



# Optimizing On-Time In-Full (OTIF) Performance in the CPG Supply Chain

With major retailers setting aggressive on-time, in-full delivery targets (98% at Walmart) and stiff penalties as high as 3% of the Cost of Goods Sold, suppliers need to take a dramatically different approach. New strategies and technologies are required to meet these targets consistently, ensure high service levels, minimize chargebacks, and maximize competitiveness in a new and unforgiving retail landscape.

One Network's NEO Platform, which powers the Digital Supply Chain Network™, is designed to maximize OTIF performance. It's a real-time AI-powered platform for both planning and execution that enables advanced supply chain optimization with prescriptive and predictive analytics, detailed metrics, and omnichannel demand-supply matching. Multi-party network platforms provide a complete real-time view of the supply chain, across all nodes and tiers, and down to the item level – and with NEO, companies finally have all the tools required for planning, tracking, managing and optimizing on-time in-full performance.

## THE NEW CHALLENGE IN THE CPG SUPPLY CHAIN

The requirement to meet aggressive On-Time, In-Full (OTIF) metrics is becoming an urgent requirement for suppliers to major retailers, including Walmart and Sam's Club. This will likely gain traction with other retailers in the near future.

**What is OTIF?** Walmart introduced OTIF as a delivery performance metric in 2017, and in 2020 increased its requirement from 85% to 98%. **OTIF measures how often the customer gets exactly what they want (in-full), when they want it (on-time).** How is it calculated? OTIF is simply the percentage of deliveries to the customer that are on-time and complete.

**OTIF (%) = number of cases OTIF ÷ total cases ordered \* 100**

**Why does it matter?** Major retailers are now measuring suppliers against their OTIF performance and holding them accountable for reaching targets. The penalties for non-compliance can be significant. For example, Walmart imposes a 3% cost of goods sold (COGS) fine on suppliers for orders that are not delivered on-time and in-full. Where Walmart and Sams Club go, others will certainly follow.

## A SUPPLY CHAIN CONTROL TOWER BENEFITS RETAILERS AND SUPPLIERS

### BENEFITS FOR SUPPLIERS:

- Eliminate or minimize OTIF penalties paid to retailers
- Improve customer service and on shelf availability to maintain revenues
- Increase operational effectiveness of the customer supply chain
- Reduce operating costs
- Lower cost-to-serve
- Improve collaboration with retailers and carriers based on sharing the same process, data and metrics in real time
- Better insights into OTIF exceptions, leading to elimination of root causes

### BENEFITS FOR RETAILERS:

- Maximize revenues with greater on-shelf availability
- Improve the customer experience
- Reduce supply variability
- Reduce inventories
- Improve service levels to the stores
- Increase Retail DC operational effectiveness and throughput
- Reduce DC operating costs
- Improve collaboration with suppliers and carriers based on sharing the same process, data and metrics in real time
- Better insights into OTIF exceptions, leading to elimination of root causes



*"As we continue to keep the customer at the center of everything we do, we must improve product availability to help ensure that our customer can purchase the products they want, when they want, in-store or online."*

# Case Analysis: The Value of OTIF Optimization for a CPG Company

For CPG companies the cost of poor OTIF performance can quickly add up to millions of dollars a year in penalties and lost sales. Let's look at a typical case:

## 1. Direct OTIF Penalties

- If the average cost per load is approximately \$50,000, and
- If the chargeback penalty is 3% COGS per late load (as with Walmart),
- Then the chargeback per late load is \$1,500.
- If there are approximately 30,000 shipments per year, and
- If 79% are on-time (and 21% are late with 19% falling short of the 98% OTIF requirement),
- Then the total annual cost in penalties is \$8.55M.

## 2. Cost of Returned Trucks

- If 25% of late loads are returned,
- And the cost of a returned load is approximately \$800 on average,
- Then the total cost incurred annually is \$1.26M.

## 3. Cost of Spot Calls (Additional Freight Expense)

- If 21% of the loads are late, and
- The company has more spot calls (higher rates that are not contracted with their carriers), and
- These amount to 25% more (\$200 per load) for late transportation moves,
- Then the total additional cost for spot calls is \$1.26M.

