type and format. This means you can integrate using any format you support, and your Trade Partners can integrate using any format that they support.

Company "A" in this example, needs to establish and maintain one connection to TraceLink which can then connect to any other company on the network through that one connection, rather than multiple connections which are necessary in typical, point-to-point systems.



The TraceLink Advantage

The following are some significant advantages of being on the TraceLink network:

- **Integrated Network:** TraceLink supports integrated network capability. You integrate once and interoperate with everyone on the network.

- **Integration with Internal Systems:** TraceLink allows you to integrate Opus with your internal system. This enables you to send/receive transaction information from/in your internal systems.
- **Transaction Exchange:** TraceLink's transaction exchange capability supports a wide range of standards like X12, IDoc, CSV, EDIFACT, and custom.
- **Flexible Formatting:** TraceLink's canonical is a data structure used to normalize input and output data. All exchanges are transformed into a universal canonical file and then transformed again to any format that your trading partner would want.

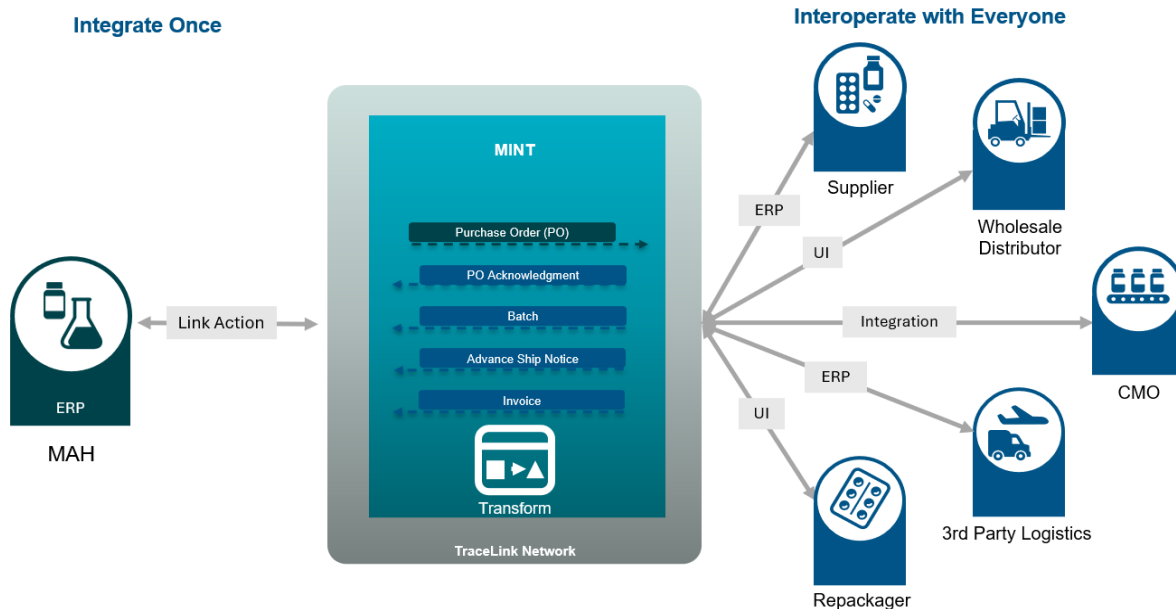
Multienterprise Information Network Tower (MINT)

MINT Overview

TraceLink’s Multienterprise Information Network Tower solution or MINT provides the foundational capabilities required for supply chain participants to finally gain full visibility with a supply network through the exchange of interoperable commerce, inventory, logistics, and other supply chain data. You just maintain your single connection to TraceLink and then you can exchange data with anyone on the network.

The MINT UI provides you with a clear view of your supply chain processes, allowing you to track transactions, monitor inventory levels, and identify any issues in real time. It provides centralized transactional data and easy access to relevant information. Users can quickly retrieve, analyze, and handle the data to support decision-making and strategic planning.

MINT uses transforms to map the data between two different formats. It uses Link Actions to integrate between your systems (e.g. ERP, QMS, etc) and MINT.





File Exchange: Transforms

Transforms make it possible for every customer and partner to work in whatever data format they need.

The purpose of a transform is to map the data between some external format (e.g., EDI X12) and TraceLink's standard canonical format, which is what our products read to display data like POs.

There are two types of transforms: standard and custom.

