



MARKET PLACE SEMINAR

RAIL CROSSROADS

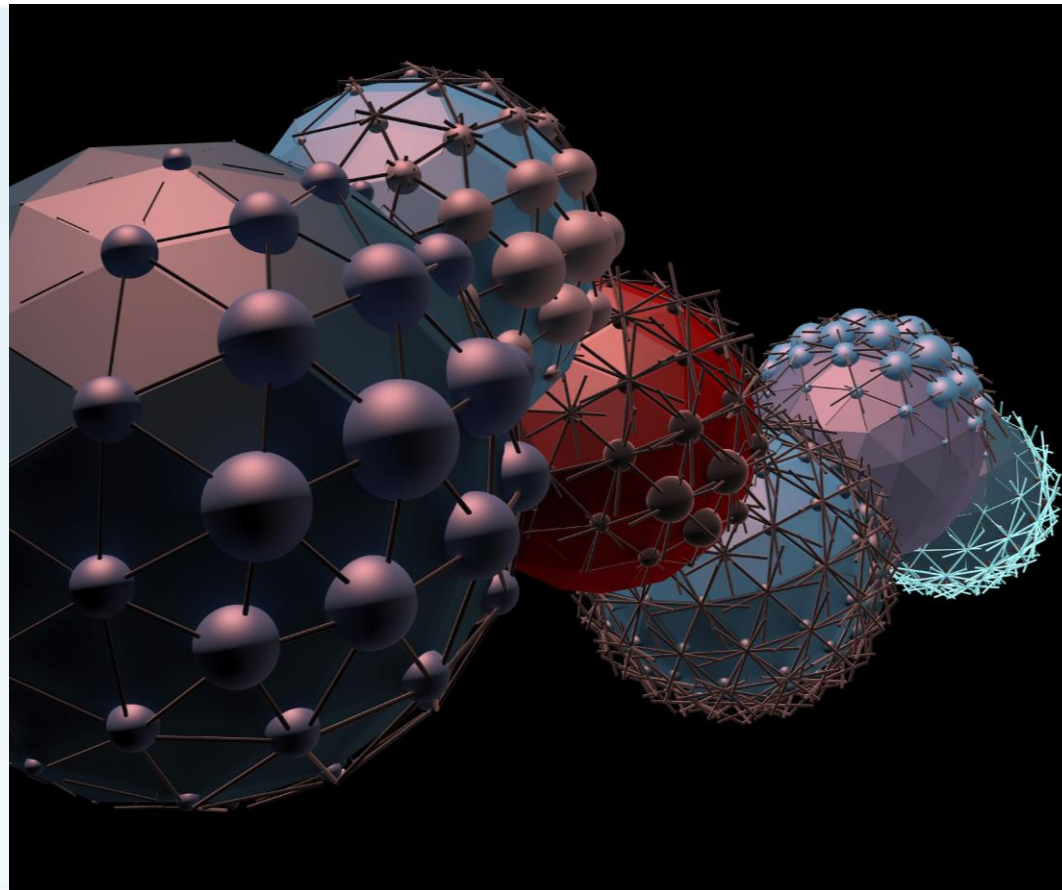
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DIGITALIZATION OF RAIL FREIGHT TRANSPORT – A KEY SUCCESS FACTOR

