

On Time in Full Delivery Approach: What, Why and How

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Abstract For any manufacturer, importance of fast and reliable deliveries cannot be overstated. Fast and reliable deliveries can create benefits like higher market share, increased price premium, lower costs and satisfied customers. On time deliveries become even more important when customer demands tighten, leading to requests for smaller deliveries as well as shorter and reliable lead times. Yet, to achieve such outcomes, manufacturers must identify and prevent problems that keep them away from meeting delivery commitments. At Apollo Tyres Ltd we believe that managers can do so by identifying key drivers of on-time, in-full deliveries and using such information all delivery related commitments given to customer can be met.

Keywords — OTIF, IFTO, On Time in Full, Delivery performance measurement system.

1. INTRODUCTION

On time in-full (OTIF) measures an organization's performance on getting customers exactly what they want when promised. In short, it measures how well a company can "get it right the first time." Getting it right the first time improves service and lowers costs.

Today's fierce margin pressure is forcing business improvements across the board. While price matters, renewed emphasis on services can also be seen. Price, which has to be competitive, is the order qualifier but service is the order winner. In a market where every dollar matters, customers are paying even more attention to price and the cost of doing business. Getting what they want when they need it remains the service gold standard. That's why OTIF matters. Measuring your company's OTIF performance lets you know how often you're getting it right the first time [1]. It tells you how often you can get the right stuff to the right place at the right time in the right condition with the right quantity.

2. HOW TO MEASURE OTIF

Financial management is fundamentally On-time is defined as delivering the order to the customer when you promised. The measurement is the commitment the organization made, not necessarily the time the customer requested. For example, if an order was

promised before noon on Tuesday or before 8 a.m. on Wednesday, did you meet that deadline? Simply because the customer requested delivery in an hour doesn't mean that's the yardstick. Your commitment is the yardstick. Can you do what you said you would when you said you would? Are you reliable? Can your customer count on you all day, every day?

In-full measures order accuracy. It counts as in-full when everything ordered is delivered with no errors, backorders, or substitutions. If there's a backorder or a substitution, the order is not in-full. It highlights a weakness in your inventory management systems. It may be that an unusually large order was placed and typical inventory levels were insufficient. If so, sales didn't communicate well enough with SCM. It may simply have been that the communication system wasn't immediate enough. Something about the process isn't working well enough to ensure that your company gets it right the first time.

3. OTIF MATTERS

Market conditions are unlikely to change significantly in the next few years. Margin pressure is fierce and will increase. One sure way to improve the bottom line is to improve process execution. This is "getting the right stuff to the right place at the right time, in the right location on the jobsite, in the right condition with the right invoice—

all day, every day." Getting it right the first time drives down costs and improves customer satisfaction. There are both tangible as well as intangible benefits of improving OTIF [2].

3.1 TANGIBLE BENEFITS OF IMPROVING OTIF

Improving your OTIF performance boosts your bottom line by lowering your operating expenses and increasing your revenue generating "time." After all, if you're improving your ability to get it right the first time, you've reduced expenses incurred from getting it right the second time (i.e., making another delivery for a backordered item). You've also increased revenue-generating time since you're not fixing a mistake.

OTIF measures the performance at each step. This isn't simply an operations report card; OTIF is a roll-up measure. To perform well on OTIF, everything that goes into it has to be correct. The takeoff and order entries have to be correct; purchasing has to maintain appropriate inventory levels; material has to be handled correctly, pulled correctly, staged and loaded correctly. OTIF is a companywide report card.

It's also a proxy for customer satisfaction. The greatest value in measuring OTIF is that it allows you to see at a glance how the company is doing. Drilling down into why OTIF is moving up or down displays problems in the company. If you're not measuring OTIF now, it's an easy bet that your organizational performance isn't as good as you might think. Replacing your assumptions with fact is invaluable. Working with hard data and not gut feeling helps improve performance significantly.

Your gains from measuring OTIF will come from better inventory management, improvements in the sales process or quoting process, greater accuracy in manufacturing or loading, and more. OTIF shines a bright light so that your gains will come from exactly where you need them most.

3.2 SOFT BENEFITS OF IMPROVING OTIF

The big story with OTIF isn't your OTIF level. It's the stories you uncover and improvements you make that drive your improved OTIF level. One such story is the improved internal communications systems between sales, SCM and manufacturing. Miscommunication results in materials that are produced for customers long before the customer is ready to receive them for one SKU and stock out for another SKU that is required by customer immediately.

OTIF has a huge cultural benefit. It really ingrains in people, from order entry to order aging, the importance of getting it right the first time. That's a huge organizational advantage. It gets even better when the organization learns to continually identify the largest driver of OTIF failures and then creates the appropriate system fix. That attitude shift and change in perspective is key to creating a culture of continuous improvement. It keeps the focus on moving forward. It eliminates the tendency of employees not to report problems because they don't want to get anyone in trouble.

Any transporter makes money only when trucks are running. When you deliver material at customer's premise that is not in line with the requirement, customer might not unload trucks immediately. This is where transporter loses money as his truck is stuck. Once you deliver what customer wants at the desired time, customer unloads vehicle immediately and hence transporter is able to run his trucks all the times with very low waiting time at your customer's premise. This helps transporter to bring in more efficiency in his business and it improves your relation with transporter.