## 4. Cost of Lost Sales

- If the margin is 10% per load (\$5,000), and
- The amount of lost sales is approximately 5% per late load,
- Then the total cost of lost sales is \$1.58M.

**So, a large CPG can easily waste \$11M a year in OTIF penalties and associated transportation costs**, in addition to the cost of lost sales, market share, and competitive position on the shelf.

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## Highlights of One Network's OTIF Control Tower Solution

**Allocated ATP and Inventory Allocation Services** give CPG companies control over how inventory is allocated, and which customers get priority. By factoring in expected chargebacks into the allocation rules, companies have a powerful tool for avoiding and reducing chargebacks, and increasing margins.

**Telematics** provides accurate real time information to track all products, orders and movements (including outsourced transportation vendors), so companies can see problems immediately, and can address them sooner.

**Descriptive Analytics** help CPG companies understand every single failure as well as what caused it. Understand the root cause, so you can fix and mitigate problems in future. With all facts in hand, companies can argue their case to avoid chargebacks when errors occur, and do so efficiently.

**Predictive and Prescriptive Analytics** help companies see problems before they occur and provide advanced optimization and AI/ML algorithms to optimally resolve problems.

**Visibility to See Delays at the Source.** With NEO, CPG companies can ensure carriers provide real-time information to avoid pick up delays at CPG facilities (late shows) that are often a cause of delays. It's critical that the entire transportation network is monitored pre-pickup (before arrival at a CPG plant or a DC). If you only have visibility into delivery routes, the shipment could have started late and you will have no visibility into the original cause. The NEO Platform helps ensure that the appropriate party is held accountable and that problems can be mitigated in future.

**Find Alternatives Faster within the Scheduling Window.** Contracts between Walmart and major CPG companies can have a delivery date SLA of several days from the time an order is placed. For example, the contractual agreement could be up to 7 days. Chargebacks should be linked to this contractual agreement (SLA expectation), but often they are not. Chargebacks are usually linked to late arrivals at the DC dock door, scheduled in advance. The key point is that if you re-schedule within your 7-day delivery window, you won't be considered late, and won't be subject to chargebacks. One Network provides greater visibility in controlling and adjusting delivery schedules to minimize penalties.

## CHALLENGES WITH TRADITIONAL SOLUTIONS

The typical solutions used to improve OTIF performance are severely lacking. Disparate and siloed data makes it difficult to get an accurate and trustworthy view of OTIF performance. Information may be conflicting, or severely out-of-date. Delivering product on-time and in-full is a multiparty process, involving retailer, supplier, carrier and sometimes a 3PL. Thus, OTIF is a multiparty metric, involving data and contributions from suppliers, carriers and retailers. The problem is:

- Each party has their own data source, capturing different data points -- or worse, they are missing key data altogether
- There is often no way to extract key insights into problems, their root causes, and possible ways to address them
- There is no way to collaborate to resolve issues as they happen, nor is it easy to improve processes and workflows that impact OTIF

In short, retailers, carriers and suppliers struggle to achieve OTIF because existing solutions provide an incomplete picture, lead to disputes about actual shipment and delivery times, and inhibit collaboration that improves service and profitability for all. While OTIF is desirable goal and metric, it often unfairly ratchets up pressure on suppliers and indirectly on carriers and retailers, without giving them the tools to accurately measure OTIF, gain insight to issues, and to fix problems and processes.

## HOW THE NEO PLATFORM HELPS

It takes a multi-party platform to solve a multi-party problem. Such a platform must:

- Include all relevant parties and data that affect OTIF
- Reconcile and synchronize all master data across all partners on the platform (multi-party master data management)
- Integrate with all disconnected enterprise systems to mirror every point-to-point transaction on the platform, as a “single version of the truth”
- Define security rules across all parties and roles at the data, workflow and UI levels (multi-party permissions model)
- Scale horizontally to be able to manage vast amounts of information in real time.

