

EDI  
**845**

EDI  
**844**

EDI  
**849**

# Moving Beyond EDI

## in Pharmaceutical Contracting and Chargebacks

# Executive Summary

It has been more than a generation since Electronic Data Interchange (EDI) was created in the 1960s to solve large scale digital communication between companies. Today 160,000 companies send over 20 billion EDI messages per year across 10,000 different message types and standards. In the pharmaceutical industry, EDI is still the backbone of many pricing, contracting and supply chain processes, but errors and disputes between trading partners persist. Many organizations in the pharmaceutical industry are now realizing the limitations of EDI and that the time for disruption has come.

The pharmaceutical contracting and chargebacks process demonstrate the ideal opportunity for digital transformation through blockchain. This process governs pricing discounts offered to different drug dispensers. Contract updates, chargeback and credits are shared between trading partners through **EDI 845**, **EDI 844** and **EDI 849**. Due to reliance on these EDI messages, roughly 4% of chargebacks result in errors causing revenue leakage, cash flow delays, and manual effort for everyone.

This whitepaper explains why the time has come to move beyond EDI to blockchain-based solutions in pharmaceutical contracting & chargebacks, and beyond.

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# Challenges with EDI



Electronic Data Interchange is a means of direct computer to computer communication at scale, almost exclusively used between two different companies. Industry groups set EDI standards so that each company does not have to manage a separate process for each of their trading partners.

However, standards only work if they are followed. No matter how much buy-in EDI standards receive, there is always variation between companies. Strict adherence to EDI standards would be mutually beneficial, but there is no motivation for a single company to optimize on behalf of the industry, without assurance their trading partners will make the same tradeoffs for them. This natural lack of trust between trading partners, or what we might call a **“trust gap”**, is the core challenge that EDI will never be able to overcome.

## DIRECTIONAL CHALLENGE

EDI messages go in one direction, which means responses/receipt confirmations are not easily incorporated and so typically require separate EDI standards that have not been achieved to date.

*Three reasons EDI as a technology and network will not overcome this trust gap:*



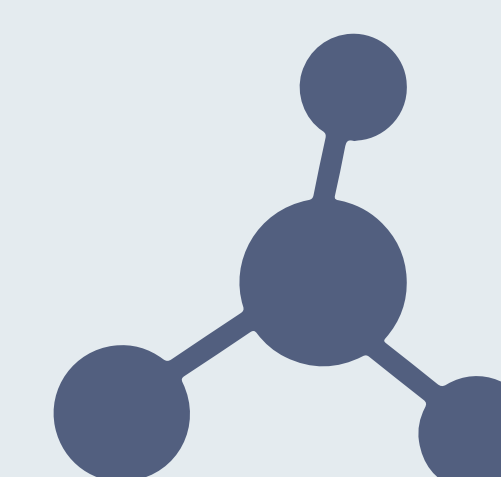
### Lack of Validation

EDI does not have the ability to do any kind of validation, and so messages are still sent with missing, inconsistent or incorrect data causing manual processes for everyone.



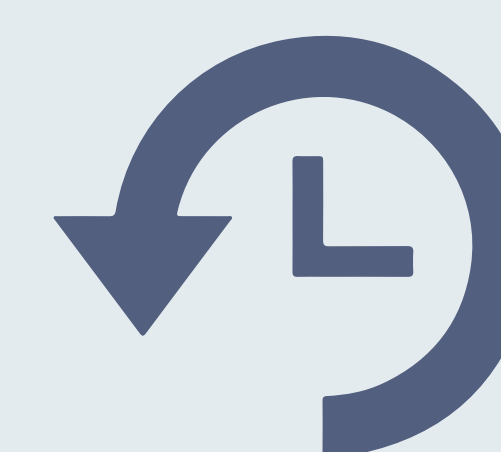
### Point-to-point communication

EDI is a point-to-point communication system, meaning each company establishes different processes for communicating with each of their trading partners, which multiplies manual processes exponentially.



### Delays and batch processing

EDI messages are sent in batches, meaning the information is never fully aligned between sender and receiver. Coupled with manual processing, delays can have significant financial impact to all trading partners.





# EDI in Pharma Contracting & Chargebacks



## EDI 845 - Contract Updates

Manufacturers send EDI 845 in slightly different formats requiring processing by wholesalers which delays contract loading and causes pricing errors.



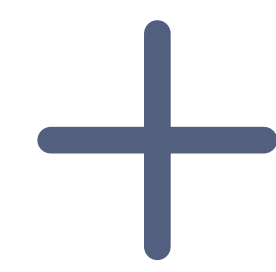
## EDI 844 - Chargebacks

Distributors send EDI 844 with missing or inaccurate data resulting in manual effort for everyone and potential re-billing which negatively impacts customers.



