

VOLVO

Fourth IRIMA Workshop Presentations of Industry Practitioners

Urban Wass
SVP Research & Innovation Policy
Volvo Group Headquarters

Volvo Group



- One of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines
- Employs about 100,000 people
- Production facilities in 18 countries
- Sales in more than 190 markets
- Recently completed the acquisition of 45% of the Chinese automotive manufacturer Dongfeng Commercial Vehicles



Volvo Group Headquarters

AA17300, Urban Wäss

2 2014-11-25

VOLVO

Volvo Group R&D

- R&D 2013: SEK 15,1 billion (€ 1.6 billion, approx. 6 % of sales)
- 75 % in the European Union
 - Sweden, France (to less extent Belgium, Germany, Poland)
 - Stable figure 2010 to 2014. SE + FR approx. 70 %
- Approx. 5-10 % R in R&D

Key competences

(a somewhat simplified description)

- Driveline development (powertrain)
- Electronic architecture
- Complete vehicle (integration of technologies)
- Manufacturing



**INTERNATIONAL
TRUCK OF THE
YEAR 2015**



**Key Innovation
Areas**

Group Technology Plan (up to 2030)



**CO₂ and Energy
Efficiency**



**Product and
Traffic Safety**



**Transport
Solutions**

Manufacturing technologies

Electrical & Embedded System technologies

Material technologies – Light Weight

Knowledge sources

- Internal work
 - Often creation of Volvo unique knowledge
- Collaborative work
 - Often generic knowledge
 - Volvo and academia (or institutes)
 - Horizon 2020, for instance
- Suppliers and consultancy companies
 - Support
 - Knowledge built into components

List of questions

How important are the following knowledge sources for the development of new technologies in your company:

- Advances in scientific research

Important. Through collaboration or via suppliers

- Technological advances from your industry

Very important. Driveline development and design of complete vehicles, for instance

- Technological advances from other industries (which?)

- Non-profit and governmental institutions

Very important. Via suppliers. Information and communication industry. Sensors and semiconductors

Not important as a source of knowledge if you exclude academia from the term "governmental institutions" (but public funding is important...)

Different logic



Engine development



Automation & driver assistance

Top 20 Advanced Driver Assistance Systems Companies 2015

- Aisin Seiki Co
- Autoliv AB
- Bosch Group
- Continental AG
- Delphi Automotive
- Denso Corporation
- Freescale
- Gentex Corporation
- Harman International
- Hella KGaA Hueck & Co
- Hyundai Mobis
- Magna International Inc
- Mobileye N.V
- NVIDIA
- Panasonic Corporation
- Renesas Electronics
- Takata Corporation
- Texas Instruments
- TRW Automotive
- Valeo SA

Source: Visiongain Automotive Report
Publication date: 08th January 2015

Some Top Critical Technologies for the future

- Powertrain
 - High efficient diesel engines (various fuels)
 - Electromobility
 - Powertrain control
- Safety technologies
- Connected vehicle technology
- Automation
- Electronics
- Flexible manufacturing

Some thoughts on the way forward

- **Policies on the research & innovation system must have industry onboard**
 - Academic research is important but not sufficient to turn research results into competitive products and services
 - Addressing societal challenges (such as transport) and providing support to demonstration activities will attract more interest from industry
 - This strategy has been implemented in Horizon 2020
- **Flexibility is a must**
 - Nations and businesses need to improve their capability to adjust to fluctuations in the economy
 - The fewer regulations a company has governing its labor force, the greater its flexibility
 - Quicker implementation of new technologies and methods in manufacturing
- **Competence counts**
 - The EU must go for high-value and knowledge intensive products
 - Scale up investments in R&D and especially in close-to-market innovations
 - Build a culture of competence combined with entrepreneurship and risk-taking

EU has a strong position in the heavy-duty truck market

- The big 3 on a global scale