In addition, the platform should provide early warnings to potential issues and alert you (and relevant parties) immediately when there is a problem or a potential problem. It should enable real-time collaboration between suppliers, retailers and logistics providers, so you can consistently achieve high OTIF performance and fix problems quickly. It should measure OTIF accurately based on data and events available to all, so it is trusted by all parties. It should enable root cause analysis to find the primary factors responsible and enable lasting solutions. Finally, it should make it easy to adapt processes to improve OTIF now and in future.

**One Network’s NEO Platform provides all this and more.** It brings together all parties and all the data (including data from legacy systems), and provides a real-time single version of the truth. It enables retailers and suppliers to work together with their carriers across prepaid and collect shipments to monitor (in real time) all transactions that impact OTIF, and collaborate across parties to improve OTIF performance.

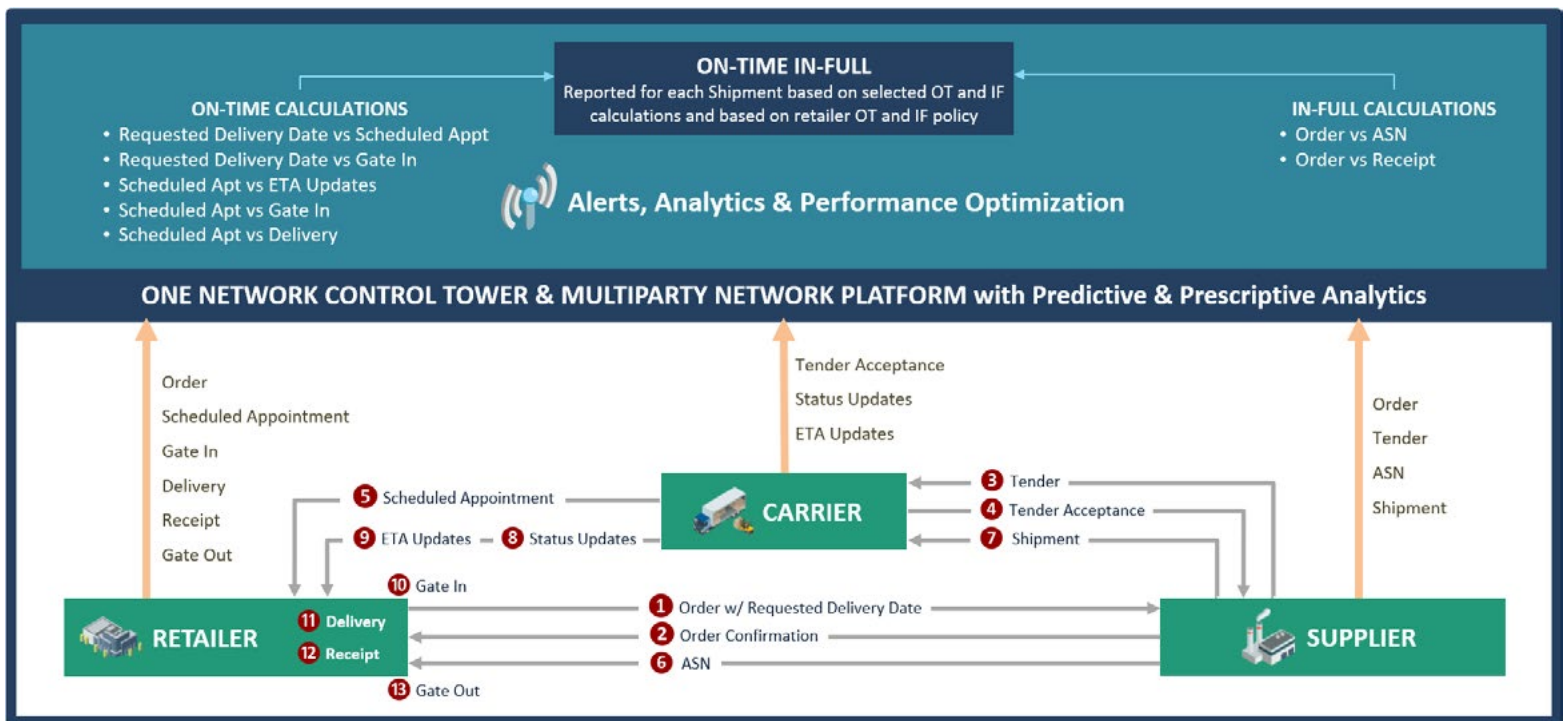
## HOW OTIF WORKS ON THE NEO PLATFORM

Let’s look at how OTIF is optimized and measured in more detail.

