Remote CVE offerings
Now is the right time to cost optimize your products...we are here to help!

April 2020
Agenda

• Introduction h&z CVE practice
• Remote CVE offerings
• References
CVE and Sourcing are our DNA since the foundation of h&z – 65% of our projects are in these areas

h&z group highlights

Revenue
85 m€

500 employees

Hidden Champion 2020/21 in “Transformation” “Procurement” & “Retail Performance Management”

1997 h&z was founded...
... since then we created value in more than 2,000 projects

Consultants like nowhere else

Member of the Transformation Alliance

40% Sourcing Projects
25% Cost value engineering

Consulting with

Head Excellent concepts
Heart People motivation
Hand Pragmatic realization

We consult 25 companies listed on the DAX 30

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We consult 25 companies listed on the DAX 30
The h&z Cost Value Engineering team has more than 100 years of industry and consulting experience

### h&z CVE Team and selected Experts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Experience</th>
</tr>
</thead>
</table>
| **Dr. Michael Preiss** | Partner and Head of the h&z CVE Practice  
>15 yrs. of experience  
Former McKinsey DtV Manager  
Former Head of CVE at Philips & ABB | Extensive experience in CVE & Cost Out projects  
Expert in the field of Design to Value and tool-based product cost calculation  
Design-to-cost and lean-engineering transformation |
| **Marc Heckeroth** | Snr. Project Manager  
>12 yrs. of experience  
Expert CVE, cost and design analytical evaluation & optimization of assemblies and parts  
Evaluation of supplier manufacturing competencies  
Cost reduction in purchasing, construction and production | |
| **Markus Ditsch** | Project Manager  
>4 yrs. of experience  
Expert for Cost Structure Analysis, Design to Cost and Cost & Value Engineering  
Benchmarking and should cost analyses  
Design of target operating model and processes | |
| **Ulf Massow** | Snr. Project Manager  
>8 yrs. of experience  
Former Manager of Operations Improvement and CVE projects @Avencore  
Experienced in a broad range of cost reduction projects for major industries including their Tier 1&2 supply base | |
| **Isabelle Delle-Case** | Project Manager  
>6 yrs. of experience  
Expert for Cost Structure Analysis, Design to Cost and Cost & Value Engineering  
Benchmarking and should cost analyses  
Expert in transformation processes | |
| **Hans-Martin Lauer** | Principal  
>22 yrs. of experience  
Former Vice President R&D, B. Braun Melsungen AG  
Management of engineering optimization projects  
Reduction of manufacturing costs by 25% p.a. | |
| **Markus Wirth** | Snr. Expert  
>21 yrs. of experience  
Extensive know how in CVE, cost structure analysis and product tear down  
Proven success idea generation for cost reduction  
Multiple cost reduction programs conducted | |
| **Marcel Schondey** | Snr. Expert CVE  
>20 yrs. of experience  
Former Snr. Consultant CVE, Tsetinis Consulting  
Implementation of workshops and projects in the areas of design-to-cost, should cost analysis, cost value engineering | |
| **Matthias Overberg** | Snr. Expert CVE  
>20 yrs. of experience  
Long-standing expert in the line for cost analysis, CVE and Design to Cost  
Planning and implementation of VA/VE projects with savings of approx. 15-40 % of production costs | |
We have reduced the product cost by 20.5% on average across all h&z projects of our Cost-Value-Engineering Practice Group.

Average across all CVE projects supported by h&z

### Average impact [%]

<table>
<thead>
<tr>
<th>Industry</th>
<th>Impact [%]</th>
</tr>
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<tbody>
<tr>
<td>Automotive</td>
<td>13.9</td>
</tr>
<tr>
<td>Engineered products</td>
<td>17.3</td>
</tr>
<tr>
<td>Aviation</td>
<td>25.6</td>
</tr>
<tr>
<td>Rail</td>
<td>22.5</td>
</tr>
<tr>
<td>Consumer goods</td>
<td>23.7</td>
</tr>
<tr>
<td>Energy</td>
<td>19.7</td>
</tr>
<tr>
<td>Average</td>
<td>20.5</td>
</tr>
</tbody>
</table>

### Number of h&z CVE projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Projects</th>
</tr>
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<tbody>
<tr>
<td>2017</td>
<td>13</td>
</tr>
<tr>
<td>2018</td>
<td>17</td>
</tr>
<tr>
<td>2019</td>
<td>10</td>
</tr>
</tbody>
</table>

### Source of potential [%]

<table>
<thead>
<tr>
<th>Source</th>
<th>2017-19</th>
</tr>
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<tbody>
<tr>
<td>Commercial</td>
<td>43%</td>
</tr>
<tr>
<td>Technical</td>
<td>57%</td>
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Remote CVE offerings

Now is the right time to cost optimize your products... we are here to help – with our remote CVE offerings!

