KTM AG

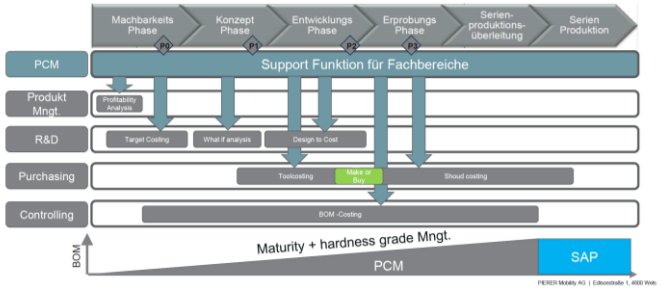
Cost Engineering in the 21Century

Achieving Global **Balance** through People, Machines, and Data



Building the Foundation

Process Landscape Meets Roadmap



Target costing
Derive targets
Drive the process

Design to cost
What if analysis
Engineering support

Benchmarking
Tear down and costing
Cost down workshop
VAVE

Product analysis
BOM Project support
Product BOM costing
Transparency
Configurator

Should costing
CBD analysis
Tool costing
Validation
Supplier negotiation

Goal

From Cost Engineering to Total Cost Excellence

Change – Tools - Processes

From process landscape to practical implementation.

01

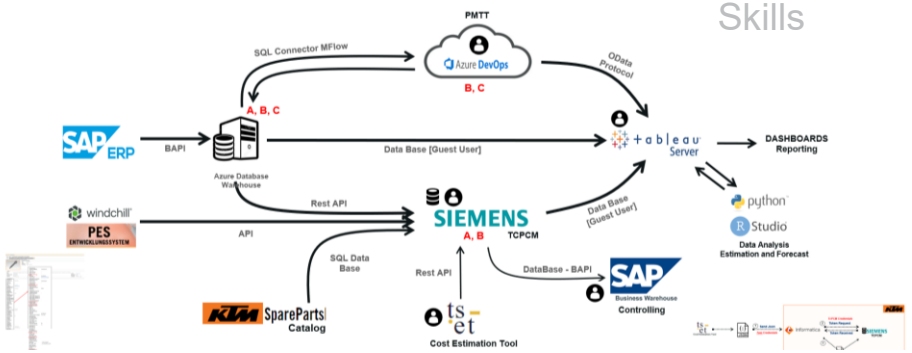
Tools

Costing tools like Siemens /Tset
NLPP and Random Forest
Automation
Azure Devops

02

Integration

Data Integration
Seamless Process automation
PDM+SAP



03

Change

New Roles
Changed Responsibilities
Ways of Working and Processes
Skills

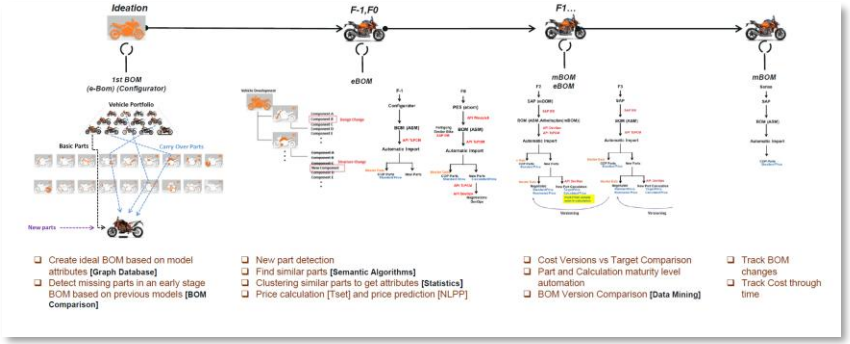
04

Data

Large Data Pool
Datamining

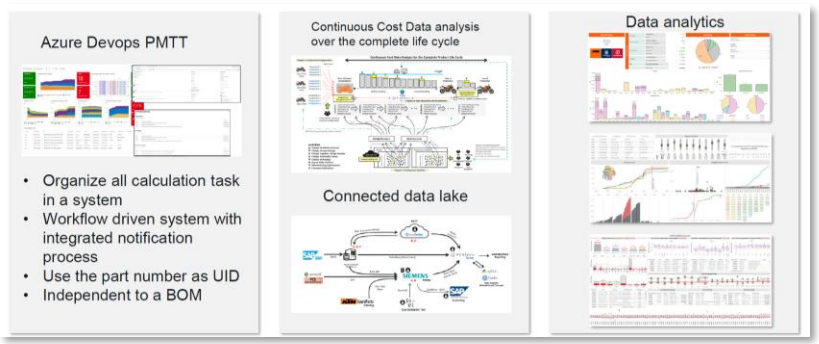
Key focus areas

Current status



Whole vehicle costing process

- BOM structure learning to decrease number of errors.
- Similarity search based on part number and names.
- Create input set for calculation from similar part.
- Automatic part costing with parameter set from similarity as input to Tset or Simens.
- PDM part release leads to an automatic/manual calculation either with no parameter result by KTM India or by Siemens/Tset.
- COP parts from a SAP integration.
- Ensuring the history by Freezing the calculations.



Smart Data and Cost Optimization

- Part number based UID.
- Action Item tracking linked to SAP and Costing database.
- Automated saving calculation based on predicted spend.
- Fast and documented collaboration between all departments.
- Automatically create item when Part number is released.
- Big knowledge database for purchasing and engineering.
- Easy reporting and data analytics enabler.
- Quality checks and progress monitor.

Key focus areas

Current status

Cost engineering

Commodity costing

Analytics & automation

Vehicle costing



New roles

- Whole vehicle costing for Business case calculation and Development project support.
- Target costing in development projects to drive design to cost.
- VAVE and Benchmarking.
- Data analyst, automation and process integration.

