

Pilot project with suppliers: structured supplier testing before release for volume production

A pilot project with suppliers is a limited practical test in terms of time and scope, in which a supplier is tested under real conditions before being fully onboarded into the supplier network or before release for volume production. Procurement professionals use pilot projects to evaluate quality, delivery reliability, capacities and communication before entering into long-term commitments. This approach significantly reduces procurement risk and creates a robust basis for decision-making when awarding framework agreements. At the same time, it gives suppliers the opportunity to qualify themselves with manageable effort.

Key facts

- A pilot project is a time-limited, real trial run with suppliers before the award of volume production or a framework agreement.
- Typical duration in practice is between three and twelve months, depending on product complexity.
- Core elements are defined test criteria, metrics such as delivery reliability and process capability, and clear responsibilities.
- Pilot projects reduce procurement risk but do not replace full supplier qualification in accordance with ISO 9001.
- Successful pilots often lead to framework call-offs or classification as an A-supplier; failed pilots require documented exit criteria.
- Legally, pilot volumes require clear agreements on samples, tooling, liability and intellectual property.

Definition: pilot project with suppliers

A pilot project with suppliers is a time-limited, contractually governed practical test in which a supplier delivers a limited quantity of a product or a service under real volume production conditions. The aim is the objective evaluation of supplier performance before a long-term contractual commitment. The pilot project is thus a central risk management instrument in procurement.

Distinction from sample build and sampling

The pilot goes beyond pure sampling: while individual parts are inspected in the sample build, the pilot process covers the entire value creation process including logistics, packaging, documentation and communication. Only in the pilot project does it become apparent whether the supplier can deliver on time, in the required quality and with stable processes. Typically, therefore, the pilot batch is already handled using the later inspection plans and workflows in order to avoid distortions. The findings from the pilot feed directly into the supplier performance evaluation.

Use cases in procurement

Pilot projects are used in several scenarios: when newly qualifying suppliers, in dual sourcing for risk diversification, when relocating production parts, and with substitute suppliers in crisis situations. They also serve as a reality check for innovation topics such as material substitution (ESG) or new manufacturing processes. In practice, they are frequently linked to strategic procurement decisions and anchored as a separate milestone in the procurement business plan.

Methods and approach for pilot execution

A successful pilot follows a structured process: preparation, contractual foundations, execution and evaluation. Those who fail to formalise this process end up with subjective impressions rather than reliable data.

Preparation and objective definition

Before the start, objectives, scope, duration, success criteria and responsibilities are fixed in writing. This includes technical requirements (drawings, Manufacturer Part Number (MPN), tolerances), logistics specifications and the legal framework. A proven rule of thumb: the pilot volume should typically cover five to ten per cent of the later annual requirement quantity so that process variations actually become visible. In addition, the buyer defines in advance which data the supplier must provide as evidence – for example process parameters, inspection reports and delivery reliability metrics.

Contractual safeguards

Pilot projects are frequently structured via framework arrangements or individual contracts with clear delivery terms; in doing so, Incoterms FOB or other delivery clauses as well as packaging and shipping requirements must also be agreed. Provisions on tooling costs, samples, intellectual property and liability in the event of volume production usage risks are important. The contract should expressly state that the pilot does not create an entitlement to follow-up orders – otherwise a de facto legitimate expectation arises in the event of a dispute.

Execution and accompaniment

During the pilot, procurement actively accompanies the supplier: a kick-off meeting, regular interim reviews and a defined escalation path are standard. For technically demanding products, quality assurance verifies process capability (Cpk values) and the initial sample documentation on site. Deviations are not silently tolerated but documented and treated as test criteria – that is precisely what the pilot is about.

Key KPIs for pilot evaluation

The evaluation of the pilot project is carried out using metrics defined in advance. They enable an objective, traceable decision and can later be incorporated directly into the supplier rating.

Quality and process stability

Key KPIs are scrap rate, rework share and process capability. In practice, a Cpk value of at least 1.33 is often the target for safety- or fit-relevant parts. In addition, complaint rates and the response time to quality deviations are evaluated. If sorting actions or blocking in the incoming goods warehouse become necessary, this is a clear warning signal. Documentation should ideally follow the requirements of ISO 9001 so that it can be used in later audits.

Delivery dates, logistics and costs

Delivery reliability (on-time and in-full delivery) is typically measured weekly during the pilot; rule-of-thumb figures for experienced volume production suppliers are often 95 per cent or above. In addition, transport damage, completeness of shipping documents (e.g. packing list) and compliance with agreed packing specifications are checked. On the cost side, Purchase Price Variance (PPV) plays a role: if the pilot price later deviates noticeably from the calculated price, this destabilises the procurement business plan. The company's own cash-to-cash cycle can also be influenced by payment terms and quantity alignment in the pilot.

Collaboration and responsiveness

Alongside hard figures, soft factors matter: communication quality, transparency about problems, response times to enquiries and the willingness to engage in continuous improvement. In practice, these criteria are often captured using structured questionnaires or supplier network feedback. What is decisive is that they are operationalised and weighted in advance – not only at the end of the pilot.

Risks, controls and legal aspects

Pilot projects carry risks of their own that differ from volume production. Without clear controls, misinvestments, premature transfer of knowledge and unclear liability issues loom.

Technical and commercial risks

A successful small pilot does not guarantee suitability for volume production: capacity limits, changes in production or material substitution (ESG) can later lead to deviations. Conversely, failure of the pilot can reveal a supplier problem that would have become considerably more expensive with a full award. Risk management should therefore define scenarios for both outcomes – including a substitute supplier and exit criteria. For complex purchased components, an additional supplier energy audit assessment is recommended if sustainability requirements are relevant.

