Deutsche Bahn and the Volkswagen Group’s partnership goes back a long way, and their future together looks bright. DB has become one of the most important service providers for the carmaker over the decades. Today’s supply chains are complex, and the logistics specialists at DB use their wealth of expertise and vast network to enable climate-friendly transport between manufacturers, suppliers and customers. This is how Volkswagen and DB Cargo are preparing for the future.

A new era
One of the products of Germany’s economic miracle was greater mobility. Germans wanted to travel more, and farther afield. And cars weren’t the only mode to gain in popularity in the first few years of the Federal Republic’s existence. Rail grew to become one of the most important service providers for the Volkswagen Group in Wolfsburg. Volkswagen established Wolfsburger Transport-Gesellschaft mbH, now Volkswagen Konzernlogistik GmbH & Co. OHG, in 1965 to coordinate and develop its own transport activities in its growing production network.

Volkswagen is now one of the world’s leading automotive companies and Europe’s largest carmaker. “We offer Volkswagen a range of services that span the entire value chain – including finely tuned just-in-sequence delivery to assembly lines, car transport to seaports and European distribution terminals, and industrial railway operations,” sums up Jens Nöldner, CEO of DB Cargo Logistics. DB Cargo is continuously expanding its existing solutions to be able to transport even more freight and meet the many different requirements of this remarkable company.

Vast network throughout Europe

The network that DB Cargo Logistics has created for Volkswagen is truly continental and stretches from Spain and Portugal to Poland, from Norway to Italy and eastward, all the way to the company’s production sites in Kaluga and Nizhny Novgorod, Russia. Cross-border block train and single wagonload service, multi-system locomotives, and smart freight wagons connect 18 warehouses for OEM parts and up to 20 plants that produce the Volkswagen Group’s brands. Volkswagen’s component business forwards some 160,000 consignments every year by rail. DB Cargo Logistics provided around 8,500 trains for these shipments in 2019.

Volkswagen’s new vehicles also make their way by train to customers in Europe and overseas. DB Cargo Logistics transported 800,000 new cars in 2019 on its rail network, which connects 14 plants to 30 ports and access points via various hubs.

Component transport beyond borders

The enormous complexity of logistics tasks becomes apparent especially when components are transported internationally. Volkswagen needs automotive parts in many different stages of completion to be delivered to its assembly lines. On average, every vehicle consists of around 4,000 components every year, around 90,000 wagons hit the rails with vehicles from the VW Group.

Its affectionate nickname “Bulli” became official in 2007. The VW Transporter has been in series production since 1950, however.
individual components, which are assembled in one place. Since components come from suppliers around the world, supply chains need to be lean and stable and work without hiccups for years on end.

The Volkswagen Group’s brands carefully plan which vehicles to produce and when. Every component plant and every supplier is informed exactly when parts need to be made available for production. Then it’s up to DB Cargo Logistics. Employees at the Components unit in Hanover, for example, make sure that trains transporting components depart on time with the required volume.

Volkswagen’s transports to Russia are an example of a reliable long-running solution. DB Cargo Logistics has transported vehicle components from Germany and the Czech Republic to Kaluga and Nizhny Novgorod, Russia, and coordinated a number of operators and subcontractors since 2007. Trains make the journey from Wolfsburg to Kaluga in five days. The logistics specialists are especially proud of their smart IT solutions, which have streamlined customs and border processes at the border between the EU and CIS in Brest.

The service has been a resounding success. DB Cargo Logistics will transport its 500,000th container from Germany to Russia in 2020. Lined up end to end, the containers would stretch from Berlin to Moscow roughly four times over.

**Just-in-sequence deliveries**

Such close cooperation between a manufacturer and service provider only works if both parties are on the same page and workflows at the plants and in the transport networks are perfectly coordinated. Logistics specialists at the Volkswagen Group and DB developed innovative, integrated solutions that perfectly fit Volkswagen’s requirements for inbound parts and outbound vehicles.

“Ten years ago, we were only able to transport from one private siding to another. For anything more complex than that, customers needed to have their own expertise,” said Kai Birnstein, who heads the Components unit at DB Cargo Logistics. “We now have an extensive network of partners for vehicle transport, access points for transshipping between road and rail, and so much expertise that we're able to offer efficient integrated concepts,” he added.