**OTIF Transactions.** The Supply Chain Control Tower acts as a “digital twin” of all the multiparty transactions that influence on-time (OT) and in-full (IF), with every transaction, alert, and status represented. The Control Tower enables all parties to leverage a shared data set that captures the lifecycle of orders, shipments, and deliveries in a “single version of the truth” across all the parties on the platform.

**Role-Based Alerts.** All transactions (e.g. a shipment) are associated with their specific states (e.g. shipped, gated-in, delivered), and each state is associated with a specific tolerance level tied to the comparison between that state and the rule it needs to follow (e.g. comparing the retailers’ Requested Delivery Date to the Scheduled Appointment Date).

Alerts are generated when the transaction states exceed the tolerance level for that state. For example, the retailer allows a grace period of one day between Requested Delivery Date and Actual Delivery Date, so alerts will only be generated when the Scheduled Appointment Date is over one day late compared to the Requested Delivery Date.



**Prescriptions and Real-Time Collaboration.** These alerts are then pushed to role-based workbenches that can be used by all the parties on the network, based on their role as defined by the multi-party security rules. One Network's NEO intelligent agents recommend resolutions to problems based on priorities such as service levels and costs, while considering all relevant factors such as OTIF requirements and penalties. Users can then review the prescriptions, execute them, or choose to collaborate in real time with partners to resolve these alerts.

**Generate the OTIF Metrics.** The platform calculates OT and IF performance metrics separately for each shipment, then these are aggregated to determine whether the shipment was delivered on-time and in-full. Here is how it works:

The **on-time metric** can be calculated in multiple ways based on the data captured in the Control Tower, including:

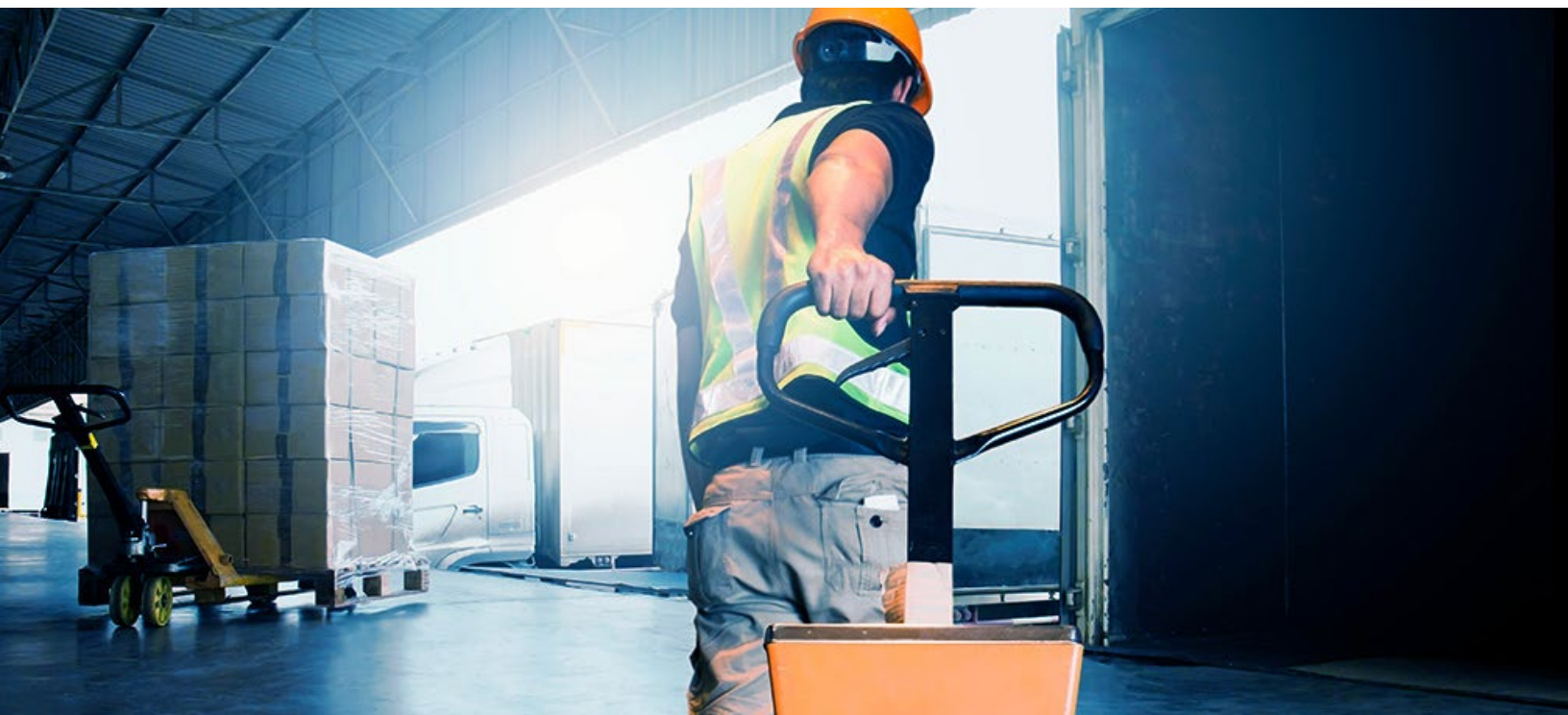
- Requested Delivery Date vs. Scheduled Appointment Date
- Requested Delivery Date vs. Gate-In Date/Time
- Scheduled Appointment Date/Time vs. Gate-In Date/Time
- Scheduled Appointment Date/Time vs. Delivery Date/Time
- Scheduled Appointment Date/Time vs. Real-Time ETA Date/Time