Enforced innovation

- The frontloading(BC, whole vehicle integration, configurator) has significantly increased the number of calculations.
- Automation of should and target costing.
- Automation of whole vehicle costing process.
- Using automatic process for NLPP for standard parts.

Purchased Price and Spend

Predictive Analytics

Input

- Parameter selection (Raw material by category, wages, electricity, gas,…) and their spreads
- Production plan/BOM/ CostDown Items

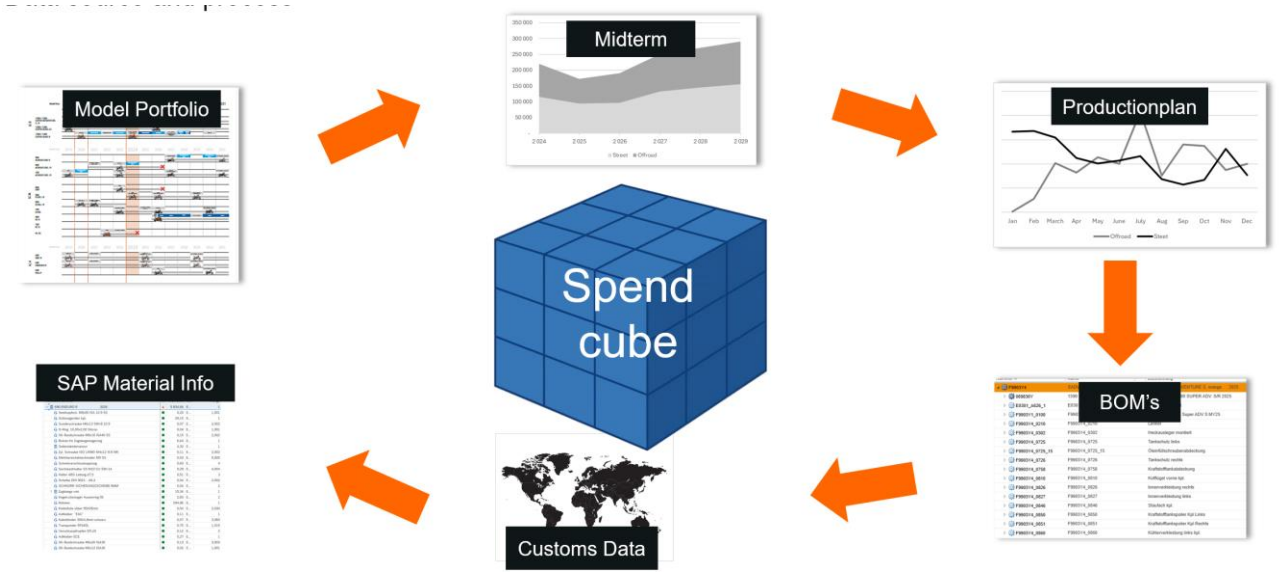
Process

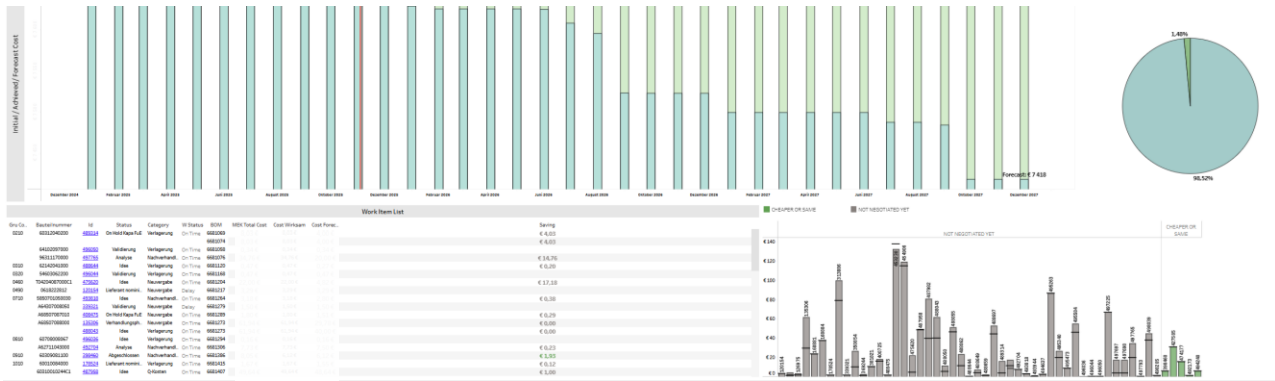
- Automatic selection of the right Should costing calculations per commodity(about 260)
- Sensitivity analysis which uses TcPCM for should costing calculation for each commodity

Output

- Sensitivity ranking by commodity increase
- Predicted Spend

Precise Mid Term and Budget support





KTM AG

Objectives and Learnings

What we aimed to achieve — and what we learned to improve.

- We need a method to explain the changes in order to understand the differences and build greater trust in the results.
- The quality of the should-costing results strongly depends on the underlying set of assumptions — both from India and from the automated calculation process.
- With the growing volume of data, a major challenge is to identify the right areas for optimization. This requires more advanced and user-friendly tools.
- The previous goal was to have one solution which can solve all tasks.
- Moving from a complete solution to an open, integrable system – with KTM providing the integration expertise.



KTM AG

Summary

Key Focus Points

01.

Change

Transformation succeeds when the added value becomes the driver.

02.

Paramter set

Enhanced parameter sets to increase calculation accuracy and comparability.

03.

Data Accessibility

Breaking silos through transparency and shared access.

04.

Explainable Comparison

Transparent transitions are essential to build trust.

05.

Process integration

Identify the right tools featuring open APIs to enable automation.

06.

Cost excellence

Establish Cost Awareness Across the Entire Development and Production Cycle