Like at the Audi plant in Brussels, for example. Audi began production of its first fully electric vehicle, the e-tron, there in September 2018. DB Cargo Logistics transports the components for the SUV from the Ingolstadt, Neckarsulm and Győr plants, in the exact sequence they will be needed in Brussels. The finished vehicles are then transported to seaports for export – by rail, of course. “Because the plant is in the middle of the Brussels metropolitan area, there isn’t much room to accommodate stock in house if delays occur,” said Michael Gaschütz from the Components Team. “We really have to be on time.”

The partners have been able to draw on their experience with a similar contract they have had for years. Trains have shuttled back and forth between Ingolstadt and the Audi plant in Győr, Hungary, since 1996. DB Cargo links both plants with high precision and just-in-sequence service every eight hours.

**Fast and flexible for finished vehicles**

DB Cargo Logistics also has the flexibility to respond quickly when it comes to delivering finished vehicles. Volkswagen built private sidings at plants and rail traversers designed specifically to load vehicles, laying the

“We really have to be on time.”

MICHAEL GASCHÜTZ
Head of Sales and Operations Centre for Components, DB Cargo Logistics GmbH
groundwork for vehicles to be transported by rail.

“The market’s logistics requirements are changing, and we’re developing new solutions with our customers. Our network puts us in a really good position to increase rail’s share of vehicle distribution in the future,” said Alexander Röckelein from the Finished Vehicles Team at DB Cargo Logistics.

Customer advisers, service designers and dispatchers at DB Cargo Logistics in Kelsterbach manage Volkswagen’s vehicle transports and connect existing concepts with new solutions as they are developed. Single wagons and block trains are combined to create efficient hybrid products. “Only the market leader has the ability to consolidate cargo onto fast and stable trains and supplement that block train system with flexible single wagonload service,” Röckelein said.

PARTNERING UP FOR SOLUTIONS

Mr Birnstein, what role does sustainability play in logistics for carmakers these days and what does that mean for DB Cargo?

It’s not just about eco-friendly cars. Sustainable production is becoming increasingly important for the entire industry. The logistics sector can play a big part, in particular by shifting road transport to sustainable rail. Everyone involved needs to adapt their internal processes as well if we are to reach our climate targets. The willingness is there.

What transports could be shifted to rail?

Over the past years, we’ve already had success increasing rail’s share of outbound transport for carmakers. Vehicle transports to unloading terminals that are connected to the railway network are largely handled by rail. New vehicles destined for export are transported from plants primarily on block trains. We also generate growth by offering integrated concepts, and we’re continuously expanding our hubs and network access points and integrating single wagons into our systems. Shifting inbound transport is more difficult because many suppliers do not have a private siding. But Volkswagen is increasingly asking for multimodal solutions and is often the first to use new access points in our automotive network.

What does that mean for DB Cargo’s relationship with the Volkswagen Group?

My impression is that contracts will be awarded for integrated solutions, not for individual transports. We’ll need strong partnerships in which the OEM (Original Equipment Manufacturer) develops solutions together with the service provider in joint working groups.
The DB Group’s extensive resources are a crucial factor in DB Cargo’s ability to offer such high performance. DB Cargo’s national companies work closely together for the automaker, using well-calibrated processes. DB Cargo relies on its partners or DB Schenker, for all-in-one international multimodal solutions. “Many of our services benefit from solutions that we developed with the DB Cargo companies and other DB Group companies,” said CEO Jens Nöldner. “Cooperation within the Group allows us to offer our customers services that are the perfect response to carmakers’ needs.”

Rolling stock designed for the automotive industry

Cooperation pays off not only when it comes to international transport solutions; it also plays an important role in the rolling stock, or wagons, that DB Cargo Logistics uses. In the early days, traditional stanchion and flat wagons were used to transport cars to distribution centres and customers. DB’s predecessor began designing special car transporters back in 1953. The best known is probably the double-decker Off 52, which is even available in miniature from model train maker Märklin.

