How to sharpen the Russian Automotive Industry through 2017/2018

Speech at the Moscow International Automobile Salon

Moscow/Russia, August 29th, 2012
CONTENT

1. STATUS RUSSIAN AUTOMOTIVE INDUSTRY

Russian automotive market is set to become the largest market in Europe – but some critical key issues have to be solved.

2. RE-SHAPING REQUIREMENTS & CHALLENGES

Modernization of the Russian automotive players & further localization of international OEMs and suppliers is key for success.

3. STRATEGIC DIRECTIONS & IMPLICATIONS

Successful development of automotive industry will act as a lighthouse project for overall development of the Russian industry.
Key economic indicators of growing Russian economy show promising basis for development of a competitive automotive market

Key economic indicators of the Russian economy, 2005-2015

**GDP PER CAPITA** [k USD at market exchange rate]

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP Per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>5.3</td>
</tr>
<tr>
<td>2006</td>
<td>6.9</td>
</tr>
<tr>
<td>2007</td>
<td>9.1</td>
</tr>
<tr>
<td>2008</td>
<td>11.8</td>
</tr>
<tr>
<td>2009</td>
<td>8.7</td>
</tr>
<tr>
<td>2010</td>
<td>11.0</td>
</tr>
<tr>
<td>2011</td>
<td>12.2</td>
</tr>
<tr>
<td>2012</td>
<td>13.6</td>
</tr>
<tr>
<td>2013</td>
<td>15.3</td>
</tr>
<tr>
<td>2014</td>
<td>17.0</td>
</tr>
<tr>
<td>2015</td>
<td>18.9</td>
</tr>
</tbody>
</table>

**INFLATION RATE** [%]

<table>
<thead>
<tr>
<th>Year</th>
<th>Inflation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>12.7</td>
</tr>
<tr>
<td>2006</td>
<td>9.7</td>
</tr>
<tr>
<td>2007</td>
<td>9.0</td>
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<tr>
<td>2008</td>
<td>14.1</td>
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<tr>
<td>2009</td>
<td>12.1</td>
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<tr>
<td>2010</td>
<td>8.8</td>
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<tr>
<td>2011</td>
<td>8.3</td>
</tr>
<tr>
<td>2012</td>
<td>7.7</td>
</tr>
<tr>
<td>2013</td>
<td>6.4</td>
</tr>
<tr>
<td>2014</td>
<td>6.0</td>
</tr>
<tr>
<td>2015</td>
<td>5.7</td>
</tr>
</tbody>
</table>

**FORECAST**

- Forecast shows a **large economic growth potential** combined with stabilizing market conditions.
- Significant increase of GDP per capita from 2011-2015 by about 55%.
- Reduction of inflation rate of 2.6% points from 2011 until 2015.
- Parliamentary election in Dec. 2011 & Presidential election in Mar. 2012 – hence, the government has 6 years time until next election.

Source: EIU, Roland Berger Strategy Consultants
Automotive industry comprises to 0.9% of total GDP – Increase of local production of Intl. players will increase GDP contribution

Value-added for selected industries in Russia [% of total Value-added Russia], 2011

<table>
<thead>
<tr>
<th>Industry</th>
<th>Value-added Russia (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale &amp; Retail Trade</td>
<td>23.5%</td>
</tr>
<tr>
<td>Transport, Storage, Communication</td>
<td>9.9%</td>
</tr>
<tr>
<td>Mining</td>
<td>9.7%</td>
</tr>
<tr>
<td>Construction</td>
<td>5.2%</td>
</tr>
<tr>
<td>Refined Petroleum, Coke, Nuclear</td>
<td>4.0%</td>
</tr>
<tr>
<td>Metals</td>
<td>3.0%</td>
</tr>
<tr>
<td>Utilities</td>
<td>2.2%</td>
</tr>
<tr>
<td>Chemicals &amp; Pharma</td>
<td>1.2%</td>
</tr>
<tr>
<td>Automotive</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

TOTAL VALUE-ADDED RUSSIA: 627.369 EUR m

1) Inflation-adjusted ad constant exchange rate 2005

Source: IHS Global Insights, Roland Berger Strategy Consultants
Following the economy, Russian car market took a dive in 2009, but is expected to rebound by 2013/14 – Foreign OEMs as major winners

Passenger car sales in Russia [m units]

CAGR +11%

2.4 2.7 2.5 2.6 2.7 2.9 3.2 3.4 3.6


Passenger car sales split [%]

2008 2010 2017

Foreign assembly
Foreign Import
Russian brand

Source: LMC Automotive, Roland Berger Strategy Consultants
Commercial vehicle market is also expected to reach pre-crisis levels by around 2013/14 with European OEMs as major winners.

