

Master Data Governance: Structured control of master data in procurement

Master Data Governance refers to the company-wide organisation, control and quality assurance of master data, i.e. the central base data on materials, suppliers, customers or contacts. In procurement, this primarily concerns material master records, supplier master records and sourcing data. Sound governance ensures that processes from enquiry through e-procurement to invoice verification are built on consistent, up-to-date data. Without clear responsibilities and rules, duplicates, incorrect prices and avoidable process costs arise.

Key facts

- Master Data Governance encompasses roles, processes, rules and controls for maintaining central master data.
- In procurement, the focus is on material master records, supplier master records and sourcing information.
- In practice, master data quality values of over 95 to 98 per cent are considered an ambitious target.
- Faulty master data typically causes downstream costs in the ordering process, logistics and financial accounting.
- Data ownership and clearly defined maintenance processes are the most important success factors.
- Master data are a prerequisite for functioning EDI connections, catalogue systems and automated procurement.

Definition: Master Data Governance

Master Data Governance is the overall framework of organisational structure, roles, process rules and control mechanisms that ensures the quality and consistency of master data across the entire life cycle. It answers the questions of who may create, amend and approve which data, according to which standards this is done, and how compliance is verified. It must be distinguished from pure master data maintenance: governance describes the control level, not the operational data entry itself.

Distinction from master data maintenance

Master data maintenance is the operational activity, such as creating a material master record or updating a supplier price. Master Data Governance, by contrast, defines which standards apply, which roles are involved and which approval steps must be followed. Only the combination of both leads to permanently reliable data stocks.

Importance for procurement

Procurement is both a producer and a consumer of master data: it supplies supplier and sourcing data and, at the same time, relies on correct material data for enquiries, quote comparisons and purchase orders. Unclear data foundations complicate requirements management, distort award decisions and impede supplier onboarding management. Functioning governance is therefore the foundation of

strategic procurement work.

Establishing governance in the company: structure and methods

An effective Master Data Governance system is not created by software alone, but by clear responsibilities, defined processes and measurable rules. A step-by-step approach has proven effective: inventory, role clarification, standardisation and ongoing control. Anchoring at management level is important, as data ownership often has to be enforced across departments.

Role model and data ownership

A core component is a role model with Data Owner, Data Steward and data maintainer. The Data Owner, in procurement often the category or supplier responsibility, holds the functional responsibility for data content. The Data Steward monitors standards, resolves conflicts and coordinates maintenance across departments. Practice has shown that without named owners, data quality initiatives quickly fizzle out.

Data standards and naming conventions

Uniform naming, classification and numbering conventions are a prerequisite for findability and duplicate avoidance. This includes rules for material short texts, the use of standardised attribute formats and the clean maintenance of the manufacturer part number (MPN) alongside the internal material number. Classification systems such as eCl@ss or UNSPSC are also frequently used as standards.

Process integration

Master data creation should not be isolated but embedded in existing processes: when creating a new part, as part of the requirements management review; for new suppliers, as part of supplier onboarding management; and for price data, as part of purchase order processing. In this way, data is captured where the functional knowledge resides, and duplicate or inconsistent entries are avoided.

Areas of application: master data in day-to-day procurement

Master data run through almost all procurement processes. Their quality determines whether enquiries can be sent automatically, whether catalogues display correct prices and whether delivery schedules trigger the right quantity at the right place. Four areas are particularly relevant in practice in a production environment.

Material master data and procurement

Material master records contain description, dimensions, unit, purchasing group, planning parameters and sources of supply. Errors here lead to incorrect orders, wrong units of measure or purchase orders placed with unapproved suppliers. Maintaining the qualification criteria for alternative sources of supply and managing the Approved Vendor List (AVL) are also based on reliable material master data.

Supplier master data

Supplier master records comprise company-wide general data, purchasing data such as terms of payment, typically around 2/10 net 30, as well as communication and certification data. Up-to-date certificates, contact details and qualifications also form the basis for evaluations as part of the tender questionnaire or bidder queries. Outdated supplier data jeopardise compliance- and audit-relevant evidence.

Price, condition and sourcing data

Condition records determine which price applies for which validity period and which supplier relationship. Without clear governance, multiple conflicting conditions arise which, in the worst case, lead to excessive payment amounts. Regular condition audits and defined approvals for price changes are therefore a standard component of good governance.

Interfaces and automation

For electronic order transmission via EDI, for catalogue solutions in e-procurement and for automatic invoice comparisons, master data must be available in uniform formats and units of measure. Inconsistent units or descriptions lead to reconciliation effort and order cancellation cases. The higher the degree of automation, the more critical the data quality.

Key KPIs: making data quality measurable

Master Data Governance can only be managed if data quality is measured regularly. Typical KPIs capture completeness, consistency, currency and uniqueness of the data stocks. In practice, monthly or quarterly reports have become established, showing the values per data object and area of responsibility.

Quality and process KPIs

Key metrics are the proportion of complete records, the duplicate rate, the proportion of materials with a valid source of supply and the number of open change requests. In addition, process metrics such as the turnaround time for new material creation or the proportion of automatically generated purchase orders can be used, which depend directly on data quality.

Impact metrics in procurement

Beyond pure data quality, the impact is also visible in operational metrics: a higher fill rate may be attributable to correct delivery times and planning data, and declining processing rates in accounts payable to consistent condition data. These correlations help to justify investments in data quality to senior management.

