

Technical Invoice Verification: Process, Methods and KPIs in Procurement

Technical invoice verification is the substantive reconciliation of an incoming invoice against the purchase order and the receipt of goods or services. It ensures that only items actually ordered, delivered and agreed are paid. As part of the three-stage invoice verification process (technical, arithmetical, accounting), it is a core element of the purchase-to-pay process and of fraud and error prevention in procurement.

Key facts

- Technical invoice verification substantively checks whether goods or services were ordered, delivered and invoiced correctly.
- It forms part of the three-way match between purchase order, goods receipt and invoice.
- In practice it is typically carried out by the department responsible for the subject matter (procurement, engineering, specialist department), not by accounting.
- Automation via non-order control accounts, invoice workflows and ERS significantly reduces manual review effort.
- Commonly defined KPIs are first-pass yield, lead time and the number of complaints per invoice.
- Comprehensive right of review and early payment discount deadlines generally require prompt verification.

Definition: technical invoice verification

Technical invoice verification is the substantive review of an incoming invoice by the department responsible for the subject matter. It verifies that the invoiced goods or services were actually ordered, were delivered in the agreed quantity and quality, and comply with the terms of the purchase contract.

Distinction from arithmetical and accounting verification

Invoice verification is divided into three stages. The technical review examines the content (goods or services, quantity, price, deadlines), the arithmetical check controls quantities, prices, discounts, tax rates and totals, and the accounting review takes place in accounts payable with regard to account assignment, payment terms and release. The technical review typically comes first and is a prerequisite for further processing.

Position within the purchase-to-pay process

Within the purchase-to-pay cycle, technical invoice verification sits between goods receipt and payment release. It is closely interlinked with order approval, goods receipt (keyword: dock-to-stock) and accounts payable lead time optimisation. Depending on the company, responsibility lies with procurement controlling, the specialist department or a central shared-service team with substantive queries directed to the buyer.

Subject matter of the review: what is checked?

The scope of the technical review depends on the nature of the goods or services. For goods, the focus is on reconciliation with purchase order and goods receipt; for services, on acceptance of performance; and for externally manufactured items, on conformity with specification and quality requirements.

Three-way match for goods

In the classic three-way match, purchase order, goods receipt document and invoice are checked for consistency: order number, item description, manufacturer part number (MPN), quantity, unit and unit price. Quantity or price deviations trigger the quantity deviation workflow or clarification with the supplier before the invoice is released.

Performance review for services and projects

For services, maintenance work or engineering projects, there is often no automatable goods receipt. Here the specialist department reviews service reports, time records, milestones or acceptance protocols against the contract. No invoice should be released without documented confirmation of performance, as otherwise no reliable evidence exists for external auditors and tax inspections.

Special cases: advance payments, tooling and framework agreements

Special cases require adapted review steps: for interim invoices, coverage against order progress must be checked; for tooling deposits, the agreed repayment condition; and for catalogue orders, compliance with the ordering quota per catalogue and the contractual terms. Change orders and additional services also fall within the technical review where they exceed the original order.

Methods and practical approach

The approach ranges from a manual review note to fully automatic release. The choice of method depends on invoice volume, system landscape and risk profile.

Manual, semi-automated and automated review

At low volumes, manual review with a note and signature or system release is often sufficient. Standardised companies use OCR-based invoice capture with automatic matching against the purchase order. With an exact match, release is automatic; with deviations, an escalation workflow step is triggered with queries to the buyer or the specialist department.

Non-order control account and simplified review procedures

Invoices without an order reference typically run through a non-order (control) account, which is manually checked for order obligation and authorisation before payment. The aim is to minimise the proportion of non-PO invoices, as they create effort and compliance risks. Some companies permit low-threshold direct purchases via catalogues with fixed account assignment rules.

Evaluated Receipt Settlement as a strict variant

With Evaluated Receipt Settlement (ERS), the buyer generates the invoice itself from goods receipt data, so the three-way match is no longer required. ERS requires very clean master data, reliable goods receipt capture and stable supplier relationships. It is the logical further development once the technical review regularly finds no deviations.

Key KPIs of technical invoice verification

KPIs make process quality and review effort visible. They should be evaluated regularly in procurement controlling and linked to supplier evaluation and payment run planning.

Quality and efficiency metrics

Key metrics are the proportion of error-free invoices (first-pass yield), the number of rejected or clarified invoices, the lead time from invoice receipt to release, and the proportion of non-PO invoices. In addition, deviation rates by cause (price, quantity, terms) provide insights into problems in order or master data quality, for example within the framework of master data governance.

Impact on payment terms and early payment discounts

Since payment terms and early payment discount deadlines frequently run only from invoice receipt or from the start of the review period, the review duration directly influences accounts payable lead time optimisation. Long review cycles cost early payment discounts or lead to payment reminders. KPIs such as the early payment discount quota and the on-time payment rate make this relationship measurable.

