

# On-Time In Full (OTIF): The key metric for delivery performance and delivery reliability

On-Time In Full (OTIF) is a metric that measures how many deliveries arrive complete and on time at the customer. It thus combines two previously separate dimensions – timeliness and quantity reliability – into a single, hard performance figure. For buyers and supply chain managers in an industrial environment, OTIF is today one of the most important control variables in supplier management and a binding component of many delivery call-off contracts.

## Key facts

- OTIF only counts a delivery as fulfilled if it arrives complete and on time – partial or late deliveries count as not fulfilled.
- Typical target values in series production are 95 to 98 percent; in the automotive industry, 98 percent or more is frequently expected.
- Measurement takes place at different levels – per line item, per delivery or per order – and should be defined uniformly.
- OTIF is a ground-level, practice-driven metric: it links supplier evaluation, materials planning and the ability to supply customers.
- Causes of OTIF losses often lie in materials planning, in capacity bottlenecks at the supplier or in inconsistent delivery call-offs.
- Binding OTIF agreements are often part of the delivery call-off contract in practice and are reviewed regularly as part of the supplier evaluation process.

## Definition: On-Time In Full (OTIF)

On-Time In Full (OTIF) describes the proportion of deliveries that arrive both by the agreed date and complete in the agreed quantity and quality. The metric originally comes from consumer goods and retail logistics and has established itself in recent years as a standard metric in the industrial supply chain as well.

## Formula and calculation logic

In practice, the following calculation has become established:  $OTIF = (\text{number of on-time and complete deliveries} \div \text{total number of deliveries}) \times 100$ . The strict AND linkage is decisive: a delivery that arrives on time but incomplete counts just as little as one that is complete but late. Partial deliveries are either scored as one unfulfilled delivery or – with a clear definition – only recorded as complete once the final line item has been received.

- Define the counting basis: purchase order line, delivery note or goods receipt
- Set tolerance windows (e.g.  $\pm 1$  day, in the automotive industry often 0 days)
- Regulate quantity tolerances unambiguously (e.g. under-delivery tolerated from 0 %)

## **Distinguishing OTIF from other delivery performance metrics**

OTIF is frequently confused with delivery performance (On-Time Delivery, OTD) or delivery reliability. OTD measures only timeliness; quantity reliability is not taken into account. Conversely, pure quantity or assortment accuracy captures only completeness. OTIF combines both dimensions and is therefore the strictest and most meaningful of these metrics.

## **OTIF on the customer side and the supplier side**

The metric works in both directions: manufacturers measure the OTIF score of their suppliers to ensure their own ability to supply end customers. Conversely, OTIF is increasingly also used by industrial customers towards their buyers as a performance commitment. Buyers should therefore keep an eye on both their own inbound OTIF and their outbound OTIF towards customers.

## **Methods and procedure for measuring OTIF**

A robust OTIF measurement presupposes a uniform definition and clean data sources. Without binding measurement rules, disputes quickly arise over 'counted' percentage points, which strain the supplier relationship rather than improving it.

### **Data basis and measurement points**

The basis is usually the goods receipt in the ERP system, reconciled against the purchase order (PO) and the delivery call-off or planning. What matters is the objective actual date of the goods receipt, not the delivery date announced by the supplier. Frequently, the shipping date is measured instead of the arrival date – this distorts the picture, especially over longer transport routes and with differing delivery clauses such as the Incoterms FCA or DDP.

- Take the target date from the purchase order or delivery call-off
- Book the actual date from the goods receipt, not from announcements
- Reconcile quantities between delivery note, goods receipt and purchase order
- Handle returns and replacement deliveries according to rule-based procedures

### **Window tolerances and call-off planning**

With delivery call-off contracts featuring flexible call-off quantities, it must be clarified in advance which call-off benchmark applies: the confirmed quantity, the called-off quantity or the planned requirement quantity. Unclear call-off logic is one of the most common causes of disputed figures in OTIF scoring. Buyers should agree the windows (time, quantity and assortment tolerances) on a binding basis and structure the maintenance of planning parameters so that call-off changes become known to the supplier in good time.

### **Responsibilities and approvals within the company**

OTIF measurement touches several departments: procurement, materials planning, goods receipt and quality. A clear delegation of authority – i.e. rules on who changes measurement definitions, adjusts target values or decides on escalations – prevents frictional losses. A procurement competence matrix helps to allocate responsibilities for supplier meetings, data maintenance and sanction decisions transparently.

