

Joint Development Manufacturing (JDM): developing together, producing together

Joint Development Manufacturing (JDM) refers to a close development partnership in which the customer and the manufacturing partner jointly develop a product or component and then produce it in series. Unlike classic contract manufacturing, the supplier contributes its own engineering know-how, manufacturing expertise and often intellectual property. For procurement professionals, JDM is a strategic instrument for shortening time-to-market and selectively supplementing development capacity.

Key facts

- JDM combines joint product development and series production within a long-term supply relationship.
- Unlike the OEM/ODM model, the manufacturing partner usually does not develop independently, but as part of a direct joint team with the customer.
- Typical fields of application are electronics, mechanics, medical technology and complex assemblies with a high level of manufacturing depth on the partner's side.
- Contracts govern intellectual property, tooling ownership, quantities and price adjustments in a binding manner, frequently as a contract for work with additional development components.
- In practice, JDM partnerships often noticeably reduce time-to-market, as manufacturing considerations are incorporated into the design at an early stage.
- Critical success factors are clearly allocated IP rights, defined escalation paths and robust supplier management.

Definition: Joint Development Manufacturing

Joint Development Manufacturing (JDM) is a form of manufacturing partnership in which the customer and the manufacturer work together on a product from the early development phase onwards, with the partner subsequently taking over series production. The term originates in the electronics industry but has become established across industry boundaries. JDM is not a standardised legal term but a practically established form of cooperation whose contractual design varies from case to case.

Distinction from ODM, EMS and contract manufacturing

In the ODM model, the supplier develops the product largely independently and sells it under the customer's brand. EMS providers manufacture to the customer's specification without significantly intervening in development. Pure contract manufacturing is likewise purely order-based. JDM lies in between: both sides contribute development expertise, share design decisions and jointly carry the results into series production.

Economic logic from the buyer's perspective

Procurement chooses JDM when in-house development resources are scarce, specialised

manufacturing knowledge lies on the supplier side, or rapid scaling is important. In return, the supplier gains planning certainty and long-term volumes. In practice, this creates a relationship of dependence that must be assessed within supplier risk management and controlled through the contractual framework, second sourcing and ongoing monitoring.

JDM in the procurement process: sequence and interfaces

JDM projects typically go through several phases: requirement definition, partner selection, joint development, prototype construction, industrialisation and series ramp-up. Procurement is required not only during the selection phase but accompanies the entire lifecycle. Particularly important is the early involvement of the supplier, known in procurement as Early Supplier Involvement.

Partner selection and tendering

Selection rarely takes place on unit price alone. What matters are engineering capacity, industry experience, certifications and manufacturing technology. A structured enquiry with a requirement specification, target costs and framework conditions creates comparability. Category intelligence about the relevant supplier market helps to set realistic targets and identify suitable partnership models.

Early Supplier Involvement and joint development

In Early Supplier Involvement, the partner's manufacturing knowledge and materials expertise flow directly into the design phase. This reduces subsequent changes, improves design for manufacturability and shortens time-to-market. Procurement coordinates the interfaces between design, quality and the supplier, including milestone planning and review dates.

Contract and IP design

The core of every JDM contract is the regulation of intellectual property: who owns design documents, tools, test data and improvements created during the collaboration? A mixed model with separated IP shares often results. In practice, the contract is structured as a contract for work with development components and should govern liability issues, escalation levels, unit price development and minimum offtakes in a binding manner. A case-by-case legal review is recommended.

Steering and KPIs in JDM partnerships

JDM relationships are long-term and closely interlinked commercially and operationally. Without measurable steering, creeping cost increases, quality erosion and capacity bottlenecks threaten. A combination of operational performance indicators, structured supplier evaluations and regular business reviews has proven effective.

Operational KPIs

Key metrics are on-time delivery, first pass yield, scrap rate, complaint rate and response times to engineering change requests. Adherence to development milestones is also increasingly measured. These values typically feed into a supplier scorecard that is reviewed jointly on a monthly or quarterly basis.

