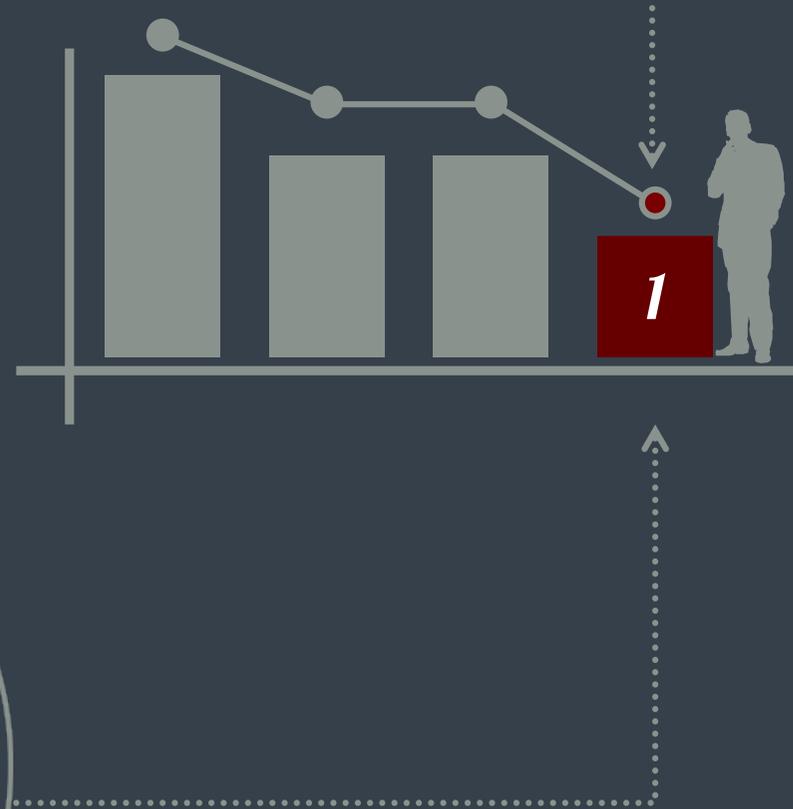


# **Non-Linear Performance Pricing (NLPP)**

The smart price analysis solution

**THE SAPHIRION MISSION:**  
WE MAKE SUPPLY CHAIN PRICES  
PREDICTABLE.



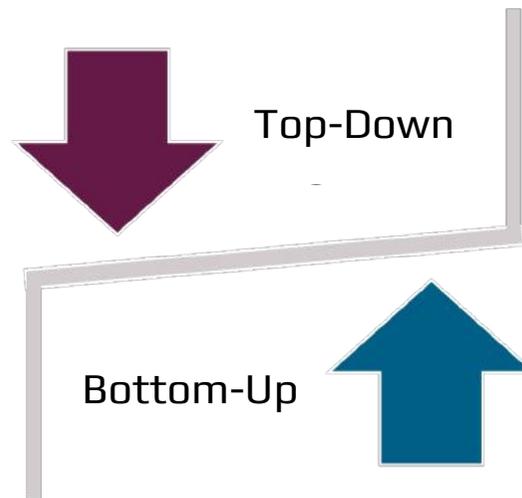
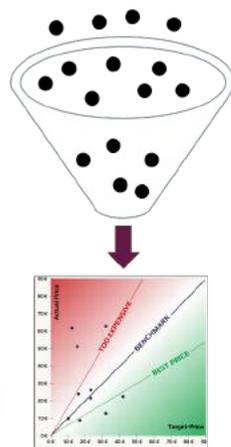
## COMPANY PROFILE

- ⊕ Founded 2006 in Germany
- ⊕ NLPP in development since 2008
- ⊕ NLPP method & tool single main product
- ⊕ Since 2011 located in Zug, Switzerland
- ⊕ Team members have 20+ years of experience in management & purchasing consulting, computer science & mathematics

## NLPP METHOD

**NLPP** closes the gap to obtain price transparency over 100% of the purchasing volume while speeding up and extending the costing process with a value-based perspective.

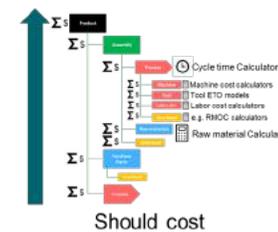
- ⊕ Fast approach
- ⊕ Portfolio price consistency
- ⊕ Identify saving potentials
- ⊕ Negotiation based on value drivers



Cost Breakdown

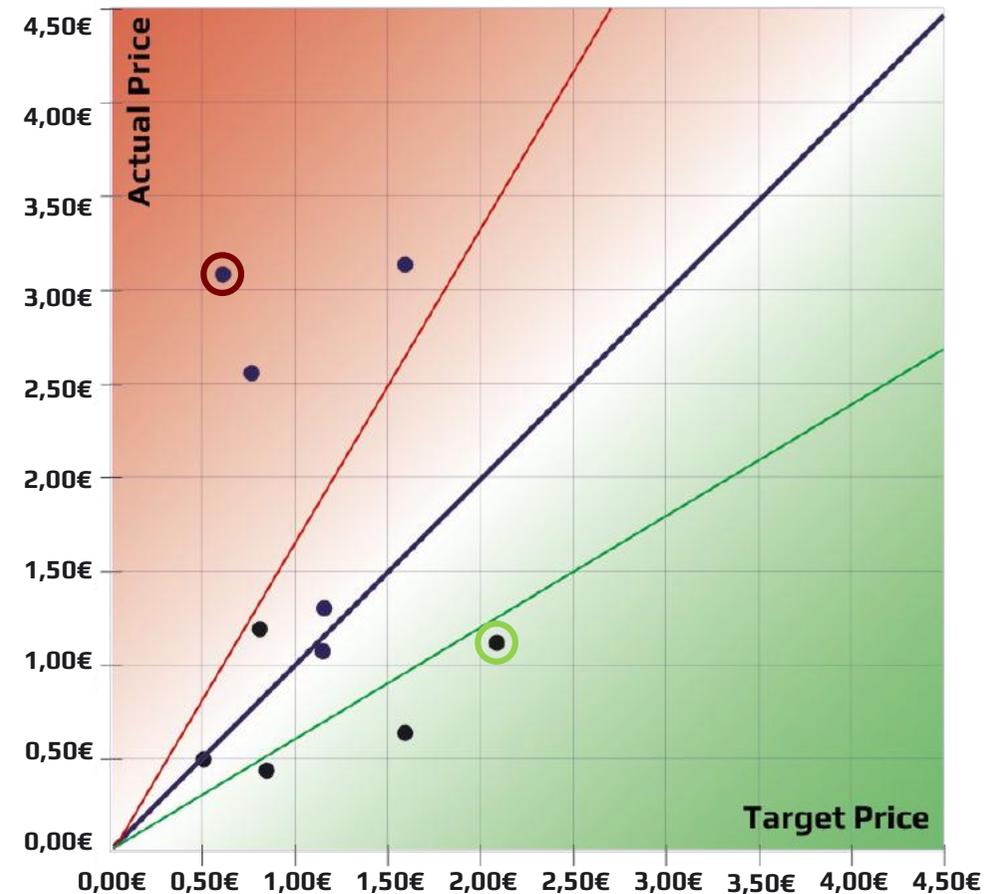
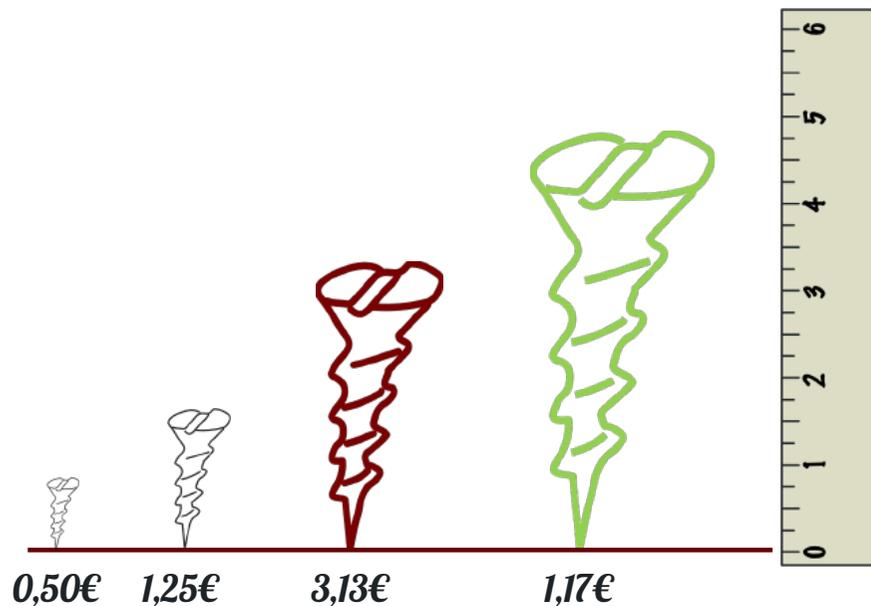
Cost Break Down BOM	Summary
Material	100.00
Labor	20.00
Machine	10.00
Tool	5.00
Energy	2.00
Overhead	1.00
Profit	10.00
<b>Total</b>	<b>158.00</b>

