tset

Tset Manifesto

Managing Cost and Carbon in Times of Industry Transformation

Contents

01 About Tset

Empowering the traditional manufacturing industry with an innovative and sustainable approach to product cost simulation.

Founded in 2018 by Andreas Tsetinis and Sasan Hashemi, Tset embarked on a mission to revolutionize product cost simulation in the manufacturing industry. Within months, the first prototypes were operational, setting the stage for a transformational journey.

product cost simulation, empowering businesses to manage costs effectively while enhancing efficiency and sustainability in product development and manufacturing.

Tset for Cost and CO_2 Management

Tset is a cloud-based solution that helps you efficiently manage product costs and carbon footprint. Tset's calculation modules automate the generation of the calculation structure for specific manufacturing technologies, leveraging heuristics, statistical models, and geometric feature extraction. Additionally, Tset provides cloud-based software for bill of material-based tracking of cost-down measures.
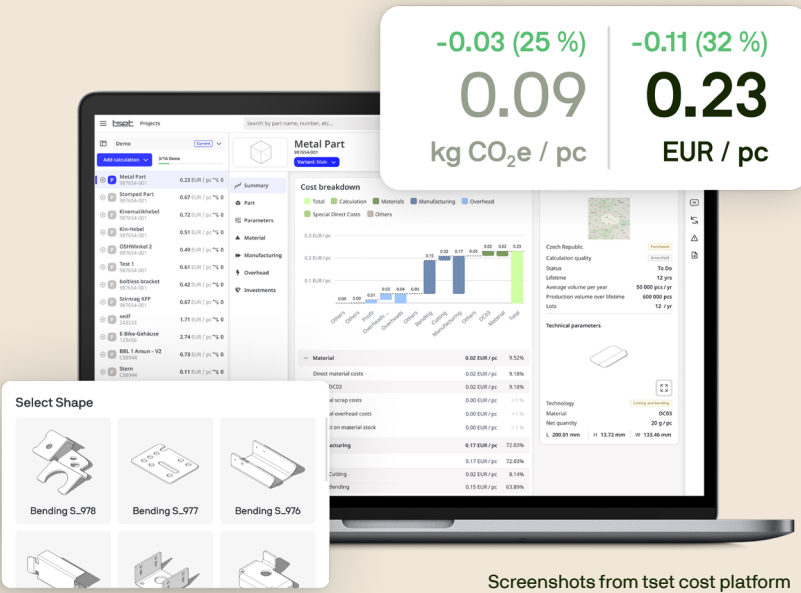

Over the past 6 years, we have evolved from a small, dedicated team into a diverse group of over 80 talented professionals. While our roots are in Austria, our team now spans across Europe, including Germany, Hungary, the Czech Republic, and France. This diverse talent is crucial to our innovative approach and vibrant company culture.

As we continue to expand, we are not only transforming how businesses manage and simulate product costs; we are redefining what it means to be a forward-thinking company in our industry. Our vision is to become the leading solution for holistic

Screenshots from tset cost platform

02 Emerging Trends to Look Out For

The manufacturing industry is experiencing significant shifts that are reshaping how businesses approach cost management and sustainability.

Digital transformation and integration

The integration of digital technologies enables more precise calculations, cost analyses, and forecasts. Automating data collection and processing significantly increases speed and efficiency, as error rates are lower. Cloud technologies further enable easy access to cost engineering software, promoting collaboration both within and between businesses.

E-mobility

Many companies recognize the need to rebuild their product portfolios to stay competitive. Traditional manufacturers are actively seeking new product ranges relevant to the electric vehicle market. Companies on the buying side are navigating unfamiliar territory by designing vehicles with new technologies.

Accelerated product development cycles

The speed at which companies develop new products, such as machinery or vehicles, has significantly shortened. This acceleration necessitates more calculations and parallel development processes, increasing the demand for cost engineering solutions.

High geopolitical instability

Geopolitical instability is pushing companies to explore alternative sourcing strategies, such as dual sourcing, to mitigate risks.

Sustainability

Cost analyses must increasingly factor in environmental impacts and sustainability. Environmentally friendly production processes can reduce resource use and CO_2 emissions but must be evaluated for potential additional costs.

High cost fluctuations

Simulations and scenario analyses allow businesses to evaluate different factors, such as fluctuations in energy and raw material prices, production locations, and currencies. These tools help assess the effects of changes on cost structures.

