

ZUKÜNFTIGE HERAUSFORDERUNGEN IM HOLZTRANSPORT AUS SICHT EINES HOLZVERBRAUCHERS FUTURE CHALLENGES IN WOOD TRANSPORT

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When we at UPM look into the forest, this is what we see:

- A future where wood is used innovatively and efficiently
- A world where bio and forest industries are integrated to create new high quality alternatives to non-renewable materials profitably and responsibly

UPM transformed from one integrated paper company into six separate, market-driven businesses



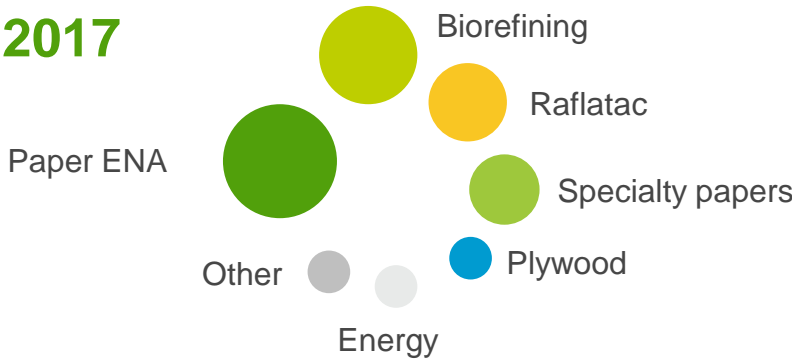
THIS IS OUR VISION:

As the frontrunner of the new forest industry UPM leads the integration of bio and forest industries into a new, sustainable and innovation-driven future.



THIS IS OUR RESPONSE:

From an integrated paper company into six separate, market-driven business areas with independent strategies and targets



54
production plants
in **12** countries



19,300
employees
in **45** countries

12,000
customers
in **120** countries

85,000
shareholders
in **40** countries

55,000
suppliers
in **70** countries

UPM's strict Supplier Code of Conduct safeguards responsible wood sourcing

THIS IS OUR STRATEGY:

Every single fiber is fully traceable.

UPM's strict Supplier Code of Conduct applies to all suppliers.

UPM uses about 28 million cubic meters of wood globally. Wood is sourced mainly from privately-owned forests.



THIS IS OUR RESPONSE:



Suppliers covered
by 3rd party-verified
**chains of
custody**



84% of wood
used is
certified



100% of our
wood is legally
harvested and
controlled



Compliance



Safe
workplace



Cost
efficiency

Why do we care about the future challenges of wood transport?



UPM transports annually 28 million cubic meter of wood by:

- **Truck** **76%**
- **Train** **20%**
- **Vessel** **2%**
- **Floating** **2%**

UPM relies on professional logistics contractors, which transport our wood:



Safe!



Within all the standards



Cost efficient

Some “trends” creating increasing pressure on the wood transportation ecosystem

1 Cost increase and decrease of profit

- Increasing **personnel** costs
- Price for **Diesel** currently on a stable low level, but on long term probably rising
- Increasing costs for **road tolls**
- **Electricity** costs increasing
- High share of small scaled truck companies under utilizing **scale effects** in purchasing: trucks, trailer, crane, tires and fuel
- New regulations or increased **controls** limiting flexibility

2 Transport capacity

- Risk of **loosing** truck transport capacity (insolvencies 3%; company exits 12%; BdHG)
- Reduced number of wood loading **train stations**
- Reduced number of wood **wagons**
- Very few train companies can ensure **single wagon traffic**

3 Transported volume of wood

- Consumption of wood in Germany **increased** over the last decade
- Wood consuming **capacity** per location raised
- Thereof transport **distances** got longer in average, which reduced the transport capacity
- **Transport costs** relatively high compared to product price and paying capability of some industries limited

Basic conditions, wood carrier and the wood consuming industry needs to be addressed when it comes to future challenges in wood transport and how to resolve them

Basic conditions



Regulations, laws and controls
Forest infrastructure
Forest owner and wood supplier

