

## HELLA: Industry 4.0 in China

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Andreas Merkel, senior vice president of operations of HELLA's lighting division in the Asia Pacific region, was reflecting on a routine visit to one of his plants. During the visit, the factory manager had approached him with his smartphone to show Andreas an anonymous e-mail he had received that morning. The sender described himself as a black-market copy producer, and he was asking HELLA to monitor its supply chain for two specific components forming part of its headlamp products. The components were complex plastic parts that were difficult and costly to copy, but the anonymous sender claimed he had nevertheless managed to copy the tools for these parts. He complained that a black-market competitor had obtained access to original HELLA parts and was gaining market share. The sender even attached photos of the components in question, which looked like original parts. Andreas recalled that a week before, in another of his plants, the factory manager there had called his attention to the fact that HELLA had been receiving warranty returns that turned out to be black market products including original HELLA parts.

As head of operations, Andreas had to take responsibility for this problem. He reflected on the multilayer supply chain that HELLA operated in China, with HELLA facilities, suppliers and contract manufacturers. The e-mail he had seen made him think that HELLA injection molding tools were not only being used for proprietary production but also for producing extra units that were later sold on the black market (a common problem in China). It was not clear to him whether HELLA's tools and molds were being used in special, unplanned shifts to produce original components that ended up in black-market products – or if perhaps some of the contract manufacturers were moving HELLA's tools to third-party factories where they could be used to produce “original” black-market parts.

Reflecting on the issue, Andreas recalled a discussion he had had recently with the CEO of a start-up. The young company produced and implemented end-to-end solutions for the digitization of production systems. It offered a technical solution for tracking the location, usage and core parameters of HELLA's injection molding tools. But what would a business case look like and what other implications would the installation of such a system have on HELLA's operations in China?

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## The Company

On June 11, 1899, Sally Windmüller founded the company Westfälische Metall-Industrie Aktien-Gesellschaft (WMI) in the town of Lippstadt, Germany. The new company specialized in the production of lanterns, headlamps, horns and fittings for bicycles, carriages and automobiles. In 1908 the HELLA name was trademarked for an acetylene headlamp.<sup>1</sup>

Over the decades, HELLA expanded its business to electronics and aftermarket products for the automotive sector. By 2016 HELLA was one of the top 40 automotive suppliers worldwide and one of the 100 largest industrial companies in Germany. In 2016, HELLA had 6,000 of its 34,000 employees working in R & D, underlining the company's focus on innovation. HELLA was listed on the stock exchange, but 60% of the shares were held by the family.<sup>2</sup>

HELLA's total revenues in financial year (FY) 2015/16 were €6.35 billion, generated in three business segments (see **Exhibit 1**): automotive (75% of sales), aftermarket (19%) and special applications (5%). The automotive segment had two divisions: lighting (43% of total sales) and electronics (32%). Within the lighting division there were five business units: headlamps, rear combination lamps, small lights, interior lights and lighting electronics. Geographically, sales were split between Germany (16% of total sales), the rest of Europe (39%), Asia Pacific and RoW (27%), and the Americas (19%). In addition to Europe, the Asia Pacific region was a core market and exhibited steady growth. Since FY 2011/12, HELLA had shown a CAGR of 8% in overall sales and 10% in the automotive sector, with profits growing at the same rate as sales (see **Exhibit 5**). In the same period, comparable sales of light vehicles (i.e., cars and pickups) grew only 3% (see **Exhibit 6**). HELLA used and developed its business portfolio to be resilient against economic cycles. A good example was the strong aftermarket business that had helped the company during the big financial crisis of 2008/09.

The most important reasons for HELLA's success were:

- Technology leadership in lighting – a very strong position in LED, the trending technology.
- Lighting had become an important design element in modern cars.
- Electronics played a key role in the present and future advances of cars – HELLA was well positioned.
- Proximity to key automotive OEMs.

