The Right Commercial Vehicle Technology Worldwide

- ZF strategy targets global growth in the commercial vehicle sector
- Localization, design-to-market approaches, and joint ventures open up more market opportunities
- Compelling ZF products for commercial vehicle manufacturers on all continents

The demands placed on the transport industry are growing worldwide. Yet developments are not all heading in the same direction everywhere: While in some regions the issue of lifecycle costs is paramount among fleet owners and legal requirements for emissions and load capacity set tight limits, a low purchase price is an important criterion in other regions of the world, not to mention the substantial variations in load capacity. Technology used in vehicles for passenger transport or goods haulage also differ. ZF makes a decisive contribution to ensuring that today’s vehicles meet all of these objectives: with a cutting-edge driveline and chassis technology for commercial vehicles around the globe.

People and goods are virtually always on the move nowadays – on a global scale. This development is set to accelerate further in future, with global population forecasts suggesting growth from the current figure in excess of 7 billion to 9 billion by the year 2050. To meet their mobility requirements and supply them with goods, existing resources, primarily energy, must be used more and more efficiently. There is virtually no scope for waste. Technologies are therefore required, particularly in transportation and logistics, which continually improve passenger and goods transport: technologies like ZF Friedrichshafen AG’s driveline and chassis technology for trucks, light commercial vehicles, and buses, which provides a customized, future-proof answer for every specific commercial vehicle requirement.
The right commercial vehicle technology around the globe

There are many ways that ZF can achieve its declared strategic aim of utilizing market opportunities for commercial vehicle technology worldwide. Firstly, the technology company is making its product portfolio available in other regions of the world apart from Europe. In this respect, maintaining affordable costs for the local market through in-country production and a local supplier structure is a key consideration. Secondly, the ZF product range is being adapted to local circumstances and – mainly also locally - developed for the market. ZF supplements this – thirdly – with partnerships and joint ventures with established companies.

Localizing transmission technology

The manual commercial vehicle transmission ZF-Ecomid is one example for the company's localization strategy: ZF has produced around 750,000 transmission systems of this type worldwide. The ZF plant in Bouthéon (France) has undoubtedly been mainly responsible for this success – at the beginning of December 2013, the 500,000th unit of the 9-speed Ecomid transmission came off the French line. Apart from the French location, four more ZF locations ensure the transmission's global success: Sorocaba (Brazil), Pune (India), Hangzhou (China), and Naberezhnye Chelny (Russia). At these locations, the Ecomid transmission is produced for the local market according to the design-to-market principle and is thus tailored to the individual market requirements.

Design-to-market: Tailor-made solutions for the growth markets

For many forwarding agents, especially owner drivers in the growth market of China, a low purchase price is the decisive factor. To serve this market segment, ZF offers low-priced transmissions under the Value Line product name. They stand out first and foremost for their robustness, ease of operation, and lower costs compared with direct competitors. ZF is also tailoring the premium segment (Premium Line) to local market requirements at its Engineering Center in Shanghai, such as with the Ecosplit manual transmission, which is also produced locally in China. The Premium Line products are a compelling proposition.
for those forwarding agents with a particular focus on lifecycle costs – thanks in part to its optimum ease-of-use as well as fuel efficiency and resource conservation.

The joint venture between ZF and the Chinese commercial vehicle manufacturer Beiben plays an important role in this product strategy. The joint venture in which ZF holds a 51 percent stake produces 16-speed manual transmissions for heavy trucks as well as manual 9-speed transmissions for medium-duty commercial vehicles and 5- or 6-speed manual transmissions for buses. They are used in vehicles produced by the manufacturer Beiben, but are also marketed by ZF as Value Line products in China.

Modern bus technology ensures mobility
The long-standing trend towards urbanization gives rise to new megacities worldwide – while existing cities are growing quickly. In parallel, traffic volumes are increasing, along with the associated noise and environmental pollution in the major conurbations. For environmental protection, the government in Beijing is imposing stringent emission thresholds. Which is why more and more Chinese manufacturers are relying on high-quality technology from ZF to make their vehicles more attractive, fuel-efficient, comfortable and eco-friendly. For instance, the ZF-EcoLife automatic transmission for buses makes public transport not only more fuel-efficient but also quieter. The engine speed can be kept low thanks to the intelligent design, six gears, and the TopoDyn Life shift program.