Wood carrier performance



Efficiency and profitability
Driver personnel availability
Equipment & Digitalization

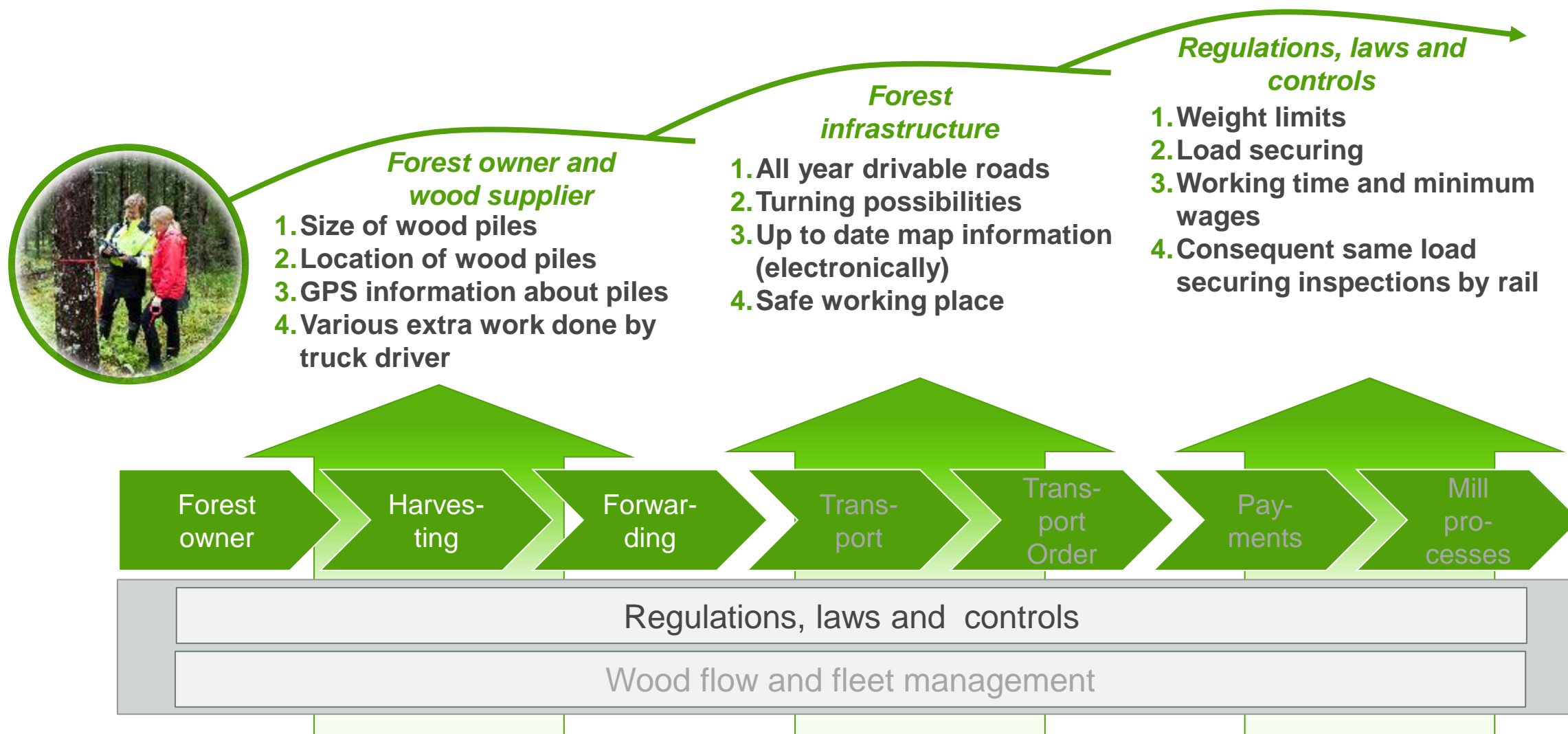
Wood consuming industry



Transport order processing
Wood flow and fleet management
Mill internal processes