Standard Transforms: Standard transforms are built to mirror a standard transaction for a standard format (e.g., invoice transaction for the X12 format). These transforms are available for all TraceLink customers out of the box. Standard transforms are deployed to the public catalog (STCM). Standard transforms may be used when the customer's transaction data does not have custom fields and is in a standard format TraceLink support.

Custom Transforms: Custom transforms use a standard map as a base but are customized specifically for non-standard fields customers may use. These transforms are available only for the customer they are deployed for. Custom transforms are deployed to the customer private catalog (CTCM). Custom transforms may be used when the customer's transaction data has custom fields that are not a part of the standard format / transaction.



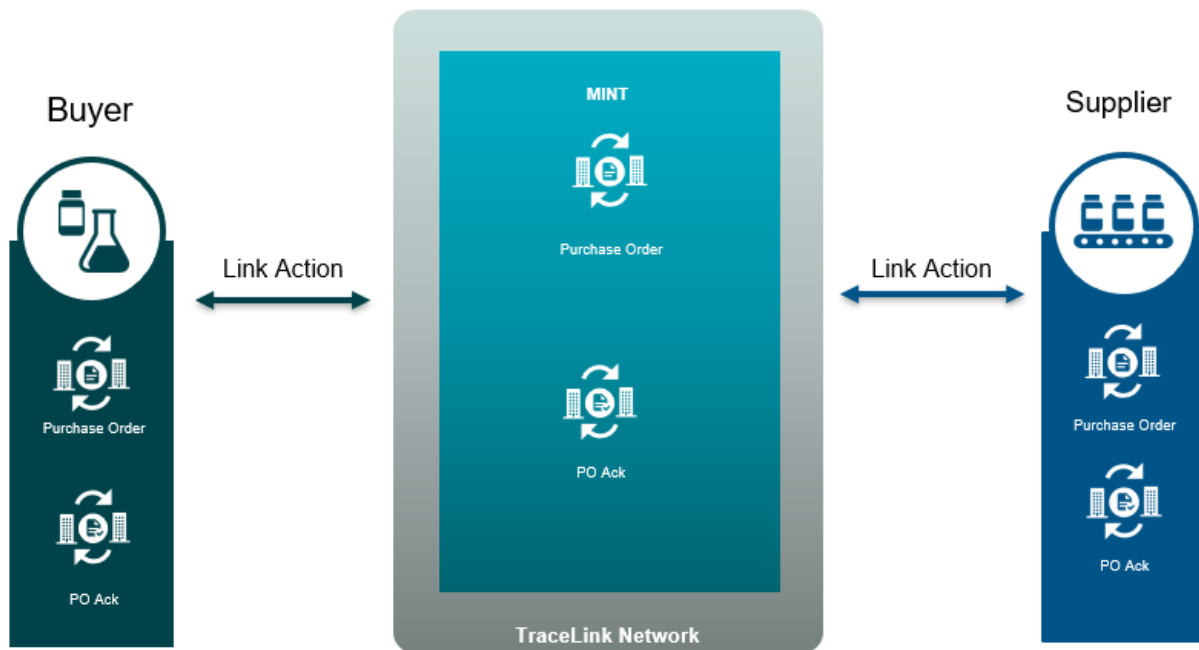
Integration: Link Action

TraceLink's Link Actions allow you to integrate between your system (e.g. ERP, QMS, etc.) and MINT by providing a direct method for syncing transactional data (e.g. PO, ASN, etc.) between systems. This integration syncs transactional data such as POs, ASNs, Invoices, etc.

A Link Action pulls the updated transactions from your system and the responses to your transactions from the partner's system. In this way you don't have to export your transactional documents to a PDF or a spreadsheet.

Send and Receive Transactions: PO Example

Imagine you're sending a Purchase Order (PO) to your partner company. Once you create it in your internal system, MINT fetches the PO from the system with the help of Link Action. This inbound PO is converted to TraceLink canonicals using a Transform, then stored in MINT (making them visible in the UI). Then the PO in MINT is transformed into your supplier's format (for example, idocs) and sent using the file exchange process. Your partner receives the PO, gives it an acknowledgment in their system, and MINT fetches this PO Acknowledgment. MINT converts the acknowledgment into your company's format and sends it back to you. This ensures that both you and your partner can access identical data within the MINT UI and integrated internal systems.

