

Supply security: delivery capability as a controllable procurement KPI

Supply security refers to a company's ability to meet its production and delivery demand for materials, components and services at all times, in a plannable manner and in the agreed quality. It is a key performance indicator of procurement management and stands in a permanent trade-off with capital tied up, warehousing costs and procurement costs. For buyers and supply chain managers, it is therefore not a soft buzzword but a measurable, systematically manageable metric with a direct impact on revenue, contribution margin and customer loyalty.

Key facts

- Supply security describes the ability to meet demand on schedule, in the correct quantity and quality.
- It is typically measured via delivery reliability, shortage rate and supplier LTU, with target values often set above 98 per cent.
- Core levers are risk classes, supplier segmentation, structured inventory management and a robust series release process.
- It stands in a trade-off with capital tied up and costs – optimisation means balancing, not maximising.
- Regulatory topics such as supply chain due diligence and material compliance are increasingly turning supply security into a compliance task.
- Risk analysis, alternative sourcing and shortage management are the most important operational tools for safeguarding.

Definition: supply security

Supply security is the degree to which a company can meet its material and service demand independently of disruptions in the supply chain. It encompasses availability, adherence to delivery dates, quantity and quality reliability, and resilience against supply failures.

Distinction from delivery capability and resilience

In practice, supply security is often equated with terms such as delivery capability or supply resilience, but it means different perspectives. Delivery capability describes the internal ability to fulfil customer orders; supply security is the upstream procurement perspective. Resilience adds the time dimension: how quickly can the company return to normal after a supply failure?

Business significance

A missing component typically stops an entire production line – the cost of a failure usually exceeds the additional cost of safety stocking many times over. At the same time, high inventories tie up capital and create warehousing and obsolescence risks. Supply security is therefore always an optimisation problem between failure risk and working capital, which must be assessed differently depending on the risk class of the material.

Responsibility within the company

Primary responsibility lies with procurement together with materials management and inventory planning. In many companies, the organisation now anchors the topic in a Sales and Operations Planning process, where sales planning, manufacturing and procurement coordinate demand and supply. Only if procurement knows the demand planning early enough can it secure capacities with the supplier on a binding basis.

Influencing factors: what determines supply security

Supply security is determined by a large number of internal and external factors. Anyone who wants to improve it in a targeted manner must first know and systematically assess the causes of supply risks in their own procurement portfolio.

External risks in the supply chain

Classic external risks include raw material shortages, geopolitical conflicts, transport disruptions, natural events and supplier insolvencies. Single-source positions for A-items are particularly critical.

Supplier-related business weaknesses – such as underfinanced capacity expansions – can also manifest later as delivery problems.

Internal causes

Often the cause of supply bottlenecks lies not with the supplier but within the company itself: unclear demand specifications, late changes to the requirements catalogue, poor inventory data or a lack of coordination between sales and inventory planning. An incomplete series release process or missing test equipment management can delay the first sample phase and thus jeopardise the series ramp-up.

Risk classes and supplier segmentation

A proven approach is to classify the procurement portfolio into risk classes – for example by business criticality, substitutability and supplier market concentration. Building on this, supplier segmentation takes place: critical A-suppliers receive close attention, risk monitoring and binding framework agreements, while C-parts are handled efficiently via standard processes and reorder point procedures.

Methods and approaches for safeguarding

Supply security is not created through improvised reactions but through a structured set of methods along the procurement process – from risk analysis via the stocking strategy to active prevention of shortages.

Risk analysis and monitoring

The basis is a regular risk analysis by material group and supplier, typically in a risk matrix of probability of occurrence and potential damage. In addition, early indicators such as late invoices, declining capacity utilisation at the supplier or rising defect rates are monitored. Critical items receive clear escalation paths and defined countermeasures.

