

Should-Cost Library: Cost Transparency as the Foundation of Strategic Procurement

A Should-Cost Library is a structured collection of should-cost analyses, i.e. calculated target costs for purchased parts, assemblies and services. It forms the internal reference system with which buyers can objectively evaluate supplier prices, underpin negotiations and assess price stability. In the B2B environment, it is one of the most effective instruments for moving price negotiations from the discussion level to the cost level.

Key facts

- A Should-Cost Library stores cost breakdowns (material, manufacturing, overhead, margin) as reusable reference values.
- In practice, it typically covers 20–40 % of the purchase volume, focused on A and B parts.
- Should-cost analyses typically deliver price optimisation potentials of 5–15 % compared with quoted prices.
- The library must be maintained regularly, as material prices, wages and exchange rates change the calculation models.
- It combines commodity group management, market modelling and price negotiation into a systematic approach.
- The technical basis is often driver models that derive cost estimates from a few parameters (weight, material, cycle time).

Definition: Should-Cost Library

A Should-Cost Library is a central, often database-supported stock of should-cost models and results for recurring purchased parts and services. It answers the question of what a product should cost, assuming an efficient manufacturing process – independently of the actual quoted price. It therefore serves as an objective negotiation and evaluation basis in the procurement process.

Distinction from Classical Price Analysis

Price analysis examines paid historical prices and market comparisons; should-cost analysis, by contrast, breaks the price down into its cost drivers. The two approaches complement each other: historical data shows trends, while the should-cost model shows the redistribution potential. The library stores both perspectives and links them to master data such as material numbers and supplier references. Without sound master data governance, the library quickly loses its validity, as allocations to commodity groups and part hierarchies become outdated.

Components of a Should-Cost Library

A practically useful library contains more than numbers: cost models with calculation logic, valid assumptions on material and labour costs, process parameters and documentation of the derivation. Quotation comparisons and outcome records from negotiations are also often stored. This creates a

learning system that becomes more precise with every completed price negotiation.

- Cost driver models per technology (e.g. machining, injection moulding, sheet metal forming)
- Material and energy price references with cut-off dates
- Manufacturing parameters: machine hour rates, set-up times, scrap rates
- Negotiation history and achieved results

Structure and Methods: How a Should-Cost Library Is Built

The build-up typically follows commodity group management: first, strategically relevant commodity groups are prioritised, then detailed target costs are calculated for lead parts and documented as references. A standardised method set is important so that results remain comparable.

Cost Driver Models (Bottom-up)

Bottom-up models break a part down into material, manufacturing and logistics components. Machine times, tooling costs and overhead surcharges are derived from the drawing, material and quantity. The effort is high, but in practice the accuracy is often better than $\pm 5\text{--}10\%$. These models are suitable for high-volume A parts, for example in lot-sizing and fine planning of procurement capacities.

Parametric and Statistical Models

For C parts and standard components, parametric approaches are often sufficient: a few key parameters (weight, degree of machining, material class) drive a cost estimate based on historical data points. Such models are quick to create but require continuously validated input data. Data quality becomes a KPI topic here – related to data quality KPIs in master data management.

Integration of Market and Index Data

Should-cost models become outdated without market context. Material indices, energy prices and wage developments must be fed in regularly – analogous to market modelling and to mechanisms such as the alloy surcharge for metallic materials. Anyone steering delivery prices with slide or index clauses needs the library in order to recalculate and verify index adjustments.

Application in the Procurement Process

The library has an impact at several stages of the procurement process: in quotation evaluation, in price negotiation, in the sourcing decision and in ongoing supplier management. What is decisive is that the results do not disappear into drawers but systematically flow into decisions.

Quotation Evaluation and Tendering

The Should-Cost Library already provides sound target prices and price corridors at the tendering stage. The tender question catalogue can be extended with cost-related enquiries, for example on routings or material origins. This makes quotations comparable and outliers are identified early – also for export handling and delivery terms, which can shift costs significantly.

Negotiation Management

In the price discussion, the should-cost analysis shifts the argumentation from "your price is too high" to "your set-up time assumption deviates by 40 % from our model". This creates a fact-based negotiation level and avoids purely ego-driven negotiations. Cost components that the supplier cannot substantiate

become visible – this is often more effective than any amount of price pressure.

Supplier Development and Ongoing Price Maintenance

Within supplier development concepts, the library identifies potentials in process costs – for example through design changes, lot size optimisation or site changes. The cost perspective also helps in evaluating supply capability issues or complaints economically. Where value gains arise from design changes (design sprint, First Article Inspection (FAI)), the model shows who receives which benefit.

Key KPIs and Evaluation of a Should-Cost Library

A library without impact measurement remains a card index. Practical metrics relate to coverage, model quality and financial benefit.

Coverage and Quality Metrics

Typical metrics are the share of purchase volume with a valid should-cost reference value, the age of the models and the deviation between should-cost and actual prices. High, persistent deviations indicate either negotiation potential or outdated model assumptions – both require action.

- Coverage ratio: % of purchase volume with a valid reference value (target value often > 60 % for A parts)
- Model age: share of models older than 12 months (typically target < 20 %)
- Validation ratio: share of models calibrated by quoted prices

Benefit Metrics

The financial effect is measured through savings achieved versus the starting price and through the negotiation yield – i.e. the price difference between the quoted price and the price achievable through should-cost argumentation. In practice, sustainably achieved savings are often in the range of 3–10 % of the addressed volume.