- ⊕ Extensive approach
- ⊕ Part cost consistency
- ⊕ Understand saving potentials
- ⊕ Negotiation based on cost drivers



60-90% Covered Purchasing Volume 10-40%

**NLPP** analyzes all kind of product prices according to customer value/benefit/performance and shows you immediately which products or services have a good or bad price/performance ratio.



The features & characteristics which are essential to you define the performance & value of the products.



- ⊕ Number of Cylinders
- ⊕ Power
- ⊕ Capacity
- ⊕ Lifetime mileage
- ⊕ Gas mileage
- ⊕ Weight
- ⊕ Torque
- ⊕ Max. Revolution

- ⊕ Charging Time
- ⊕ Capacity
- ⊕ Volume
- ⊕ Voltage
- ⊕ Weight
- ⊕ Lifetime
- ⊕ Volume Efficiency
- ⊕ Part Design

**NLPP uses the magic of mathematics to determine how the performance drivers influence the price and produces a precise target price formula.**

$$\begin{aligned}
 \textit{Targetprice} &= 0,345 \times \textit{Charging Time} \\
 &+ 1,256 \times \textit{Capacity} \\
 &+ 0,044 \times \textit{Lifetime}
 \end{aligned}$$

$$\textit{Targetprice} = 0,731 \times \textit{Charging Time}$$

$$\textit{Targetprice} = 2,674 \times \textit{Capacity}$$



- ⊕ Charging Time
- ⊕ Capacity
- ⊕ Volume
- ⊕ Voltage
- ⊕ Weight
- ⊕ Lifetime
- ⊕ Volume Efficiency
- ⊕ Part Design

**NLPP benchmarks prices by value and performance, shifting purchasing's focus from a «discussion about supplier costs» to a «discussion about customer value.»**



## *Manufacturer*

Pricing is resource driven and based on cost-calculation (Cost of Production)

*Cost → Value  
(NLPP)*



## *Purchasing*

Seeks for parts with specific functions and properties with the best price performance ratio.

**NLPP calculates sales prices based on customer value and performance, shifting sales' focus from a «discussion about price» to a «discussion about customer value.»**



