

Obsolescence management: systematically securing spare-part and component availability

Obsolescence management refers to the systematic identification, assessment and control of components, materials and parts whose availability is ending or at risk. In the manufacturing industry, it primarily affects electronics, spare parts and long-lived capital goods whose life cycle outlasts their market availability. Structured obsolescence management reduces failure risks, Last-Time-Buy costs and downtime in production and service. For technical buyers, it is therefore a central element of procurement and risk planning.

Key facts

- Obsolescence management encompasses the detection, assessment and handling of part discontinuations along the entire product life cycle.
- Planned and unplanned obsolescence require different countermeasures, from Last-Time-Buy to redesign.
- Typical instruments include lifecycle reports, EOL/PCN monitoring, inventory depletion analysis and strategic stock strategies.
- Core KPIs are the obsolescence rate, the coverage rate of critical parts and the value of unused residual stock.
- Early involvement of procurement in the innovation funnel significantly reduces design decisions at risk of obsolescence.
- In practice, Last-Time-Buys without demand planning frequently lead to high capital tie-up and write-downs.

Definition: obsolescence management

Obsolescence management is the process-driven handling of components and materials that are discontinued by the manufacturer (EOL, End of Life) or whose procurement ends for other reasons. The goal is to ensure the supply of products in production and already delivered throughout their entire life cycle. It combines procurement, engineering and logistics topics into an integrated risk management process.

Planned versus unplanned obsolescence

Planned obsolescence is triggered by product or portfolio decisions of one's own company, for example when phasing out a device. Unplanned obsolescence arises externally through supplier discontinuations, Product Change Notifications (PCN), market shortages or regulatory changes such as new requirements for a Restricted Substances List (RSL). Both forms require similar actions but different timing and responsibilities. Unplanned cases typically place a greater burden on the procurement budget, as there is little time for alternative sourcing and negotiations.

- Planned: phase-out within one's own portfolio, plannable transition phases
- Unplanned: PCN/EOL notifications, supplier failure, raw material shortages
- Regulatory: substance bans and approval changes

Distinction from classic spare-parts management

Spare-parts management focuses on the operational supply of spare parts in the service business. Obsolescence management goes beyond this with a forward-looking approach: it already assesses at the design and sourcing decision stage how long a component is likely to remain available. It thereby becomes a cross-functional topic spanning engineering, procurement, quality and after-sales. In practice, it is frequently organised as part of lifecycle management or category management.

Methods and approach in obsolescence management

Effective obsolescence management follows a clearly defined process from detection through assessment to the implementation of countermeasures. A sound early data basis from bills of materials, supplier data and demand forecasts is decisive.

Monitoring and early detection

The foundation is continuous monitoring of EOL notifications, PCN data and the life-cycle status of relevant components. Master data and bills of materials are regularly cross-checked against lifecycle data, often via a structured ETL process integrated from procurement into the systems. In parallel, inventory depletion analysis provides indications of parts whose consumption is declining and which are therefore at risk of discontinuation. Linking this to the sourcing process is important so that findings flow directly into award decisions.

Assessment and prioritisation

Not every discontinuation event carries the same significance. Assessment is typically based on criteria such as degree of criticality for functionality and safety, remaining life of one's own products, obtainable residual stock, redesign effort and the revenue relevance of the service business. The result is a priority list that determines whether a Last-Time-Buy, qualification of an alternative or a redesign makes sense. The forecast accuracy of one's own demand is decisive here in order to avoid over- and under-supply.

- Criticality: function, safety, approvals
- Remaining demand: forecast demand to end of product life
- Switching costs: redesign, qualification, certification

Countermeasures

The portfolio of measures ranges from short-term to long-term options. In the short term, the focus is on residual-stock procurement, Last-Time-Buy, searching for brokers or alternative suppliers and, if applicable, die reproduction (reproduction commissioned from the original manufacturer). In the medium term, second-source qualification takes place, often accompanied by an Initial Sample Inspection Report (ISIR) as proof of component equivalence. In the long term, the focus is on redesign, design-for-availability principles and the use of long-term available components in new developments.