Commercial vehicle\(^1\) sales in Russia [m units]

\(^1\) including light commercial vehicles

Source: LMC Automotive, Roland Berger Strategy Consultants
Automotive clusters with the highest potential production volume are St. Petersburg, Central and Volga regions.

Geographical focus of Russian automotive industry

- **Status Automotive Industry**

- **Facts**
  - **Automotive clusters** with the highest potential production volume are St. Petersburg, Central and Volga regions.
  - **Most international OEMs** present with production facilities in Russia.
  - Only a **few number of international suppliers** present.
  - **Focus areas** are located in **areas with high education** level compared to other regions in Russia.
  - **Highest employment rate in focus areas**, e.g., Moscow with 98%, St. Petersburg with 97% and Volga region with 92%.
  - **Employment rate in other Russian regions** varies between **50% and 95%**.
  - Focus of educational programs in the area of universities – **underrepresentation of handcraft education**.

Higher localization of intl. OEMs and suppliers will lead to higher GDP growth and supports the development of a profound industry

Value-added depth & benefits

**FACTS 2011**

- **GDP contribution** of automotive industry accounts to **0.94%**
- Contribution equals an **absolute GDP** of **EUR 5.7 bn** in 2011
- Corresponds to **approx. 30% of local value-add** in 2011
- **Target** of local value-add for 2017 is **48%**
- Approx. **600,000 employees** in the Russian automotive industry – after crisis level

**Influence of increasing local content:**

- **Total GDP**
- **Employment rate**
- **Industry structure**
- **Oil & Gas dependency**

Source: Rosstat, Roland Berger Strategy Consultants
Russian automotive market is set to become the largest market in Europe – but some critical key issues have to be solved.

Modernization of the Russian automotive players & further localization of international OEMs and suppliers is key for success.

Successful development of automotive industry will act as a lighthouse project for overall development of the Russian industry.
Seven critical issues have to be addressed to improve the Russian automotive industry until 2017/18

Critical issues for the Russian automotive industry

- **WTO entry** has significant **impact on** automotive industry **imports vs. localization** in Russia
- **Infrastructure, workforce** qualification and availability **not competitive** on international level
- In main automotive regions the **former cost advantages in labor & energy are marginal** today
- Very **limited regulations/ programs to support** domestic & international **supplier industry**
- **Low productivity and efficiency of domestic OEMs** due to fully integrated business models
- Fragmented **domestic OEMs** with **low production volumes** are not profitable and competitive
- Nearly **no export business** established to provide **enough production volume** for all players
- **Outdated quality standards** of domestic suppliers and **low value added components** localized
- **No automotive industry vision 2018 and no responsible administrative department**

Source: Roland Berger Strategy Consultants
Six requirements need to be fulfilled to successfully achieve further localization of production in Russian automotive industry.

Automotive localization requirements Russia

- **A**: Strong production growth case
- **B**: Supporting regulations for supplier industry
- **C**: Competitive economic environment
- **D**: Modernization of domestic players
- **E**: Upgraded technology & quality
- **F**: High value components prioritized

Source: Roland Berger Strategy Consultants
Production is expected to grow at 14% for passenger cars and 15% for Commercial vehicles – Counter impact of WTO entry?

**DISCUSSION**

- Production of passenger cars and commercial vehicles will re-bound to pre-crisis conditions in 2012/13.
- Total production of passenger car and commercial vehicles of 3.5 m units expected in 2017.
- After entering WTO import duties will decrease from 30% to 15%.
- Decreasing import duties with potential counter impact on local production.
- Production per domestic OEM still low compared to intl. OEMs – Export crucial for healthy growth.