Stocking, inventory planning and procurement strategies

Depending on the risk class, different instruments are used: safety stocks and reorder point procedures for manageable demand, framework agreements with call-off obligations for plannable series demand, and alternative sourcing via qualified second suppliers for critical items. Note must be taken of the

supplier's minimum order quantities (MOQ) and residual quantity arrangements, which influence stocking planning. Inventory management must regularly evaluate the stocking level and capital tied up against each other.

Collaboration with suppliers

For A-suppliers, joint demand and capacity monitoring has proven effective, for example via rolling forecasts within a Sales and Operations Planning process. Contracts should include an appropriate binding period and clear rules on delivery obligations and limitation of liability. In tenders, a careful clarification round helps to clarify misunderstandings about scope of services and delivery capability early, before the award decision is made.

Key KPIs for measuring supply security

Without measurable metrics, supply security remains mere assertion. In practice, a lean KPI set has established itself that combines procurement, logistics and production perspectives.

Key operational metrics

The central metric is delivery reliability, or supplier LTU (supplier delivery reliability), typically with target values above 98 per cent. Also relevant are the shortage rate per production line, the number of production stoppages or disruption days, and the fill rate against the planning requirement. These metrics are often reported differentiated by risk class.

Financial accompanying metrics

Because every safeguard costs money, metrics on capital tied up belong in the reporting: inventory coverage, inventory turnover and the proportion of safety stock. The additional costs of alternative sourcing in the event of failures should also be recorded in order to make the cost-benefit ratio of the safeguarding strategy visible. In this way, supply security can be weighed against classic types of savings instead of being blindly subordinated to them.

Structural metrics

In addition, structural metrics show the robustness of the portfolio: share of single sources among critical items, number of qualified second sources per A-item and average replenishment lead time. These figures change slowly but are the best early warning indicators of structural weaknesses in the supply strategy.

Risks, controls and compliance

Supply security is increasingly also a governance and compliance task. Regulatory requirements, invoicing and contract processes as well as functioning defect handling have a direct impact on supply stability.

Regulatory and sustainability-related requirements

Due diligence obligations along the supply chain, product requirements such as the PPWR declaration of conformity for packaging, and material compliance requirements (e.g. on substance restrictions) can lead to suppliers failing or make supply relationships more difficult. Sustainability requirements such as SBTi targets also influence which suppliers remain viable partners in the medium to long term. Such requirements should be factored into the risk class and supplier selection; legal details must be

examined on a case-by-case basis.

Contractual and procedural controls

Contracts with critical suppliers should include delivery and capacity obligations, escalation levels and clearly regulated limitation of liability. In tenders, deadlines such as the binding period for offers and a defined practice for shortage and bidder complaints apply; in the event of defects in the preparation of the offer, a structured bidder complaint must be observed. The invoice error rate is also a business early indicator: frequent invoice deviations often point to internal process weaknesses at the supplier.

Shortage management and crisis response

Despite all prevention, failures remain possible. A defined shortage management process with clear escalation levels, prioritised options for alternative sourcing and defined coordination paths with production and sales limits the damage. In addition, vetted alternative sourcing helps, including a supplier-recognised substitution review, and – for new developments – the early establishment of second sources via the series release process.

Current developments: digital safeguarding and new framework conditions

The requirements for supply security have changed significantly in recent years. Digitalisation, regulatory requirements and more volatile procurement markets increase the management effort – and at the same time the tools available.

Digitalisation and transparency

ERP-supported inventory and planning data, supplier portals and structured supplier evaluations create transparency about risk positions in real time. Digital platforms also facilitate the rapid search for qualified suppliers and thus alternative sourcing in the event of failures. Data quality remains crucial: without well-maintained master data and reliable demand forecasts, the technology effect dissipates.

Regionalisation and dual-sourcing strategies

Many companies in DACH industry are increasingly pursuing regionalisation and dual-sourcing strategies to reduce transport and country risks. This increases the procurement effort in the short term – for example for qualification and prototype procurement of new sources – but structurally improves supply security. The resumption of in-house solutions or local manufacturing partners is also a trend here.