Risks, controls and compliance

Without effective technical verification, incorrect payments, duplicate payments, fraud (e.g. forged invoices) and audit findings loom. Controls must be documented and traceable.

Typical risks

Common risks are duplicate invoices, invoices without performance having been rendered, price deviations from the framework agreement, incorrect deliveries that are nonetheless posted, and invoices with altered bank details (fraud risk). Customs and tax issues, such as correct origin documentation – for example conflict minerals proof of origin or EUDR in procurement for relevant goods – may also feature in the technical review.

Controls and documentation

Effective controls include: segregation of duties between orderer and approver, the four-eyes principle for releases above a defined threshold, documented review deadlines and audit-proof archiving of review notes. Where export control applies or a supplier is escalated for repeated incorrect deliveries, the technical review should be linked to the responsible functions.

Legal framework

Companies can agree invoice review periods contractually; otherwise the statutory rules on inspection and duty to give notice of defects under sales law apply, with limitations in the B2B context. The specific design (review deadlines, consequences of default, early payment discount terms) should be examined contractually and legally on a case-by-case basis; this article does not constitute legal advice.

Current developments: automation and AI

Digitalisation is fundamentally changing technical invoice verification. E-invoicing mandates, AI-supported classification and integrated workflows reduce manual review effort and improve data quality.

E-invoicing and structured data

The phased introduction of e-invoicing in Germany provides structured invoice data that can be matched automatically against order data. This reduces manual entry and sources of error, but shifts the review effort from data capture to exception clarification and master data maintenance.

AI-supported exception classification

AI methods classify invoices, suggest account assignments and detect anomalies such as atypical prices or unusual supplier patterns. The technical review increasingly concentrates on exceptions; the standard case runs touchless. Clean master data governance for item, supplier and price master data remains a prerequisite, as automated matching is only as good as its data basis.

Typical metrics

First-pass yield for invoices: > 90 %

Proportion of invoices passing through without friction; practical benchmark

Proportion of non-PO invoices: < 5 %

Target metric for reducing cases on the non-order control account

Lead time from invoice receipt to approval: < 5 working days

Critical for early payment discounts and payment terms

Complaint rate per invoice: < 2 %

Indicator of supplier and ordering process quality

Practical example

A medium-sized mechanical engineering company with around 8,000 incoming invoices per year suffered long review cycles and a high proportion of non-PO invoices. The technical review was spread across dispersed specialist departments with no uniform review deadlines. The company introduced a central invoice workflow with mandatory order reference, established a non-order control account for exceptions and automatically linked deviations to the quantity deviation workflow and to procurement.

- Mandatory order reference with the exception rate as a KPI and target value
- Automatic three-way match for catalogue and standard orders
- One-day deadline for specialist department review with reminder logic
- Monthly deviation analysis as input for supplier discussions

Conclusion

Technical invoice verification is more than a formality: it protects against incorrect and duplicate payments, secures the audit trail and provides data on supplier quality and process weaknesses. Its value depends largely on the quality of upstream processes – clean purchase orders, reliable goods receipt and well-maintained master data. Those who think of verification, order approval and deviation management in an integrated way reduce effort and risk simultaneously. Automation and e-invoicing intensify this effect, but do not make the review redundant – rather, they focus it on the exceptions. For procurement organisations, it is therefore an indispensable control and steering instrument within the purchase-to-pay process.

Frequently asked questions

What does technical invoice verification mean?

Technical invoice verification is the substantive review of an incoming invoice by the department responsible for the subject matter. The review checks whether the goods or services were ordered, were actually delivered and comply with the agreed terms. It is the first stage of the three-stage invoice verification process, preceding the arithmetical and accounting checks.

Who carries out the technical invoice verification?

The department capable of judging the goods or services on their merits is responsible – typically the buyer, the specialist department or a central shared-service team with the option to consult the buyer. Functional segregation is important: whoever placed the order should not be the sole approver of the corresponding invoice if fraud prevention is required.

What is checked during technical invoice verification?

In essence: order reference, delivered quantity and quality, prices and terms and, where applicable, acceptance of services. For goods, a three-way match is performed between purchase order, goods receipt and invoice. Deviations are routed into a clarification workflow before payment is released.

How long may the technical invoice verification take?

Many companies define internal review periods of typically a few working days up to two weeks in order to preserve early payment discount deadlines and payment terms. Contractually agreed review periods may differ. The specific duration should be defined in the process and monitored via KPIs; legal details must be assessed on a case-by-case basis.

What is the difference between technical and arithmetical invoice verification?

The technical review assesses the content: are the goods or services, quantity and contractual basis correct? The arithmetical check verifies the mathematics of quantities, prices, discounts, tax rates and totals. The two stages complement each other and typically run sequentially within the invoice workflow.

How can technical invoice verification be automated?

Through mandatory order reference, OCR or e-invoicing capture with automatic three-way match, and rules for approvals, standard invoices can be processed largely automatically. Deviations are escalated to workflows and the responsible specialist departments. Clean master data and a disciplined ordering process are prerequisites.