Benchmarking in tool manufacturing

Procedure and results
Overview

Benchmarking in tool manufacturing

**Benchmarking**

- **Your company**
- **Aspired status**
- **Worst in Class**
- **Average**
- **Best in Class**

**Procedure**

- Drafting of a *brief overview* of toolmaking (suppliers, own production, products) to define the balance sheet limits
- Selection of *two comparison groups*
- Determination of technological, organizational and commercial *data* as well as running an *in situ audit*
- Calculation of relevant *key figures* in comparison to the competition

**Results**

- Matching of the *own status* with the average and with comparison groups such as *direct competitors*
- Sound basis for future strategic decisions by using knowledge of own *strengths and potentials*
- Evaluation and presentation of approx. 100 *key figures*
- Development and discussion of *recommendations for action*

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The determination of the *strengths and potential for improvement* of toolmaking through a *comparison with competitors* forms the *basis for continuous further development.*
Contents
Organization and technology evaluation of a tooling company

Organizational evaluation

Orientation

Results

Costs

Range of services

Employees

Technological evaluation

Product requirements

Technology deployment

Technology performance

Our services

- Analysis of process flows and interfaces
- Evaluation of the organizational framework conditions
- Evaluation of customer and product-related results

Our services

- Evaluation of technological resources and their performance
- Evaluation of the machinery and process performance data
- Checking the technology deployment and degree of automation

The parallel execution of an organizational and technological evaluation enables the **holistic evaluation** of toolmaking companies.
Data basis

**Holistic data mapping with benchmarking data base**

Global data sets

- South Africa: 8%
- Asia: 16%
- East Europe: 2%
- Western Europe: 10%
- Germany: 64%

**Holistic product range**

- Injection molding: 59.0%
- Punching dies: 35.4%
- Hot forming tools: 22.9%
- Cold forming tools: 18.8%
- Elastomer molding: 18.8%
- Die casting: 16.7%
- Testing equipment/fixture construction: 12.0%
- Special machinery construction: 9.0%

**Various corporate structure**

- Number of employees:
  - < 50: 3%
  - 50 - 100: 5%
  - 101 - 200: 5%
  - 201 - 500: 15%
  - > 500: 51%

**Selected data sets**

- Various corporate structure:
  - Germany: 64%
  - South Africa: 8%
  - Asia: 16%
  - East Europe: 2%
  - Western Europe: 10%

The benchmarking database contains over **1000 data sets of national and international toolmaking companies**, not older than five years, which are demonstrating the heterogeneity of the industry.
The Benchmarking is executed in **six steps** with **close cooperation** between the tooling company and the Fraunhofer Institute for Production Technology IPT.
Results

Detailed appraisal of the benchmarking analysis

Example: Adherence to delivery dates

<table>
<thead>
<tr>
<th></th>
<th>Company</th>
<th>Average</th>
<th>Comparison group 1</th>
<th>Comparison group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>7%</td>
<td>20%</td>
<td>12%</td>
<td>8%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Fertigstellung der Aufträge...

- vor Termin
- zum Termin
- plus wenige Tage
- plus eine Woche
- plus mehr als eine Woche

Example: Evaluation turnaround time

Value per day [Euro/day]

- 197
- 350
- 1.148
- 1.030
- 1.203
- 3.500

Value per day = \( \frac{\text{Order value \times Turnaround time}}{\text{Value-added share}} \)

Example: Tool dimensions & tolerances

Typical tool dimensions:

<table>
<thead>
<tr>
<th>Size</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 250 x 250 mm²</td>
<td>43.5%</td>
</tr>
<tr>
<td>&lt; 500 x 500 mm²</td>
<td>55.6%</td>
</tr>
<tr>
<td>&lt; 1 000 x 1 000 mm</td>
<td>57.3%</td>
</tr>
<tr>
<td>&lt; 2 000 x 1 000 mm</td>
<td>36.3%</td>
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</tbody>
</table>

Required tolerances:

<table>
<thead>
<tr>
<th>Size</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10 µm</td>
<td>33.9%</td>
</tr>
<tr>
<td>&lt; 20 µm</td>
<td>41.1%</td>
</tr>
<tr>
<td>&lt; 50 µm</td>
<td>57.3%</td>
</tr>
<tr>
<td>&lt; 100 µm</td>
<td>52.4%</td>
</tr>
<tr>
<td>&lt; 1 µm</td>
<td>41.1%</td>
</tr>
<tr>
<td>&lt; 2 µm</td>
<td>15.3%</td>
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</tbody>
</table>

After completion of the benchmarking analysis, the toolmaking company receives a **detailed evaluation** of **strengths and potentials** with referring its organization, costs and technologies.
Additional value

Basis for a targeted development of strategic improvements

Drafting of a detailed profile containing strengths and potentials

- Summary of **strengths and potential for improvement** in terms of technological, organizational and commercial data
- Derivation of technological and organizational competence profiles and identification of the own position in **comparison to other competitors**

Derivation of prospective action fields

- Definition of **fields of action** on the basis of the strength and potential profile and detailed review of the **strategic orientation**
- Detailed **planning of measures** by using the derived fields of action to address identified potentials

<table>
<thead>
<tr>
<th>Target</th>
<th>Optimization of planning and control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure</td>
<td></td>
</tr>
<tr>
<td>1. Process modeling PPS for order processing</td>
<td></td>
</tr>
<tr>
<td>2. Development of a planning system</td>
<td></td>
</tr>
<tr>
<td>- Definition of milestones</td>
<td></td>
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<tr>
<td>- Conception for transfer processes</td>
<td></td>
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<tr>
<td>- Determination of areas of responsibilities</td>
<td></td>
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<tr>
<td>- Draft knowledge recirculation</td>
<td></td>
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<tr>
<td>3. Caption of action plan in a roadmap</td>
<td></td>
</tr>
</tbody>
</table>

Person responsible: Mr. John Doe

The identification of **strengths and potentials** as well as the derivation of **recommendations for action** are the main result of the benchmarking analysis and the basis for further **strategic improvements**.
Your contact person for the benchmarking analysis for tooling companies

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