**Customer**

Prices are consistent with the performance and comparable

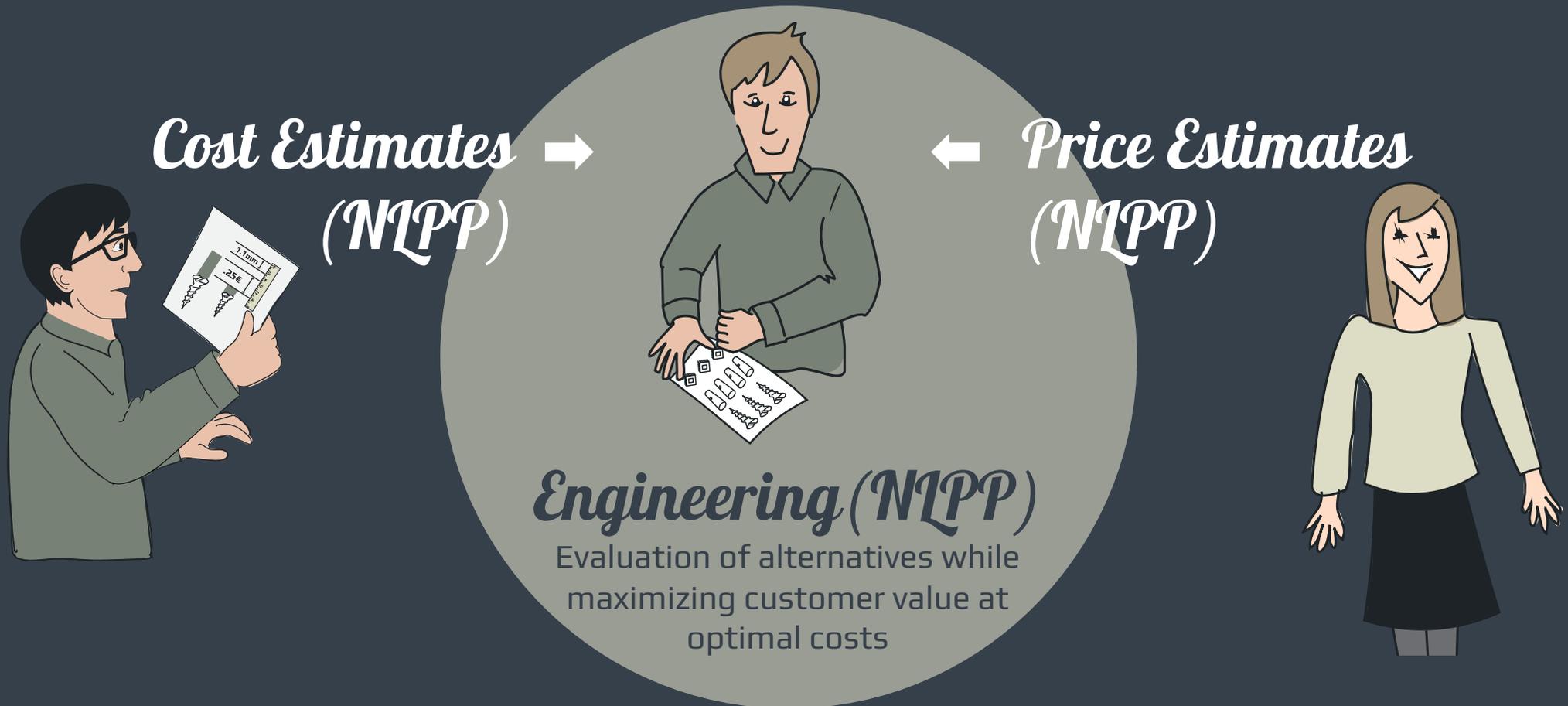
*Value ← Price*  
*(NLPP)*



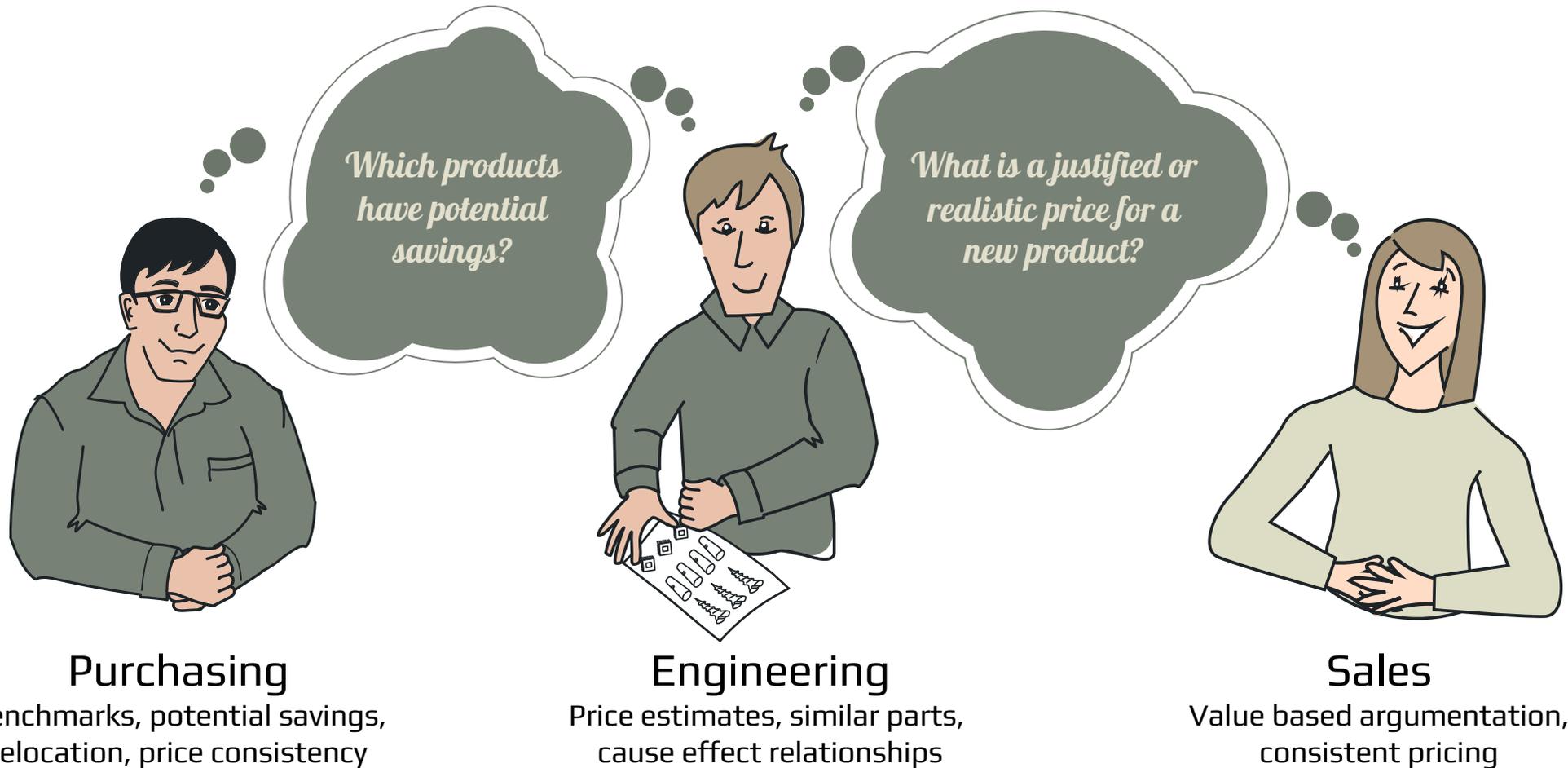
**Sales**

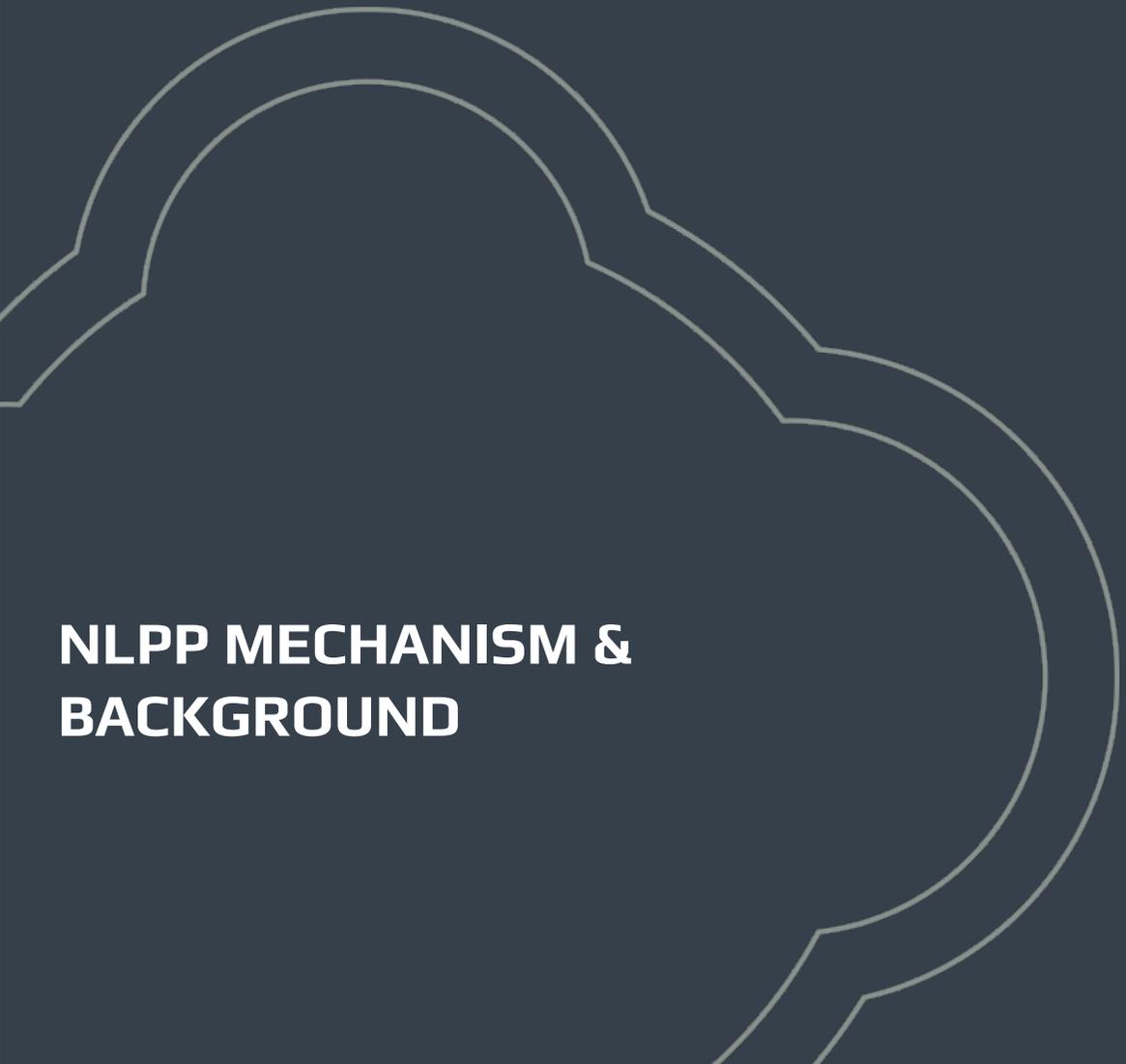
Argues with benefits and uses consistent price-performance ratio

Engineering assesses performance changes monetarily using the NLPP prediction formulas, enabling them to evaluate product variants quickly and precisely.



