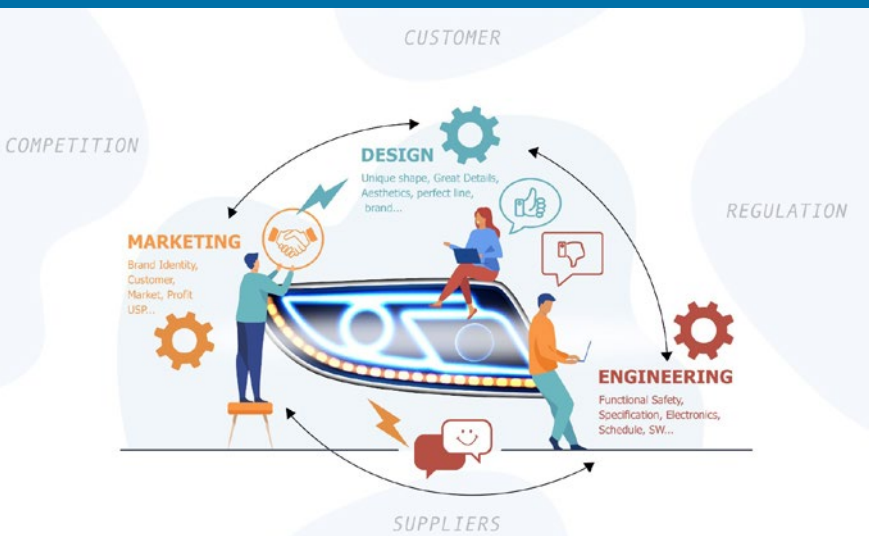


## LIGHTING UNDER PRESSURE?

Leveraging tensions between Design,  
Marketing and Engineering



DVN study will be ready for publication in  
October 2021. Price: 5 000 Euros

### For ordering or more information

Contact Salomon Berner  
Driving Vision News  
sberner@drivingvisionnews.com  
+33 607 64 05 02

DVN adds another dimension to its repertoire by studying the process of creating a new vehicle, and understanding the role of lighting within this process. The result is a compact, and exciting-to-read, booklet reporting on the study having the title:

## “ LIGHTING UNDER PRESSURE? LEVERAGING TENSIONS BETWEEN DESIGN, MARKETING AND ENGINEERING ”

This study focuses on the OEMs perspective of the vehicle creation process and, provides the users of this booklet with the opportunity to better understand the following:

- The roles and responsibilities of the OEM's Design, Marketing and lighting-engineering that often seem to be diffuse and unclear to observers from the outside. This "inside information" makes it more transparent.
- How to educate (new) managers, engineers, key-account managers and project leaders, for a better understanding of the vehicle creation process, to raise motivation and avoid frustration. It helps to prepare for the stormy times of a vehicle launch program.
- How to improve the capability to anticipate the complexity created by new influences and changed priorities in the OEM's process.
- How to transform from being an observer to becoming a player, in the early car creation phase, by leveraging the detailed behind-the-scenes information provided in the booklet.

A group of senior experts in the field of car lighting (Carsten Befelein, Geoff Draper, Hector Fratty, Wolfgang Huhn, Leo Metzemaekers, Jean Paul Ravier, Ralf Schäfer) has analysed, how a new vehicle model is created, and the roles of the different functions, especially with respect to creating the lighting system.

Not unexpectedly, during the discussions it became obvious that several tensions exist between the targets of the three key functions of Design, Marketing, and Lighting-engineering.

As with former studies, one element of information gathering was through interviews with a number of key stakeholders from Design, Marketing and Lighting-engineering, mainly at the OEMs.

The study starts by describing the main demands of the three key functions, including the influence of the homologation process. The study concludes by outlining the upcoming tensions, and unavoidable target conflicts, during the development of a vehicle and how to deal with them in a constructive manner.

This new DVN study will shine a light on such tensions with some examples; especially the role of Lighting-engineering in its relations to Marketing, Design and Regulation.

# Preface

Dear reader,

In this study you will find a, somewhat unusual, description of the early phase of a vehicle creation process. The whole study is a team result of course, however I wrote my contributions in an emotional and engaged way, because this was part of my daily life and, all in all, it was a great time.

Most of the examples, especially in the content of chapter 9, are based on my personal experience in the Lighting Engineering part of the vehicle development process. During my working life, the importance of lighting changed dramatically from a commodity to a brand shaping element.

This study includes the different demands, interests and influences of Design, Marketing, and Lighting Engineering inside an OEM. My intention was to provide an insight, where the doors are normally totally closed, to help the mutual understanding between the OEM, and the Tier 1, and Tier 2 suppliers.

The development phase of a new vehicle model is full of time and cost pressures, unexpected changes, and late decisions. Design sets the trends and creates exciting shapes (where not always the form follows the function from the lighting point of view). Marketing defines the future customer expectations inside the brand values. Lighting Engineering makes all this feasible with technical innovations together with the suppliers. And the Vehicle Program Director is the referee!

Lighting is a fascinating job. Believe me.



Wolfgang Huhn



## Dr. Wolfgang Huhn

From 1987 to 2001, he worked at BMW as head of lighting development then as Head of Production Planning Electrics / Electronics. In 1999, he got the PHD at TU Darmstadt. From 2001 to 2005 in Audi AG, Dr.Huhn was Head of Development Lighting and Switches. From 2006 until the beginning of 2021, he was Head of Development Lighting and Vision Systems at Audi.