Risks, Controls and Typical Sources of Error

The greatest danger of the Should-Cost Library is spurious accuracy: a model with many decimal places appears robust but is only as good as its assumptions. Anyone who sells should costs as absolute truth loses credibility with suppliers and internal departments alike.

Methodological Risks

Outdated hourly rates, unrealistic scrap assumptions or incorrect process chains systematically distort results. Another risk is transferring a model to parts for which it was not designed. Controls remedy this: regular validation against actual quotation and purchase prices, as well as documented assumptions that enable traceability.

- Document every model with cut-off date, author and assumptions
- Validate against real quoted prices at least annually
- Conduct sensitivity analyses on material and labour costs
- Always communicate should costs as a range, not as a point value

Organisational and Data-Side Controls

Responsibilities for maintenance and updating must be clearly regulated, ideally anchored in commodity

group management. Data protection and confidentiality play a role when models depict sensitive manufacturing costs – non-solicitation clauses and confidentiality arrangements with suppliers must be agreed here. For site-specific models, identifiers such as the Global Location Number (GLN) help assign cost statuses unambiguously.

Current Developments: Automation and AI-Based Should-Costing

Software providers and cost specialists increasingly offer systems that automatically generate cost estimates from technical drawings and master data. Such tools significantly accelerate the build-up of a library but do not replace the professional plausibility checks by procurement and manufacturing experts.

AI-Based Cost Estimation

Modern approaches use machine learning based on historical purchase prices and part characteristics. They quickly provide coverage across broad assortments but require clean data – here, data quality KPIs directly affect model accuracy. A hybrid approach has proven effective: AI-generated initial estimates for breadth, detailed bottom-up models for critical parts.

Integration into Sourcing Platforms and Marketplaces

Digital procurement platforms make it possible to embed should-cost reference values directly into tenders and quotation comparisons. This shortens cycles in the procurement process and makes price deviations immediately visible. Supply capability and risk aspects, such as supplier cyber risk, can also be linked with cost considerations in overall evaluations.

Sustainability and Regulatory Aspects

Should-cost models are increasingly being extended with sustainability components, such as CO costs for material and manufacturing – relevant in the context of the EU Taxonomy and CSRD-oriented reporting. This gives the buyer a total cost view that combines classic prices and environmental costs.

Typical metrics

Coverage ratio: > 60 %

Share of purchase volume (A and B parts) with a valid should-cost reference value

Model age: < 20 % older than 12 months

Share of outdated models in the total library

Should-cost vs. actual deviation: < 10 %

Persistently high deviations indicate negotiation potential or model errors

Savings yield: 3–10 %

Sustainably achieved savings versus the starting price in the addressed volume

Practical Example

A medium-sized mechanical engineering company with an annual purchase volume of around EUR 90 million built a Should-Cost Library for its machining and sheet metal fabrication. Bottom-up models were created for 120 lead parts, and parametric models covered a further 1,800 standard parts. Within two years, the company achieved savings through newly negotiated prices and design optimisations that

typically lie in this order of magnitude in practice: around 6 % of the addressed volume.

- Cover lead parts with bottom-up models and standard parts with parametric estimation models
- Document all models with assumptions, cut-off date and validation history
- Integrate should-cost reference values into every tender and quotation evaluation
- Quarterly validation against actual quotation and purchase prices

Conclusion

The Should-Cost Library moves price negotiations from the emotional level to the cost level and makes buyers equal conversation partners for technically versed suppliers. Its value depends less on model sophistication than on topicality, data quality and consistent use in day-to-day business. Those who integrate the library into commodity group management and regularly validate it against real market prices create a learning system with a lasting savings lever. What is decisive is discipline in assumptions, documentation and communication as a range rather than a point value. This turns an individual tool into a systematic claim to cost leadership in procurement.

Frequently asked questions

What is a Should-Cost Library?

A Should-Cost Library is a structured collection of should-cost analyses for purchased parts and services. It stores cost breakdowns, assumptions and models as reusable reference values. Buyers use it to objectively evaluate supplier prices and to prepare negotiations.

How do you create a should-cost analysis?

First, the part is broken down into material, manufacturing and overhead components, and machine times, hourly rates and tooling costs are derived from the drawing and routing. Logistics costs and a realistic margin are added. It is important to document all assumptions and then validate them against actual quoted prices.

Which KPIs are relevant for a Should-Cost Library?

Key metrics are the coverage ratio of purchase volume with valid reference values, model age, and the deviation between should-cost and actual prices. The validation rate against real quotations and the savings achieved also count. These figures show whether the library is maintained and actually used.

What advantage does a Should-Cost Library offer buyers?

It provides an objective, fact-based negotiating position, because every price component can be discussed individually. It also identifies cost drivers that can be used for design or process optimisation. In practice, addressable savings potentials are often between 5 and 15 % compared with initial quotations.

Which parts are worth a should-cost analysis?

The greatest leverage comes from A and B parts with high volume or high optimisation potential, especially in strategically relevant commodity groups. For C parts, parametric estimation models are often sufficient. Focusing on 20–40 % of the volume is common practice and economically sensible.

How often does a Should-Cost Library need to be updated?

Material, labour and energy prices change constantly, so at least an annual validation of all models is

recommended. With indexed price clauses or strong raw material price movements, such as alloy surcharges, shorter intervals make sense. Every update should be documented with a cut-off date and author.