03 Improve Profitability and Sustainability With Tset
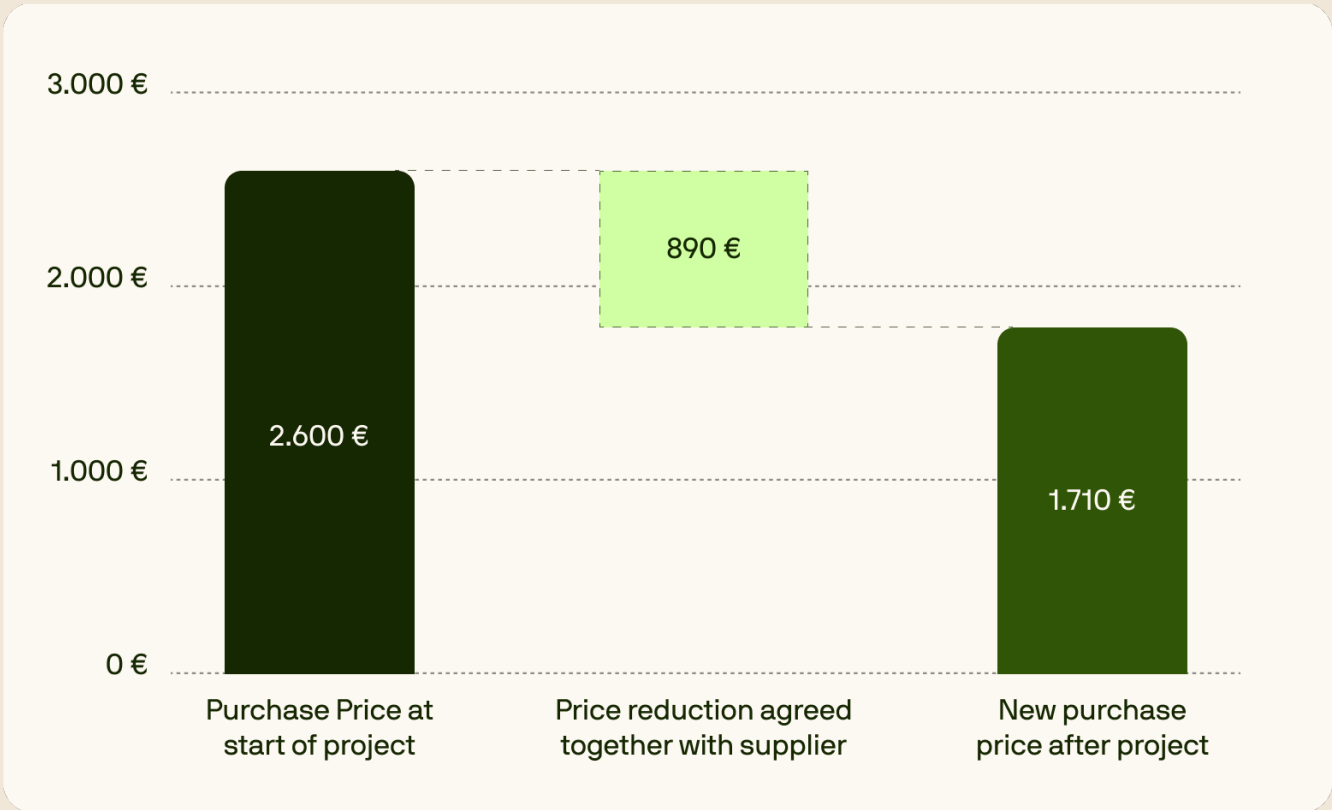
1. Reduce Supply Chain Material Costs

Tset's software provides a powerful solution for optimizing purchasing processes and negotiating better terms with suppliers. By leveraging data-driven analysis and simulations, Tset enables businesses to identify cost-saving opportunities that might otherwise go unnoticed.

Customer
Manufacturer of recreational engines and propulsion systems for small aircraft, light sport aircraft, and UAVs.

Challenge
Reduce the purchasing price of a specific component package by 6% amid rising material costs.

Tset's approach
1. Collection of technical and economic assumptions.
2. Creation of "Best Practice Green-field" Product Cost Simulations under the assumptions of ideal conditions and delta analysis versus current client estimate.
3. Confrontation with supplier and detailed anallis between "ideal" simulation and existing cost structure.
4. Derivation of measures to reduce costs together with supplier.
5. Final negotiation of new purchasing contract.

Outcome
- 34% reduction in price per piece
- 4.9 MEUR in annual savings

Bar chart:
- Purchase Price at start of project: 2.600 €
- Price reduction agreed together with supplier: 890 €
- New purchase price after project: 1.710 €

2. Improve Sales Offer Quality and Speed

Tset empowers companies to create profitable, competitive quotes and win RFQs. By leveraging advanced product cost simulations, Tset enables businesses to analyze their current estimates against ideal conditions and apply internal and external supply chain constraints.

Customer
Multinational engineering company specializing in aerospace and automotive components.