- Send your product, drawings or CAD data
- Address your specific needs
- Remote CVE idea generation
- Remote Should Cost modeling
- Virtual CVE Workshops with your team
- CVE Trainings

Costing Tool with latest databases

Global Sourcing Centers

Global CVE industry experts

h&z Die Beratung mit Hirn, Herz & Hand
Remote CVE idea generation: We tear down your product, analyze all components and derive optimization ideas

h&z teardown lab & optimization idea generation

Approach

Cycle 1

1. Identification / Documentation
   Collect & document all relevant product information. (image, labelling, etc.)

Cycle 2

2. Physical Analysis
   Collect physical data (weight, materials, etc.)

3. Functional Analysis
   Analyze functions and interplay of components

4. Document findings and optimization ideas

Cycle n

6. Decomposition
   Disassemble product to lower granularity level

Note: Abstracted version also possible based on CAD data or drawings

Our experts

Marc Heckeroth
- Snr. Project Manager
- >12 yrs. of experience

Ulf Massow
- Snr. Project Manager
- >8 yrs. of experience

h&z teardown lab
Remote Should Cost modeling: Our costing experts prepare your cost models by using our proven Product-Cost-Calculation Tool

h&z product cost calculation tool

<table>
<thead>
<tr>
<th>Approach</th>
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<tbody>
<tr>
<td><img src="image" alt="Cost-Engineering" /></td>
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<tr>
<td>PCC-Tool (<a href="http://www.pcc-tool.com">www.pcc-tool.com</a>)</td>
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<table>
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<tr>
<th>Our experts</th>
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<tr>
<td><img src="image" alt="Matthias Overberg" /></td>
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<tr>
<td>Snr. Expert CVE</td>
</tr>
<tr>
<td>&gt;20 yrs. of experience</td>
</tr>
<tr>
<td><img src="image" alt="Markus Ditsch" /></td>
</tr>
<tr>
<td>Project Manager</td>
</tr>
<tr>
<td>&gt;4 yrs. of experience</td>
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</tbody>
</table>

- Bottom-up calculation of components using the product cost calculation software
- The calculations are carried out by experienced experts with a wide range of experience (industry experience)
- Current database (material, personnel etc.) lead to reliable results
- Presentation of the production process with processes, machine data, cycle times, etc.
- The result is for individual parts, components and systems
Virtual CVE workshops: Our experts prepare and discuss the results with your cross-functional teams in virtual workshops

h&z virtual workshop capabilities

Cross-functional workshops
- Engineering
- Sourcing
- Sales
- PM
- …

Our experts
- Hans-Martin Lauer
  - Principal
  - >22 yrs. of experience
- Isabelle Delle-Case
  - Project Manager
  - >6 yrs. of experience

Our tools to conduct virtual workshops
- We have a proven track record of hundreds of virtual held workshops and trainings
- We have a broad range of tools to conduct effective virtual meetings
- We are able to implement the tools at our clients if needed
CVE Training basic module: What is cost and value engineering about and how to run such a project

Learning goals and content

The participants understand the **purpose and benefit of cost and value engineering** project. They **know some basic methods** and apply them in short exercises, e.g. cost structure analysis, levers and lever workshops, function analysis. The participants will be able to **support CVE activities more professionally**.

### Content

- What does CVE – cost value engineering mean
- Why to work on CVE topics?
- Master BOM and why to use it?
- Types of costs in a cost structure and how to influence them?
- What is a cost model and how to build it?
- Difference between costs and prices
- Cross-functional cooperation
- CVE project phases
- CVE levers to optimize the product costs

### Organization

- Virtual training (e.g. via Microsoft Teams)
- 1 - 2 days (length and depth of content is adjustable, according to customer needs)
- Up to 12 participants

A previous participant: “Great mix between theory and practicing. Even me as non-engineer understands now better the purpose of CVE. It was a great training.”

### Relevant for:
- All colleagues to get an idea about the purpose/benefit of CVE projects

### Our Expert

**Marcel Schondey**
Snr. Expert CVE

>20 yrs. of experience
Former Snr. Consultant CVE, Tsetinis Consulting
Implementation of workshops and projects in the areas of design-to-cost, should cost analysis, cost value engineering
CVE Training advanced module: What are the most used methods and tools and how to run a CVE project successfully

Learning goals and content

The participants understand the **purpose and benefit of advanced cost and value engineering tools** and can apply them. They know the h&z toolbox for CVE and can identify the needed method. They understand about the **importance of cross-functional project management and the key elements which have to be managed.**

### Content

- Overview of h&z methodology / toolbox to work on CVE
- Cost driver identification
- Cost calculation of selected parts
- Definition of should costs and target to cost
- Function and cost analysis
- Tear down workshops
- The importance of successful cross-functional cooperation
- How to manage CVE project phases
- Controlling of CVE projects

### Organization

- Virtual training (e.g. via Microsoft Teams)
- 2 - 3 days (length and depth of content is adjustable, according to customer needs)
- Up to 12 participants

A previous participant: “It was a great inside to work in the cost structure tool and to analyse the costs. That helps me improving the cost driver and negotiate them.”

### Relevant for:
- CVE experts to enhance their skills and run CVE projects smoother

### Our Expert

**Marcel Schondey**

Snr. Expert CVE

>20 yrs. of experience

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A brought range of industrial companies trust in our CVE expertise

Example clients (extract)

+GF+  AgieCharmilles

Hatz Diesel

Bombardier

Navico

Vossloh

 thyssenkrupp

Faurecia

Mann+Hummel

Glamox

Krones

ARRI

INNIO

Airbus Group

eurocopter

Astrium

KNORR-BREMSE

Kongsberg Automotive

SMA

Aventics

Are you next?