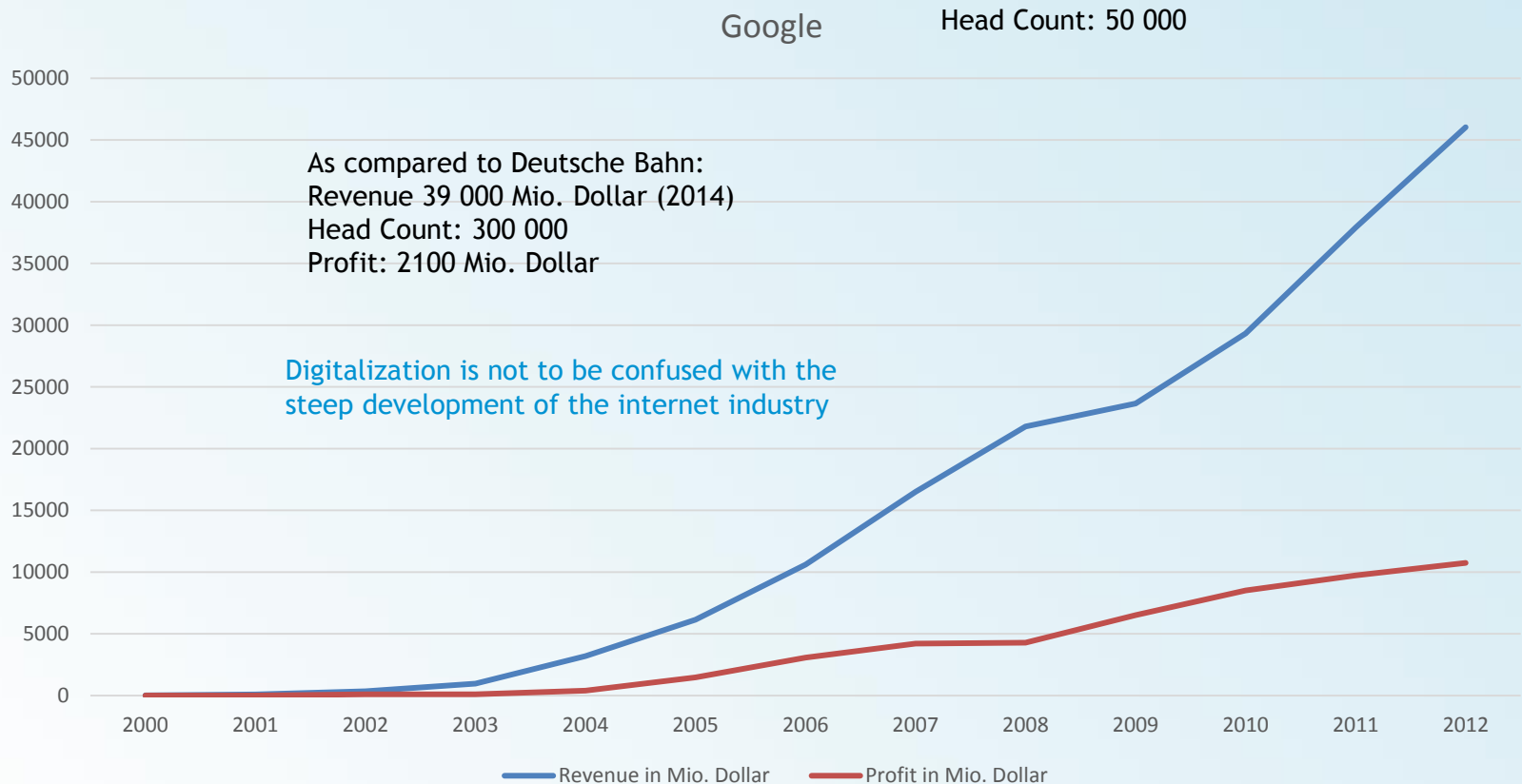
Philipp Tarter
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DIGITALIZATION OF RAILWAY FREIGHT TRANSPORTATION SOUNDS EASIER THAN IT IS