DB Cargo Logistics now has a wide range of wagons that the Group and some of its close partners developed specifically for transporting certain types of vehicles: wagons with a top loading deck whose height can be adjusted to accommodate SUVs and vans; flat wagons for especially large commercial vehicles; and TT wagons for transporting components, with a headroom of three metres, providing roughly as much space as a lorry.

It’s down to partnership

So how is it possible to operate such a large network and offer so many services for a wide range of requirements, and still manage to do an excellent job?
DB does it by partnering with its customers and by using its decades of experience to quickly and reliably recognise what carmakers need. That’s especially challenging with Volkswagen, which manufactures cars around the world and is constantly evolving. And that means that logistics has to evolve as well. A driver shortage, stricter rules for drivers and traffic in Germany have made trucks much less flexible than they were a few years ago, for example. As a result, transport solutions that combine multiple modes are now increasingly important.

Then there’s the sustainability factor. “Carbon emissions have become one of the most important issues in the automotive industry,” said Birnstein. The modal shift is necessary from a climate policy perspective. Transport is much more sustainable when the long main legs are covered by rail, and trucks handle only the first and last mile. DB Cargo’s product DBeco plus also makes it possible to haul freight 100% carbon-free within Germany and Austria.

The Volkswagen Group is laying the groundwork now for its materials and vehicles to be transported by trains powered entirely by renewable energy beginning in 2021. Once the switch is made, rail transports will cut carbon emissions by over 26,700 tonnes of CO₂, compared to Germany’s conventional current mix.

The conversion to electric mobility will bring about a fundamental structural change, not so much on the logistics side, but in terms of the range and design of supply chains. Transports for lithium-ion fuel cells are one example. DB Cargo Logistics is paving the way for a carbon-neutral supply chain for battery and cell module transports. It has developed a rail-based logistics concept with Volkswagen Group Logistics to bring cells from Poland and other countries to German plants, and soon to other locations as well. Simply switching to battery transport by rail will allow Volkswagen to reduce carbon emissions by more than 7,000 tonnes a year beginning in 2021.

Protecting the climate is important to the company. Volkswagen Group Logistics’ goTOzero impact logistics programme is working on reducing carbon emissions to help reach the targets of the Paris Climate Accord.

The challenges of the modal shift

If only it were that easy to shift freight from road to rail. International transports have shown time and again that the conditions aren’t quite as good for rail transport in other countries as they are in Germany. “Many international routes are not operating at their maximum capacity,” said Birnstein. “We should be able to gradually shift more transport to rail.” The many railports, terminals, hubs, logistics centres and other track access points that DB Cargo Logistics has established and operates with its partners will help.

In contrast, capacity utilisation along the main routes in Germany is good. Here, digitalisation will help increase infrastructure capacity. Comprehensive digital control will make it possible to up traffic in the network by nearly one-third. Carmakers are already using digital advancements, such as artificial intelligence and the internet of things (IoT). The Volkswagen Group connects its 125 plants around the world via a cloud so that it can identify delivery bottlenecks and incidents early on.

DB is also well on its way to taking advantage of these opportunities. State-of-the-art IT systems for ordering, transport monitoring, and billing as well as IoT applications will create efficient, automated processes. But first, current data and sensors are needed. DB Cargo’s entire fleet of some 68,000 freight wagons in Germany will be equipped with digital assets by the end of this year to provide information about condition, temperature, humidity and movement.

Infrastructure in the digital age

DB Cargo intends to use these assets to continuously improve its range and expand its services for the Volkswagen Group. Its prospects are looking good. One thing that’s not going to change is its large, European network, which is one of the key advantages that allows it to respond to customer’s changing parameters quickly. This highly
efficient infrastructure, combined with the decades of experience of its employees and state-of-the-art technology, is what will create logistics solutions that will be essential to automobile production and distribution in the future. “We will be able to achieve what we have planned for Volkswagen in the coming years only as part of a close partnership with the company. We need to rethink logistics chains,” said Kai Birnstein. “It’s the start of a new era for us.”

“...DB Cargo Logistics has an equipment fleet for various customer requirements. Its car-carrying wagons are equipped with two loading decks for transport throughout Europe.”

ALEXANDER RÖCKELEIN
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