Permanent performance improvements require you to strengthen your underlying systems. That means finding and implementing permanent fixes and stop fire fighting. For example, substituting one product for another is a short-term solution; you'll find the situation repeated over and over again. You'll also jeopardize customer service over and over. You'll also incur the additional costs over and over. It's in the best interest of all to take a hard look at what was insufficient in the system that caused the failure. Then make the process or system changes to secure a permanent fix.

4. STEP BY STEP APPROACH TO IMPROVE OTIF.

Starting with OTIF can seem overwhelming but it's not. It's like going to the gym; you just have to force yourself to do it. Here are some rules of the road.

1. DEFINE OTIF :

Simply start by educating your whole team on what OTIF is and why it's important. Communicate the definitions of on-time and in-full.

On-time = met the time commitment we (the company) made.

In-full = all items on the ticket are delivered with no errors, backorders, or substitutions.

2. PRESENT THE TRACKING TEMPLATE

AND FAILURE REASON CODES:

- Logistics: shipped late; damaged in transit; shipped wrong product/quantity/quality.
- Internal: sales; inventory; operations; delivery; accounting; manufacturing.
- Customer: ordered wrong product/quantity; last minute change;
- Other: weather delay, rail strike, etc.

Identify how the data will be captured and compiled. Determine who will be responsible for maintaining the data and analyzing it.

3. START TRACKING AND TAKING COUNTER MEASURES FOR DEFAULT REASONS

Start capturing reasons for default every day. Review the data and then break out the category with the largest number of failures. Investigate and identify the root causes and then address them and fix the problems, permanently. Make it a system fix so that the organization will have a predictable performance regardless of which employees are involved. If a particular problem keeps cropping up, there's a system/process fix for it.

4. REPEAT STEP 3

Once you have your solution in place, move on to the next largest driver of OTIF failures and address that. OTIF provides data. Use the data to confirm your gut feel and to drive efforts to improve. Step by step, you'll systematically improve your organization's ability to get it ALL right the first time.

5. HOW DID WE IMPROVE OTIF AT APOLLO TYRES LTD.

Apollo Tyres Ltd (ATL) is the biggest tyre manufacturing company of India. It is a \$ 2 Bn organization having very well crafted strategies and future plans to achieve its target of becoming one of world's top 10 tyre manufacturing companies. ATL manufactures Truck, Bus, Tractor, and Car and Off Highway Tyres (OHT). All of these tyres are sold through three major sales channels: Replacement, OEMs and Export.

As a part of improving customer experience, ATL decided to improve its OTIF for all of its OEM customers. Here we are taking a case how ATL improved OTIF for one of its PCR OEM customer which

is one of the largest car manufacturing company of India.

5.1 DEFINING OTIF:

In the month of Apr'2011, ATL formed a team for this project. Team interacted with customers and arrived at OTIF measurement definition as given below.

1. Customer works on JIT manufacturing principle and hence ATL has agreed to supply SKU wise desired quantity 3 times a day as per defined time windows
2. On- time = 100% quantity of every SKU on defined time window +/- 2 Hours. If supply is made beyond this time fence, it will be counted as 1 time default...
3. In Full = 100% desired quantity of every SKU should be supplied on that Day. In case 100% quantity is not delivered on the same day, it will be counted as 1 quantity default.
4. On time Score for the month = $(100 - \text{Time Defaults in the month})/100$
On time score will be "0" if Time defaults in the month > 99
5. In Full Score for the month = $(100 - \text{Quantity Defaults in the month})/100$
On time score will be "0" if Quantity defaults in the month > 99
6. OTIF Score for the month = $(\text{On Time Score} + \text{In Full Score})/2$.

Example: If in a given month, Time defaults = 125 and Quantity defaults = 20
On Time Score = 0 (As Time defaults > 99)
In Full Score = $(100 - 20)/100 = 80\%$
OTIF Score = $(0+80\%)/2 = 40\%$
When this project was started, OTIF score for past 3 months was 38%.

5.2 DAILY TRACKING:

Team worked out a daily default tracker which was daily filled by 3PL ware house team with reasons of default for every SKU. Reasons were captured for 2 months and immediate actions were planned for every reason. Main reasons were as given below:

1. Material was not available inside 3PL warehouse and hence couldn't be dispatched.

Counter Measure: Defined safety stock for every SKU and maintained

2. Heavy traffic on the way from 3PL warehouse to customer plant

Counter Measure: Every vehicle will leave at least 2 hour before the time window

3. Vehicle unavailability to dispatch material

Counter Measure: Have dedicated vehicle for customer

4. Schedule late received from customer

Counter Measure: Communicate to customer of each and every such instant and it wouldn't be considered as default

5.3 OTHER ACTIONS:

Apart from all of above mentioned activities, team also worked out following activities that helped improving OTIF

1. Training of 3PL warehouse staff sensitizing them about importance of OTIF

2. Layout designing of warehouse

3. Defined stacking norms for inventory

4. Worked out daily work management check .list for staff of warehouse

5. Worked out production capacity for all SKUs and recommended increase in production capacity for high potential SKUs

6. Communicate entire work done by team to the customer

5.4 RESULTS:

1. OTIF was improved to 95%.

2. An improved awareness of customer's requirements.

3. Improved efficiencies in the 3PL warehouse.

4. Sustainable processes and controls.

5. Employee engagement at all levels to improve the total supply chain in terms of service, quality and cost..

Like every great movie deserves a sequel, ATL aspires to take learning's from this project to all of its OEM customer as well as for replacement and export customer.

6. REFERENCES

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