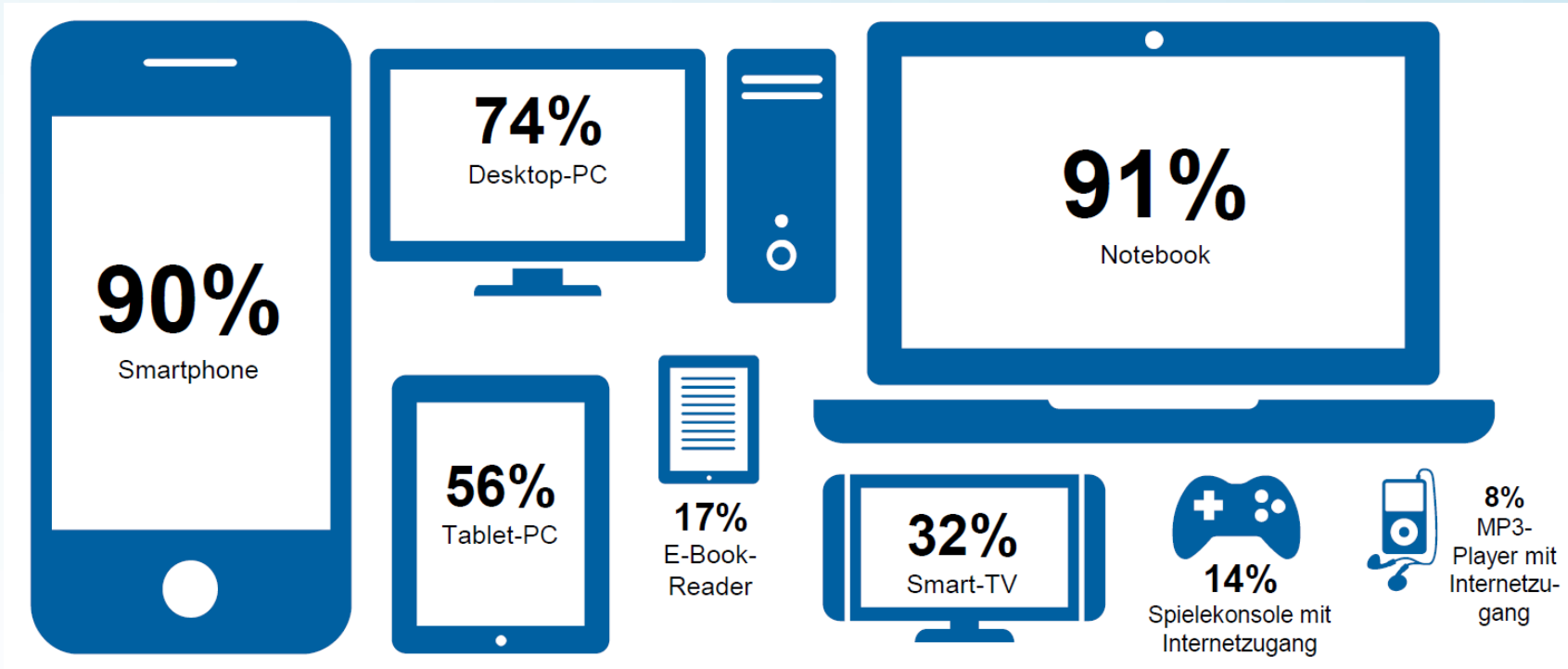
- **Digitalization** is a broadly used and often misunderstood term
- Digital devices have conquered almost every part of our lives
- Some areas of the economy including freight transportation have remained unimpressed by digitalization
- Digitalization for freight transportation can be achieved by implementing telematic solutions
- Telematic solutions are more than just plotting GPS positions on a map
- You can not optimize the unknown!