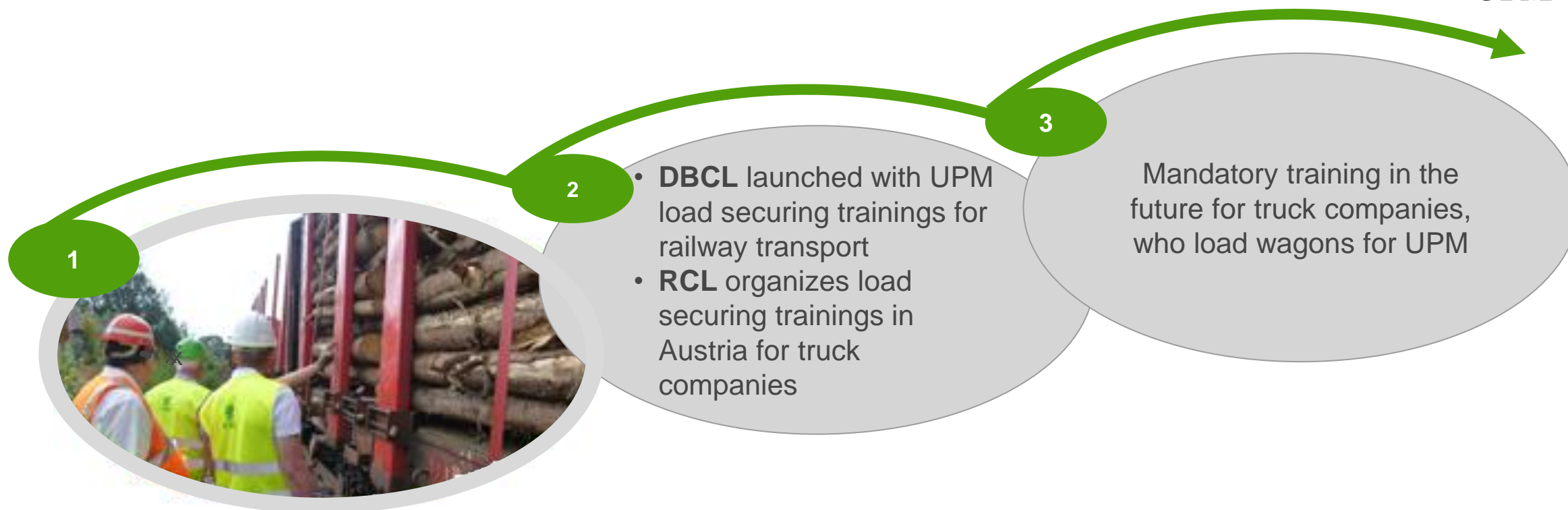
Various basic conditions can't be influenced from transport companies, but have an enormous effect on efficient transport

The Biofore Company



Load securing trainings for train transport from DBCL and RCL allow more efficient loading and transport of railway wagons