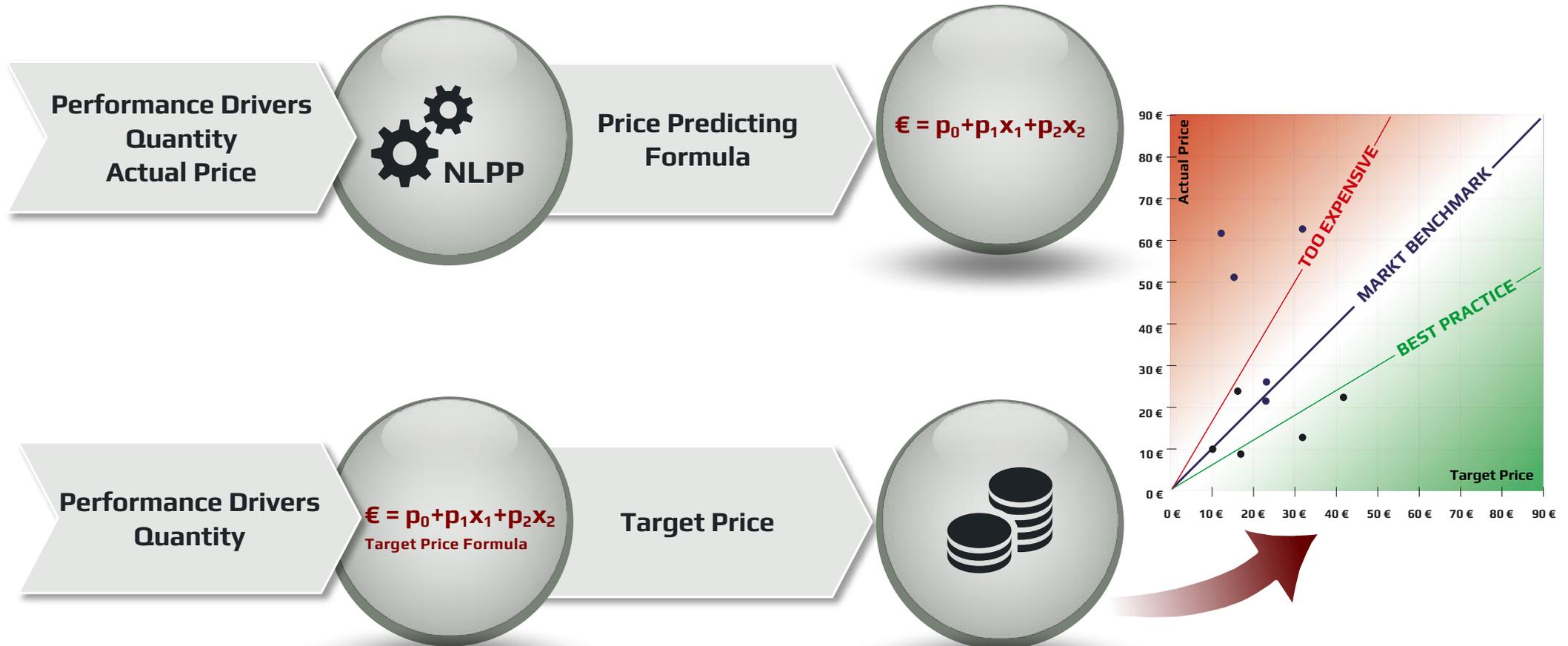
**NLPP** thus connects purchasing, engineering, and sales through a uniform method and language which quickly and accurately assesses the value of prices & costs in many different use-cases.



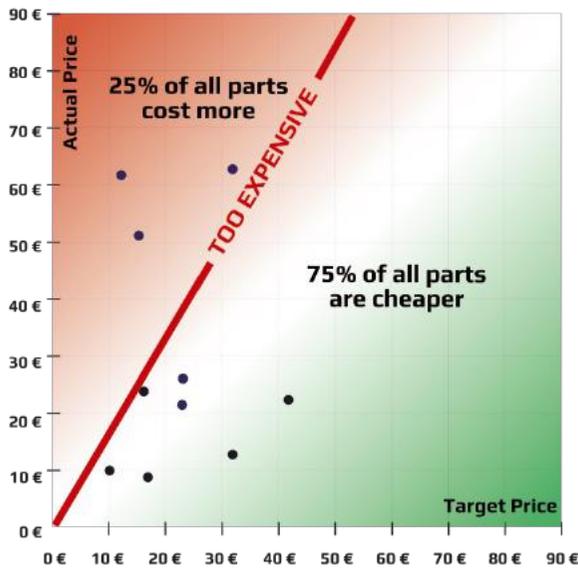


## NLPP MECHANISM & BACKGROUND

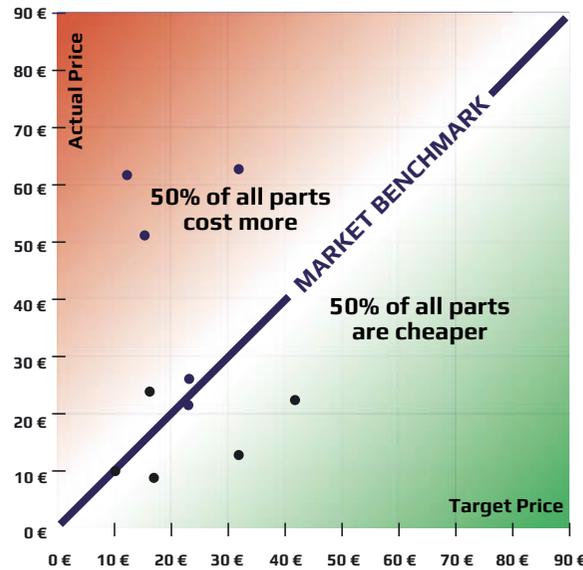
The «magic» about **NLPP** is that it finds the best price predicting formula using your data and calculating a target price equaling the product value for every part number.



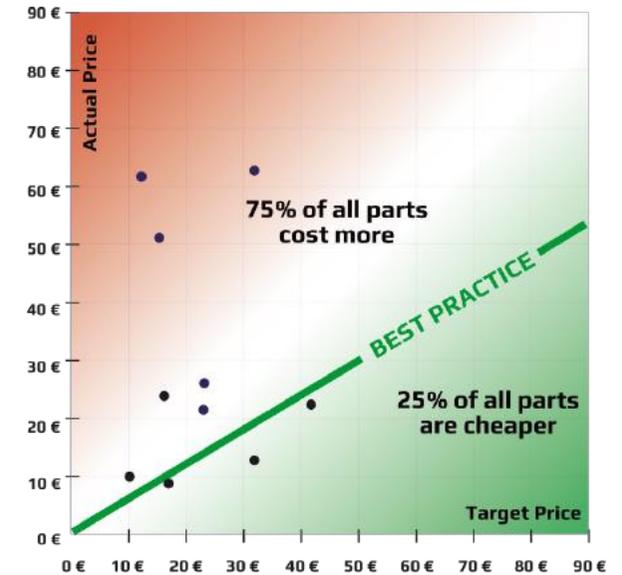
**NLPP** calculates three price benchmarks from your data and shows which products are **more expensive** (above benchmark line) **or cheaper** (below benchmark line) **than the three benchmarks.**



**Worst-Practice**  
25% more expensive / 75% cheaper



**Target**  
50% more expensive / 50% cheaper



**Best-Practice**  
75% more expensive / 25% cheaper



## Regression methods provide reliable results only if their mathematical pre-conditions are fulfilled and the method correctly capture the underlying structure of the input data.

**1** It is easy to calculate many different regression models which do not capture the underlying structure of the input data, but still calculate an (unreliable and incorrect) result for each part number.

**2** Only correct «performance pricing models» can represent the product preferences (defined by the selection of the performance drivers) and the market situation (defined by the purchased quantity and the actual prices).

**3** The methods used must extract the maximum amount of information from the input data (gain of knowledge) in order to calculate a model with the best possible predicting power.

