

VTG AG POLICY BRIEF

August 2017

SMART RAILCARS: DIGITIZATION OPENS UP OPPORTUNITIES FOR RAIL FREIGHT

Dear Sir or Madam,

It's the holiday season, a season of swimming and sunshine. But sadly, it is also a season of traffic congestion. The cumulative length of congestion on Germany's roads has been growing constantly for years: from 450,000 km in 2011 to over 1.3 million km in 2016, according to the Federal Statistical Office. One reason is the ever larger number of trucks as more and more freight is carried by road. Yet **DIGITIZATION** can help make **RAIL EASIER, MORE TRANSPARENT AND MORE EFFICIENT** – much more attractive, in other words. That would get more traffic back off the roads and onto the rails. This issue of our policy brief looks at what VTG is already doing to help and what part politics can play.



I wish you an enjoyable and informative read!

Dr. Heiko Fischer
Chief Executive Officer

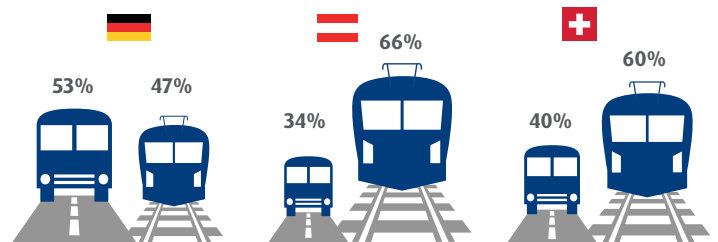
64.000 RAILCARS
– VTG's entire European fleet – are currently being connected to the digital world.

RAIL TRANSPORT TOMORROW – INVESTING IN THE (DIGITAL) INFRASTRUCTURE IS VITAL

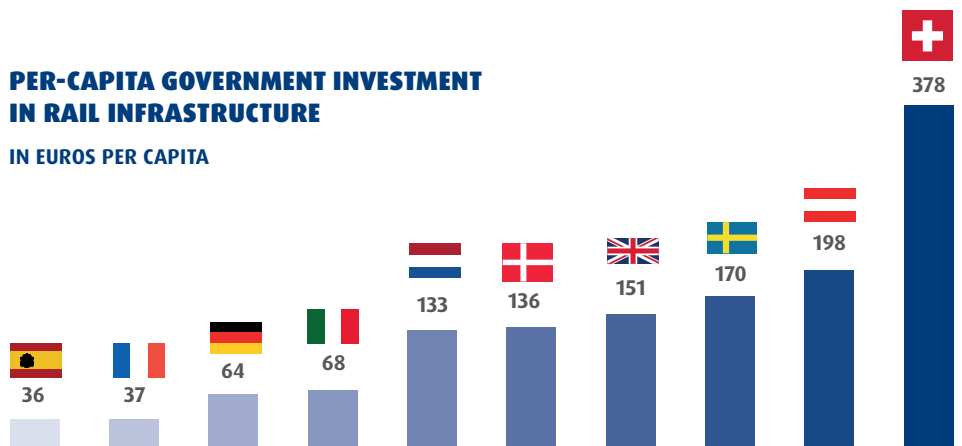
Digitization harbors vast potential for rail transportation: for better utilization of the existing infrastructure capacity, more efficient and more transparent processes, greater availability thanks to permanent monitoring, and automated data analytics. In all these areas, digital technologies can make rail significantly more attractive and strengthen its position relative to road transport – an aim governments have been pursuing for years. If this aim is to be realized, however, **SUBSTANTIAL INVESTMENT FROM BOTH PRIVATE ENTERPRISE AND THE GOVERNMENT IS IMPERATIVE.** International comparison shows that, although Germany has been catching up in recent years, other countries still invest considerably more in their railways.

SHARE OF GOVERNMENT INVESTMENT IN TRANSPORTATION INFRASTRUCTURE (MAINTENANCE, REPLACEMENT AND EXPANSION)

Unlike Austria and Switzerland, Germany still invests more in road than rail.