Supplier scorecard and business reviews

A supplier scorecard weights quality, delivery performance, cost, service and, where applicable, sustainability aspects into an overall rating. In the JDM context, it should also reflect development

performance, such as adherence to deadlines for design milestones. Quarterly business reviews create transparency on capacity utilisation, price development and technology roadmaps and serve as a basis for ongoing supplier management.

Capacity and volume planning

Since the JDM partner ties up resources exclusively or on a prioritised basis for the joint product, joint capacity planning is essential. Sales forecasts, batch size optimisation and framework volumes are coordinated regularly. If the agreed offtake volume remains permanently below the agreed level, suppliers often raise price claims, which should be clarified contractually in advance.

Risks and controls in the JDM model

The close interlinking with a manufacturing partner creates efficiency, but also dependencies. Buyers should assess risks systematically at an early stage and counter them contractually and operationally.

Dependence and second sourcing

Anyone who outsources development and manufacturing to a partner quickly loses the ability to have the product manufactured elsewhere. Countermeasures include contractual assurance of complete documentation, customer ownership of tooling and the evaluation of second-source options. Tools financed by the customer should be safeguarded through a tooling deposit or clear ownership and delivery-up provisions.

Quality and supply chain risks

Quality problems during the series phase require defined processes such as 8D containment for rapid containment and permanent resolution. The JDM partner's sub-suppliers must also be risk-assessed, as their failures directly affect the company's own ability to deliver. In international partnerships, for example after offshoring to Asian markets, logistics risks such as port or transport delays are added, which can be felt financially as detention or demurrage.

Financial and legal safeguards

In the case of high pre-financing or international business, buyers frequently secure payments through a letter of credit. Payment terms, price adjustment clauses (e.g. linked to commodity indices) and currency risks belong in the contract. Sustainability reporting obligations are also gaining importance: for companies falling within the scope of the Corporate Sustainability Reporting Directive (CSRD), supplier data on emissions and social standards forms part of the reporting.

Organisation and data foundation in procurement

JDM places organisational demands on procurement: it is no longer about transactional purchase orders but about managing a strategic partnership over several years. This requires clean master data, clear category allocation and closely interlinked processes with engineering and quality.

Supplier master data and category structure

Well-maintained supplier master data is a prerequisite for reliable analyses of volumes, risks and performance per partner. Likewise, a clean category structure helps to separate JDM matters analytically from classic contract manufacturing or standard procurement. Only then can category strategies be derived per category and the right form of cooperation be chosen per requirement.

Order processing and materials management

Even within a close partnership, the operational side remains: framework agreements are drawn down through purchase orders, and call-off schedules and forecasts feed into the partner's materials management. Modern ERP systems maintain dispositive data via MRP parameter maintenance, such as lead times and batch sizes, which should be closely coordinated with the actual manufacturing conditions at the JDM partner.

Data quality as the basis for steering

Decisions on volume shifts, price negotiations or risk measures stand or fall with the underlying data. A structured data quality score for master data, open purchase orders and performance indicators makes clear where cleansing is needed. In negotiation management, reliable data is often the most important lever vis-à-vis a strong JDM partner.

Current developments: sustainability, resilience and digitalisation

JDM partnerships face changed framework conditions. Sustainability reporting, supply chain due diligence obligations and the desire for geographic diversification are changing selection criteria and contract design. At the same time, digital platforms and data integration enable closer but less personally dependent collaboration.

Sustainability and reporting obligations

Companies within the scope of the Corporate Sustainability Reporting Directive (CSRD) need reliable data from the supply chain, for example on emissions values and social standards. JDM partners are particularly relevant here because of the close collaboration and are increasingly contractually obliged to provide data and undergo audits. Sustainability criteria are also finding their way into the supplier scorecard.