DIGITALIZATION IS A BROADLY USED AND OFTEN MISUNDERSTOOD TERM

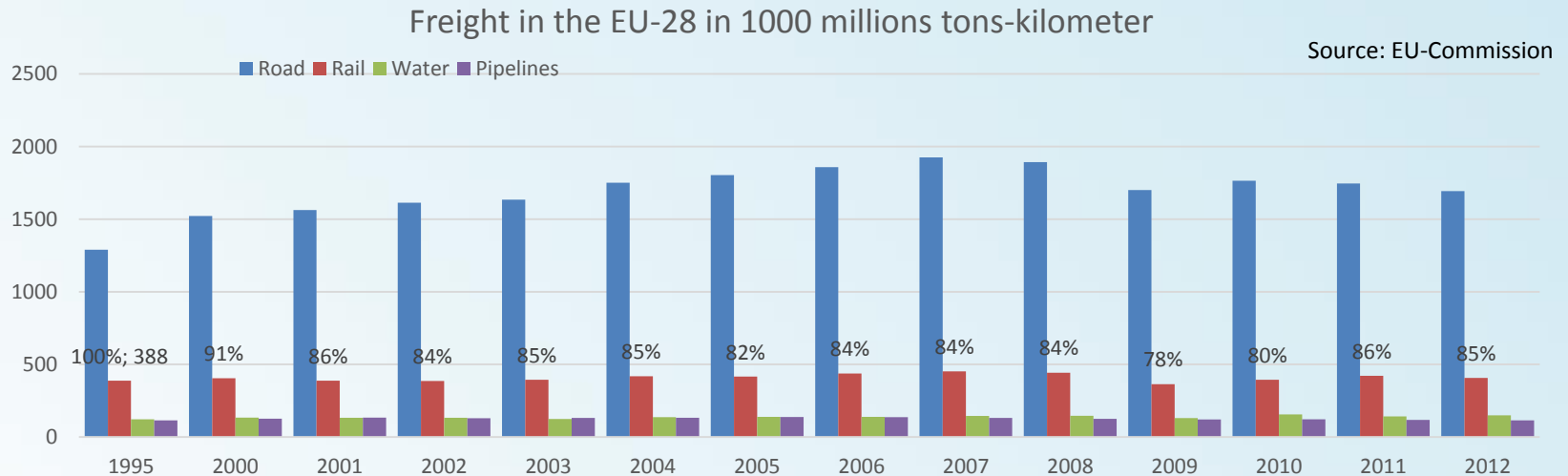


DIGITAL DEVICES HAVE CONQUERED ALMOST EVERY PART OF OUR LIVES



Source: Internet World Messe, Bayerstraße 16a, 80335 München

ACTUAL CHALLENGES IN RAIL FREIGHT TRANSPORT



- Competition from the road
- Slow transportation
- Decrease in productivity
- Unpredictable stopping times
- Lack of control over wagons abroad
- Increasing cost pressure
- High personnel costs for ensuring safety and maintenance standards

EXAMPLE DATA OF A SELECTED EUROPEAN FORWARDER

- 110 million tons of goods were transported in a year
- 21'750 million ton-km transported in a year
- 990 Locomotives
- 24 000 Wagons
- 45'000'000 Train-Kilometers per Year

At any given time only 3-5% of the wagons were moving.
Half of the moving wagons were empty.

WHAT CAN WE LEARN FROM THE COMPETITORS?



Truck Traffic:

- Fast
- Excellent fleet management
- Tracking & tracing: state-of-the-art
- Good management of resources
- Highly efficient



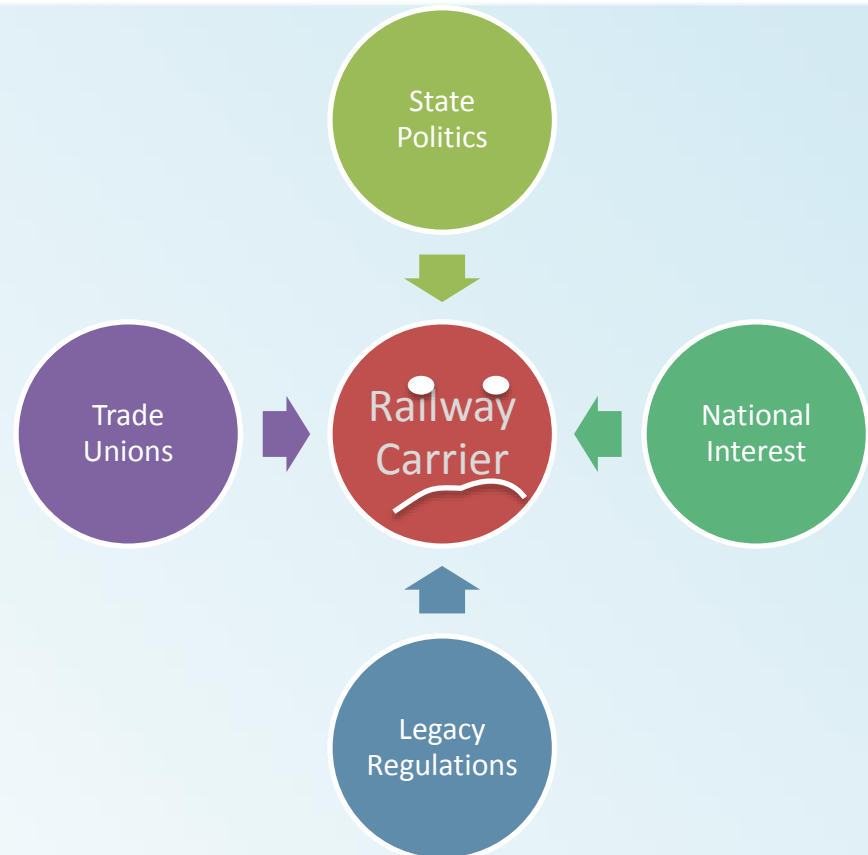
Railway Traffic:

- Little progress since steam-engine was replaced by diesel locomotives
- Slow
- Lack of innovation
- Waste of valuable resources

