Jenoptik Capital Market Day 2018
Division Automotive – Transformation to a complete solution provider for the smart factory
Volkmar Hauser | Feb 8th 2018
How do we generate customer value?

- We enable for our customers enhanced production processes and product quality in their Smart Factory by our solutions and services.

- Leading global provider of high-precision, automated measurement and laser processing solutions for the automotive industry.

- We ensure customer proximity and success within our core markets by local presence alongside the complete value chain.

Picture Source: Tesla (JO AM LP is a supplier of Tesla)
CO$_2$ / NO$_x$ reduction

- Improvement combustion engine
- E-mobility
- Lightweighting

Smart Factory

- Digitalization
- Automation
- Big Data

Growing importance Asia

- China as leading car market
- Leading position e-mobility
- Requests for local solutions

Change is on the way - but changes lead to opportunities!
Jenoptik Automotive

Derived opportunities for our business – Roadmap 2022

New propulsion systems

<table>
<thead>
<tr>
<th>Year</th>
<th>Combustion Engine</th>
<th>Hybrid (Full and Mild)</th>
<th>Electric &amp; Alternative Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>92</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>2020</td>
<td>83</td>
<td>100</td>
<td>9</td>
</tr>
<tr>
<td>2025</td>
<td>109</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>2030</td>
<td>116</td>
<td>18</td>
<td>34</td>
</tr>
</tbody>
</table>

Production units in mio.

Key message:
% of combustion engine will stay at ~ 80%

Source: AT Kearney & IHS

Lightweighting

<table>
<thead>
<tr>
<th>Year</th>
<th>Metric tones in mio.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0</td>
</tr>
<tr>
<td>2020</td>
<td>11%</td>
</tr>
<tr>
<td>2025</td>
<td>4%</td>
</tr>
<tr>
<td>2030</td>
<td>2%</td>
</tr>
</tbody>
</table>

Key message:
UHHS processing only possible by laser

Source: AT Kearney, Deutsche Bank, Just-Auto, BPI

Traction Battery

<table>
<thead>
<tr>
<th>Year</th>
<th>Predicted GWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>35</td>
</tr>
<tr>
<td>2020</td>
<td>123</td>
</tr>
<tr>
<td>2025</td>
<td>408</td>
</tr>
<tr>
<td>2030</td>
<td>1,290</td>
</tr>
</tbody>
</table>

Key message:
Changes in E-mobility will support Metrology and Laser Processing business

Source: PEM RWTH Aachen

Source: PEM RWTH Aachen
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Strategic growth initiative Laser Processing – Roadmap 2022

New Applications
- Forward integration
- Service After Sales

New Technology & Innovation
- Processing of new Lightweighting materials
- Ultra short pulsed laser processing

Core Competence
- Sensitive materials (leather)

Business Model

Internationalization
- Engineering Solutions
- Automation

CN
US
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Strategic growth initiative Metrology- Roadmap 2022

- Forward Integration
- Service After Sales

- Optical Measurement & Optical Surface Inspections
- 3D - Analysis

- Engineering Solutions
- Automation

New Applications
- Hydraulic Parts
- Break Systems
- New Powertrain Systems*

New Technology & Innovation

Internationalization

CN
US

*Source Pictures: ZF
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Transformation of the Division – Roadmap 2022

Stand-alone system

JO Votan BIM Cutting

Engineering business & solution provider

JO Laser Module & Five Lakes Automation

For the Smart Factory

Part of the IoT* & Service After Sales
Trends
- Integration of the machines in the production line
- Automation
- Digitalization (I4.0)
- Predictive support

Customer Demands
- 24/7 within 4h reaction time
- Uptime & TCO*
- Global footprint
- Condition Based Monitoring

*TCO: Total Cost of Ownership
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