

Suggestions leveraging lighting industry trends

❖ Main suggestions to OEMs concerning lighting

Strengthen Collaboration with Lighting Suppliers

- OEM Purchasing, Engineering, and Quality, to define technology roadmaps, drive cost and development time reductions, with selected suppliers.
- OEM Studio and Engineering to develop design creativity with selected suppliers.

Foster Affordable Innovations

To use adaptive lighting, projections, and personalization, possibly from OTA update technology. The future is not in lighting performance, already at a good level.

Search Standardization

Of non-seen components as optic modules and ECUs.

Integrate Sustainability in all Developments

To improve the energy efficiency of lighting components, the reparability of headlamps and their components, and the recyclability of materials.

Optimize Lighting Electronic Architecture towards Vehicle

Electronic Architecture

Plan for all vehicle models that will be set up on a new electronic architecture to introduce a new optimized lighting electronic architecture.

❖ One main suggestion to the lighting community

Establish lighting industry associations

To create associations that bring together OEMs, Tier-1 and Tier-2 suppliers, universities, research centers, and regulatory bodies to improve and promote safety (visibility, glare), enhance communication to dealers and end-users, and facilitate regulatory harmonization.

Suggestions leveraging lighting industry trends

❖ Main suggestions to lighting suppliers

Strengthen Collaboration with OEMs

- Lighting suppliers to work closely with OEM Purchasing, Engineering, and Quality to optimize technology roadmaps, specifications, cost, and development time.
- Lighting suppliers to develop design creativity with OEM Studio, engineering.

Foster Business Development between Tier-1 and Tier-2 suppliers

To encourage stronger collaboration between Tier-1, Tier-2, and other industries to capture new opportunities driven by safety requirements, enhanced design, and increased functionality, all of which will raise the value of lighting systems per vehicle.

Develop Strategic Partnerships and Transformation Initiatives

To organize around key technology domains, accelerating innovation through partnerships, particularly Chinese players, with the target of remaining competitive and addressing industry transformation challenges.

Develop Affordable Technologies

Emphasizing perceived quality, entertainment, safety (projections), differentiation, personalization, dynamics, even grilles and displays, searching not expensive solutions.

Optimize the ADB HD Cost

Privilege 20kµLED and reduce cost by standardization and simplification.

Find Solutions to Reduce Glare drastically

Developing and using fully automatic aiming and adaptive lighting depending on areas and the environment.

Prepare for the Proliferation of Autonomous Vehicles

To integrate lighting systems into the evolution of autonomous mobility by optimizing lighting patterns, exploring new lighting functions specific to AVs, and conducting joint regulatory and field studies.

Conclusion : Challenges to Lighting Industry

Considering the several trends emphasized in the report, the automotive lighting industry is in front of 6 challenges.

❖ **Cost and development time reductions, mainly in Europe**

Strong relationship OEM-suppliers, Standardization, use of advanced engineering tools, and affordable innovations will be the main levers to succeed.

❖ **Design signature and differentiation**

Body light and use of position light, DRL, logo, grilles, and headlamps with thin appearance will be the levers to succeed.

❖ **Light communication and Personalization**

Strong need of marketing with the demand shift..

❖ **Electronic/Software proliferation**

Centralized replacing distributed architecture and centralization of application software and electronics.

❖ **Endless standardization**

Standardization on components and ECUs standardization on ADB, Matrix segment and μ LED cost to be reduced by the volume.

❖ **Glare decrease**

To find solutions to reduce glare, even headlights don't dazzle in static conditions.

A2S Consulting is an independent consulting firm with a deep knowledge and experience of the Global Automotive market.

We focus on 3 support activities:

1. Business Development

- Leveraging contacts with OEMs (Audi, BMW, Mercedes-Benz, Renault, Stellantis, VW...) and long-established relationships with the main lighting Tier Ones: Hella, Marelli AL, OP Mobility, Valeo, ZKW.

2. Strategy

- Team of former CEOs, CFO, CTOs with Global Tier Ones (FORVIA, Valeo, ...)

3. M&A and Partnerships

- Knowledge of the worldwide lighting market

We offer you:

1. Proven Expertise in the automotive lighting industry

- Comprehensive understanding of the lighting ecosystem

2. Hands-on Experience

- Large automotive experience in strategy execution, industrial footprint, and engineering transformation, Joint venture, partnership, and turnaround

3. Market Knowledge and Data Access thanks to:

- Strong link with DVN
- Worldwide presence in universities, institutional organization, and regulations through a Network of specialists and the experience at DVN