Challenge
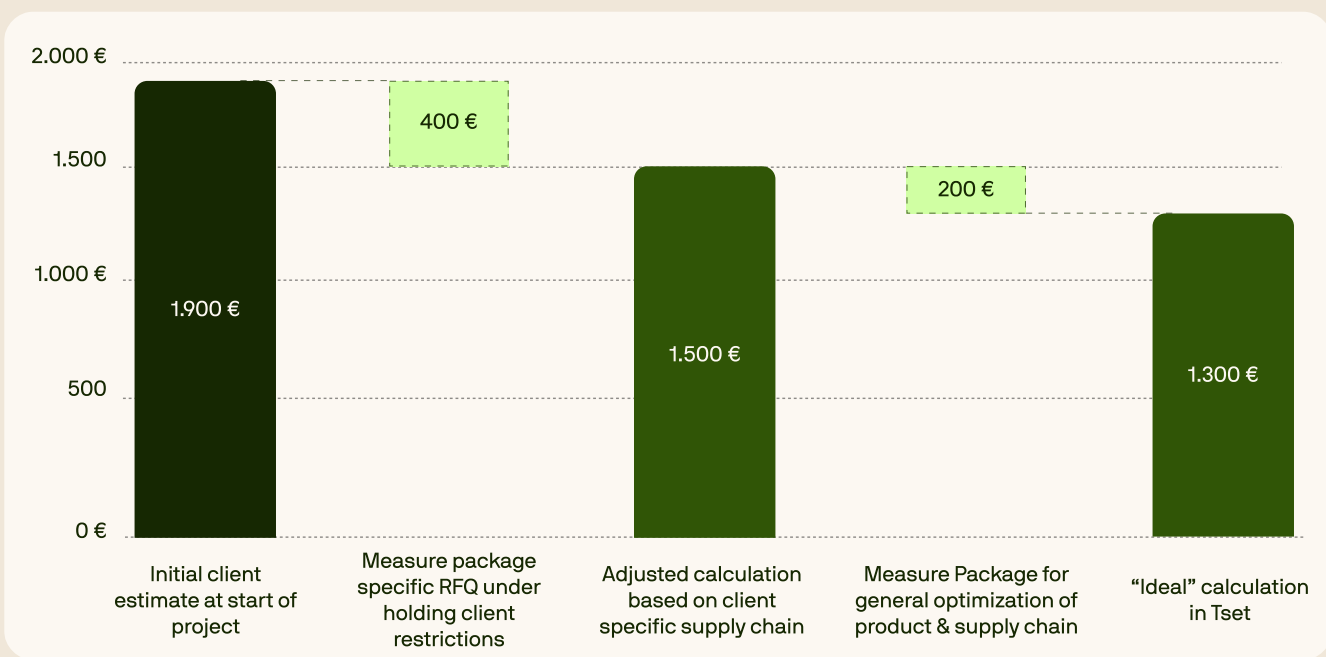Initial product estimate 30% above OEM target during RFQ process.

Tset's approach
1. Collection of technical and economic assumptions.
2. Creation of "BPG*" Product Cost Simulations under the assumptions of ideal conditions and delta analysis versus current client estimate.
3. Adjustment of "BPG" Simulations into "BPB**" Simulation through application of clients internal & external supply chain restrtions.
4. Derivation of specific measures for the given RFQ through delta analysis between "BPB" and current client estimate.
5. Derivation of general measures for client organization through delta analysis between "BPB" and "BPG" -> "Why are we not in an ideal world".

Outcome
- 18.75% reduction in price per piece
- 732 MEUR in savings over a project lifetime (1.8M pieces)

| | Initial client estimate at start of project | Measure package specific RFQ under holding client restrictions | Adjusted calculation based on client specific supply chain | Measure Package for general optimization of product & supply chain | "Ideal" calculation in Tset |

Values: 1.900 €, 400 €, 1.500 €, 200 €, 1.300 €

*Best Practice Greenfield ** Best Practice Brownfield

3. Make Product Carbon Footprint Transparent

Tset enables clients to set CO_2 targets early in product development, even before finalizing their supply chain. Our software creates a bottom-up calculation structure for the entire bill of material (BOM), defines CO_2 premises for key materials and energy sources, and performs scenario simulations.

Customer
Tier-1 supplier in Central Europe, producing powertrain components for automotive, aerospace, and industrial sectors

Challenge
Stay competitive in the market while managing product carbon footprint

Tset's approach
1. Set up a bottom-up calculation structure for the entire bill of matrial including all process steps and raw materials; supported with Tset Engine calculation modules, Tset master data and a modular set of golden sample calculations.
2. Define preliminary CO_2 premises for the most elevant raw materials and energy sources; apply them to the calculation strucure.
3. Perform various scenario simulations.
4. Assess cost impact of CO_2 reduction measures.
5. Decide on a final scenario and submit the
6. OEM's product carbon footprint break-down forms.

Outcome
Enhanced carbon footprint transparency, integrating emissions reduction solutions

4. Early-Stage Target Setting

In early product development, Tset's software plays a crucial role in target setting and technical concept evaluation. Tset's solution supports technical and cost analysis of machines and benchmark products, develops target concepts and costs for new machines via design-to-cost activities, and conducts detailed competitor benchmarking.