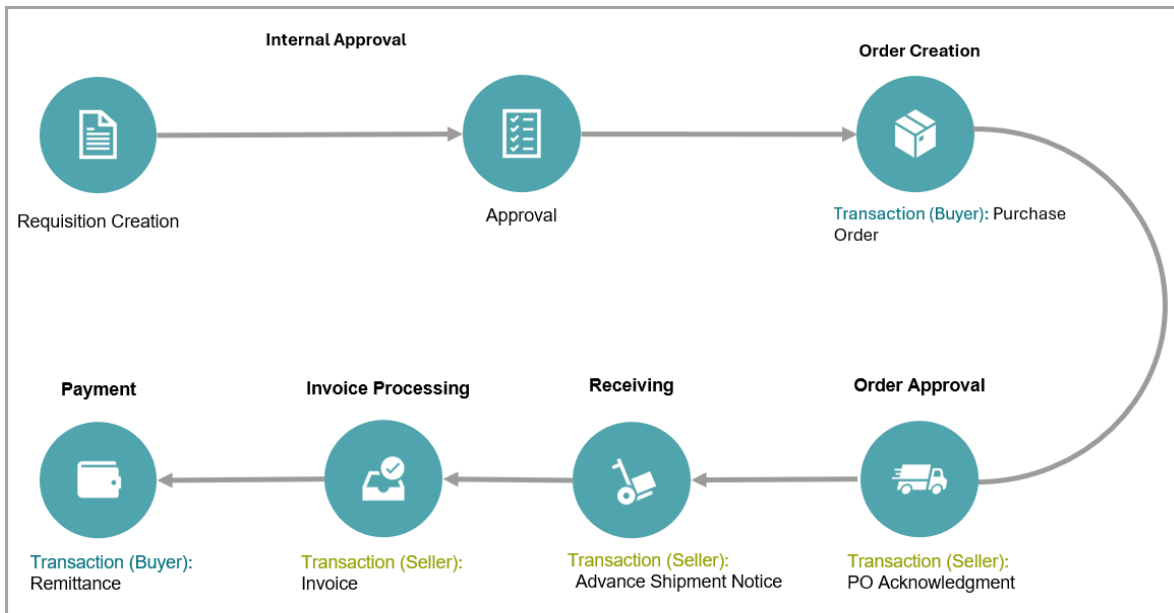


Supply Chain Orchestrations

The following are some of the common business transactions that happen between a buyer and a seller.

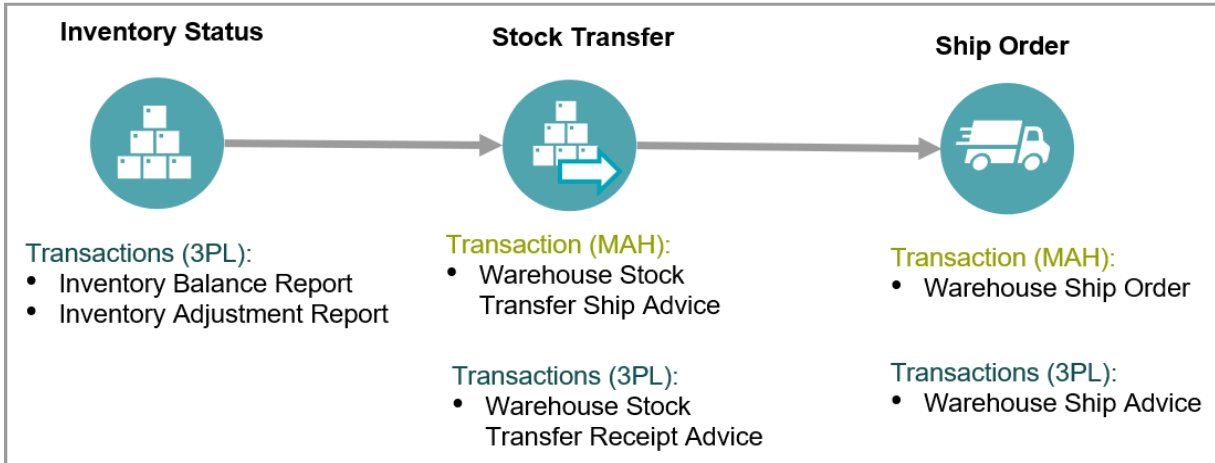
Procure to Pay

A procure-to-pay (P2P) process involves the entire cycle of purchasing goods or services, from the initial requisition to the final payment to the supplier. First the requisition is created, and it's approved internally. The buyer sends a purchase order (PO), seller sends a PO acknowledgment and sends an Advance Shipment Notice (ASN). Once the items are shipped the seller sends an invoice. The buyer receives the inventory and the invoice and sends the remittance (payment). You have visibility into these transactions in the MINT UI.