Wolfgang acts now as DVN Senior Advisor and he is still GTB Strategy WG Chairman. Dr Huhn is one of the foremost worldwide experts in automotive lighting, and has greatly influenced the evolution of lighting technologies.

## Lighting Under Pressure?

### Leveraging tensions between Design, Marketing and Lighting Engineering

Jackie Marshall DiMarco, Vehicle Programs Director - Ford Motor Company

At Ford Motor Company, we continue on our journey to help build a better world where every person is free to move and pursue their dreams. This journey for each customer is very personal and can manifest itself in a relationship with a vehicle for personal use, for work purposes, or both. We have found that exterior lighting is a complex part of that relationship and journey, now more than ever based on the signature and performance aspects that need to be brought together to bring unforgettable character to the vehicle while delivering unparalleled customer satisfaction.

The vehicle development process begins years before images of our new models are released for public consumption, as do the tensions between the teams bringing life to the vehicle throughout the creative and engineering processes. The healthy tension between Design (Studio), Marketing, and Product Development is a serious reality, as will be explored in this paper by the Driving Vision News team. As a global OEM developing platforms for multi-market usage, we must also consider the strong impact of certification/homologation throughout the markets when carefully considering the content for each vehicle. A single or limited region product is relatively simple to plan and develop as compared to a multi-regional or even global platform in which the tough choices become more complex in lock step with the diversity in regulations and customer preferences.

We can consider the Styling (Design), Voice-of-the-Customer (Marketing), and technical requirements (Engineering) all as separate inputs to the development of lighting products between the OEM and Suppliers, however at their essence there is one factor – the customer. The lighting and vehicle design must communicate artistry and technology, but if they are not working in harmony to create an attractive and desirable aesthetic, the styling exercise has failed. Marketing indeed has the crucial role to monitor the pulse of the needs of the customer in terms of features and content. And finally, while we may view the engineering activity is a dry, unemotional process, at the heart of it are specifications designed to ensure customer satisfaction throughout the life of the vehicle. And so, we are constantly balancing the valid arguments of the various domains always with the customer at the center of the debate.

When we discuss exterior lighting on the vehicle, we also may be limiting ourselves

to the legally required functions. We need to think beyond these boundaries as well when adding functionality to our vehicle in terms of more signature lit content or even perimeter/zone lighting to get the maximum out of every day in terms of work and play. Remember, our customers are pursuing their dreams - and lighting products create safety through visibility, drive passion, enable businesses to get work done, and bring our family members safely home at night in that pursuit.

Going forward, the greater Lighting community can reduce these omnipresent tensions through increased modularity as well as the harmonization of lighting regulations and performance criteria throughout the primary markets. A higher focus in these areas will allow us to bring more innovative and safer products to the markets that relate to the significant automotive paradigm shifts that are under way.



#### Jackie Marshall DiMarco

Jackie Marshall DiMarco is Ford Motor Company's Vehicle Programs Director for F-Series and Commercial Trucks. In this role, she oversees strategy, planning, and product development of vehicle lines including F-150, Super Duty, E-Series, and Medium Trucks. Ms. DiMarco has 25 years of experience at Ford, starting as a powertrain engineer and working her way to leading vehicle programs. She served as the Chief Engineer on several vehicle lines including F-150, Expedition, Navigator, and Transit Connect, as well as leading planning for global small car platforms in Europe. In 2019, she was appointed to Director of the North American Truck Product Lines.

# LIGHTING UNDER PRESSURE?

Leveraging tensions between Design,  
Marketing and Engineering



DVN study will be ready for publication in  
September 2021. Price: 5 000 Euros

## For ordering or more information

Contact Salomon Berner  
Driving Vision News  
sberner@drivingvisionnews.com  
+33 607 64 05 02

# CONTENT

## > Preface

## > Acknowledgements

## > Executive summary

## > Business opportunities

## > Design demands and trends

- Mission of Design expressed by designers
- Mega Trends influencing Design and Styling
- Design - Styling Demands for Lighting
  - Current styling trends for cars
  - Current Design Trends for Lighting systems
- Design Trends and demands expressed from DVN designers' interviews
- Future Styling trends and Styling demands
- Take aways from Design demands

## > Marketing demands and trends

- On the importance of marketing
- The roles of marketing during the vehicle creation and life cycle
  - The car definition phase
  - The phase before SOP
  - Just before and after SOP
  - After sales
- OEM brand value and signature
  - Brand value
  - Brand signature
  - Marketing driven lighting functions
- Marketing Trends and demands expressed from DVN designers' interviews
- Take aways from Marketing demands

## > Lighting-Engineering demands and trends

- Introduction on the role of Engineering and its main relationships
- Relation, tension, conflicts with Design
- Relation, tension, conflicts with Marketing
- Value drivers for Lighting-Engineering
- Take aways

## > Regulatory and Safety Demands

- Homologation and regulation
- Tensions in the programme for the development and launch of a new vehicle model range
- The UNECE or EU Exemption Procedures
- Fundamental requirements to enable a new lighting function to be regulated
- How to avoid delays to the introduction of new functions
- Conclusion

## > Leveraging Tensions

- Some aspects of the vehicle Design Process
- Reasons for the pressure on the designers
- Reasons for the pressure on Marketing
- Reasons for the pressure on Engineering
- The role of the program director
- The others are not enemies
  - Three scenarios
- The right organisation
- More ideas
- The role of DVN

## > Appendices

- Contributing companies and institutions
- Author Biographies
- Glossary