Customer
World-renowned manufacturer of dental products

**Challenge**
Cost optimization for a new machine

Tset's approach
1. Technical and Cost Analysis of machine & benchmark product
2. Support development of target concept & cost for new milling machine via design to cost activities
3. Detailed competitor benchmarking and development of ideas for own new product concept and cost structure
4. Commercial realization

Outcome
- 30% reduction in costs per new machine
- Achieved commercial realization of product cost optimization

04 Achieving Success with Tset
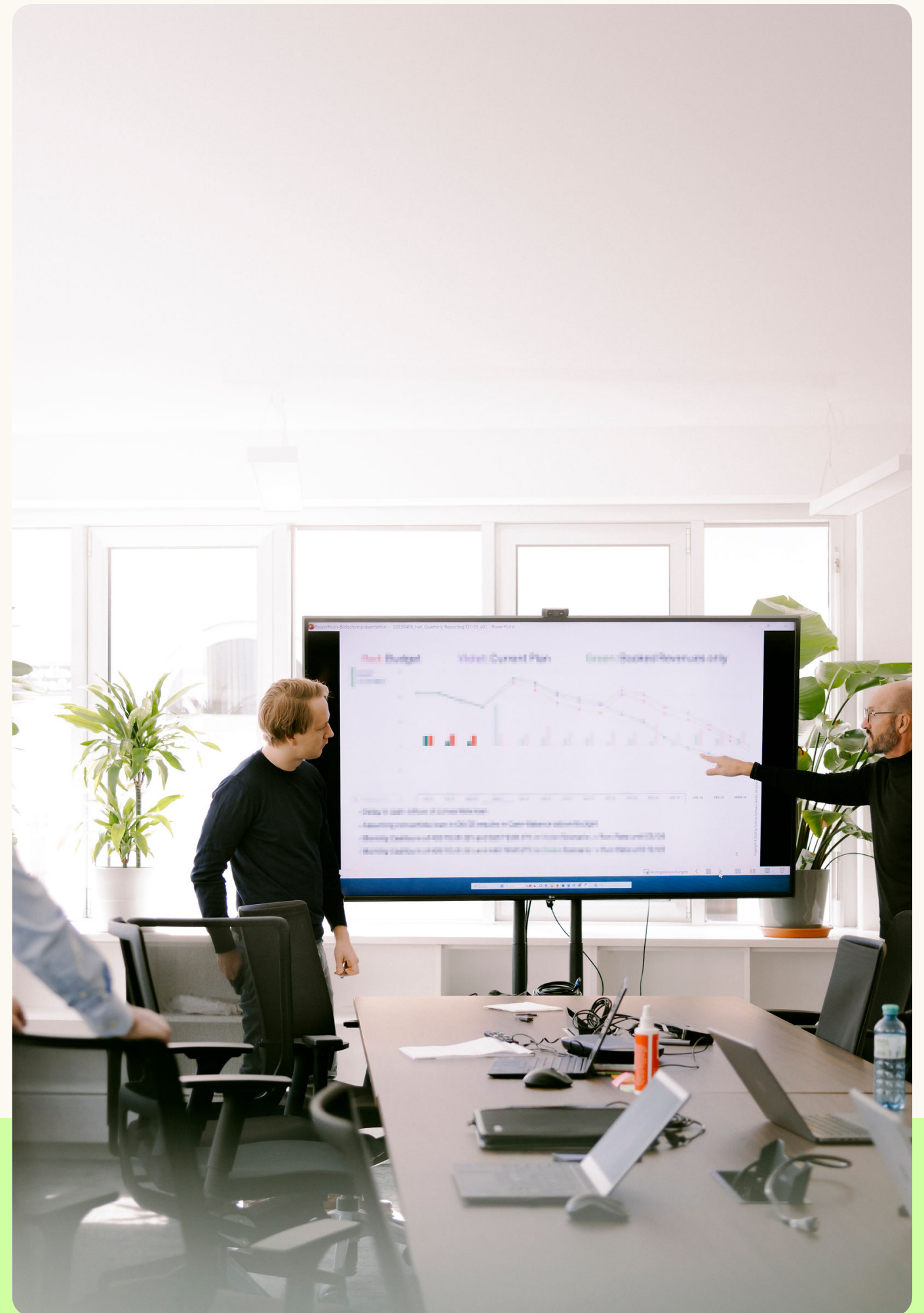
01 Create More Bottom-up Cost Calculations

How Tset Calculation Modules Work

Tset excels at cost analysis through its calculation modules. These modules automate processes across manufacturing technologies, such as die casting and plastic injection molding, and are widely used in many products worldwide.