**A Vehicle production [m units]**

- **Passenger cars**
  - CAGR +14%

- **Commercial vehicles**
  - CAGR +15%
  - 2007: 0.3, 2008: 0.3, 2009: 0.1, 2010: 0.2, 2011: 0.2, 2012: 0.3, 2013: 0.3, 2014: 0.4, 2015: 0.4, 2016: 0.5

Source: JD Power, Roland Berger Strategy Consultants
Success story for growth case of an Asian player due to increasing focus on export – Hyundai is using India as global hub for small cars

A. Best practice example – Hyundai India

**EXPORT SHARE – Volume, 2011 [k units, %]**

<table>
<thead>
<tr>
<th>Export</th>
<th>7%</th>
<th>20%</th>
<th>38%</th>
<th>39%</th>
<th>48%</th>
<th>39%</th>
</tr>
</thead>
<tbody>
<tr>
<td>i10</td>
<td>139</td>
<td>132</td>
<td>271</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>i20</td>
<td>76</td>
<td>124</td>
<td></td>
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<td></td>
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<tr>
<td>Santro</td>
<td>85</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Accent</td>
<td>48</td>
<td>75</td>
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<tr>
<td>Eon</td>
<td>25</td>
<td>26</td>
<td></td>
<td></td>
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<tr>
<td>Sonata</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DOMESTIC SALES & EXPORTS – 2011 [k units, %]**

Source: Company website, Industry database, Roland Berger Strategy Consultants
After joining WTO, tariffs will decrease from currently 30% to 15% resulting in a stronger stimulation of imports into Russia.

A Improvement of market attractiveness: Impact on tariffs after Russia joining WTO

- **WTO entry increases attractiveness of Russian market** for intl. companies do to stable and internationally comparable tariffs.
- **Decrease of tariffs** from currently 30% to 15% in the next 7 years – **Import duties for components** could be **reduced** from currently 1-2% to 0%.
- **Significant increase of imports** expected.
- However, **reducing attractiveness** for international suppliers and OEMs to increase their **local content**.
- **Transition period** from 3rd to 7th year needs to be defined.

WTO entry strengthened China's domestic automotive industry – Increasing domestic production and exports within 5 years

Impact of China's WTO entry on domestic automotive industry

DEVELOPMENT OF THE CHINESE AUTOMOTIVE INDUSTRY AFTER WTO ENTRY
FROM 2001 TO 2006

1) WTO entry in Dec. 2001
2) Export in 2005 equaled USD 2.5 bn

- Production & sales development: + 200%
- Development of exports: + 15% p.a.
- Development of imports: + 240%
- Share of imports in total domestic sales: -3% points
- Cooperation with international players
- Development of technical standards
After WTO entry tariffs for components might disappear – Hence, regulations required as counter measures to increase local content

**Comparison of regulations for intl. OEMs and suppliers**

**International OEMs**

- Introduction of Decree 166 favoring OEMs manufacturing cars in Russia – Forcing localization of automotive assembly in Russia
- OEMs signing investment agreement under Decree 166 achieve significant cost savings on component imports of up to 1/3 of a car value
- Significant reduction of tariffs and import duties for components after entering WTO

**International SUPPLIERS**

> Currently, only limited local content contribution by international suppliers

> After joining WTO, no tariffs for components and hence no stimulation for international suppliers to increase local content

> Sufficient regulations for suppliers as counter measures required

> "Protected" domestic OEMs have to be opened-up for intl. suppliers

Source: Roland Berger Strategy Consultants
Competitive advantage in energy costs and raw material access – Infrastructure improvement & skilled workforce availability required

Competitive economic environment

- **Energy costs**
  - Russia with very low energy cost due to local power production

- **Access to raw materials**
  - High domestic raw material resources – Good material supply for production

- **Infrastructure/logistic costs**
  - Developed infrastructure only in metropolitan areas – High logistic costs

**Categories**

- **Labor costs**
  - Low labor costs compared to international standards – Low productivities

- **Workforce availability/qualification**
  - Shortage of qualified work-forces in current automotive clusters

Source: Roland Berger Strategy Consultants
Russia lags in production costs behind other BRIC countries – Situation in automotive industry significantly more tense