Risks and controls: avoiding typical pitfalls

The most common sources of error are missing responsibilities, historically grown free-text data and uncontrolled creations across multiple system access points. Without control mechanisms, data quality deteriorates noticeably again after every cleansing project. Effective governance therefore combines preventive rules with subsequent audits.

Preventive controls

Effective measures include mandatory fields and validation rules at data entry, duplicate checks before creating new records, workflow-driven approvals and access restrictions on critical fields such as conditions. Four-eyes principles for sensitive changes are common practice and also support audit-proof processes.

Reactive controls and audits

In addition, regular data quality audits, sample checks and analyses of critical changes should take place. Anomalies such as frequent order cancellations, unnecessary firm stock levels or faulty import

documents, including incorrect HS classification in foreign trade, often indicate master data problems and should be used as triggers for data cleansing.

Organisational risks

A widespread risk is the relocation of maintenance into decentralised silos, for example when departments keep their own Excel lists. Further pitfalls include unclear data ownership after reorganisations, a lack of training during system changes and the neglect of deletion processes for data records that are no longer required.

Current developments: master data in transition

Several drivers are currently increasing the importance of structured master data: the increase in automated procurement processes, growing sustainability and compliance requirements, and AI-supported applications that only deliver reliable results with clean data. At the same time, master data are increasingly moving into networked system landscapes beyond the classic ERP core.

Sustainability and compliance data

Master data models are being extended to include sustainability attributes, such as CO2e values per material or transport route, certifications and proof of origin. These fields are a prerequisite for product carbon footprints and reporting obligations. As legal requirements regarding sustainability and product information continue to evolve, case-by-case review by the relevant departments and, where appropriate, legal advice should be carried out.

AI and automated maintenance

Language models and classification tools now support the automatic enrichment, normalisation and duplicate detection of material texts. They do not replace governance but require it: without clear standards, automated tools consistently produce incorrect data. Used sensibly, they significantly accelerate creation and maintenance and relieve the data stewards.

Networking across company boundaries

Increasingly, master data are shared with suppliers and customers, for example via supplier portals and data exchange platforms. This places higher demands on format standards, approval processes and data protection. At the same time, shared data enable faster onboarding processes and more up-to-date information on certificates and capacities.

Typical metrics

Master data completeness rate: > 95 %

Proportion of records without missing mandatory fields; ambitious target in practice

Duplicate rate: < 2 %

Proportion of duplicate material or supplier records in the total data stock

Materials with a valid source of supply: > 98 %

Proportion of actively procurable materials with a maintained source of supply

Turnaround time for new material creation: 2–5 working days

Typical benchmark incl. approval workflow

Practical example

A mid-sized mechanical engineering company with around 400 employees discovered during an ERP migration that around one fifth of its material master records contained duplicates or incorrect units of measure. Purchase orders were placed using incorrect units, EDI messages were rejected, and the Approved Vendor List (AVL) contained deactivated suppliers. After cleansing the data, the company established a permanent governance structure.

- Introduction of a data owner model with clear assignment per product group and supplier master
- Introduction of binding naming conventions and mandatory classification for every new material creation
- Workflow-driven approval of new materials and suppliers with duplicate checks and mandatory field validation
- Monthly data quality reporting with targets such as a duplicate rate below 2 per cent and complete sourcing data above 98 per cent

Conclusion

Master Data Governance is not an IT project but a permanent organisational task with a direct impact on procurement costs, process automation and compliance. It requires named responsible persons, binding standards and regular monitoring of data quality. Companies that implement this consistently reduce processing effort, avoid costly incorrect orders and create the data foundation for automation and sustainability reporting. For technical buyers, it is often worthwhile to start with the most critical objects: material master records for A-parts and the master data of key suppliers.

Frequently asked questions

What does Master Data Governance mean?

Master Data Governance refers to the totality of roles, rules, processes and controls with which a company ensures the quality and consistency of its master data. In procurement, this particularly concerns material, supplier and condition data. The objective is for all systems and processes to work with the same, reliable base data.

Why is master data quality so important in procurement?

Faulty master data leads to incorrect purchase orders, unnecessary order cancellations, duplicate-driven multiple sourcing decisions and disrupted EDI processes. They also distort reports and award decisions. In practice, the downstream costs of faulty data are frequently underestimated considerably, as they are incurred across many departments.

Which roles belong to Master Data Governance?

Three roles are typical: The Data Owner holds the functional responsibility for a data area, such as a product group. The Data Steward coordinates standards and resolves conflicts across functions. The data maintainers or maintenance units carry out the operational creation and amendment in accordance with the defined rules.

How do you start a Master Data Governance project?

A step-by-step approach has proven effective: first analyse the existing data for completeness and duplicates, then define roles and standards and cleanse the most critical data objects. Subsequently,

maintenance processes and controls are embedded. A pilot area, such as the master data of A-list suppliers, delivers early visible successes.

Which KPIs measure Master Data Governance?

Common KPIs are the completeness rate, duplicate rate, share of valid sources of supply and the turnaround time for change requests. In addition, process metrics such as the degree of purchase order automation or the invoice discrepancy rate are suitable. What matters is measuring the values regularly and comparing them against clearly assigned responsible persons.

Which systems support Master Data Governance?

Dedicated Master Data Management systems are frequently used, serving as a central hub between ERP, e-procurement and functional systems. Even without specialist software, governance can be implemented with standard ERP tools, workflows and reports. The rules and responsibilities are decisive, not the tool.