Integration into design and sourcing

The most effective measure begins before the first order: in the early phases of the innovation funnel, designers should incorporate availability data, lifecycle expertise and procurement criteria. Components

with limited availability or single-source risks should only be specified after deliberate risk assessment. The same applies to contract manufacturing and contract manufacturers: contracts should anchor the obligation to provide timely EOL notification and to jointly manage discontinuations. This shifts the topic from reaction to prevention.

Key KPIs and control figures

Obsolescence management can only be controlled if availability risks and the impact of measures are made measurable. The KPIs draw on master and movement data from procurement and inventory systems.

Risk indicators

Key figures are the share of active bill-of-material items with components at risk of discontinuation, the number of open EOL cases with overdue need for action, and the period between EOL notification and completed action. In addition, the coverage rate of critical parts with qualified second sources is measured. These KPIs should be evaluated by criticality class in order to concentrate limited procurement resources on business-critical parts.

Financial efficiency indicators

Financially relevant are the value of tied-up obsolescence stock, write-downs on stock no longer saleable, and the costs avoided through timely measures. Last-Time-Buys should be reviewed post hoc in terms of contribution margin, stockholding duration and residual stock value. The total cost of ownership of the affected material groups also indicates whether a measure was economically justified.

Risks and controls

Without systematic controls, there is a threat of service downtime, costly emergency-sourcing scenarios and write-offs. Risks frequently arise from interface problems between engineering, procurement and sales.

Typical risks

The greatest risk is poor data quality: incomplete bills of materials, missing supplier part lists or outdated demand forecasts lead to incorrect quantity decisions. Added to this is supplier location risk in global procurement, which low-cost country sourcing makes more acute through additional lead times and qualification effort. With a Last-Time-Buy, there is the risk of over-ordering followed by write-downs; with under-ordering, the risk of supply shortages and goodwill cases in service.

Organisational controls

Effective controls rely on clear responsibilities, defined thresholds and documented decisions. A negotiation record and a performance statement on Last-Time-Buy terms create transparency towards management. Internally, there should be a reporting culture in which engineering and sales pass on EOL information early. For compliance-relevant topics such as substance bans, a whistleblowing channel is a useful supplementary early-warning instrument along the supply chain.

Contractual safeguards

Suppliers should be contractually obliged to notify changes and discontinuations, including notice periods. Proven instruments include benchmarking clauses for alternative sourcing, agreed prices and

payment terms for residual stock, and take-or-pay guarantees for Last-Time-Buys. For critical components, a contractual stockpiling obligation on the supplier can be agreed. All provisions should be legally reviewed on a case-by-case basis, particularly with regard to antitrust law and liability.

Obsolescence management in the supply chain and in global procurement

Obsolescence is not an isolated parts issue but affects the entire supply chain. Global sourcing strategies and manufacturing models alter the risk profile and the room for manoeuvre.

Global procurement and second sources

Low-cost country sourcing expands the supplier base but increases lead times and complexity in qualification and logistics. Every second source from other regions requires its own qualification and approval process, including ISIR and, if applicable, customer approval. Supplier location risk, for example due to geopolitical tensions or export controls, should be factored into the obsolescence assessment. A diversified supplier structure significantly reduces the impact of individual discontinuations.

Contract manufacturing and customer ownership

With contract manufacturing, it must be clarified who owns residual stock and who makes decisions in the event of discontinuations. Contracts should stipulate whether customer ownership of remaining materials is possible and how stockpiles are shared between the partners. Supplier integration into planning and forecasting processes, for example through the exchange of a consensus forecast, also improves responsiveness to discontinuations. Transparent data flows are the prerequisite for rapid joint decisions.

Current developments and digitalisation

Availability risks have gained importance in recent years due to semiconductor shortages, geopolitical fragmentation and tighter regulation. At the same time, digitalisation and AI are transforming the tools of obsolescence management.