Tset developed these modules by analyzing historical cost calculations to identify the key factors influencing cost variance. For each technology, the software identifies 10-15 crucial cost drivers and implements feature engineering, allowing users to input data in multiple formats, such as specifying shapes.

Level of Detail

Tset provides a detailed, bottom-up description of calculations, breaking down raw materials and manufacturing steps to create a small bill of materials. Calculation modules typically handle single parts, each potentially having its own bill of materials. Additionally, Tset generates a bill of processes, detailing required steps, machines, setup times, and labor. Users can view, edit, add, or remove steps to tailor the module to specific needs.
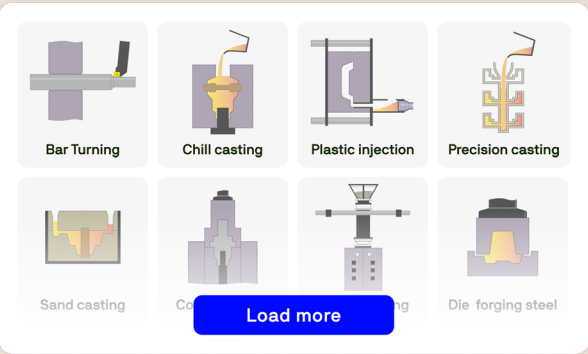

Technology Coverage

Tset supports a range of technologies, including:

- Plastic parts injection molding
- Casting
- Forging
- Sheet metal forming
- Sintering
- Electronics and electromechanics
- Turning operations in machining

3D file support is available for select modules, with plans for future expansion to more technologies.

Benefits for Users

Senior Experts:
Tset automates repetitive tasks, enabling senior experts to generate accurate cost estimates more efficiently, with the ability to adjust results based on expertise.

Less Experienced Users
Tset's modules serve as a learning tool for less experienced users, providing insights into the bill of materials and processes, accelerating the learning curve.

Frequently Asked Questions

01 What is the result?

The output of Tset's calculation modules includes a chain of manufacturing steps, required materials, machines, workers, and more, all of which are adjustable. Tset produces best-practice greenfield calculations, which represent ideal scenarios. Such a best-practice is the perfect starting point to identify ideas for cost improvements; however, it will usually not immediately match the brownfield situation of a specific supplier.

02 Do calculations require training data from the customer?

No, Tset does not require any training data. The software is ready to use out of the box, with no need for pre-loaded data.

03 Does everyone get the same results?

If two clients use the software out of the box, they will get the same results. However, many clients choose to customize the software. Modifying the master data can change the results.

04 Can I customize my calculations?

Yes, Tset can customize the calculation modules by incorporating client-specific formulas and shapes into the software. This is an optional paid service.

05 What if a technology is not covered?

Tset covers the 25-30 most common manufacturing technologies, but not all. Clients can manually create additional calculation steps or use available master data to adapt to their needs. The Tset Consulting team can also assist with creating calculations for special technologies as an additional service.

06 Does Tset support 3D?

Yes, 3D file support is available for certain calculation modules, such as sheet-metal forming. Tset plans to expand 3D support to additional modules in the future.

02 Leverage Internal and External Data

Key Features of Tset Master Data Service

Tset's master data service provides prepared datasets essential for cost calculations, reducing the need for manual research. Key features include:

Out-of-the-box functionality
Begin using Tset immediately without any initial data input required.

Flexibility
Leverage both Tset's provided data and your own datasets for additional benefit.

Multi-dimensional master data
Store and simulate data across multiple dimensions, such as material prices by time, region, type, and more.

Available Reference Master Data

Most master data is included with the Tset license and is regularly updated. Tset ensures data quality by conducting internal research and collaborating with top external sources, providing customers with reliable and comprehensive datasets.

5.000 machines with invest, depreciation time, space, and energy / maintenance /consumable rate

11.600 material data points

Overhead best practices, currencies & more

147 manufacturing technologies

760 regions worldwide with wages, labor cost and shift burdens, interest, space cost, electricity cost etc.

Frequently Asked Questions

01 Is my data secure?

Yes, Tset ensures data security by separating each client's data.

02 Do you provide forecast data?

While Tset does not provide forecast data, users can create and store their own within the software.

03 Can I use the master data service with other tools?

Yes, the service includes an API for integration with other applications

04 How often is the software updated?

Tset provides weekly bug fixes and regular feature enhancements.

05 Is CO_2 data included?

Yes, a basic CO_2 dataset is included in the standard package, with additional comprehensive data available as an add-on.

03 Move From Hundreds of Spreadsheets to a Central, Interoperable Calculation Software

Fully Managed SaaS: Hosting, Updates, and Security

Tset provides more than just software - it offers a comprehensive software-as-a-service (SaaS) solution. Tset manages all aspects of hosting in a high-security data center, ensuring professional management and compliance with data privacy regulations. The infrastructure is optimized for performance, providing fast response times and sufficient resource availability.