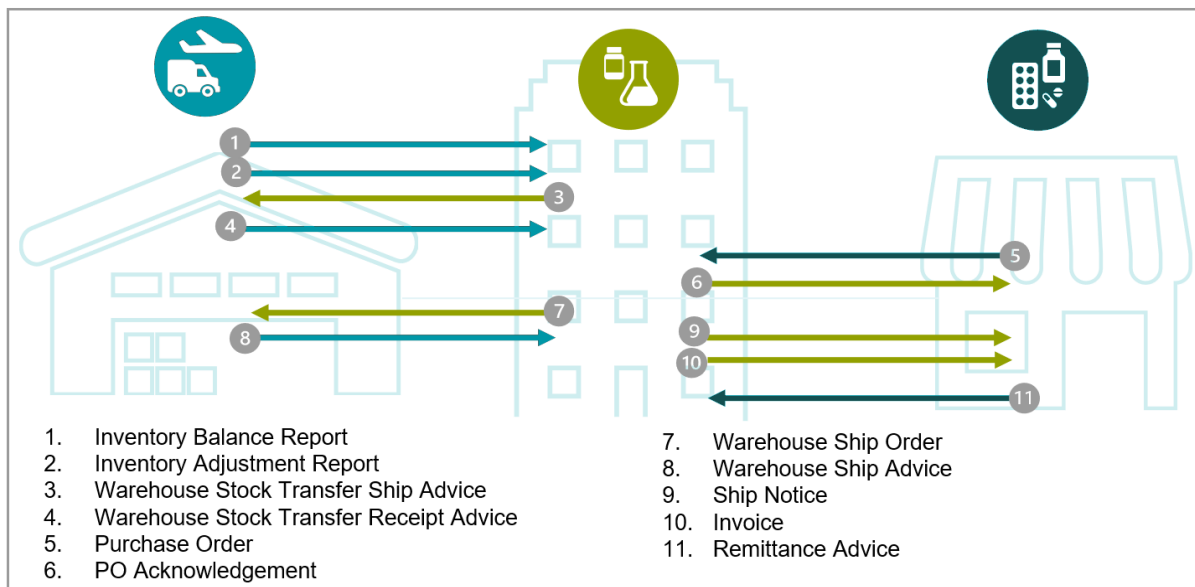


Third Party Logistics (Warehouse)

To fulfill the order, a manufacturer would need to coordinate with their 3PL on inventory balance and shipping schedules.



Combining above two orchestrations provides the visibility from warehouse management all the way down to sales.



Supply Chain Orchestrations

Following are some of the transactions you can use to gain visibility through MINT.

CMO	Direct Suppliers	3PL	Wholesale Distributor	Clinical Supply
<ul style="list-style-type: none"> • Forecast Planning Schedule • Forecast Planning Response • Purchase Order (PO) • PO Acknowledgement • Invoice • Batch Creation • Inventory Balance Report • Inventory Adjustment • Bill of Material • Remittance Advice • Advance Ship Notice (ASN) 	<ul style="list-style-type: none"> • Forecast Planning Schedule • Forecast Planning Response • Purchase Order (PO) • PO Acknowledgement • Advance Ship Notice • Invoice • Remittance Advice 	<ul style="list-style-type: none"> • Inventory Balance Report • Inventory Adjustment • Warehouse Stock Transfer • Warehouse Shipping Orders and Advice • Advance Ship Notice 	<ul style="list-style-type: none"> • Purchase Order (PO) • PO Acknowledgement • Invoice • Bill of Material • Remittance • Return Authorization • Credit/Debit Adjustment 	<ul style="list-style-type: none"> • Inventory Balance Report Request • Inventory Balance Report • Inventory Status/Adjustment • Shipping Order Request • Ship Order Ack • Shipping Advice • ASN • Receiving Advice • Dispensing Advice • Drug Return Order • Destruction Confirmation • Remittance • Batch Master