SOME AREAS OF THE ECONOMY INCLUDING FREIGHT TRANSPORTATION HAVE REMAINED UNIMPRESSED BY DIGITALIZATION

This is mainly due to

- The influence of state politics
- Unions initiated regulations are strict
- Diverging interests of the various players in the value chain (wagon renter, forwarder)
- National interests are against data exchange
- Legacy safety regulations require very long certification procedures



IMPLEMENTING TELEMATIC SOLUTIONS IS MORE THAN JUST PLOTTING GPS-POSITIONS ON A MAP

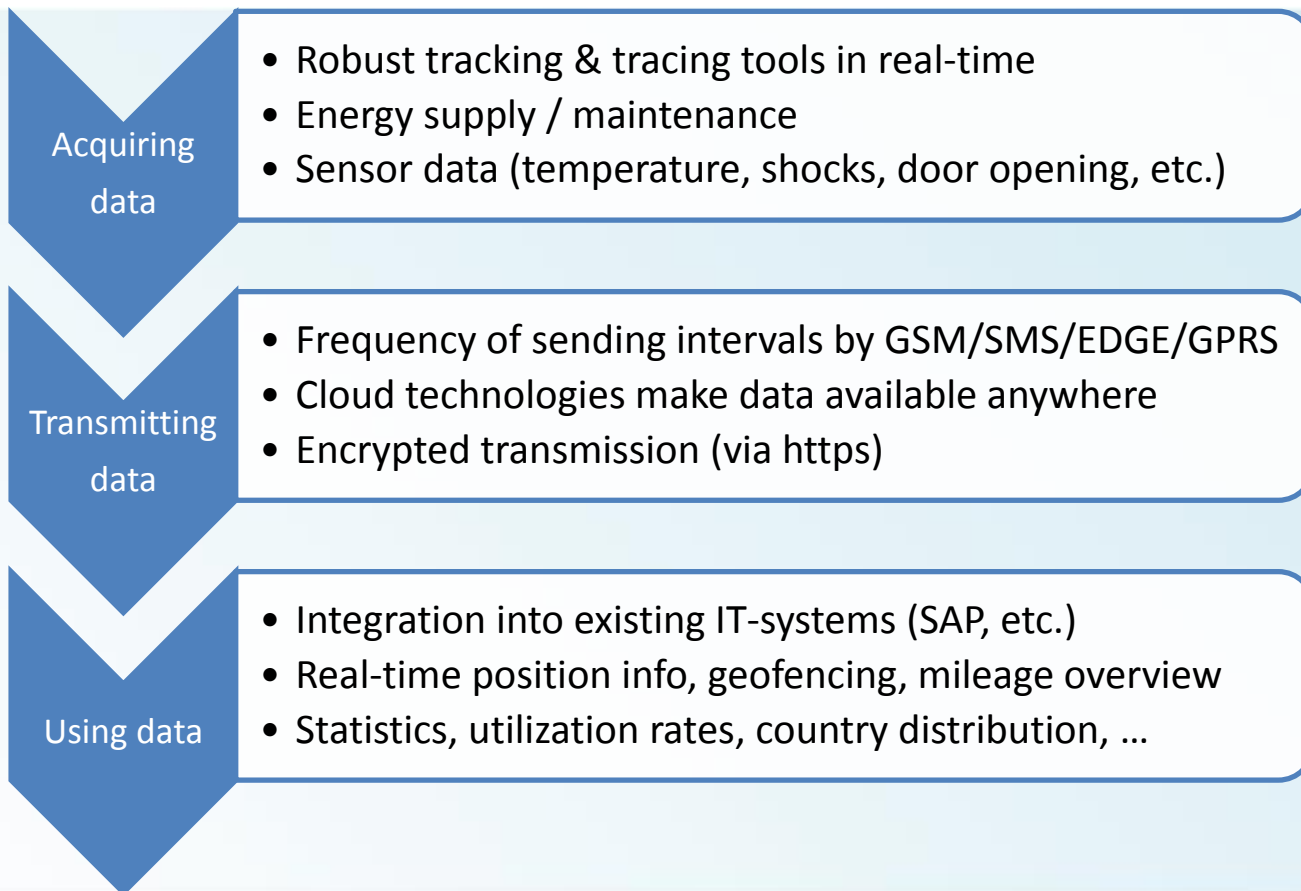
- Real-time data / exact locations are available per mouse click
- Transport progress is monitored
- Various persons can look at all wagon/container data simultaneously
- Easy access to position data from smartphones, laptops, etc.
- Connecting electronic railway bills with the tracking tools
- Multifunctional and interactive platforms for processing the data
- Alternatively integration of raw data into individual IT-Systems (SAP)
- Geofencing: sms or e-mail when certain areas have been entered or left
- Utilization rates of wagons/containers
- Recording of mileage per wagon for handling maintenance intervals