Security is a top priority for Tset. The system gets regularly updated to address vulnerabilities and continuously enhance the product functionality. Annual updates include revised location factors such as wages, material prices, manufacturing information, machine descriptions, and more. With this all-in-one approach, Tset eliminates the need for internal IT infrastructure, thereby reducing additional costs for clients.

Service Level Agreement (SLA)

Tset offers a robust service level agreement (SLA) that covers critical aspects of software performance. This includes such topics as defined error resolution timeframes, backup procedures, and software uptime guarantees. The SLA ensures clients have clear expectations of service quality.

Cost Reduction Through the Cloud

Tset's cloud-based solution provides significant cost advantages compared to traditional on-premise software. For most clients, the total cost of ownership is lower with Tset, particularly when considering the frequent updates required by on-premise solutions.

For clients transitioning from Excel-based systems, Tset eliminates the need for ongoing maintenance and updates. By centralizing these functions, Tset reduces the risk of errors that occur with manual, people-dependent processes.
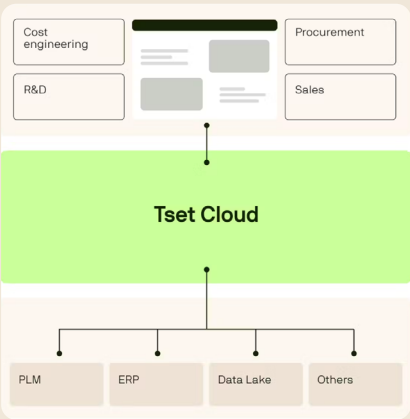
Easy Integration with Documented, Powerful API

Tset offers superior integration capabilities through its professional, standards-compliant API. The thoroughly documented API covers all data objects within the software, enabling seamless integration with other applications. Any action that can be performed through the user interface can also be accomplished via the API, providing maximum flexibility for clients' integration needs.

Frequently Asked Questions

01 Can I connect my Single Sign-On/ Authentication system?

Yes, Tset supports SAML (SAML 2.0) and OpenID Connect (OIDC). Integration is straightforward and has been implemented for many clients.

02 Do you have adapters for ERP or PLM systems?

Tset does not provide standard adapters due to the heavy customization of ERP and PLM systems in large companies. However, we work with clients to build customized interfaces, which we have successfully implemented in the past.

03 Can you help with creating interfaces for other systems?

Yes, Tset provides documentation and support for specifications, and we can build interfaces for clients if needed.

04 Can you help design my ideal architecture?

Yes, our rollout team includes experts who can design the target architecture for integrating multiple software applications in cost or carbon management.

05 Are you certified?

Yes, Tset holds a valid TISAX label for all locations, based on the ISO 27001 norm and maintained by the VDA. We hold the label "Information with High Protection Needs" and can provide detailed information via the ENX portal.

06 Can I run the software on a Mac?

Yes, Tset runs on any modern web browser. For the best experience, we recommend using Google Chrome and an industry-standard Full HD 1080p screen resolution.

# 04 Enable Collaboration Across Departments

Breaking Organizational Silos

When making an offer calculation, companies need to combine data from various departments, such as purchasing, engineering, controlling, and sales. Data siloes often appear even within a single department. These silos make it difficult to store and analyze supplier breakdowns, benchmarks, and best practice calculations systematically.

Tset addresses this issue by providing a centralized software solution for all product information. It allows companies to store and access all cost-relevant information in one place, making it easily accessible to all relevant stakeholders.

Access for Other Departments

As a web-based application, Tset does not require installation, making it easy to onboard users from different departments. Sharing calculations is simple - users can share links with a simple copy-paste action.