Data integration and automation

Modern systems automatically integrate lifecycle data, bills of materials and demand data, often via an ETL process from procurement into procurement and PLM systems. AI-supported analyses can identify patterns in discontinuation announcements and estimate residual demand more precisely. Automated alerts shorten the time between EOL notification and action. However, a well-maintained master data basis remains a prerequisite, which in many companies still has to be built up first.

Sustainability and the circular economy

Obsolescence management is gaining importance due to sustainability requirements: longevity, repairability and spare-part supply are increasingly regulatory and commercial requirements. Refurbishment, redeployment of used components and material recovery reduce disposal costs and the carbon footprint at the same time. Companies that can reliably commit to spare-part supply also strengthen their competitive position in the after-sales business.

Typical metrics

Share of items at risk of discontinuation: typically < 5% of active bill-of-material items

Rule-of-thumb value; always assess by criticality class

Coverage rate of critical parts with a second source: > 90%

Refers to items classified as critical

Lead time from EOL notification to action: typically < 30 days to decision

Depends on redesign or qualification effort

Value of obsolescence stock: often < 1% of inventory value

Target value; investigate causes of deviations

Practical example

A mid-sized machinery manufacturer delivers special-purpose machinery with a typical service life of 15 to 20 years. After several unplanned discontinuations of electronic components, which led to costly emergency sourcing actions and service downtime, the company established structured obsolescence management. A small team from procurement, engineering and service took ownership of the process.

- Establishing an automated cross-check of all bills of materials against the component manufacturers' lifecycle data
- Introducing a criticality matrix to prioritise EOL cases and define standard measures
- Anchoring EOL notification obligations and notice periods in supplier contracts and with contract-manufacturing partners
- Regulating Last-Time-Buy decisions with demand forecasting, approval thresholds and economic post-review

Conclusion

Obsolescence management is not a peripheral topic but an economically relevant component of procurement and lifecycle strategies. It combines early detection, structured assessment and a tiered portfolio of measures from Last-Time-Buy to redesign. Decisive factors are a sound data basis, clear responsibilities and the early involvement of engineering and suppliers. Those who consider availability as early as component selection avoid cost-intensive reactive situations. Obsolescence management thereby evolves from a crisis tool into a preventive competitive advantage.

Frequently asked questions

What does obsolescence management mean?

Obsolescence management is the systematic handling of components and materials whose availability is coming to an end, for example due to manufacturer discontinuations. It includes early detection, risk assessment and countermeasures such as Last-Time-Buy, second-source qualification or redesign. The objective is security of supply across the entire product life cycle.

What is a Last-Time-Buy?

A Last-Time-Buy is the final ordering opportunity for a component before the discontinuation date. Buyers order the total forecasted demand up to the end of the product in a single order. This requires a reliable demand forecast, as over-ordering can lead to write-downs and under-ordering to supply

shortages.

What measures are available for component discontinuations?

Typical measures include Last-Time-Buy, searching for residual stock or alternative suppliers, qualification of pin-compatible alternatives, third-party reproduction and redesign of the affected circuit or assembly. The choice depends on criticality, remaining demand, switching effort and available time. Early detection significantly increases the available options.

Who is responsible for obsolescence management within the company?

In practice, responsibility frequently lies with procurement or with a cross-functional group comprising procurement, engineering, quality and service. It is important to have a clearly designated process owner with defined escalation paths. Since obsolescence-related costs arise in several areas, joint governance with representatives of the affected functions has proven effective.

How early should one respond to discontinuations?

Ideally, the assessment begins immediately upon receipt of the EOL or PCN notification, as lead times for qualification and redesign often run to months or years. For critical components, the design phase should already check for long-term component availability. Many manufacturers announce discontinuations with notice periods in the range of several months to around one year; contractually agreed notice periods should exceed this.

Which KPIs are measured in obsolescence management?

Typical KPIs are the share of items at risk of discontinuation in active bills of materials, the coverage rate of critical parts with second sources, the lead time from EOL notification to action, and the value of tied-up obsolescence stock. In addition, write-downs and avoided costs are reported. The evaluation should be broken down by criticality class.