Supply security as part of the procurement strategy

Supply security is increasingly being written into procurement strategy as a standalone objective alongside cost, quality and sustainability. This requires clear trade-off rules: when may procurement be more expensive, when is stocking justified, which risk class may tolerate single sources? Companies that have defined these rules respond measurably faster and more controllably in crises.

Typical metrics

Supplier delivery reliability (LTU): > 98 %

Typical target value for series suppliers; to be evaluated differentiated by risk class.

Shortage rate: < 1 %

Share of production days or orders with missing parts; varies by industry.

Single-source share of critical items: ideally < 10 %

Structural metric; critical A-items should preferably be capable of being dual-sourced.

Inventory coverage of critical parts: 2–12 weeks

Guideline value depending on replenishment lead time and capital commitment targets.

Practical example

A mid-sized mechanical engineering company with around 350 employees repeatedly suffered production stoppages during an order phase due to late cast part deliveries from a single-source position. Procurement analysed the procurement portfolio by risk classes, re-segmented the suppliers and built structured safeguards for the most critical components.

- Risk analysis of all A- and B-items with classification into risk classes and flagging of all single-source positions
- Qualification of a second supplier for the most critical cast part, including prototype procurement and series release process
- Introduction of a reorder point procedure with defined safety stocks for regular demand and rolling capacity alignment with A-suppliers
- Monthly KPI reporting on supplier delivery reliability and shortage rate, embedded in a Sales and Operations Planning meeting

Conclusion

For technical buyers, supply security is not a soft factor but a measurable performance indicator with a direct impact on production, revenue and customer loyalty. It arises from the combination of risk analysis, clear supplier segmentation, an appropriate stocking and inventory planning strategy, and reliable contract and release processes. The conscious balancing against capital tied up and costs is important – every safeguard has its price. Companies that manage supply security with defined KPIs and embed it in a Sales and Operations Planning process are measurably more capable of acting in the event of disruptions. Building second sources and a structured shortage management process are the most effective long-term levers.

Frequently asked questions

What does supply security mean in procurement?

Supply security describes a company's ability to meet its required material and service demand at all times, on schedule, in the correct quantity and quality. It is a key performance indicator in procurement and materials management. It is typically measured via delivery reliability, shortage rate and the availability of critical items.

How can supply security be measured?

The most important metrics are supplier delivery reliability (LTU, in practice often a target of over 98 per cent), the shortage rate, the number of production stoppages, and structural metrics such as the share of single sources among critical items. In addition, inventory coverage and capital tied up are recorded to make the price of safeguarding visible. Differentiated reporting by risk class has proven effective.

Which measures improve supply security?

Proven measures include regular risk analysis of the procurement portfolio, qualification of second suppliers, defined safety stocks and reorder point procedures, framework agreements with delivery obligations, and structured shortage management. In addition, close alignment of demand planning and procurement is effective, for example via Sales and Operations Planning. A robust series release process also secures the ramp-up of new sources.

What is the difference between supply security and delivery capability?

Supply security is the procurement perspective: can the company reliably source its upstream products and materials? Delivery capability is the outbound perspective: can the company fulfil customer orders on time? The two are directly interrelated – insufficient supply security leads, with a delay, to declining delivery capability towards customers.

How much safety stock is sensible?

The level of safety stock depends on the material's risk class, replenishment lead time, demand variability and the cost of a supply failure. In practice, critical A-items are stocked more heavily than standard C-items. There is no one-size-fits-all solution; it makes sense to regularly weigh the risk of failure against capital tied up in inventory management.

What to do in the event of an impending supply failure?

First, the demand should be critically assessed and prioritised with production and sales. In parallel, alternative sourcing is activated – for example via qualified second sources, short-term market enquiries or temporary substitution following a technical review. A defined shortage management process with clear escalation paths and coordination routines significantly shortens the reaction time.