Moreover, Tset's intuitive user interface allows users without deep technical expertise to quickly understand cost and carbon calculations. Whether a user is a purchaser, controller, or engineer, the software makes critical information accessible and easy to understand.
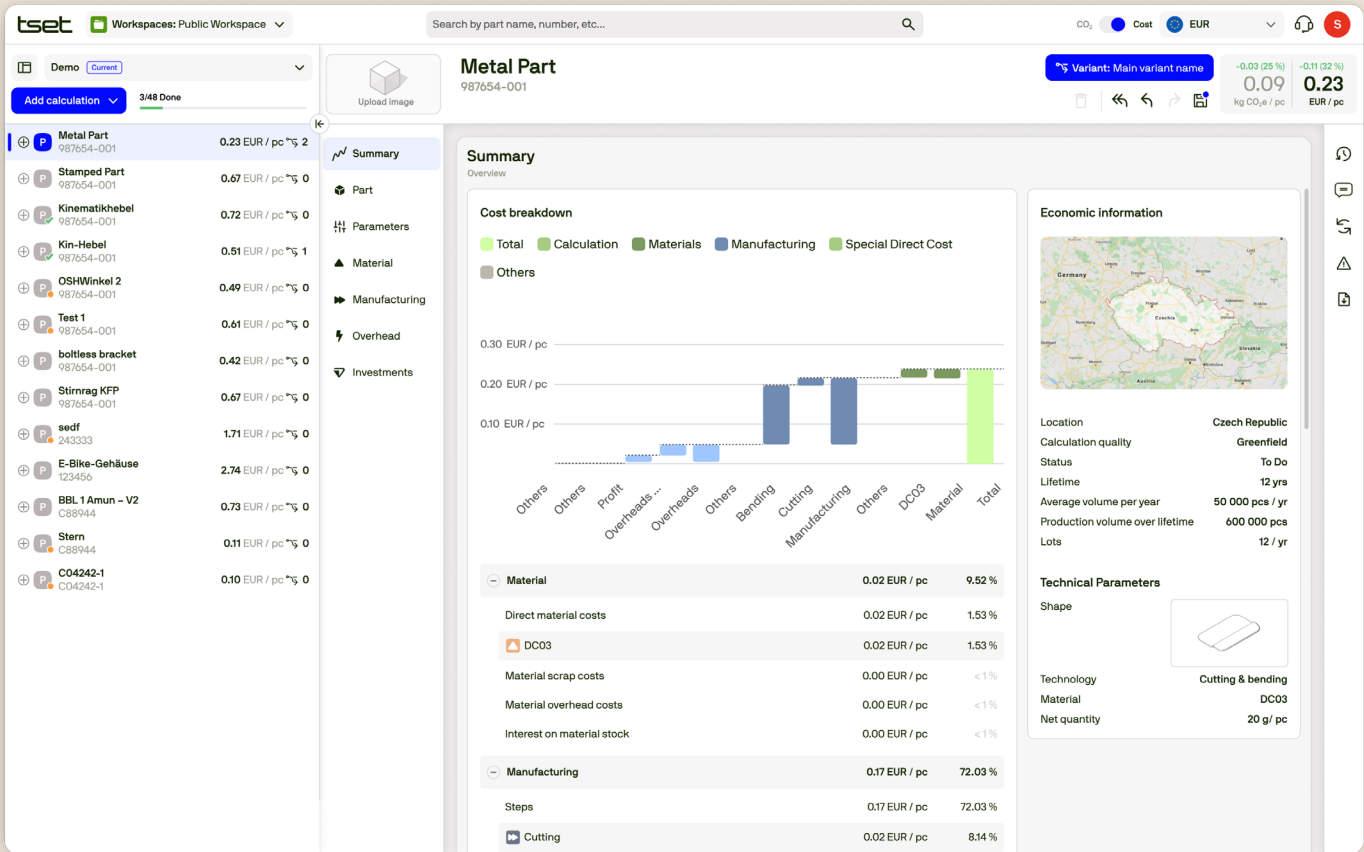
Frequently Asked Questions

01 Can I get a read-only license?

Yes, read-only licenses are available.

02 Are the calculation modules usable by non-technical purchasers?

Yes, though we recommend technology-specific training, which we are happy to provide.

03 Can I calculate the net present value (NPV) of my offer?

Currently, Tset does not calculate NPV, but we plan to add this functionality. In the meantime, we can provide Excel exports for users to calculate NPV externally.

05 Integrate Product Carbon Footprint

Product Carbon Footprint for New Sustainability Demands

Sustainability is increasingly important in production due to pressure from consumers, investors, rising costs, and regulatory restrictions. Greenhouse gas KPIs further drive up material and product costs, with emissions certificates often required for both products and manufacturing plants, adding to expenses.

-0.03 (25 %) | **-0.11 (32 %)**
0.09 | 0.23
kg CO2e / pc | EUR / pc

Manufacturers face cost fluctuations, making it essential to track how rising material prices affect product costs. Additionally, clients often set specific carbon footprint requirements, and failing to meet these can lead to rejected offers.

In early product development, clients may request carbon estimates before suppliers are finalized, requiring initial

calculations based on reference data, which can later be refined with primary supplier data.

To address these challenges, precise carbon footprint calculations are essential. While rough estimates are possible, accurate data is often needed due to variations in recycled material content, weight, energy use, and location-specific factors. Fortunately, companies already using bottom-up cost calculations typically have much of the necessary data. Tset's software supports both cost and carbon calculations, including an emissions database, making it easy to integrate carbon calculations into existing cost calculation processes.

Tset Consulting Services for Sustainability

While Tset can be used solely for carbon calculations, it is most beneficial when used for both cost and carbon analyses. If the process becomes overwhelming, Tset's consulting services are available to assist with estimations.

Frequently Asked Questions

01 Are you certified?

Typically, a product's carbon footprint is certified once all primary data is available. However, many Tset clients use the software to generate preliminary carbon footprint estimates months before primary data is available. Since these are just estimates, certification is usually not required.

02 Can I use my own data?

Yes, users can input their own data into the software.