The OT metric will capture the Reason Code associated with the transaction state if the shipment was not delivered on-time. The Reason Codes will be input by the users when they manage exceptions, and will determine which party is responsible for the late delivery. For example, a late delivery may be caused by a lack of retail DC dock capacity, a carrier problem, or a late shipment from the supplier ship-from facility.

The **in-full metric** can be calculated by comparing the Quantity Ordered (as per the Retailer Order) with the:

- Quantity Promised (as per the supplier's ATP engine)
- Quantity Shipped (as per the ASN or Bill of Lading)
- Quantity Delivered (as per the Proof of Delivery)

As with the OT metric, the IF metric will also capture the Reason Code associated with the transaction state if the shipment was not delivered in-full. The Reason Codes are also input by the user when they manage the exceptions, and will determine which party is responsible for the short delivery. For example, a short delivery may be caused by a short or incorrect shipment from the supplier or by damages caused by the carrier.



The **OTIF metric** is then calculated for each shipment by combining both OT and IF metrics. The OTIF metric tells us whether the shipment was on-time and in-full, and, if not, what the quantity is that was not delivered on-time and in-full. The Reason Codes are captured with the OTIF metric to determine why the shipment was not on-time and/or in-full, and who is responsible. The metrics are highly configurable, based on the OTIF policies being tracked. Since all parties leverage the same platform, process, data and metrics, there is no need for time-consuming and disruptive reconciliations, claims and adjustments.

## HOW NEO MAXIMIZES OTIF PERFORMANCE

With One Network's Supply Chain Control Tower on the NEO Platform, retailers and suppliers can deploy a solution that will:

1. Capture all the OTIF-related multi-party transactions on a single platform
2. Trigger real-time alerts to monitor and resolve issues
3. Generate analytics to calculate OT and IF for all shipments using common data and common metrics

As we have seen, the NEO Platform provides all the crucial elements for tracking, managing and improving OTIF related performance.

**Single Version of the Truth.** Because the NEO Platform is real-time, and all your business partners are on the Digital Supply Chain Network™, there are no blind spots, no information lags, no duplicate data, no data conflicts and no confusion. The platform is authoritative, enhances trust in the trading community and is a reliable benchmark you can use to drive improvements.