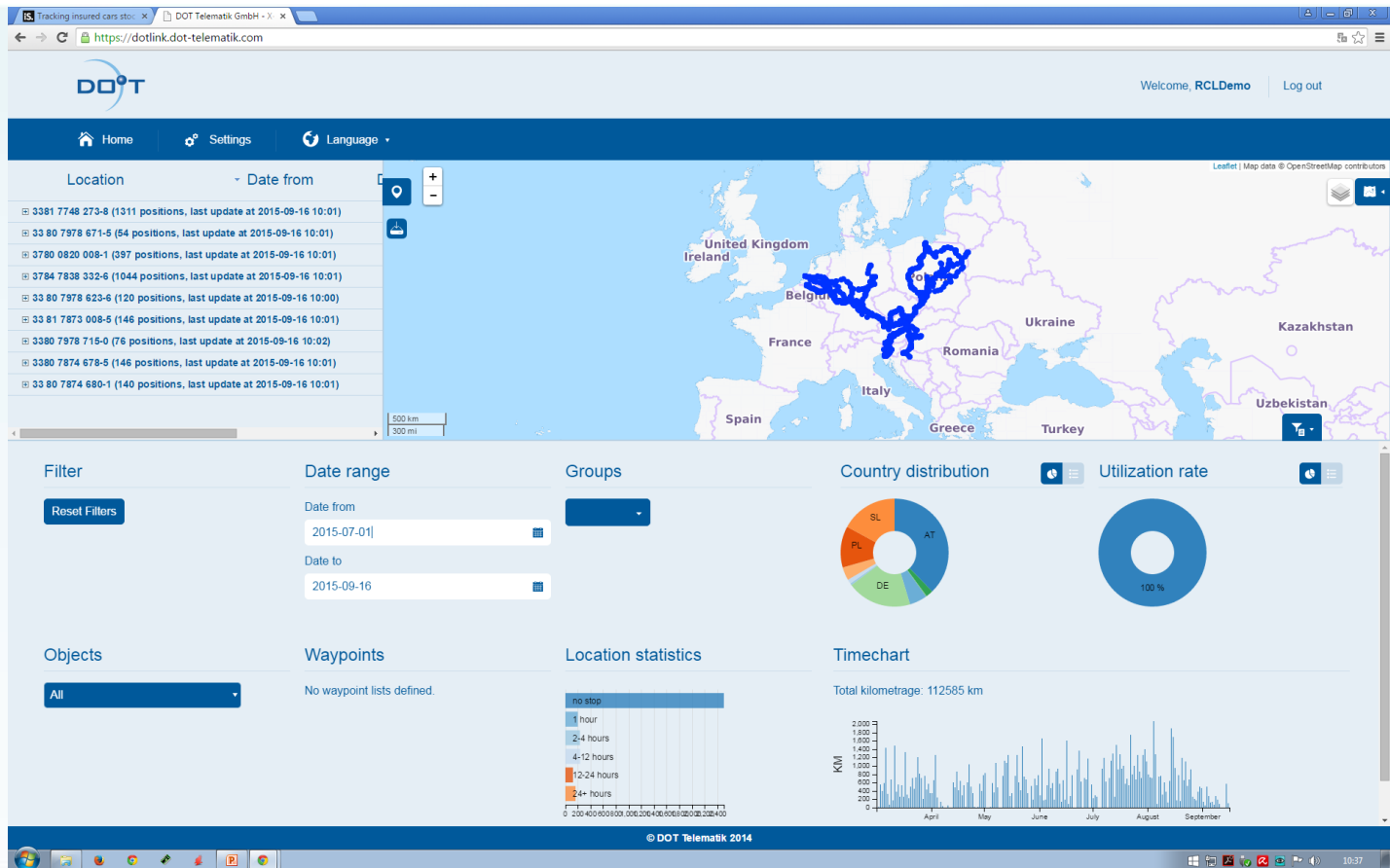
Remember: unknowns cannot be optimised!