03 Does Tset connect with Catena-X?

Not at the moment, but Tset is considering integrating with Catena-X in the future.

04 Can Tset help create a product carbon footprint calculation?

Yes, Tset's consulting team is available to assist with carbon footprint calculations.

06 Setting up a New Cost Engineering Organization

Tset Support for New Cost Analysis Functions

Tset's software provides everything necessary to establish a new Cost Engineering organization. Here's how it supports the creation of a robust cost analysis function:

Definition of Master Data Requirements and Report Formats
Tset's software comes pre-loaded with comprehensive master data, including raw materials, machines, manufacturing steps, overheads, and cost/emissions factors. It also provides reference import and export formats, ensuring a solid foundation for starting cost analysis activities.

Definition of a Calculation Methodology
The offers a reference calculation methodology from the outset. This methodology is further enhanced by four calculation modules, allowing users to quickly explore new technologies and gain a head start in cost engineering efforts.

Training: Software, Methodology, Technology
To maximize the benefits of the software, Tset offers comprehensive training. This includes software training to help users navigate and utilize all features effectively, as well as technology training to stay updated with the latest advancements in cost engineering.users to quickly explore new technologies and gain a head start in cost engineering efforts.

Consulting Support
Tset's support extends beyond software. Its consultants provide valuable insights on fine-tuning calculation methodologies and setting up overhead schemes. This personalized approach ensures that the software is optimized for specific organizational needs.

Interim Management
For more complex support, whether strategic or operational, Tset's consultants can provide customized solutions tailored to the unique challenges of setting up and managing a Cost Engineering organization. This flexibility allows organizations to address their specific needs effectively.

With Tset's comprehensive software solution and expert support, organizations are well-equipped to establish and operate an efficient Cost Engineering organization, driving success in cost analysis initiatives.

Frequently Asked Questions

01   Can Tset help find talent for a future Cost Engineering team?

While Tset does not handle HR tasks, it can provide interim management for the Cost Engineering team.

02   Should the Cost Engineering team report to the CFO, CPO, or CTO?

Each reporting line is viable depending on the organization's supply chain position, structure, and the primary problem to be addressed. Tset can offer consultation on the best way to structure the Cost Engineering function.

07 Switch From a Legacy Solution to Tset

How Tset Calculation Modules Work

Tset provides various data migration options for clients transitioning from legacy solutions. A tailored migration strategy is developed in collaboration with the client, which may include:

- Assessing the quality of legacy data
- Implementing a data-cleaning project
- Determining which data should be migrated, such as process know-how, machine descriptions, steps, supplier conditions, or existing calculation results

Based on the agreed strategy, Tset handles the migration process, which may include full bills of material, machine hourly rates, cost types, cycle times, and more. The cost of this service depends on the scope of migration.

Software Training

When clients switch from another professional software to Tset, the training approach is customized to focus on Tset's unique features.

Dealing With Existing Excel Calculations

For clients with existing Excel-based calculations, Tset evaluates the best approach on a case-by-case basis. Solutions may include:

- Removing the need for these calculators, as Tset already covers the required functionality.
- Enhancing the standard software to include features previously managed through Excel.
- Custom modifications to replicate specific Excel functionalities within Tset's environment.

This flexible approach ensures a smooth transition for clients, allowing them to integrate existing calculations and processes while benefiting from the advanced capabilities of Tset's cradle-to-gate product carbon footprint calculation software.

Frequently Asked Questions

01 Can old calculations be migrated?

Yes, Tset can migrate old calculations into the system

02 When I migrate calculations, will I lose information and/or accuracy?

This depends on the migration strategy and cost-benefit analysis. While no data should theoretically be lost, it is sometimes not cost-effective to migrate everything. The migration will preserve as much detail as needed based on the strategy defined.

03 Can I keep my Excel export formats?

Yes, as part of the rollout project, Tset can create any customer-specific Excel formats needed.

04 Can I keep my know-how about supplier lines and machines?

Yes, Tset's master data service can store this information, and reference calculations can be migrated to preserve process know-how.

05 Conclusion

Tset offers innovative solutions for product cost and carbon simulation, empowering businesses to manage costs effectively while enhancing efficiency and sustainability in product development and manufacturing. Tset's software can be used for various purposes, including reducing supply chain material costs, improving sales offer quality and speed, reporting product carbon footprints, and facilitating early-stage target setting and technical concept evaluation. With its calculation modules, master data service, and comprehensive approach, Tset enables both senior experts and less experienced users to perform detailed cost analyses across a wide range of manufacturing technologies.

Ready to revolutionize your approach to cost and carbon management? Book a demo to take the first step toward building a more efficient and sustainable future for your business.

Explore more industry insights, sustainability trends, and Tset expertise in our full whitepaper collection.

Call us at +43 676 4487761 (we offer support in DE, EN, and NL).

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