### Competitiveness of production locations

<table>
<thead>
<tr>
<th>Labor Costs, 2009</th>
<th>Energy Costs, 2008</th>
<th>LPI Score2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[USD per hour]</td>
<td>[USD per KWh.]</td>
<td>[1= low, 5 = high]</td>
</tr>
<tr>
<td>Germany</td>
<td>40.3</td>
<td>Germany</td>
</tr>
<tr>
<td>Brazil</td>
<td>5.2</td>
<td>China</td>
</tr>
<tr>
<td><strong>RUSSIA</strong></td>
<td><strong>3.3</strong></td>
<td>Brazil</td>
</tr>
<tr>
<td>India</td>
<td>2.1</td>
<td>India</td>
</tr>
<tr>
<td>China</td>
<td>1.9</td>
<td><strong>RUSSIA</strong></td>
</tr>
</tbody>
</table>

Relative low labor costs, however, low and even decreasing productivity
Low costs and low energy efficiency: Ranking no. 109 amongst 122 countries
High logistic costs and low effectiveness: Ranking no. 94 amongst 155 countries

1) Industry average  2) International Logistics Performance Index, determined by World Bank – based on evaluation of international logistic companies following 6 criteria (e.g. tariffs, infrastructure, logistic competence)

Source: World Bank, EIU, EIA, Roland Berger Strategy Consultants
Significant gap in productivity and profitability between Russian and international OEMs – Focus on core competencies required

**Modernization of local OEMs – Comparison of Productivities and Profitabilities**

<table>
<thead>
<tr>
<th>PRODUCTIVITY</th>
<th>PROFITABILITY</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>[trucks produced/employee]</td>
<td>[EBIT/trucks sold in k EUR]</td>
<td></td>
</tr>
<tr>
<td>Paccar</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Navistar</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>GAZ</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>MAN</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Volvo</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Daimler</td>
<td>4.4</td>
<td></td>
</tr>
<tr>
<td>Scania</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>KAMAZ</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Paccar</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Volvo</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Daimler</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>MAN</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Navistar</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>KAMAZ</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>GAZ</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTIVITY**

International OEM: Paccar, Navistar, MAN, Volvo, Daimler

Russian OEM: GAZ, Scania, KAMAZ

**PROFITABILITY**

International OEM: Paccar, Volvo, Daimler

Russian OEM: Scania, MAN, Navistar, GAZ, KAMAZ

> Benchmark shows a **gap in productivity and profitability** of Russian OEMs compared to international OEMs

> **Russian OEMs** need to **modernize** their business to stay competitive

> Domestic players are highly **vertically integrated** – at the same time hindering access to intl. suppliers

> Focus on core competencies required – **Carve-out** of component business for JVs/partnerships

Source: Company information, LMC Automotive, Roland Berger Strategy Consultants
Domestic integrated suppliers with inefficiencies & outdated processes – Parts production not competitive with intl. quality standards

**Technology and quality standards of domestic players – Example**

- **Production facility**
  - Equipment in reasonable condition
  - Modernization required

- **Machine park**
  - Low degree of automation
  - Mostly very old machine park

- **Production process**
  - Many employees work in high risk areas
  - Modernization required

- **Office buildings**
  - Average condition of buildings
  - Renovation appropriate

**Comments**
- Domestic suppliers with high inefficiencies and out-of-date processes
- Parts production not competitive with international quality standards
- Efficiency programs and modernization are required to ensure profitable production

Source: Roland Berger Strategy Consultants
Parts with low investment requirement, low production complexity & high labor costs, such as casting parts, are suitable for localization.

## Prioritization for localization of components

### Components for localization

<table>
<thead>
<tr>
<th>Logistic cost portion</th>
<th>High (&gt;10%)</th>
<th>Medium (5-10%)</th>
<th>Low (until 15-20%)</th>
<th>Priority 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air cooler</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust elbow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front-/Rear end</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering gear</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labor cost portion</th>
<th>Medium (5-10%)</th>
<th>High (&gt; 20%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake pad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric generator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catalytic converter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety installations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seat belt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side carpeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DE-PRIORITIZED COMPONENTS:**

- ABS
- Airbags
- Air condition
- Alarm
- Amplifier
- Anti-theft device
- Automatic gearbox
- Brake system
- Cockpit
- Damper
- Engine fuel supply
- Electronic control unit
- ESP
- Fuel-injection system
- Gateway-control box
- HVAC
- Intake system
- Locking system
- Navigation system
- Radio/CD
- Sun roof
- Wheel suspension