*Only models that capture the structure of the input data and extract as much information as possible give reliable and usable results.*

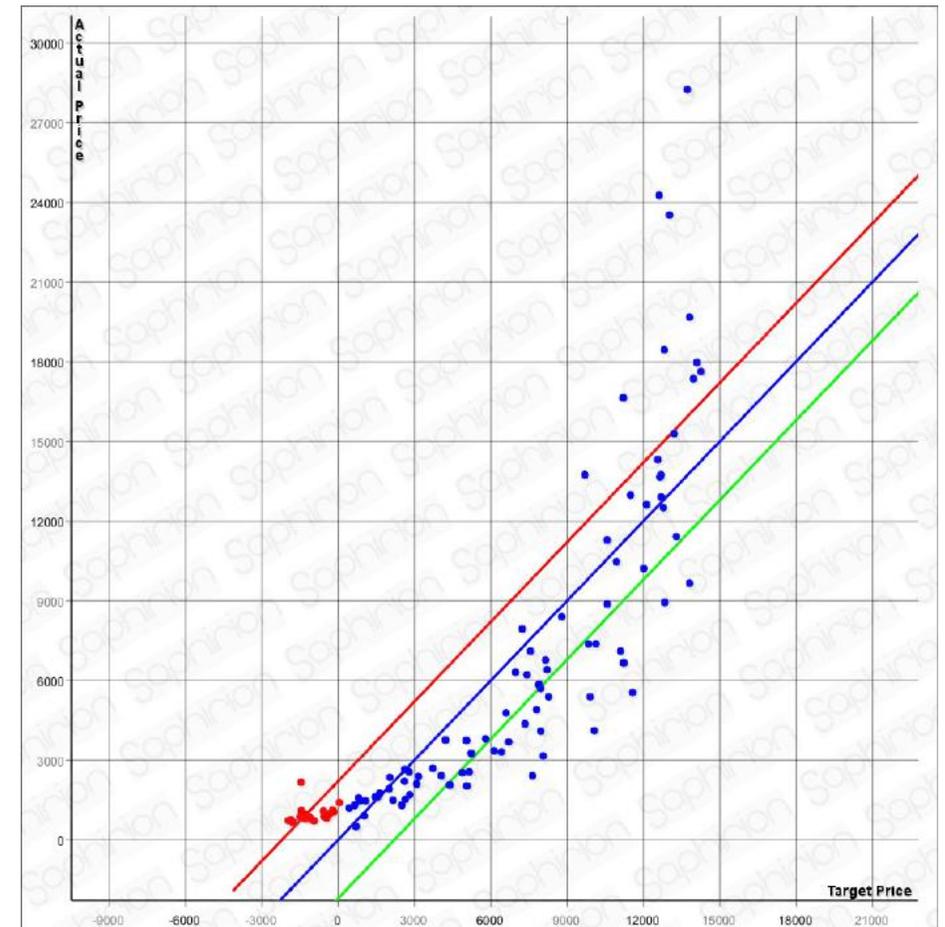
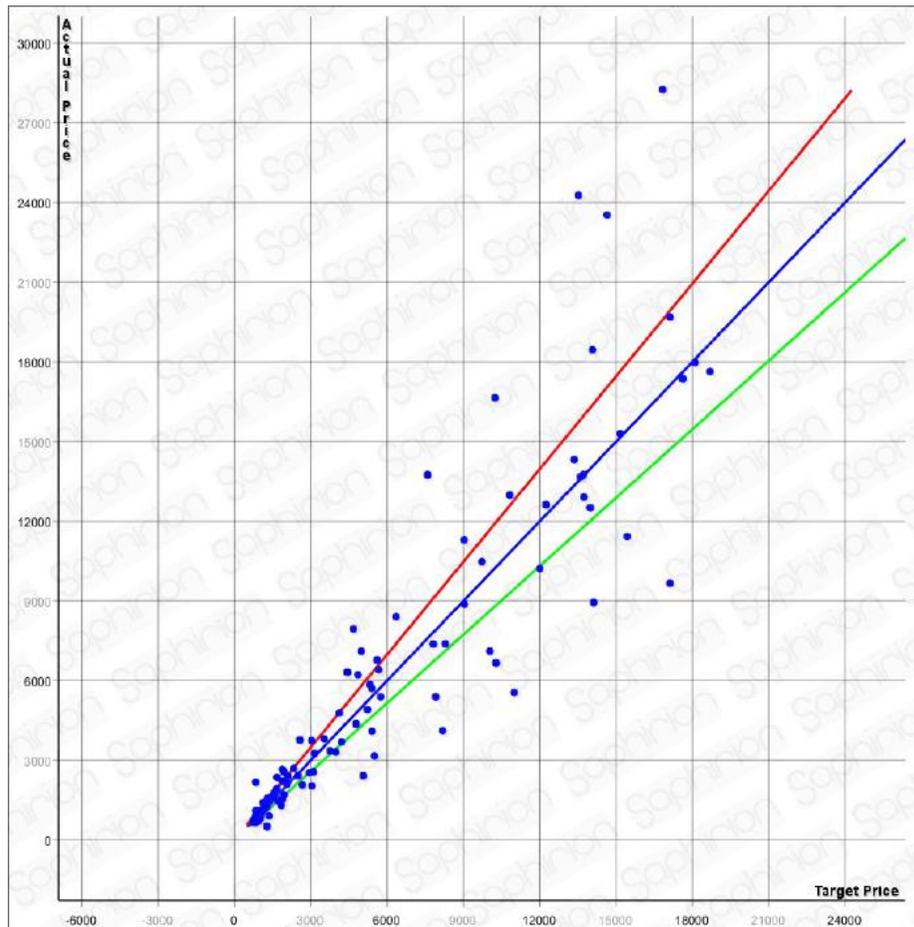
Depending on your input data, **NLPP** automatically selects the regression method & product properties that gain the most information from your input data for the best possible price predicting model.



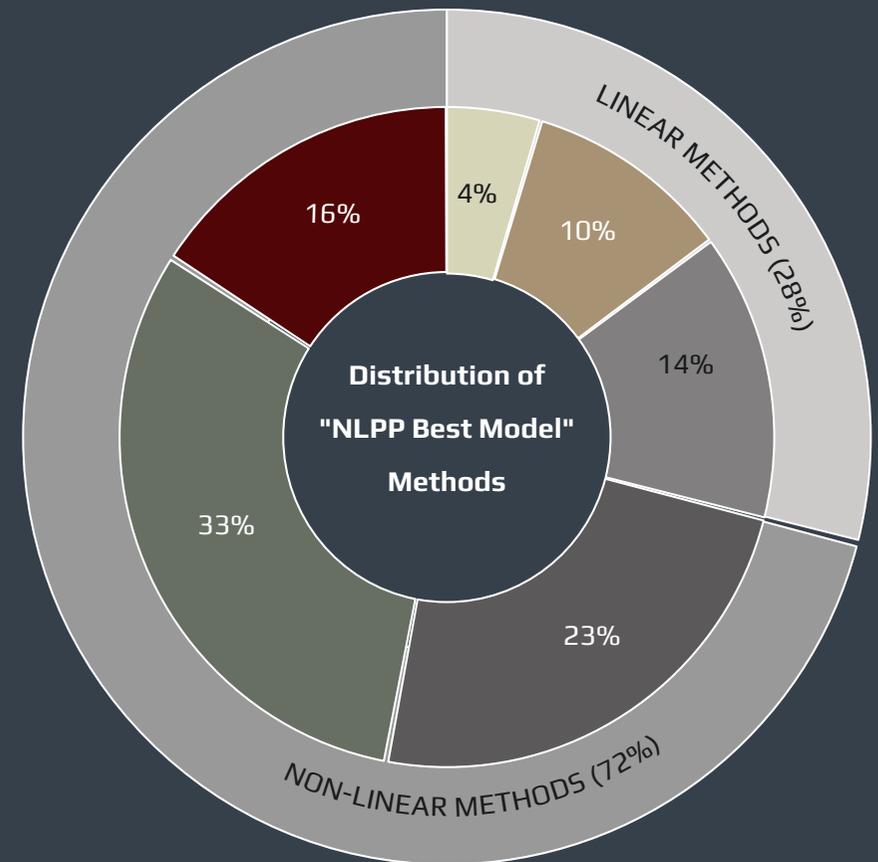
*Notes*

- ⊕ LPP-LSM (linear, least squares method) is the simplest and most common regression method.
- ⊕ The five additional methods are uniquely available in NLPP.

**Comparison of NLPP-QR (left, best model) with LPP-LSM (right): You can clearly see that LPP-LSM predicts negative target prices and that the LPP-LSM target price formula must therefore be wrong.**



In 96% of all cases, only one of the five unique **NLPP** methods can ensure that the information from the input data reaches the target price formula correctly and accurately.



Basis: Calculation of the best target price formula for 1133 data sets from different industries and product families.

**NLPP** offers many advantages compared with other methods to identify potential savings and to calculate price predictions.