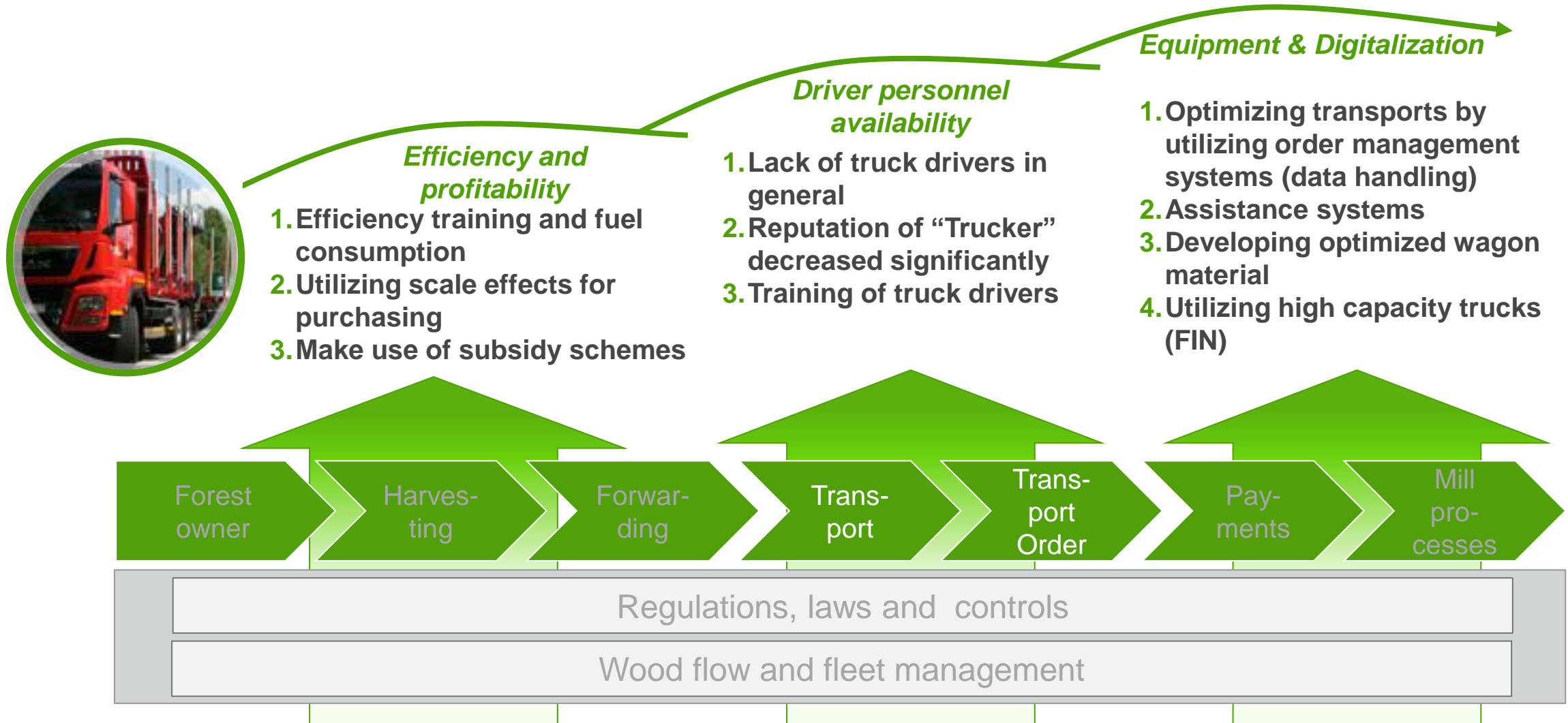
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Achieve together:


1. More efficient transport of railway wagons
2. No costly regulations by truck company needed
3. Increased safety
4. Joint effort from truck, railway and wood consuming company

Wood carrier performance needs to be increased in order to capture all cost saving potentials and increase profitability of truck transport companies



Safety training and efficient driving training for truck companies will reduce accidents and costs