Protection of knowledge and tooling

Pilot projects provide insight into drawings, bills of materials and manufacturing know-how. Non-disclosure agreements, clear tooling ownership provisions and restrictions on purchased parts from sub-suppliers are therefore standard. The Restricted Substances List (RSL) should also be part of the contract from the outset in order to make substance bans binding. Anyone running several pilots with competing suppliers in parallel must actively organise information separation.

Controls and release process

A formal release decision at the end of the pilot is important: staffed in a multidisciplinary way from procurement, quality, engineering and logistics. The results of the supplier performance evaluation are documented and feed into the supplier rating. If the pilot turns out negatively, this should be justified in a traceable manner – this protects against conflicts and enables the supplier to be requalified at a later stage. Legally, it must be examined in individual cases whether contractual claims to continuation may arise from the conduct of the pilot.

Current developments and digital support

Pilot projects are increasingly supported digitally and linked to sustainability and resilience goals. Procurement organisations use platforms and data analysis to handle pilots faster and on a

better-informed basis.

Digitalisation of pilot management

Digital supplier portals and supplier networks simplify data capture during the pilot: delivery notes, inspection reports and metrics converge centrally. Automatic spend classification helps make pilot requirements visible in category management. When onboarding new suppliers, a supplier technology radar helps systematically assess their capabilities and development path. Structured tender processes are also becoming more important when screening new pilot candidates.

Sustainability and resilience as pilot criteria

Sustainability requirements are increasingly examined already in the pilot: CO2 data, certificates such as Science Based Targets and the company's own supplier energy audits provide insight into ESG suitability. At the same time, the pilot becomes a resilience test: how does the supplier respond to short-notice quantity changes, material shortages or logistics disruptions? Here, mechanisms such as cross docking or flexible transport concepts prove to be strengths. As part of a dual sourcing strategy, the pilot can even be combined with an A-supplier benchmark.

Pilot project and supplier development

Increasingly, the pilot is understood not just as a test but as a joint development phase: supplier and buyer actively improve processes, tooling and communication during the pilot process. This shortens the production ramp-up time and strengthens the partnership. Anyone designing the pilot in this way transforms classic supplier qualification into a genuine start of cooperation.

Typical metrics

Delivery reliability: $\geq 95\%$

On-time and in-full delivery performance during the pilot, measured weekly

Process capability (Cpk): ≥ 1.33

Common rule of thumb for safety- and fit-relevant characteristics

Scrap rate: $< 1\%$

Industry-dependent; significantly lower target values for precision parts

Response time to deviations: < 48 h

Time until a qualified initial 8D response

Pilot volume as a share of annual requirement: 5–10%

Rule of thumb, spread across several call-offs

Practical example

A mid-sized mechanical engineering company was looking for a second supplier for precision-milled housing parts in order to reduce its dependence on an A-supplier. Before awarding the volume production contract, the company agreed a six-month pilot with a new supplier, defined KPIs for delivery reliability, process capability and response times, and accompanied the pilot with monthly reviews.

- Pilot scope: three sizes, approx. 8 per cent of annual requirement, weekly on-time and in-full delivery measurement
- Contractually regulated: tooling ownership, confidentiality, Restricted Substances List, Incoterms FOB

- Monthly review meetings with procurement, quality and logistics; documented deviations as evaluation basis
- Result: Cpk values above target, delivery reliability 96 per cent – onboarding as a B-supplier with the prospect of framework call-offs

Conclusion

The pilot project with suppliers is the most effective instrument for making supplier risks measurable before the award of volume production. It combines technical testing, logistical proof and contractual clarity within a controlled framework. Prerequisites for success are clearly defined KPIs, clean documentation and a formal release decision. Those who conduct pilots in a structured manner not only gain reliable data for the supplier rating but also build resilient partnerships. In a supplier network that increasingly prioritises resilience and sustainability, the instrument is thus gaining further importance.

Frequently asked questions

How long does a pilot project with suppliers typically take?

In practice, the duration is usually between three and twelve months, depending on product complexity, batch size and lead time. Simple standard parts can often be evaluated in three months, while six to twelve months is realistic for complex purchased components with multiple production stages. It is important to fix the duration contractually in advance and equip it with clear milestones.

Which KPIs should be measured in a supplier pilot project?

Key metrics are delivery reliability (on-time and in-full delivery), scrap and rework rates, process capability (Cpk) and the complaint rate. Cost metrics such as Purchase Price Variance and logistics criteria such as completeness of the packing list are also worthwhile. Soft factors such as communication and response times should be operationalised and weighted in advance.

Does a successful pilot project create an entitlement to follow-up orders?

No, not automatically. Without an explicit contractual provision, a de facto legitimate expectation may nevertheless arise in individual cases, which is legally dispute-prone. In practice, it is therefore documented in writing that the pilot does not create any entitlement to volume orders. If in doubt, the design should be reviewed legally.

What volume should be ordered in the pilot project?

A common rule of thumb is five to ten per cent of the expected annual requirement, spread across several call-offs. It is important that several cycles occur over time so that process stability and delivery reliability can actually be demonstrated. A single large order at the end would produce distorted results.

How does a pilot project differ from sampling?

In sampling, individual samples or first articles are inspected, usually under laboratory or prototype conditions. The pilot project, by contrast, tests the entire delivery process under real volume production conditions – including logistics, documentation, communication and delivery schedule performance. The results feed directly into the supplier performance evaluation.

Who should evaluate the pilot project internally and make the decision?

A proven approach is a multidisciplinary review panel consisting of procurement, quality assurance, engineering and logistics. The decision on release for volume production is made and documented on

the basis of the KPIs defined in advance. This keeps the evaluation objectively traceable and demonstrable in ISO 9001 audits.