THE TECHNOLOGY GROUP FOR SECURITY AND MOBILITY
Capital Markets Day 2014 | Düsseldorf | November 26, 2014
Horst Binnig, CEO Automotive
Data, facts and figures

Internationalization

Innovations and new products
2014 - the best year in KSPG history. We will outperform the market.

Markets – we are well positioned. Focus today: China.

Products and innovations – The main drivers of our business.
Outlook 2014: Outstanding year for Automotive

Figures 2013 and 2014e (Continuing operations, i.e. excluding ATAG JV) in EUR million

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014e</th>
<th>Change</th>
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<tbody>
<tr>
<td><strong>Sales</strong></td>
<td></td>
<td></td>
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<tr>
<td>Above previous year</td>
<td>2,262</td>
<td>2,400</td>
<td>+138</td>
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<tr>
<td><strong>Operational Earnings</strong></td>
<td></td>
<td></td>
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<tr>
<td>All time high</td>
<td>158</td>
<td>180</td>
<td>+32</td>
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<td><strong>Operational Margin</strong></td>
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<tr>
<td>Above previous year and the best in KSPG history</td>
<td>7.0%</td>
<td>7.5%</td>
<td>+1.0 pp</td>
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* After impairment of EUR 10 million
The global engine market will exceed 100 million units of production in 2016.
Situation analysis – global presence

Global engine production *in million units*

Market will not limit our future growth

KSPG is present in all mobility markets
Shift of global production of passenger cars

Global LV production 2011-20  in million units

BRIC & ASEAN¹
+18.2 million units
72% growth share

KSPG growth 2013 - 2020
Stronger than market growth

+25.4 million units
CAGR 3.9%

¹ ASEAN: Indonesia, Malaysia, Philippines, Thailand, Vietnam; Source: Autodata 2014 Q2 data publication
Since 2012 China has been the biggest car market in the world
The KSPG – China Story (1/3)

Sales joint ventures (100%) and Wholly Foreign-owned Enterprises in EUR million

Phase 1: Market entry

Until 1996 license business

1997 1. JV with SAIC, product: pistons

2001 2. JV with SAIC, product: castings

2005: 
- 2 joint ventures
- ~EUR 80 million sales
- Profitable business
The KSPG – China Story (2/3)

Sales joint ventures (100%) and Wholly Foreign-owned Enterprises in EUR million

Phase 1: 
*Market entry*

Phase 2: 
*Invest in growth*

- **2008** Motorservice China
- **2009** Pierburg China
- **2009** Second site Yantai, Castings, KPSNC

2009:
- 2 joint ventures
- 2 own companies
- ~EUR 160 million sales
- Profitable business
The KSPG – China Story (3/3)

Sales joint ventures (100%) and Wholly Foreign-owned Enterprises in EUR million

Phase 1: Market entry
- 2012: JV with Mikuni, PMP
- 2012: JV with SAIC (HASCO), PHP
- 2013: Start KS LBC, Large Bore Pistons

Phase 2: Invest in growth
- 2014e:
  - 4 joint ventures
  - 3 own companies
  - ~EUR 700 million sales
  - Profitable business

Phase 3: Outperforming market
- CAGR 2003 → 2014: 24.1%
Automotive network in China today - sites and products

Joint Ventures (50 : 50)

KPSNC
Shanghai
Loutang (Head office)
Cylinder heads,
Engine blocks,
Structural body parts

KPSNC
Kunshan
Cylinder heads,
Engine blocks

KPSNC
Yantai
Fushan
Cylinder heads

KPSNC
Shanghai
Waigang
Machining of engine
blocks/cylinder heads

KSSP
Shanghai
Anting
Pistons

PHP
Shanghai
Yuepuzhen
Electric &
mechanical pumps
SOP 2014

Wholly Foreign-owned Enterprises (100%-Subsidiary)

Pierburg China
Kunshan
AGR modules,
Electric throttle bodies

KS Large-bore
pistons
Kunshan
Large-bore pistons

MS Motor Service Asia
Pacific
Shanghai Waigaoqiao,
Kunshan
in free-trade area

Subsidiaries of a JV

Pierburg Mikuni Pump
Technology
Shanghai
Zhangjiang
Water- & oil pumps

KSPG House

Head office for
all wholly owned
subsidiaries
Shanghai
Zhangjiang
Historic CO₂ development

- CO₂ concentration over time from -800,000 to 2000 years
- Global CO₂ development with a significant increase from 1700 onwards
- CO₂ in the Troposphere: 1.5.2013
- Source: NASA
Worldwide legislation on climate protection

CO₂-Targets for passenger cars

- USA 2025: 103
- Canada 2025: 103
- Mexico 2016: 153
- EU 2021: 95
- Japan 2020: 105
- China 2020: 117
- South Korea 2015: 153
- Brazil 2017: 146
- India 2021: 113
- Brazil 2017: 146
- China 2020: 117
- India 2021: 113
- USA 2025: 103
- Canada 2025: 103