## EDI 849 - Credit Memos

For 844 errors, Manufacturers respond with different interpretations of EDI 849 error codes, creating extensive manual effort for everyone to resolve errors.



In the pharma industry, manufacturers negotiate pricing contracts with GPOs on behalf of customers. These contracts are shared with distributors, through **EDI 845 (contract updates)** so distributors know which prices to offer which customers.

The distributor then submits an **EDI 844 (chargeback)** to the manufacturer to make up the difference between the lower contract sales price and their higher acquisition cost. The manufacturer responds to the chargeback with an **EDI 849 (credit memo)** to make the distributor whole or report an error.

**4%** of chargebacks still result in errors and disputes

**4,000** pricing errors found by hospitals per day

With over 1.2 billion chargeback transactions processed every year, almost 48 million errors are produced which take roughly 12 million hours per year to resolve across the industry. For the 4,000+ hospital systems in the US, on average pricing errors can be found at least once a day. This also creates extensive manual follow up and re-bills which can disrupt revenue forecasting and budgeting.



# The MediLedger “Blockchain-powered” Network

The MediLedger Network is the leading pharmaceutical industry network, powered by blockchain, where manufacturers, wholesalers and GPOs can align on contract data and enforce chargeback accuracy. The core benefit of blockchain is that rules between companies can be enforced. This means each company can trust their trading partners are aligned and abiding by the same rules as them. Shared data and transactions are then predictable and accurate, which enables new opportunities for every participant around automation and efficiency.



*Blockchain can only enforce rules on data published on the blockchain, but it only works if everyone has access to the blockchain creating a data privacy issue to be solved:*

## How does it Work?

The blockchain creates trust by enforcing rules. Data cannot be sent unless it is published on the blockchain. The blockchain only accepts the data if it follows the rules. No single participant can change the rules or data published on the blockchain, thereby facilitating trust between trading partners.

*For example:*

*A key chargeback rule is that the chargeback customer, product, and pricing data all must match the terms of the contract. Wholesalers know the latest state of the contract and which terms must match the chargeback for each manufacturer. The wholesaler can then optimize their internal systems to meet these matching rules in their chargeback submissions, and rely on the blockchain to adjudicate chargebacks that are always accurate in real-time.*

## MEDILEDGER SOLUTION TO DATA PRIVACY

The MediLedger Network is like a 2 lane highway. Messages between trading partners go through a “Direct Messaging” lane while shared public data and rule enforcement exist in the “Blockchain” lane.

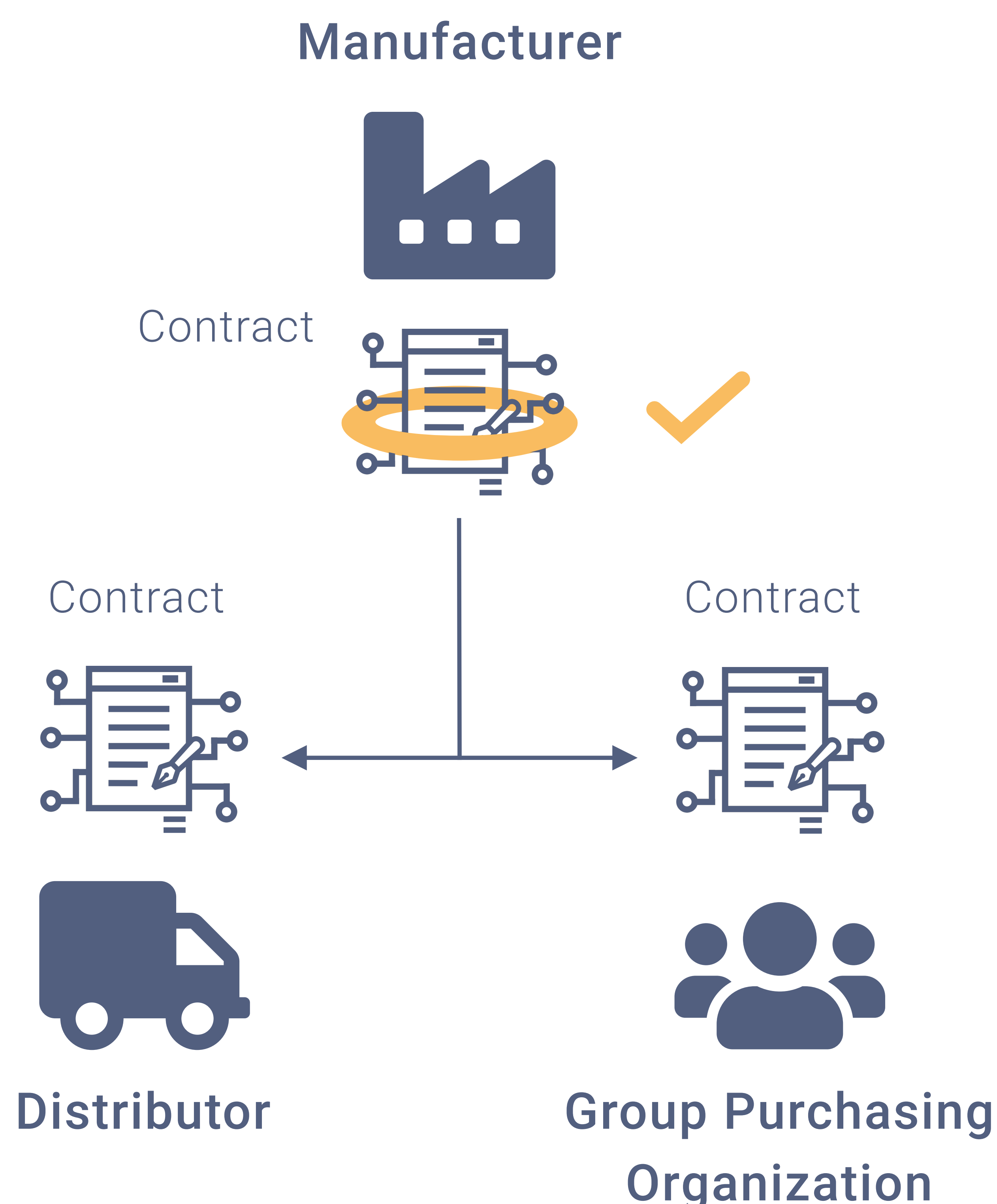
Direct private messages are never shared on the blockchain. Instead the blockchain enforces rules against cryptographically hidden proofs that are forever linked to the direct messages. Direct messages can only be sent if the blockchain accepts the proof, and the proof is only generated if the direct message complies with all the rules.