3 STEPS TO HIGHER PRODUCTIVITY

ACQUIRING - TRANSMITTING - USING DIGITAL INFORMATION

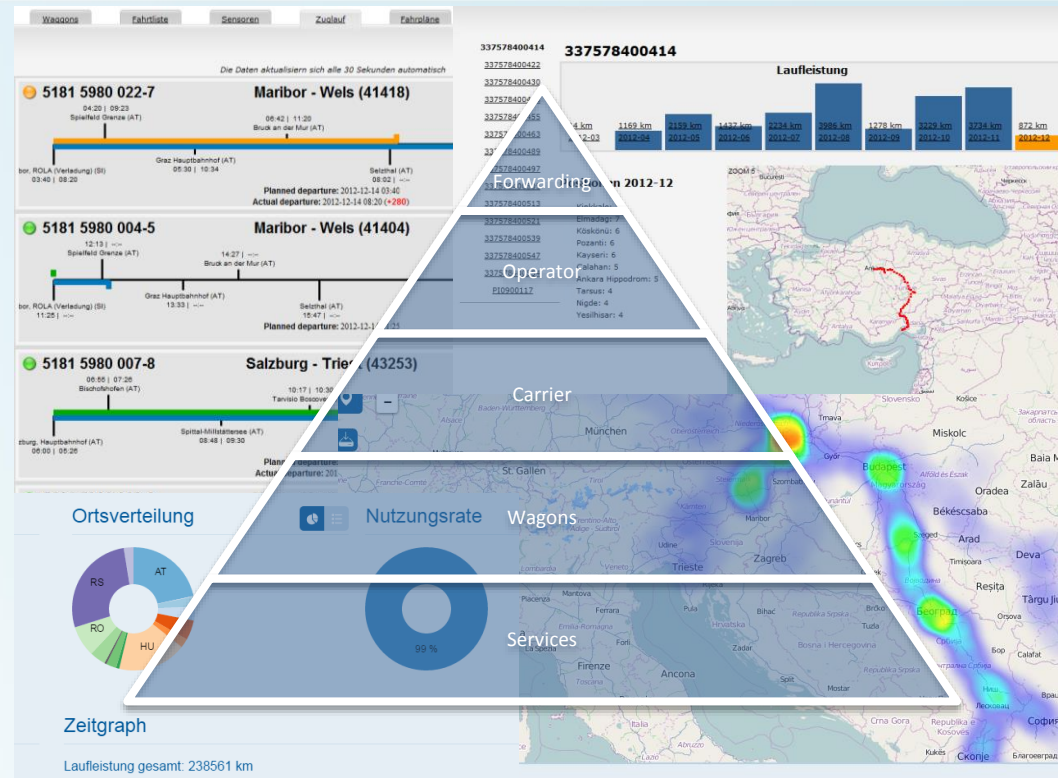


VISUALISATION OF DATA AND ITS INTEGRATION INTO ERP-SYSTEMS (SAP,...) IS CRITICAL IN ORDER TO REACH DECISION MAKING



BENEFITS FOR USERS OF TELEMATIC SYSTEMS STRONGLY DEPEND ON WHO IS TARGETED IN THE VALUE CHAIN

- Effective fleet management due to real-time information of wagons
- Cost reduction due to analysis of stopping times / loading times / unplanned stops (theft)
- Transparency: Valid data and statistics instead of complicated interpretations
- More safety and reduction of maintenance costs due to measurement of mileage and optimisation of maintenance intervals
- Clients are more satisfied owing to Estimated Time of Arrival
- Amortisation in short terms



Remember: unknowns cannot be optimised!

CHECKLIST FOR INTRODUCING TELEMATIC SYSTEMS

Hardware

Power supply: batteries vs. solar power

RF ID?

Certified for railways?
ATEX required?

Sensors: temperature, vibration, door alarm

Software

Integration into existing IT-systems (raw data)

Individual solutions?

Configuration over the air?

Encrypted data transfer via https?

Communication

Monthly costs for SIM-cards and data packages

GSM SMS/GPRS/EDGE

SMS available for areas with poor internet?

Extra costs for roaming?

USE OF TELEMATIC SYSTEMS - DONE SMART - GIVES YOU MORE TRANSPARENCY - MORE EFFICIENCY - MORE PROFIT

Surf the digitalization wave!