CO₂-Concentration (ppm)

CO₂ in the Troposphere 1.5.2013
Source: NASA
Permanentley tightening and globally converging emission legislation

**Key trends:**

- **China** is generally following the European Union
- **India** is generally following the European Union
- **USA** are independent (using Federal and Californian systems)
CO₂ savings with current KSPG products and innovations

- Specially composed sliding layers for bearings
- Optimized piston assemblies
- Variable valve trains
- External EGR for gasoline engines
- Low-pressure EGR
- Steel pistons for diesel engines
- Coolant, oil and vacuum pumps

Fuel savings:
- 3 g/km CO₂ reduction
- 1.9% less fuel
- 2% fuel savings
- 4% fuel savings
- 1.5-3% fuel savings
- 5-6% less fuel
- 5-6% less fuel
- 18 g/km CO₂ reduction
Market trends for future drive systems

Car sales *in million units*

Phase 1: *until 2020*

- Pure combustion
- Hybrid and E-Drive

- Diesel
- Gasoline
- Gasoline-Hybrid
- Gasoline-Plugin-Hybrid
- Diesel-Hybrid
- Diesel-Plugin-Hybrid
- E-Drive
- Fuel Cell-Drive

Source: Honda
Four key strategic directions

- **Market attractiveness**
  - High
  - Low

- **Company capabilities**
  - High
  - Low

**Improve / Enter**
- Improve company capabilities and additionally profitability and volume

**Growth**
- Grow the profitable business as much as possible

**Exit**
- Exit unprofitable business as soon as possible

**Cash**
- Limit resources to maximize profitability

*With regard to the relevant market*
Screening of 70 automotive product groups

Division Mechatronics
54% of the product groups

Division Hardparts
37% of the product groups

Division Aftermarket
9% product group clusters
Balanced product portfolio

Product groups *in numbers and in % of sales*

- Potential: 9
- Enter: 15
- Grow: 28
- Cash: 13
- Exit: 5

In % of sales: 1% | 65% | 31% | 3%
Situation analysis – products

Strongest drivers:

- Reduction of emissions
- Reduction of fuel consumption
- More performance from smaller engines

KSPG has the right product portfolio for a substantial growth
Product highlights 2014

**Steel pistons for PC and Truck**
Consumption reduction up to 4%

**Aluminum castings for chassis and car bodies**
Lower weight reduces fuel consumption

**EGR cooling modules (Exhaust gas recirculation)**
Pierburg holds worldwide leading position in EGR technology

**Oil, water and vacuum pumps**
High efficiency and long durability, fully variable oil pumps are saving up to 5% fuel

**UniValve (variable valve train)**
Up to 6% fuel economy

**Range extender for electric vehicles**
Realizes normal operation distance without charging stops
The divisions strategy in headlines

- **Hardparts is growing**
  with existing products in emerging markets

- **Mechatronics is growing**
  with new products in existing markets

- **Aftermarket has a good profitability**
  and potential for internal and external growth
Market trends for future drive systems

Car sales in million units

Phase 1: until 2020
Phase 2: after 2020

Pure combustion → Hybrid and E-Drive

Gasoline
Gasoline-Hybrid
Gasoline-Plugin-Hybrid
Diesel
Diesel-Hybrid
Diesel-Plugin-Hybrid
E-Drive
Fuel Cell-Drive

Source: Honda
Non-light vehicles sales 2014e
Examples for alternative propulsion systems with KSPG content

**VW Golf GTE (Plug-In-Hybrid)**
- Secondary-air system
- Crankshaft bearings
- Thrust washers

**VW Jetta Hybrid**
- Secondary-air pump
- Secondary-air valve
- Solenoid valves
- Crankshaft bearings
- Thrust washers

**Audi A3 E-Tron**
- Secondary-air pump
- Secondary-air valve
- Crankshaft bearings
- thrust washers
- Water recirculation pump

**BMW i3**
- Secondary-air valve

**BMW i8**
- Electrical switching valves
- Crankshaft bearings
- Collar bearings

**Fiat 500e**
- Electrical coolant pump
  CWA 50 & 100

**Mercedes S-Class (Plug-In-Hybrid)**
- Electrical switching valves
- Thrust washers
Product highlight 2014 (Prototype)

New heating and cooling module for electric and hybrid cars

- Use of any kind of “waste” energy (e.g. loading and using the battery, engine, …)
- Plug and play concept for cabin heating, easy to install
- Higher range for pure e-cars (especially in wintertime)
Markets will not limit our growth, we will outperform the market.

New and innovative products are in the pipeline.

Good balanced product portfolio for PC, Truck and MIR applications.

Substantial growth in the emerging markets with own and JV companies.

Target 8% EBIT margin under stable market conditions is achievable in 2015.
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