Resilience instead of pure cost optimisation

Experience of recent years has shown that one-sided offshoring strategies can be vulnerable. Many companies today pursue hybrid models: JDM core partners close to the main market, supplemented by capacity in low-cost regions. Procurement assesses supplier risk here not only by cost but by failure scenarios and lead times.

Digital collaboration

Shared PLM systems, digital quality management processes and automated forecast alignment reduce friction losses in the JDM collaboration. Transaction costs fall, and development cycles can be shortened further. What remains important is that responsibilities and data sovereignty are clearly regulated contractually.

Typical metrics

On-Time Delivery (OTD): typically > 95%

Target values in the JDM context are often higher than for standard suppliers, since planning certainty is given.

First Pass Yield: often > 97% in series production

Measure of the partner's process maturity; below the target value, action is required.

On-Time Development Milestones: typically > 90%

Reflects reliability during the joint development phase.

Complaint rate (PPM): industry-dependent, often < 500 PPM

Benchmark varies considerably depending on product complexity and industry.

Practical example

A mid-sized mechanical engineering company developed a new control platform for special-purpose machinery. As its in-house electronics engineering was fully utilised, procurement chose a JDM partner with its own layout and testing expertise rather than a pure EMS provider. Together they defined design for manufacturability, the test strategy and the procurement of long-lead-time components. The partner then took over series production including configuration and end-of-line testing.

- Contractual definition of the IP split: design data with the customer, process know-how with the partner
- Quarterly business reviews with a supplier scorecard including development milestone adherence
- Agreement on customer ownership of tooling and a delivery-up obligation at the end of the contract
- Establishment of a qualified second-source board for critical assembly components

Conclusion

Joint Development Manufacturing is more than a form of procurement: it is a strategic partnership that influences development speed, manufacturing quality and cost position in equal measure. Success depends less on price than on clearly allocated rights, measurable performance and professional supplier management. Buyers should actively manage dependencies, set up the data foundation and contracts cleanly, and review the partnership regularly. Those who lay these foundations use JDM as a genuine competitive advantage. Those who neglect them take on long-term risks that are difficult to correct.

Frequently asked questions

What does Joint Development Manufacturing (JDM) mean?

JDM refers to a form of cooperation in which the customer and the manufacturing partner jointly develop a product, after which the partner takes over series production. Both sides contribute development know-how and resources. The partnership is typically designed as a long-term relationship with closely specified contractual terms.

What is the difference between JDM and ODM?

In the ODM model, the supplier develops the product largely independently and delivers it under the customer's brand. In JDM, the customer and the partner work together directly during development and share design decisions. As a result, JDM offers greater control over specification and intellectual property, but also requires more in-house engineering resources.

When is JDM worthwhile for companies?

JDM pays off when in-house development capacity is limited, specialised manufacturing know-how sits with the partner, or a fast time-to-market is important. Prerequisites are sufficient volumes and a willingness to commit long term. For simple, short-lived or sensitive products, classic contract manufacturing or ODM is often the better fit.

How is intellectual property handled in Joint Development Manufacturing?

IP rights should be allocated precisely in the contract: background IP usually remains with the respective owner, while newly created results (foreground IP) are distributed according to project shares or purpose agreements. Tooling, test data and documentation require separate provisions, including delivery-up obligations. A case-by-case legal review is recommended.

What are the risks of the JDM model?

The main risks are dependence on the partner, loss of manufacturing knowledge and restrictions when switching partners. Added to this are quality and sub-supplier risks as well as potential price claims in the event of volume deviations. Countermeasures include contractual documentation obligations, customer ownership of tooling, second sourcing and systematic supplier risk management.

How do you find suitable JDM partners?

Suitable partners are identified through structured enquiries with requirement specifications, target costs and qualification criteria. Engineering capability, manufacturing technology, certifications, references and capacity situation are evaluated. Site visits, audit reports and pilot projects are standard practice in partner selection.