# MediLedger Contract Updates



Distributors rely on EDI 845 messages from manufacturers to understand the correct state of the contract for customer invoicing. Manufacturers vary in how they send the 845, requiring processing by distributors and delays loading these updates into their systems. GPOs don't currently receive EDI 845, which means pricing/chargeback disputes can only be resolved after a customer has already received incorrect pricing.



Through the Contracts & Chargebacks Solution on the MediLedger Network, manufacturers, distributors and GPOs are all aligned on the latest state of the contract. Basic rules, validated by the **MediLedger Blockchain**, ensure wholesalers and GPOs receive predictable contract updates from all partners enabling immediate contract loading in to existing systems. GPOs receiving contract updates enables proactive identification of discrepancies. Each participant's MediLedger node also stores contract history and enables powerful contract search for immediate dispute resolution. As new distributors and manufacturers join the network, there is no additional configuration or process required to start doing business together.



# MediLedger Chargebacks



When Distributors submit a chargeback they are basing the EDI data off of their latest understanding of the contract. Many underlying issues can occur and lead to chargeback errors and disputes. Again, with EDI there is no way to enforce rules for chargeback submissions. Manufacturers and distributors will always be forced to continue spending time and energy resolving errors, re-billing customers, holding out payments and leaking revenue.

With contracts aligned through Contracts & Chargebacks on MediLedger, EDI 845 can be replaced with chargebacks sent and enforced through the **MediLedger Blockchain**. GPOs also receive chargebacks in real-time creating true alignment between trading partners. In cases of retroactive contract updates resubmissions can be automatically generated in the distributor's MediLedger node and shared with trading partners. Chargebacks and resubmissions are also easily searchable and automatically stay tied to the original invoice making dispute resolution fast and easy.