The company's annual report for 2015/16 defined HELLA's goals and strategies as follows:<sup>3</sup>

"HELLA Group pursues a strategy of profitable and largely organic growth based on solid financial policy. Technological leadership, operational excellence and a global presence are success factors for profitable business. HELLA realises this strategic orientation at the Group level as well as in the three business segments Automotive, Aftermarket and Special Applications. HELLA's current lighting product portfolio has a strong focus on LED technology. [...]"

<sup>1</sup> Hella, [Online]. Available from: <https://www.hella.com/hella-com/History-739.html>, last accessed April 2016.

<sup>2</sup> Hella, 2016, *Hella Annual Report 2015-2016*, p.13, [Online]. Available from: [https://www.hella.com/hella-com/assets/media\\_global/2016.08.11\\_HELLA\\_Annual\\_Report\\_secured.pdf](https://www.hella.com/hella-com/assets/media_global/2016.08.11_HELLA_Annual_Report_secured.pdf), last accessed April 2016.

<sup>3</sup> Hella, 2016, *Hella Annual Report 2015-2016*, p.53, [Online]. Available from: [https://www.hella.com/hella-com/assets/media\\_global/2016.08.11\\_HELLA\\_Annual\\_Report\\_secured.pdf](https://www.hella.com/hella-com/assets/media_global/2016.08.11_HELLA_Annual_Report_secured.pdf), last accessed April 2017.



“For the Group and the segments, HELLA focuses its strategic objective on market leadership, which, depending on the segment, product line or region, can be achieved in the short, medium or long term. Thus, in the Automotive segment, HELLA pursues the goal of taking market leading positions (top 1 to 3), globally or in certain regions, in the respective market segments relevant for the Company’s competitiveness. Furthermore, HELLA also strives to attain a market-leading role in the Aftermarket and Special Applications segments in each of the relevant target group markets and sales regions.

“In strategic terms, HELLA is guided by major megatrends in the automotive industry, with (1) the environment and energy efficiency, (2) safety and (3) styling and comfort being particularly significant for HELLA. The huge transition from conventional illumination systems to LED applications in lighting technology, high demand for driver assistance systems to increase safety and comfort, and for technologies that save energy and reduce CO<sup>2</sup> emissions, are opening up strategic growth potential for HELLA.”

HELLA’s success had several pillars, among them innovation leadership and technological excellence, where the company combined deep technological expertise with significant investment in R & D: 9.8% of annual revenues in FY 2015/16. The automotive lighting business was evolving at a rapid pace (e.g., matrix LED, OLED, laser light, etc.) and this investment allowed HELLA to become an innovation leader, registering 172 patents in FY 2015/16 alone. One of HELLA’s core principles was its proximity to its customers. Consequently, HELLA operated facilities in 134 locations across 35 countries. For HELLA, “proximity” also referred to cultural proximity in the form of localized products, even in the age of global product platforms. The company relied on organic growth but also entered into strategic partnerships for growth – for example, when venturing into new markets or technologies, benefiting from shared risk and synergies. Finally, operational excellence was seen as part of the company’s DNA, with a deeply rooted culture of continuous efficiency improvements in manufacturing, logistics and process management.

## HELLA’s Automotive Lighting Business Division

HELLA’s automotive lighting division was the oldest and largest division in the group. During its more than 100 years of existence, it had always kept pace with technology (see **Exhibit 2**), starting from the first electrical headlamp (1908), the first low beam (1914), the first LED projection headlamp (1984), the first full LED headlamp (2008) and the world’s first LED matrix headlamp in 2013 (see **Exhibit 3**).

### Multimedia Content

#### Matrix LED HD84 Headlights System From Hella

Source: CARiD. 2016. *Matrix LED HD84 Headlights System From Hella*. [Youtube.com](https://www.youtube.com/watch?v=...). Last accessed April 2017.

### Multimedia Content

#### HELLA Marker Light - Early Recognition of Hazardous Situations

Source: HellaGroup. 2015. *HELLA Marker Light - Early Recognition of Hazardous Situations*. [Youtube.com](https://www.youtube.com/watch?v=...). Last accessed April 2017.