The Biofore Company

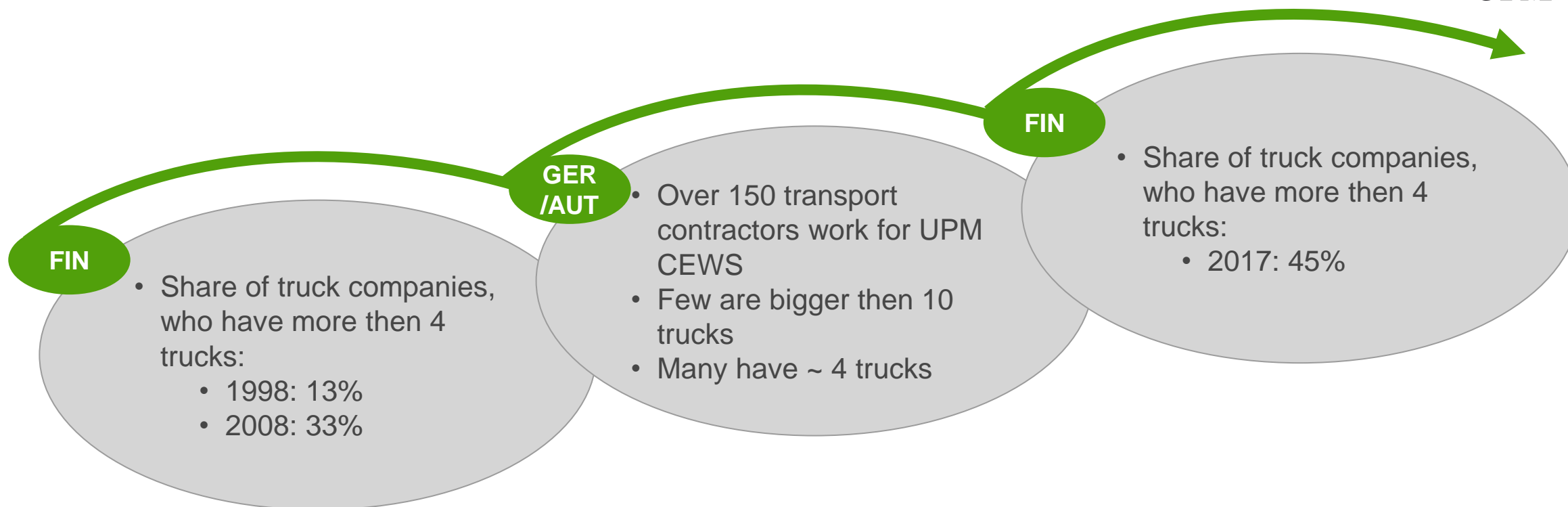


Pilot Safety training for truck companies in Munich on 18th 11.2016 by MAN ProfiDrive and UPM

Trust and be trusted:

1. Special training for short log transports developed and launched by MAN ProfiDrive and UPM in order to react on the very special needs and challenges of wood truck drivers
2. First reactions: Not so much to be learned in such a training; Feedback after training: lots of new and partly basic knowledge well shown from trainers from MAN ProfiDrive, Palfinger and Exte

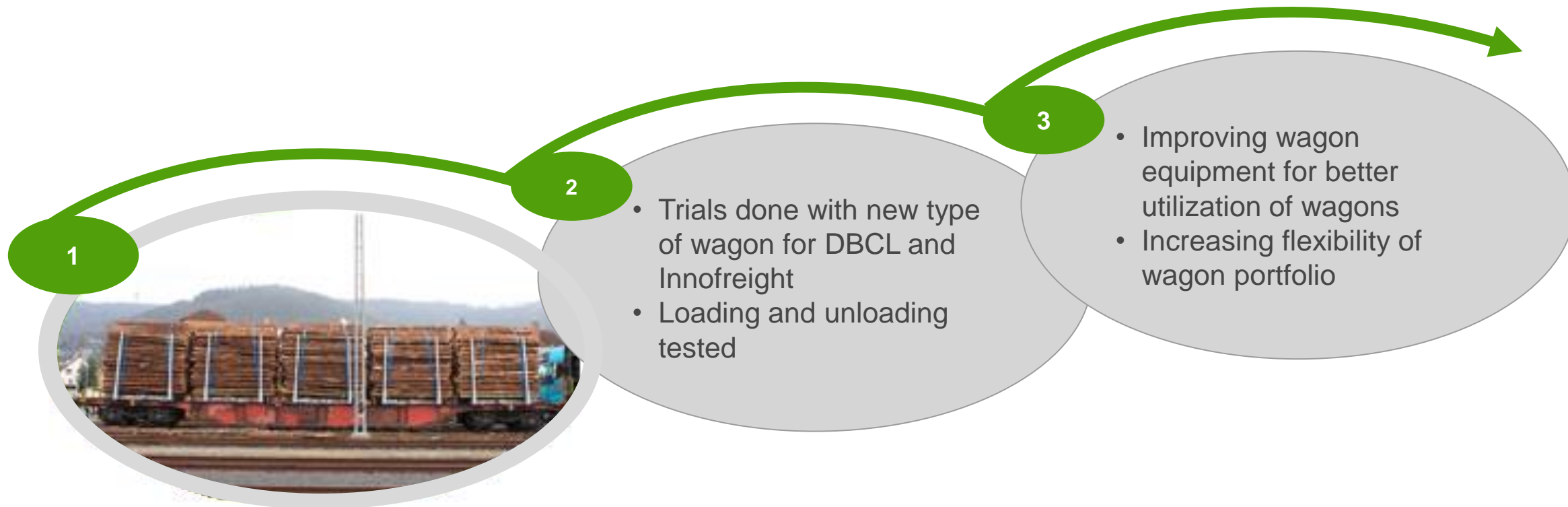
The size of wood transport companies might need to grow in the future to capture scale effects for cost savings