## Key KPIs around OTIF in procurement

OTIF does not unfold its effect in isolation, but in interplay with other procurement metrics. Anyone steering exclusively by OTIF risks mis-steering – for example, excessive safety stocks or a reduction in supplier diversity.

### The family of metrics in supplier management

Typically, OTIF is considered alongside quality metrics (such as the defect rate at goods receipt), the requisition-to-PO cycle time, adherence to framework agreements (contract compliance) and the capital tie-up period. Only this interplay shows whether a supplier is reliably dependable or whether high OTIF scores have been bought, for example, at the cost of oversized inventories.

### Root cause analysis for OTIF losses

If the OTIF score falls, a structured bottleneck analysis helps: is the cause at the supplier (capacity bottleneck, staff shortage, material availability), in your own materials planning (late call-offs, changed requirements) or in transport (lack of freight capacity, customs clearance)? A systematic outsourcing analysis at the supplier additionally reveals whether subcontractors or outsourced process steps are impairing reliability.

### OTIF as an evaluation criterion

In supplier evaluations, OTIF is often carried as an evaluation criterion with a high weighting, usually alongside price, quality and flexibility. In practice, the weightings for delivery performance typically range between 20 and 35 percent of the overall evaluation. It is important to interpret OTIF scores jointly in the supplier meeting rather than using them purely as a sanctioning instrument.

## Risks and controls around OTIF

OTIF is an effective but also vulnerable control instrument. Misinterpretations, data gaps or one-sided sanctions can do more harm than the metric itself does good.

### Typical measurement and interpretation errors

Common sources of error are inconsistent date baselines (order date versus call-off date), subsequent date changes without the supplier's consent and unconsidered force majeure events. Overly granular measurement – for example at individual purchase order line level with a thousand small lines – also creates statistical noise. Clear measurement rules in the delivery call-off contract guard against these conflicts.

### Mis-steering through one-sided OTIF pressure

Anyone putting suppliers under pressure solely through OTIF scores quickly creates undesirable side effects: excessive buffer stocks at the supplier, which flow back through prices, selective prioritisation in favour of larger customers, or the concealment of problems through manipulated confirmation dates. Dependable repeatability is created through joint supplier capacity alignment, not through threats of sanctions alone.

### Contractual anchoring and escalation

In practice, OTIF is anchored as a target figure in the delivery call-off contract or framework agreement, supplemented by escalation levels and – in the event of serious, repeated breaches – by remedies such

as a debit note for additional costs of substitute or alternative sourcing. Legal consequences (consequences of default, damages, warranty) should always be examined on a case-by-case basis and with inclusion of the jurisdiction clause; blanket formulations frequently fail to withstand scrutiny in a dispute.

## **OTIF in interplay with materials planning, sourcing and supplier development**

OTIF improvements rarely arise at the goods receipt, but earlier in the process: in requirements planning, supplier selection and joint capacity planning.

### **Materials planning and master data quality**

Many OTIF losses arise within one's own organisation: unrealistic replenishment times in the master data, missing maintenance of planning parameters or unclear handover of requirements to the delivery call-off. Here, clean maintenance of the lead time per material and supplier – aligned with seasonal and market fluctuations – has a direct impact on measurable delivery reliability.

### **Sourcing and contract design**

OTIF relevance should already be considered during supplier selection: reference data, capacity reserves and logistics concepts belong among the evaluation criteria in the e-sourcing process. Delivery clauses under Incoterms (such as FCA, DDP or CIP) influence who controls the transport and thus also how reliably deadlines can be measured and met. For international payments and long terms, a letter of credit can provide additional security, but it does nothing to change physical delivery performance.

### **Supplier development and joint improvement**

Sustainable OTIF improvement is usually achieved through collaboration: joint capacity alignment, transparent forecasts, digital call-off processes and regular supplier evaluation meetings. Strategic topics such as a joint innovation roadmap with suppliers or lifecycle costing in make-or-buy decisions also benefit from suppliers who deliver on time and in full – because unreliability causes consequential costs along the entire chain.

## **Current developments: digitalisation and rising OTIF expectations**

The demands placed on delivery reliability continue to rise in DACH industry, driven by leaner production models, lower buffer stocks and higher expectations on the part of end customers.