In addition to efficient transmissions, agents are also interested in new chassis with better dampers. Over the past few years, the AVE 130 has managed to demonstrate repeatedly its unrestricted everyday practicality: In various field trials, more than 300 ZF electric portal axles have already clocked up over 10 million kilometers. Including in articulated buses manufactured by EvoBus, the AVE 130 is being used in serial hybrid operation, i.e. in conjunction with a downsizing diesel generator. Thanks to the optimum design of the overall system, it can thus provide fuel
savings of up to 30 percent compared with conventional diesel drives.

At present, a large number of customer projects are involved in trials or are about to be implemented worldwide – for instance in China with the manufacturer Foton. Here the AVE 130 is being used in battery-electric buses and can leverage all the benefits of electromobility. The AVE 130 is not only an innovation in public transport in terms of energy efficiency. Other advantages arise in relation to vehicle design because the AVE 130 is installation-compatible with ZF's well-known AV 132 and AVN 132 portal axles and its electric motors are directly located in the hub units of the axle. As the conventional drive and propshaft in the rear are no longer needed, the installation space for seats and standing room can be expanded, the passenger area has a completely level aisle, and the low-floor technology provides for a stepless as well as comfortable entry and exit.

Captions:
1.) Tailored to local market requirements: the manual commercial vehicle transmission ZF-Ecosplit.
2.) More comfortable, faster boarding and alighting thanks to ZF low-floor chassis systems: Bus Rapid Transit for instance in the Chinese megacity Guangzhou.

Photos: ZF
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ZF is a global leader in driveline and chassis technology with 113 production
companies in 26 countries. In 2014, the Group achieved a sales figure of €18.4
billion with approximately 71,400 employees. In order to continue to be
successful with innovative products, ZF invested about 5 percent of its sales
(2014: €891 million) in research and development. ZF is one of the ten largest
automotive suppliers worldwide.

In 2015, the company will celebrate its centennial. Originally named
Zahnradfabrik GmbH, ZF was founded in Friedrichshafen in 1915 by
Luftschiffbau Zeppelin GmbH among others. In its early years, the company
developed, tested and manufactured aircraft transmissions. After 1919, the
company's focus shifted to the automotive and commercial vehicle industry under
Alfred Graf von Soden-Fraunhofen, the first general manager and later head of
the company. In this sector, the company registered numerous patents for
innovative transmission technology and established itself once and for all as a
major technology supplier. ZF grew outside of Europe in 1958 with a location in
Brazil, launching a globalization drive that still continues. In addition, through
product innovations and acquisitions, ZF constantly expanded its range of
expertise. In 1984, ZF acquired the majority share in Lemförder Metallwaren &
Co. KG, a move that extended the product portfolio to include chassis technology.
In 2001, ZF took over the former Mannesmann Sachs AG to strengthen its value
added product offering with driveline and chassis components. It adopted the
current name of ZF Friedrichshafen AG in 1992. Today's product range includes
driveline and chassis technology such as transmissions, driveline and chassis
components, as well as complete axle systems and modules. ZF products are used
in passenger cars, commercial vehicles, construction and agricultural machinery,
rail vehicles and marine applications. The company also focuses on the wind
power and electronic components business. In addition, ZF Services represents
the company on the international aftermarket. In 2014, ZF announced its
intention to acquire U.S. automotive supplier TRW.
The shareholders of ZF Friedrichshafen AG are the Zeppelin Foundation, administered by the City of Friedrichshafen, holding a share of 93.8 percent, and the Dr. Jürgen and Irmgard Ulderup Foundation, Lemförde, with 6.2 percent. "Motion and Mobility," ZF’s tagline, clearly states the company’s core mission: Right from its foundation, ZF has developed and manufactured innovative products for all people around the globe who want to move things reliably, comfortably and safely all while experiencing the ultimate in efficient mobility. Quality, technological leadership and innovative power have always defined the company’s identity – today as much as ever.

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