**Requirements & Challenges**

- Low logistic cost
- High labor cost
- High production complexity (i.e. not suitable for a short-term relocation)

**Source:** Interviews, Roland Berger Strategy Consultants
High component value per car for casting components – Upgrade of domestic technology by cooperation or JVs with intl. suppliers

**Localization example – Casting components**

**TOP 10 CASTING COMPONENTS**
Component value per car [EUR]

<table>
<thead>
<tr>
<th>Component</th>
<th>Value (EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder head</td>
<td>71</td>
</tr>
<tr>
<td>Engine block</td>
<td>62</td>
</tr>
<tr>
<td>Crankshaft</td>
<td>45</td>
</tr>
<tr>
<td>Oil pan</td>
<td>40</td>
</tr>
<tr>
<td>Wheels (Light metal)</td>
<td>38</td>
</tr>
<tr>
<td>Control arms</td>
<td>20</td>
</tr>
<tr>
<td>Pistons</td>
<td>17</td>
</tr>
<tr>
<td>Wheel brakes</td>
<td>12</td>
</tr>
<tr>
<td>Wheel hub</td>
<td>6</td>
</tr>
<tr>
<td>Axle Carrier</td>
<td>2</td>
</tr>
</tbody>
</table>

**COMMENTS**

- **High component value per car for casting components**
- **Casting** process as energy- and work-intensive procedure – Russia offers ideal preconditions
- Russian suppliers with low quality standards, as shown in example
- **Upgrade** of domestic technology & ensure know-how transfer by cooperation or JVs with intl. suppliers

Source: Roland Berger Strategy Consultants
Russian automotive market is set to become the largest market in Europe – but some critical key issues have to be solved.

Modernization of the Russian automotive players & further localization of international OEMs and suppliers is key for success.

Successful development of automotive industry will act as a lighthouse project for overall development of the Russian industry.
Seven key strategic directions have to be addressed to establish a competitive automotive industry through 2017/18

Strategic directions for the development of the Russian automotive industry

I. Setup **financial development program for localization** as counter measure for import increase due to decreasing import duties from WTO entry – Cross financing by vehicle usage taxes

II. **Introduction of structural programs** to support industrialization of structurally weaker regions, including transport infrastructure, and to ensure workforce qualification & availability

III. Introduction of **regulations and guidelines especially for international suppliers** to increase local content as counter measures for decreasing tariffs after WTO entry

IV. **Modernization of domestic OEMs** to stay competitive, in particularly against Asian players – Focus on OEM core competencies allows access to international supplier

V. **Upgrade supplier landscape** – Carve-out of component business of domestic OEMs and creation of partnership & JVs with international supplier to increase quality standards and local content

VI. **Strengthening process technologies** – Russian advantage of low labor and energy costs plus raw material availability, e.g. casting parts with high value added per car

VII. **Introduction of a "Russian Automotive Principal"** – Introduction of a department/key person in charge in the government for the realization of the strategic automotive vision
Increasing local content to targeted 48% leads to a GDP increase of EUR 10.4 bn and around 360,000 more employees until 2017/18

**Effect of increase of local content on GPD and employment rate**

**EFFECTS**

**INCREASING LOCAL PRODUCTION RATE**

> Higher production level due to market growth and modernization of production facilities

**TECHNOLOGY AND QUALITY UPGRADE**

> Increase of production efficiency due to technology upgrade by cooperation or JVs with intl. players

**INCREASE OF LOCAL CONTENT**

> Higher local content supported by regulations and financial support for foreign suppliers

**RESULT**

Increasing local content by 18% to target of 48% LEADS TO GDP increase of EUR 10.4 bn and increase of employment by 360,000 people

Source: Roland Berger Strategy Consultants
Successful development of automotive industry will act as a lighthouse project for overall development of the Russian industry.

Impact of success story automotive industry:

- **Success story automotive industry** will act as a **lighthouse project** for overall manufacturing industry development.
- Strengthening of automotive industry will **further stabilize overall situation** and **create jobs in Russia**.
- Strong automotive industry with **higher impact on GDP** will **reduce Oil & Gas dependency**.
- Successful implemented of automotive vision 2017/18 with **positive signal for WTO accession**.

Source: Roland Berger Strategy Consultants
It's character that creates impact!