		<b>NLPP</b>	<b>Classical Cost Analysis</b>
<b>Focus</b> 		Price in proportion to customer value	Tries to understand the costs of the supplier
<b>Data</b> 		Uses the data treasure of many different parts	Concentrates upon few part numbers
<b>Time</b> 		Results for thousands of part numbers are quickly available and useable	Approach doesn't scale for many part numbers
<b>Information</b> 		Only uses clearly defined & measurable properties of parts	Many assumptions, estimates, «black box» databases, production know-how
<b>Robustness</b> 		Gives stable and robust results with already few and not perfect data	The value of one parameter can strongly influence the calculated costs / prices

## NLPP EXAMPLES

**Especially for complex assemblies or aggregates, NLPP is excellently suited, because with only a few details, precise target prices can be calculated very quickly.**

### *Electric Motors*

- ⊕ 208 small / mid-sized electric motors
- ⊕ ca. 2 Mio. EUR PV
- ⊕ -20,5% potential savings identified
- ⊕ 10 part numbers covered 70% of identified savings

### Possible Price Drivers

Type (textual: AC, DC, ...)
Weight (kg)
Electrical Output (kW)
Revolutions (1/s)
Voltage (V)
Transmission Ratio (i)
Break (textual: yes, no, ...)
Length (mm)
Width (mm)
Height (mm)
Torque (Nm)
Current (A)
Frequency (Hz)
Number of Poles (#)
Power Efficiency Class (textual: IE2, IE3, ...)

**For complex machines it is much easier to find the most important performance drivers that are sufficient to obtain a precise NLPP analysis result.**

***Manufacturing Robots***

- ⊕ 42 different manufacturing robots
- ⊕ Only 4 performance drivers sufficient
- ⊕ More than 200 Mio. EUR PV
- ⊕ -8% (market) to -16% (best) potential savings
- ⊕ 6 part numbers with > 1 Mio. EUR of savings

**Possible Price Drivers**

Technology Standard (textual)

Accessories Included (textual: yes, no)

Load (Kg)

Arm Length (mm)



Due to the high computing speed, **NLPP** can deal very well with extensive parts portfolios and creates a very clear picture of the current situation with little expenditure of time.

*Fastener*

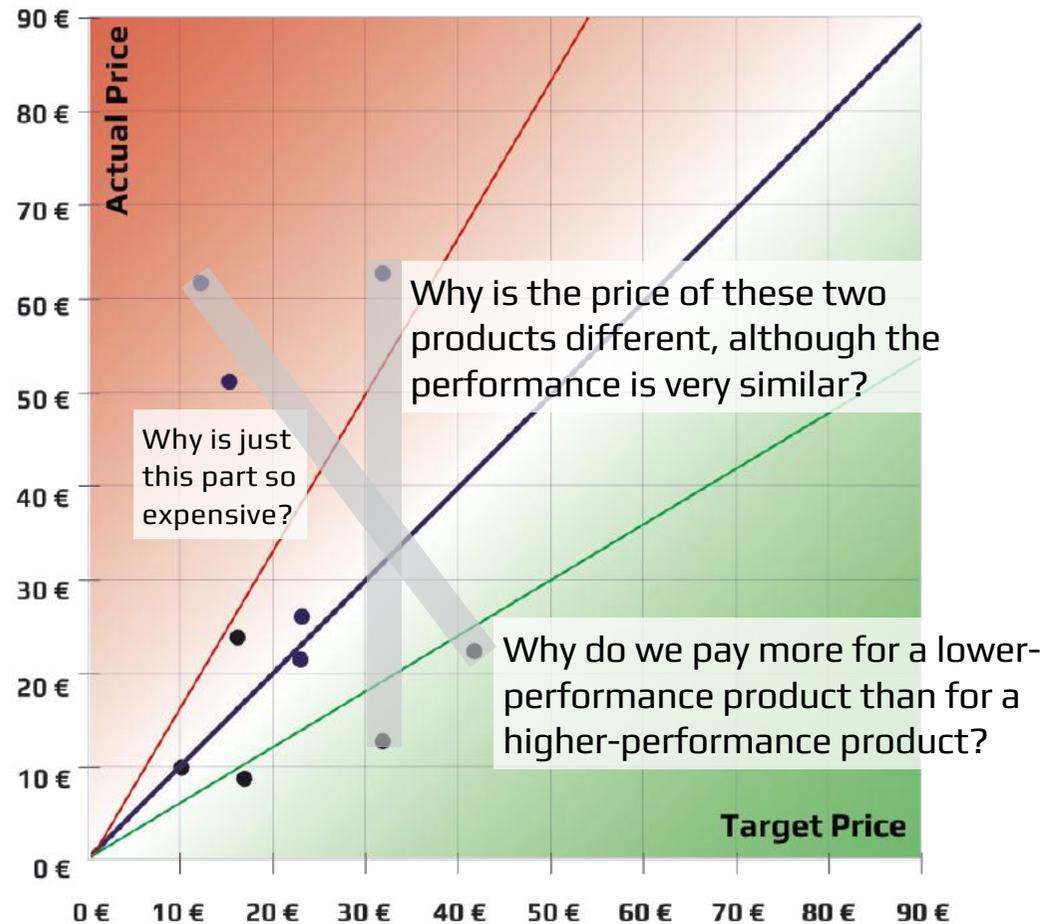
- ⊕ 3000 screws, 30 Mio. EUR PV
- ⊕ -10% potential savings identified
- ⊕ New prices for 1000 part numbers
- ⊕ 80% of potential savings realized
- ⊕ Total effort 1/2 day
  
- ⊕ Tender of 1600 part numbers
- ⊕ 5,3 Mio. EUR PV with 5 suppliers
- ⊕ Goal: Find optimal part number/supplier allocation
- ⊕ -22% reduced costs

**Possible Price Drivers**

Length (mm)
Weight (g)
Diameter (mm)
Tightening Torque (Nm)
Thread Type (textual)
Head Type (textual)
Tip Type (textual)
Surface (textual)
Thread Pitch (mm)
Thread Length (mm)
Surfacelenght/area (mm/mm2)
Thread Diameter (mm)
Thread Tollerance
Hardness
Drive Type (textual)

PV = purchasing volume  
 Most NLPP analyses use between 1-10 price drivers at the same time. It's not necessary nor sensible to use as much price drivers as possible.

**NLPP** results give you an information advantage, as inconsistent pricing between products as well as portfolio benchmarks are revealed. This information you can easily use in negotiations.



You are no longer trying to convince the supplier to give you a lower price, instead you...

- ⊕ ...simply point out hotspots with inconsistent prices.
- ⊕ ...ask the supplier to explain to you why a part price is that high compared to other parts with different performance.
- ⊕ ...lead the supplier to those hot-spots you want to discuss.
- ⊕ ...know upfront what is a worse, realistic or best practice price for every new or existing part.



# ANALYSIS WORKFLOW

The **NLPP** workflow consists of simple steps, quickly giving new insights & evidence based on your pricing and product data.

**1**

**Compile** the properties of your products which you expect to influence the price in an XLS sheet.

**2**

**Import** your data into **NLPP** and select the product properties **NLPP** should use for calculation

**3**

**NLPP calculates** the best formula in a couple of seconds and uses it to calculate target prices for all records

**4**

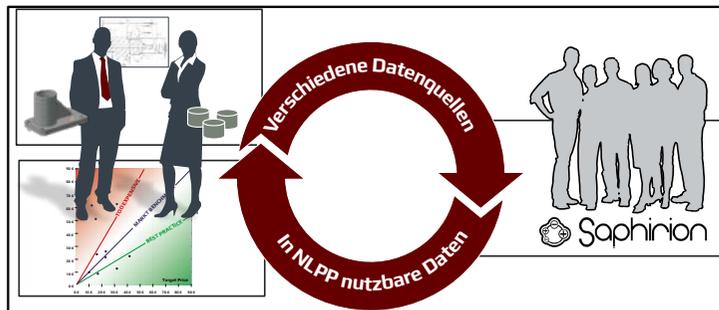
Use **NLPP's analysis** functions to drill down into your data and see what you've been missing.