### **Digital call-off and feedback processes**

EDI connections, supplier portals and API-based call-off processes make OTIF data available in real time and reduce manual feedback. As a result, the focus shifts from subsequent measurement to forward-looking control: deviations are detected before they lead to a production stoppage. The prerequisite remains a clean process specification in the handling process between the systems.

### **Forward-looking risk management**

OTIF is increasingly moving into the context of supply chain risk management: bottleneck early-warning systems, alternative sources of supply and scenario planning complement the pure metric view. Companies combine OTIF measurement with structured alternative sourcing strategies in order to remain capable of acting in the event of failures, rather than merely documenting percentage figures

after the fact.

## Rising demands from leaner supply chains

Since many manufacturers have reduced their inventories, every OTIF loss has an immediate impact on the ability to produce. In practice, this increases the pressure on the entire supply chain – up to and including requirements on second- and third-tier suppliers. Buyers who measure and actively manage OTIF gain a genuine competitive advantage here.

## Typical metrics

### **OTIF: typically $\geq 95$ %**

Target value depends on the industry; in series production often 98 % or more

### **OTD (On-Time Delivery): typically $\geq 96$ %**

Only timeliness, without quantity reliability – weaker than OTIF

### **Quantity reliability (In Full): typically $\geq 97$ %**

Completeness rate of deliveries, viewed in isolation

### **Supplier evaluation: weighting of delivery reliability: commonly 20–35 %**

Usual weighting of the delivery reliability block in overall evaluations

## Practical example

A medium-sized mechanical engineering company with around 400 active suppliers found, when measuring inbound OTIF, that only about 88 percent of deliveries arrived on time and complete – against a target of 97 percent. The analysis showed that a significant share of the deviations did not originate at the supplier but in the company's own materials planning: changed call-off quantities were communicated too late, and the lead times in the master data were out of date.

- A uniform OTIF definition anchored in the supplier manual, including time windows and quantity tolerances
- Materials planning tidied up: planning parameters updated, lead times re-evaluated for each supplier
- Joint capacity alignment conducted with the twenty most critical suppliers, plus quarterly OTIF reviews
- OTIF integrated as a weighted evaluation criterion in the supplier evaluation and the escalation concept

## Conclusion

On-Time In Full (OTIF) is more than a statistical metric: it makes delivery reliability measurable in a single, hard figure and creates a common language between procurement, materials planning and the supplier. Decisive for success are a uniform measurement definition, clean master data and anchoring in contracts and supplier evaluations. At the same time, OTIF should never be viewed in isolation, but in combination with quality, cost and inventory metrics. Those who analyse causes systematically and involve suppliers in the improvement, rather than merely sanctioning scores, achieve lasting higher reliability. In an era of lean supply chains, OTIF thus becomes a binding benchmark for supplier performance.

## Frequently asked questions

### What does On-Time In Full (OTIF) mean?

On-Time In Full (OTIF) is a metric for delivery reliability. It measures the proportion of deliveries that arrive both on time and complete in the agreed quantity. Partial or late deliveries count as not fulfilled and reduce the score.

### How is OTIF calculated?

The usual formula is:  $OTIF = \frac{\text{on-time and complete deliveries}}{\text{all deliveries}} \times 100$ . It is important to define the counting basis (line item, delivery or order) and the tolerance windows consistently. A delivery only counts if BOTH the deadline AND the quantity are met.

### What is a good OTIF score?

In series production, values of 95 percent and above are typically considered acceptable; in the automotive and supply industry, 98 percent or more is often the standard. The appropriate target value depends on the industry, the criticality of the material and the design of the supply chain. What matters is comparability over time and across suppliers.

### What is the difference between OTIF and OTD?

OTD (On-Time Delivery) measures only the timeliness of a delivery. OTIF, by contrast, additionally requires that the delivery arrives complete in the agreed quantity and quality. OTIF is therefore the stricter metric and reveals where pure deadline metrics paint an overly positive picture.

### How can the OTIF score be improved?

First, the causes should be analysed systematically – at the supplier, in your own materials planning or in transport. Effective levers include sound maintenance of planning parameters, realistic lead times, clear call-off processes and joint capacity alignment with suppliers. Penalties alone rarely improve the OTIF score sustainably.

### Where is OTIF contractually agreed?

In practice, OTIF is typically anchored in the delivery call-off contract or framework agreement as a target figure with measurement rules, tolerances and escalation levels. In the event of repeated breaches, remedies such as replacement delivery, substitute sourcing or a debit note may be considered. The precise legal design should be examined on a case-by-case basis.