Trust and be trusted:

1. Transport companies need to invest in their capacities and grow in order to gain scale effects
2. Most limiting and challenging factor is the lack of good skilled drivers
3. The underlying fact that transport volume will not decrease should give the needed trust for growing the business, but some confirmation of volumes to transport might be needed

Better utilization and increased flexibility of new wagons might cope with the cost pressure on rail transport

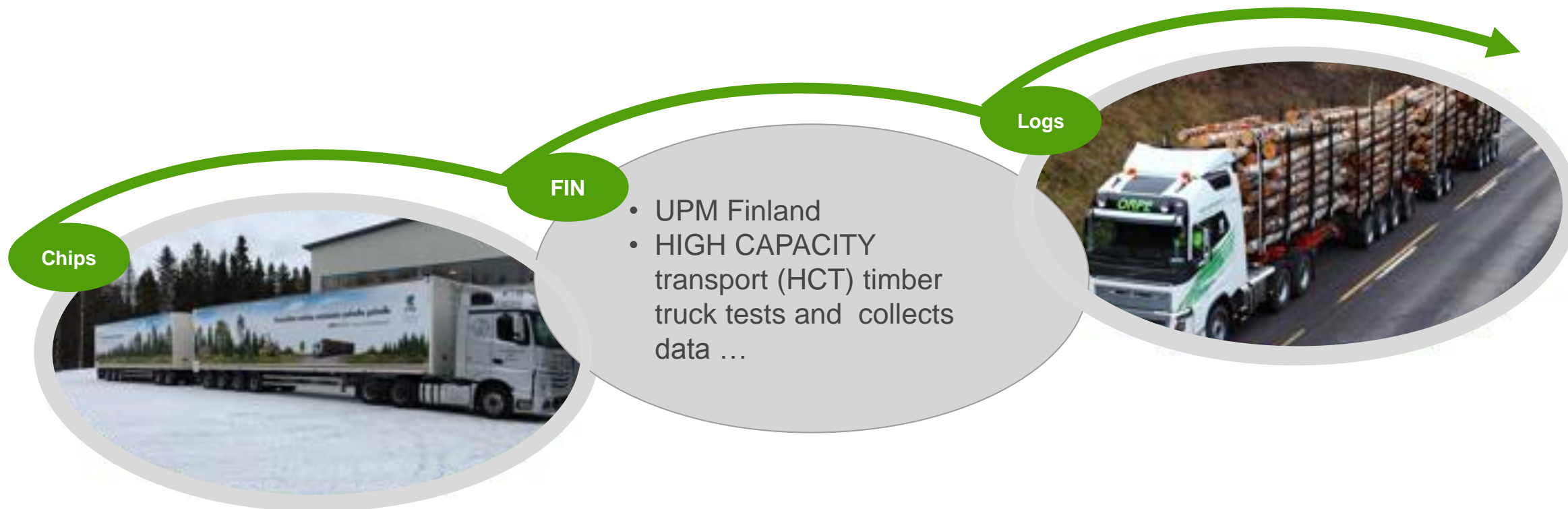


Renew with courage or “Let's challenge the railway system” (Innofreight):