**5**

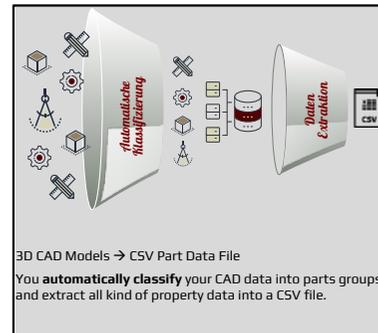
**Use** the result to develop and effectively implement your purchasing strategy, negotiation tactics etc.

**NLPP**

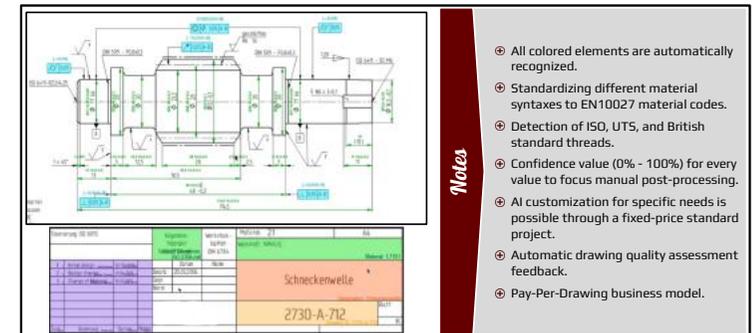
We can quickly and easily support data acquisition with manual entry, the use of your 3D data, or automatic data extraction from 2D drawings.



With the Saphirion "Data Extraction Service," we take the first step so that you can carry out an **NLPP** analysis with your data quickly and easily.



3D CAD data contain a lot of information that can be read out.



Title blocks, dimensions, tolerances, threads and many other attributes, can be automatically extracted from 2D drawings.

Notes

- ⊕ All colored elements are automatically recognized.
- ⊕ Standardizing different material syntaxes to EN10027 material codes.
- ⊕ Detection of ISO, UTS, and British standard threads.
- ⊕ Confidence value (0% - 100%) for every value to focus manual post-processing.
- ⊕ AI customization for specific needs is possible through a fixed-price standard project.
- ⊕ Automatic drawing quality assessment feedback.
- ⊕ Pay-Per-Drawing business model.



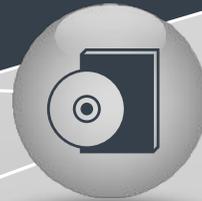
## PRODUCT OVERVIEW

Your NLPP license consists of software, training and documentation. On top it covers unlimited personal access to our team of experts for support and consulting.



*Personal access to the  
NLPP expert team*

*Software*



*Training*



*Documentation*



From data import to the result, our **NLPP** workflow will guide you and give hints to get the best possible **NLPP** result as quickly as possible.

Cell Errors: 0. Selected: 0. Visible: 324. Total: 324. Price Drivers: 7/6. Pricing Mode (P): 93/93. Costs (C): 93/93. Plotted (G): 93/93. User Should-Costs: 0
All Products
Data Other

**Clusters**

All	NLPP-QR	●●●●●●
Supplier / Supplier-1	NLPP-CR	●●●●●●
Supplier / Supplier-2	NLPP-CR	●●●●●●
Supplier / Supplier-3	LPP-CR	●●●●●●
Supplier / Supplier-4	NLPP-QR	●●●●●●
Supplier / Supplier-5	LPP-CR	●●●●●●

Cluster

ID	Sel	Suitable	P/C/G	Global	Cluster	?Partname (M)	SupNr (M)	Supplier (M)	Region (M)	Plant (M)	Price [EUR/pcs] [EUR/pcce] (P) *	Quantity [Pcs] [Pcs] (nQPD) **	vWeig
1		■	■			Product-11	33801	Supplier-3	ASIA	C	154,178	4,000	35▲
2		■	■			Product-122	33801	Supplier-3	ASIA	C	98,950	98,000	22
3		■	■			Product-123	33801	Supplier-3	ASIA	C	97,600	424,000	22
4		■	■			Product-124	36621	Supplier-1	ASIA	A	80,085	388,000	22
5		■	■			Product-127	33801	Supplier-3	ASIA	C	87,850	443,000	20
6		■	■			Product-128	33801	Supplier-3	ASIA	C	86,500	720,000	20
7		■	■			Product-13	33053		ASIA	B	33,714	136,000	5
8		■	■			Product-130						236,000	21
9		■	■			Product-131						146,000	20
10		■	■			Product-134	33801	Supplier-3	ASIA	C	103,300	55,000	23
11		■	■			Product-135	33801	Supplier-3	ASIA	C	107,250	2,000	23
12		■	■			Product-136	33801	Supplier-3	ASIA	C	117,180	8,000	24
13		■	■			Product-137	33801	Supplier-3	ASIA	C	115,830	164,000	25

Part Number Records

**Steps for All Product Data**

Products OK
1. Import...
Columns OK
2. Columns...
Assignment OK
3. Assign...
Inclusion OK
4. Edit...
Feasible
5. Calculation...
Graph OK
6. Result...

Enough products are present.

Use 'Import' and 'Append to Current File' to import more.

Result: All required columns are present.

Price Column: Price [EUR/pcs]

Quantity Column: [Pcs]

Pricing (P): Pricing Model is possible.

Calculation (C): Cost Calculation is possible.

Plotting (G): Plotting is possible.