PER-CAPITA GOVERNMENT INVESTMENT IN RAIL INFRASTRUCTURE IN EUROS PER CAPITA



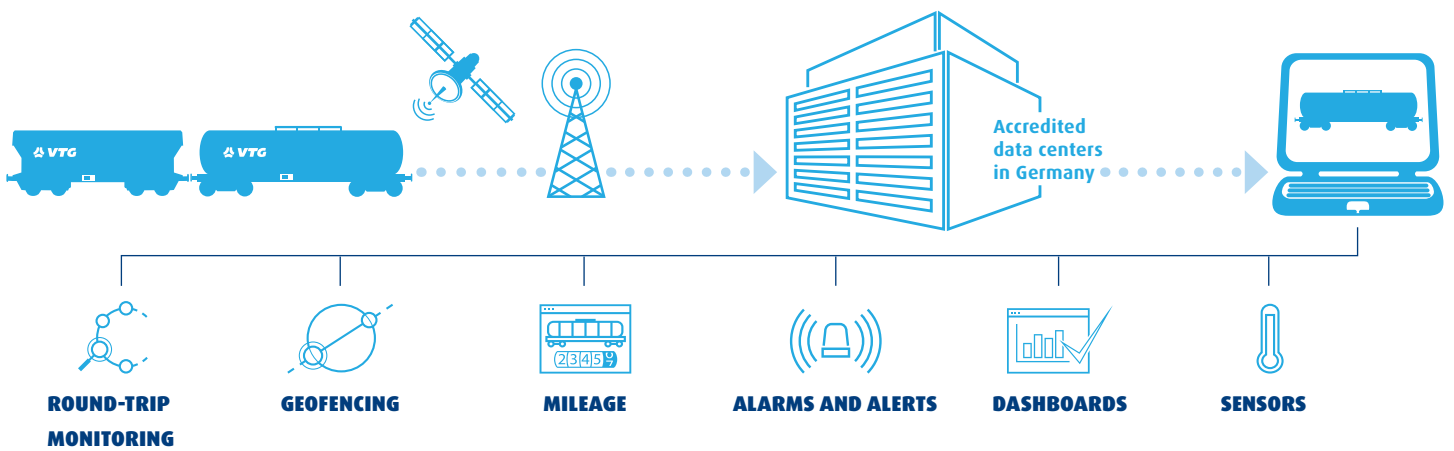
Source: Pro-Rail Alliance 2017, based on data from the German Federal Ministry of Transport and Digital Infrastructure (BMVI), the Swiss Public Transport Association (VÖV) and the Austrian Ministry for Transport, Innovation and Technology (BMVIT)

THE FUTURE OF RAIL TRANSPORTATION – DIGITAL TECHNOLOGIES DRIVING GREATER EFFICIENCY

Railcars are an integral component of rail freight transport. VTG, Europe’s leading rail leasing company, has therefore begun to build digital connectivity into its fleet and is **FITTING EVERY RAILCAR WITH A TELEMATICS MODULE**. This will make the supply chain much more transparent: In future, VTG’s customers will know exactly where their railcar and their freight is at any time. Consignments can be scheduled far more accurately than in the past on the basis of this informa-

tion, and that in turn boosts efficiency: Customers need fewer railcars and thus save money, while capacity is also freed up on the rails.

Railcar maintenance too will be substantially more efficient in future. Based on mileage data, servicing intervals can be scheduled exactly when they are needed, laying the cornerstone for predictive maintenance.



WHICH DEVELOPMENTS REQUIRE GOVERNMENT SUBSIDIES?

DIGITAL INFORMATION SHARING	INFRASTRUCTURE MONITORING	ENABLING PLATOONING
<p>Most route planning is still analogue, but algorithms would enable TRAINS TO RUN AT MORE FREQUENT INTERVALS. The availability of information in digital form enables PROCESSES to be ACCELERATED. One exciting technology in this context is the BLOCKCHAIN.</p>	<p>Digital monitoring detects wear at an early stage, allowing worn parts to be replaced before damage and delays occur. The result? LOWER MAINTENANCE COSTS and HIGHER AVAILABILITY across the network infrastructure.</p>	<p>Digitally connected trains can travel more closely together and require fewer staff. That would facilitate BETTER UTILIZATION of the existing rail infrastructure and PUT MORE FREIGHT ON THE RAILS.</p>

CONTACT VTG

We would welcome the chance to engage in dialogue with you. Please feel free to talk to us about any issues relating to rail freight transportation. We would be happy to assist you with facts, figures and expert opinions.

WHO TO CONTACT

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