1. Railway transport will play an important role also in the future for middle and long distance transports
2. Wagon equipment needs to be more flexible in terms of wood lengths and to be improved in terms of payload

Increased payload improves transport efficiency, fuel consumption, CO² footprint and number of transports in Finland

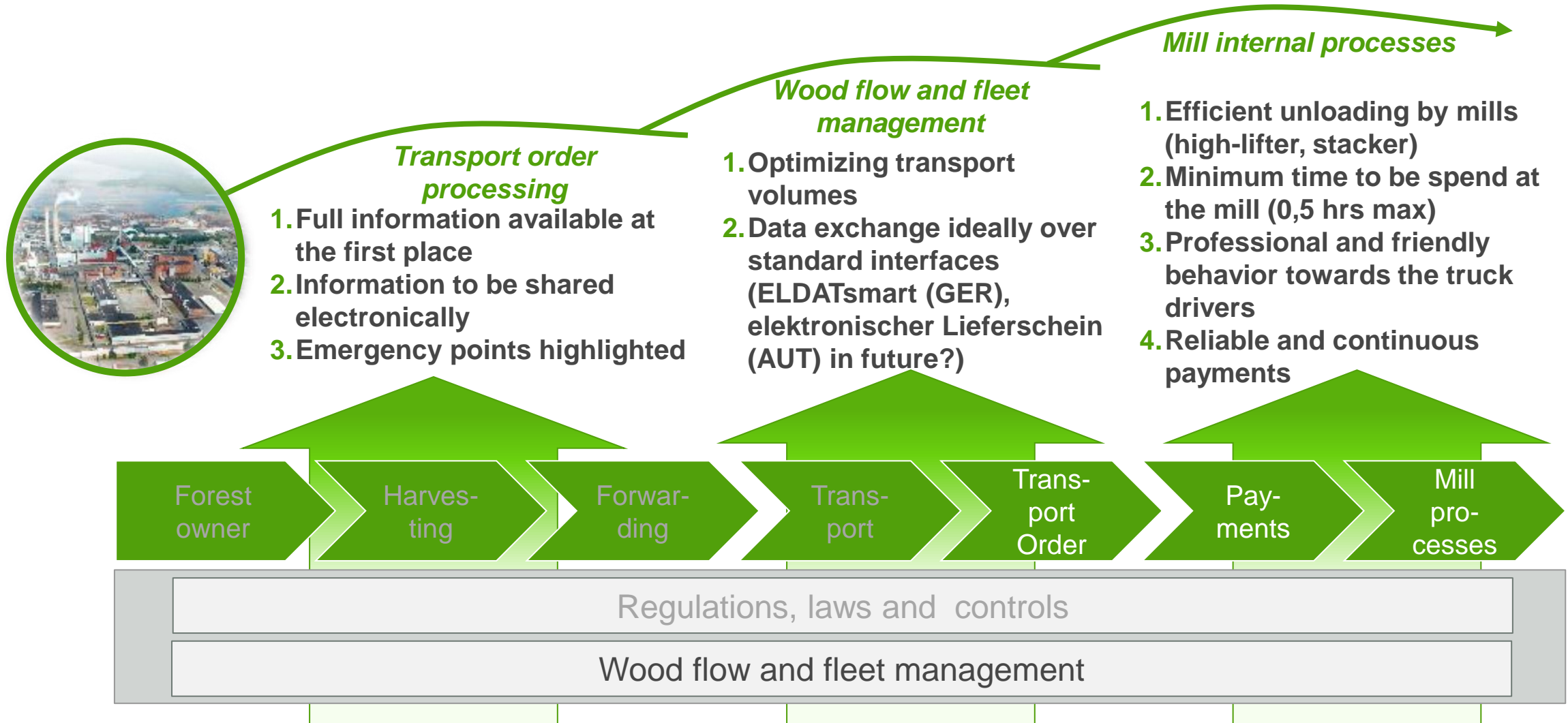
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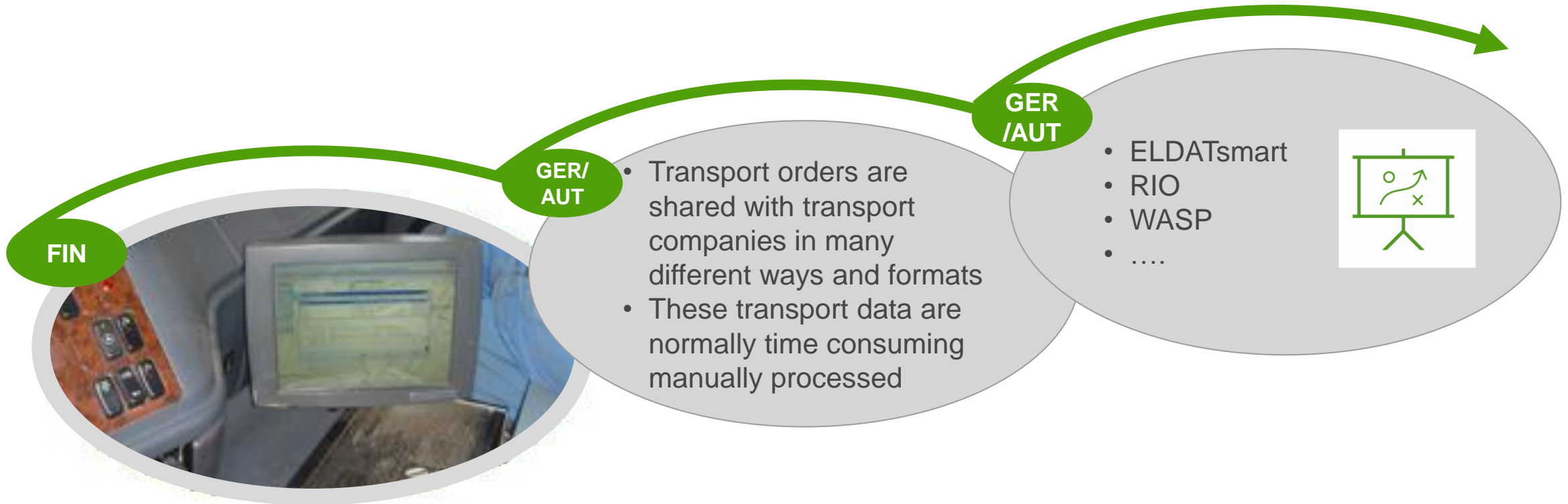
Renew with courage, but not likely to have in Germany and Austria:

1. Joint project with Metsäteho, Finnish Forest Industries Federation and Metsähallitus
2. Length: 31 m; based on maximum weight of 102 tonnes, special permission for 94 tonnes; stability and strain on the road per axle better than in existing normal vehicles; smaller CO² impact per transported tonne; load-carrying capacity about 1.5 times bigger (compared to FIN trucks)

Wood consuming industry can influence the efficiency of wood transports in many ways, where well organized mill processes are only one area



Wood flow and fleet management is essential for bigger mills, but also for transport companies, which need integrated and seamless data exchange



Achieve together:

1. FIN: all trucks, harvesters, forwarders connected to UPM system for real-time data exchange
2. GER/AUT information is provided electronically and via a contractor service, but there is room to develop further as the transport company receives many different formats of data
3. RIO, which combines fleet-, OEM- and 3rd party-services in software and hardware, like TMS, trailers, cranes ...

To face existing and up-coming challenges in the wood transport all parties needs to improve their own areas of responsibility and gain benefits from collaboration

Basic conditions



- Working within the standards
- Loading conditions need to meet minimum standards

Wood carrier performance



- Scaling up
- Attractiveness of the job “truck driver” to be ensured
- Invest in modern, flexible wagons

Wood consuming industry



- Seamless data exchange
- Standard unloading conditions needs to be ensured



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