Pricing Model Report Result: No errors

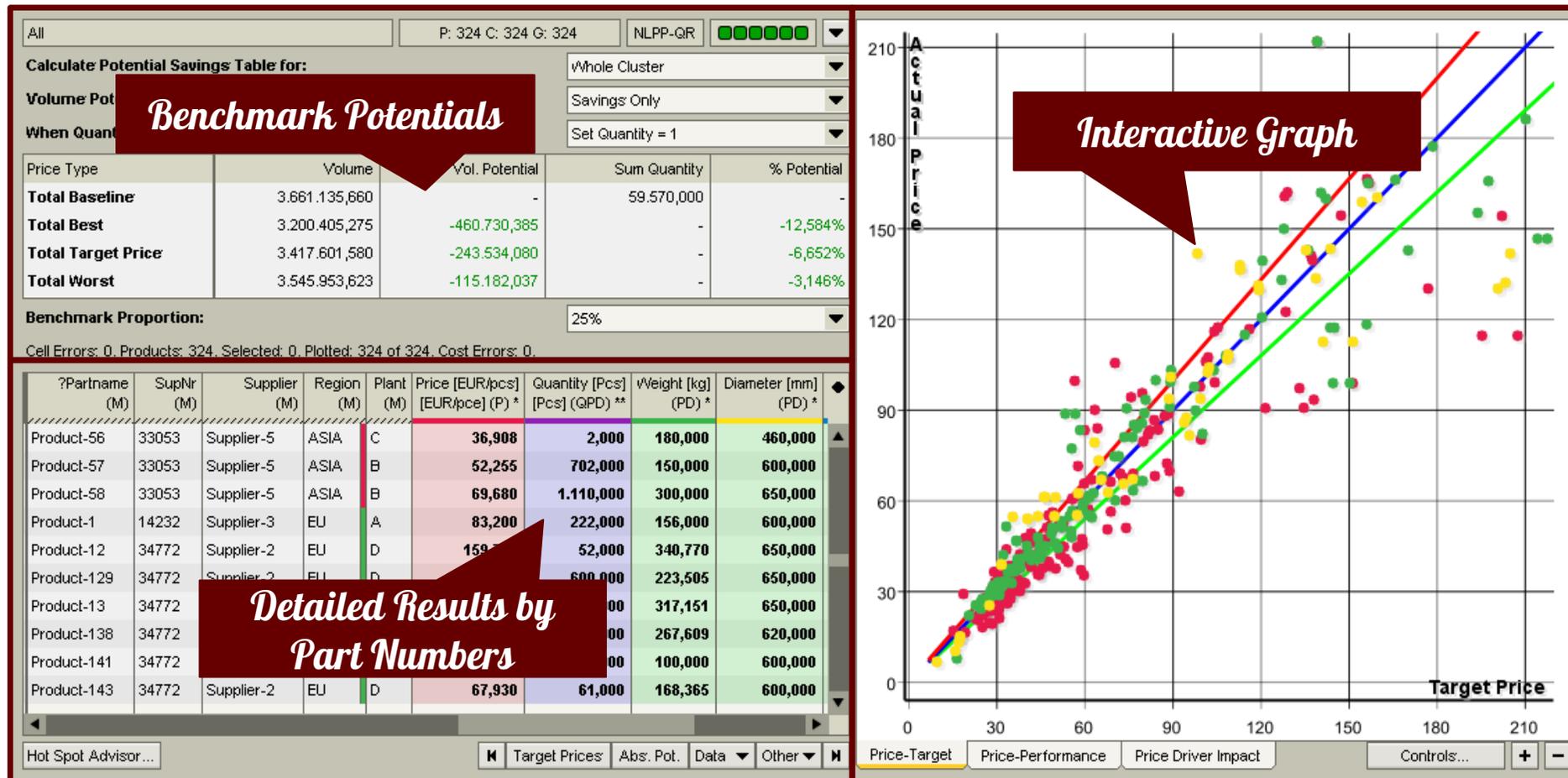
NLPP Report Feasible

Graph OK.

View graph by clicking the 'Graph' Tab or the '6. Result...' Button.

NLPP Workflow

With the visualization features of **NLPP**, you quickly find all HotSpots worth a thorough review.



## IMPLEMENTING NLPP

**NLPP is accepted most quickly when it is applied, and the findings are used promptly to make success visible.**

<b>Options</b>	<p><b>1</b></p> <p><b>Expert-Team</b></p> <p>1..N NLPP users perform analyzes for colleagues as an internal service</p>	<p><b>2</b></p> <p><b>Key-User</b></p> <p>Per Commodity / Departement 1..N NLPP users</p>	<p><b>3</b></p> <p><b>Field-Roll-Out</b></p> <p>1..N NLPP users as part of the corporate strategy «Digital Transformation»</p>
<b>Pro</b>	<ul style="list-style-type: none"> <li>⊕ Fast Know-How gain</li> <li>⊕ Easy to organize</li> <li>⊕ Convenient for all «not involved»</li> </ul>	<ul style="list-style-type: none"> <li>⊕ Broad Know-How gain</li> <li>⊕ Easy to organize</li> <li>⊕ Easier "to cross the chasm"</li> </ul>	<ul style="list-style-type: none"> <li>⊕ Broad Know-How gain</li> <li>⊕ Sustainable «Digital Transformation»</li> <li>⊕ Motivating employees</li> <li>⊕ Biggest ROI</li> </ul>
<b>Contra</b>	<ul style="list-style-type: none"> <li>⊖ Results of the expert teams not buyers</li> <li>⊖ Rejection is simplified</li> <li>⊖ Group separation «we / they»</li> <li>⊖ Scaling difficult</li> </ul>	<ul style="list-style-type: none"> <li>⊖ More resistance at the beginning</li> <li>⊖ More demanding leadership</li> <li>⊖ «Wrong» key users prove that approach does not work</li> </ul>	<ul style="list-style-type: none"> <li>⊖ Strategic management decision necessary</li> <li>⊖ Impact on target systems and communication likely</li> <li>⊖ Perseverance necessary</li> </ul>



## NEXT STEPS

**NLPP's** power and value is best experienced in a real-life environment using your data.

### NLPP Live Presentation

- ⊕ Remote / On Site
- ⊕ Duration 1h – 1,5h
- ⊕ We show you the **NLPP** workflow, from data import to result
- ⊕ We answer all your questions
- ⊕ After this presentation you have a very good understanding about NLPP

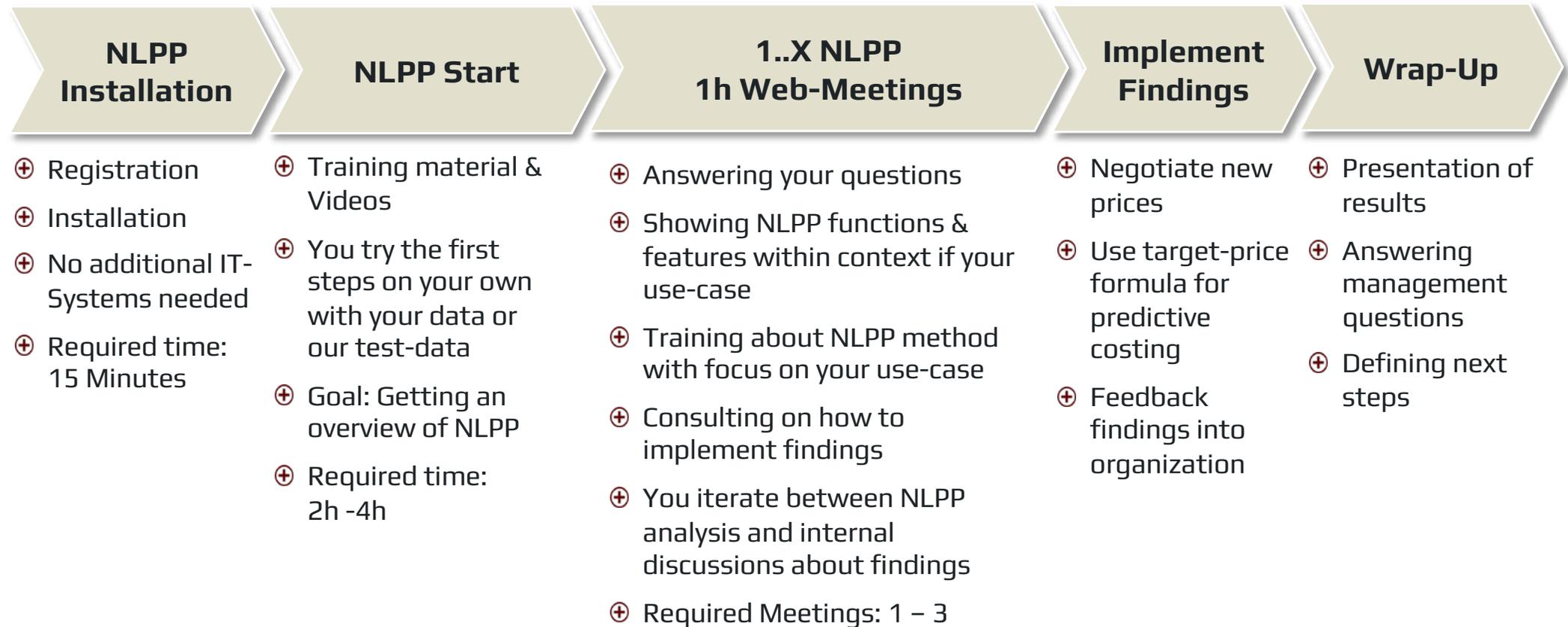
### NLPP Test Analysis

- ⊕ Remote / On Site
- ⊕ Duration 1h – 3h depending on audience size
- ⊕ You collect 20 – 50 records of any part group you are interested in
- ⊕ We do a live **NLPP** analysis of your data
- ⊕ We interpret the results
- ⊕ You get the results either as XLS export or together with a special NLPP version, enabling you to work with the analyzed data set

### NLPP Trial-Phase

- ⊕ On Site
- ⊕ Duration 4 – 12 weeks
- ⊕ You run NLPP analysis for several part or assembly families
- ⊕ You interpret the results, while we train you on the job
- ⊕ You can make use of the results and implement the findings
- ⊕ Most prospects are able to achieve an ROI of the necessary investment upfront

During the **NLPP-Trial-Phase** you use the NLPP tool with your data while getting fully supported by us. The goal is, that you implement the findings and experience the power of NLPP on your own.



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smarter | better | faster

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