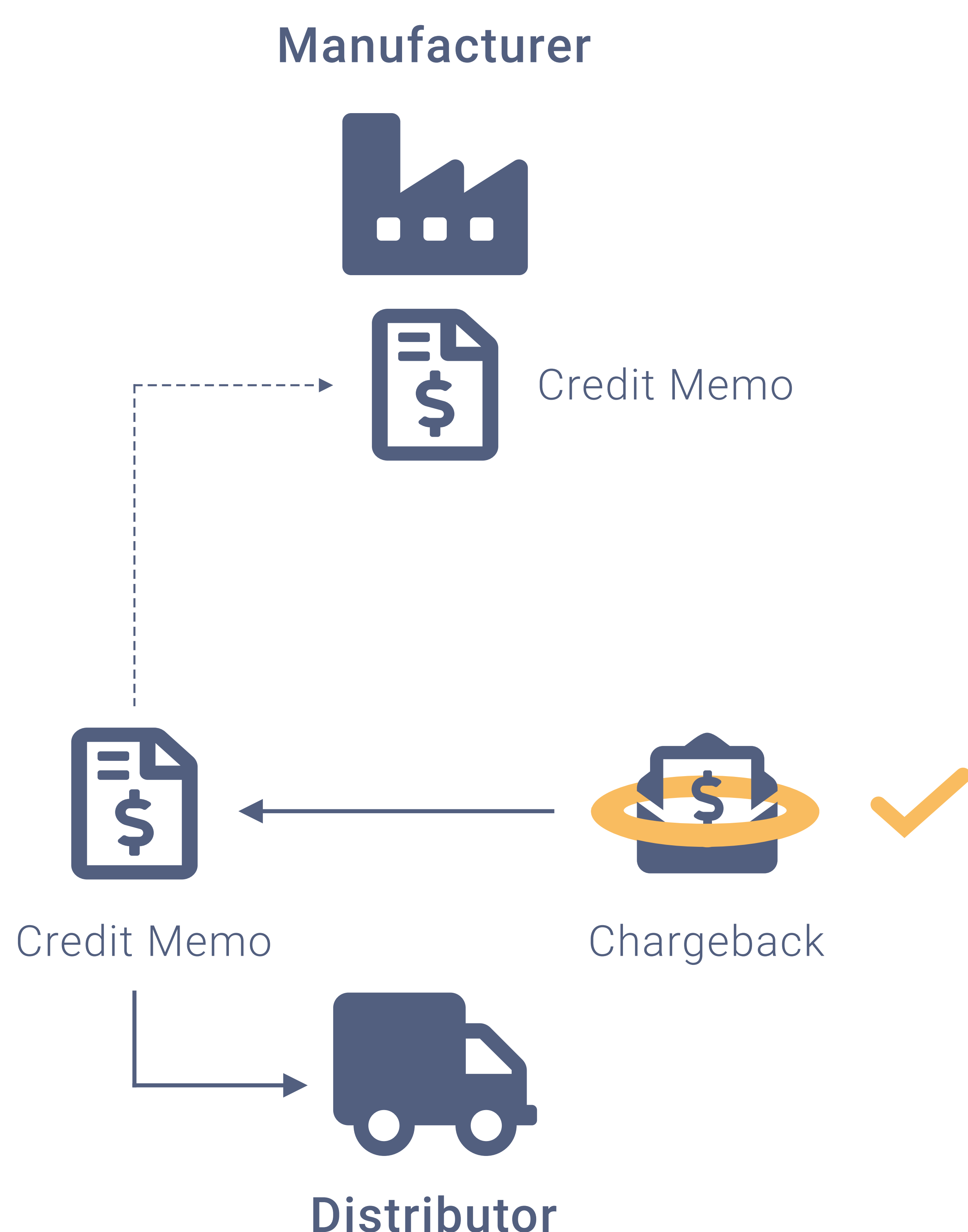




## MediLedger Credit Memos



It currently takes approximately 3 days for manufacturers to send a credit memo to a wholesaler after a chargeback claim is approved. These payment windows leave time for the resolution of errors. Like other aspects of EDI, standards were adopted to categorize chargeback errors. However, the way error codes are used across the industry vary between manufacturers which is largely the reason for lengthy dispute resolution and payment delays.



With **MediLedger Blockchain** ensuring chargeback accuracy, EDI 849 can be replaced with automatic credit memos generated by the MediLedger Network based on payment rules established by manufacturers. With blockchain enforcing a shared state of the contract manufacturers can trust the system to enforce chargeback accuracy, which in turn can dramatically speed up feedback and payments for distributors. This an example of a completely new type of automation in B2B commerce across multiple companies and creates an exciting future for efficiency across the pharmaceutical industry.



# The Future of Pharma



Enterprise blockchain has gained momentum in the media, innovation departments and many small scale pilots and POCs, as the technology that will change how companies do business together. However, there is still lingering uncertainty around blockchain's path to commercial adoption and scale.

We see EDI as an informal roadmap for the future of blockchain in the pharmaceutical industry. Business leaders can evaluate internal EDI based processes as clear opportunities for innovation, as there are many different EDI message types used in the supply chain and related processes alone. The same fundamental challenges hold true across all of them, which presents an amazing opportunity for digital transformation and efficiency for the healthcare system as a whole.



# Moving Beyond EDI in Pharmaceutical Contracting and Chargebacks

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Chronicled Inc.

To learn more about the Contracts & Chargebacks Solution on the MediLedger Network  
visit [www.chronicled.com](http://www.chronicled.com) or reach out to [contact@chronicled.com](mailto:contact@chronicled.com)