**A True Omnichannel Perspective.** The platform enables you to have a consolidated view of demand across every customer and geography, including retailers, distributors, every ecommerce channel and your direct-to-consumer business. It's an essential element for optimal decision making and demand-supply matching in a way that maximizes overall services levels at the lowest landed cost.

**Root Cause Analysis.** When failures do happen, you have an authoritative record, because all nodes and parties are represented. This enables complete root cause analysis, so you can pinpoint the problem, all the factors that led to it, what happened where and when, so you can fix it at its root, stop it from happening in future, and plan for ways to best mitigate issues when they do occur.

**Advanced Predictive and Prescriptive Analytics.** To maximize OTIF performance, you need advanced network-level problem solving and optimization. What differentiates the problem-solving analytics of the NEO Platform is that in the real world, it's not that you're trying to resolve a single exception in isolation, looking at a choice of options and picking the best one. For large businesses, you've got dozens or hundreds of exceptions each day, that impact not just those customers, but hundreds or thousands of other customers whose orders may be impacted by the choices. In other words, decision-making is interconnected. So, the network-level optimization provided in the NEO Platform maximizes service levels for your top customers overall, at lowest overall cost. The winning strategy will be one that can handle the interdependencies of the decision making at the scale and real-world complexity of your business.

**Telematics.** Real-time status information is essential to supply chain optimization. With telematics you can track all products and movements, whether inbound to your facilities, or outbound for delivery to customers. Telematics keep you informed and help keep inbound and outbound deliveries on track. It triggers alerts when milestones are threatened, so upstream, downstream and midstream parties are aware of problems and collaborate to resolve them quickly. It keeps customers informed about the status of their orders so there are no unpleasant surprises. The system is intelligent and bills the appropriate party, depending on whether the shipment is "collect" (charges the retailer), or "prepaid" (charges the supplier).

**Intelligent Network.** But telematics plays a vital role in the supply chain beyond real-time tracking of in-transit orders and product. Telematics intelligence is fed back into the network, to adjust dock door schedules, based on more accurate and realistic arrival times. Dock doors and resources are released and rescheduled based on the new ETA. Retailers don't need to expend resources manually managing and shuffling appointments and having staff loitering waiting for trucks that never come. Autonomous scheduling based on actual truck arrival times is faster and more efficient, and it optimizes capacity utilization and flow-through of your DC. It's a simple solution that relieves dock door "bottlenecks" and optimizes DC throughput. It enables better planning and use of downstream resources and activities.

**Available-to-Promise (ATP) and Allocation Services.** The NEO Platform takes all your orders, and NEO agents intelligently and autonomously allocate the inventory optimally, based on your priorities, variables and configuration. For example, NEO will consider OTIF factors, such as a retailer's 3% COGS charge, specific target service levels by customer, and will autonomously allocate available-to-promise inventory based on those factors. This enables you to minimize chargebacks, improve or preserve service where necessary, and build customer satisfaction and loyalty.

Traditional solutions like ERP, function on a "first come, first served" basis. The system allocates inventory blindly and in a sub-optimal fashion, based on whoever ordered first, regardless of their status as a customer, their chargeback policy, or their profitability.

## IN SUMMARY

One Network's NEO Platform is designed to maximize OTIF performance in ways that are not possible using any other platform. In our experience, companies can begin to see dramatic returns on investment in less than six months.

**Contact One Network Enterprises to learn more.**





## ABOUT ONE NETWORK ENTERPRISES

One Network is the leader in supply chain control towers and provider of the Digital Supply Chain Network™. It is the only solution that gives supply chain managers and executives end-to-end visibility and control with one data model and one truth, from raw material to last mile delivery. Powered by NEO, One Network's machine learning and intelligent agent technology, it enables seamless planning and execution, across inbound supply, outbound order fulfillment, and logistics, matching demand with available supply in real-time. Lead your industry by providing the highest service levels and product quality at the lowest possible cost. Visit [www.onenetwork.com](http://www.onenetwork.com).



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