

THE CHANGING FACE OF DISTRIBUTION

THE SHAPE OF
THINGS TO COME



CUSHMAN &
WAKEFIELD

THE DRIVERS FOR CHANGE

INCREASING FREIGHT VOLUMES, RISING TRANSPORT COSTS, LABOUR SHORTAGES AND ROAD CONGESTION - NEW BANANAS EMERGING



182%

EUROSTAT FORECASTS THAT DEMAND FOR FREIGHT TRANSPORT IN CONTINENTAL EUROPE WILL **ALMOST TRIPLE (182%)** BETWEEN 2010 AND 2050

.....



40%

HIGHER OPERATING COSTS ESTIMATED TO INCREASE BY **40% IN 2030** AND **80% IN 2050**

.....

TRAINS, TRUCKS AND BARGES- TRANSPORT THROUGH TO 2030

LOOKOUT FOR MORE SUPPLY CHAIN DISRUPTIONS



TOO MANY CONSTRAINTS
- B2C FUELS A SHIFT FROM
PALLETS TO PARCELS



**TOO MUCH
CONGESTION
ON THE ROADS**



**TOO EXPENSIVE
WITH RISING
TRANSPORT COSTS**



**TOO MUCH
POLLUTION AND
REGULATIONS ARE
GETTING TIGHTER**

WHAT ARE **THE SOLUTIONS**, WHAT IS THE **MOTIVATION**
AND HOW DO WE **FIX** THE PROBLEMS THAT ARE
CURRENTLY GETTING WORSE EVERY YEAR?

WE LOOK AT **TECHNOLOGY, ALTERNATIVE FUELS AND
MULTI MODAL TRANSPORT** AND OFFER **OUR VISION
FOR MORE EFFICIENT** DISTRIBUTION BY 2030.

FREIGHT VOLUMES ARE INCREASING

THE EU-28 IS NOW FACING A 22% RISE IN FREIGHT ACTIVITY OVER THE NEXT DECADE

Relying principally on road transport, which has represented more or less 75% of total goods movement in the EU since 2011, is no longer feasible.



Source: European Commission's EUTRIM and Cushman & Wakefield

ROAD REMAINS DOMINANT BUT PROBLEMS LIE AHEAD

3,382 TONS
PER CAPITA

THE HIGHEST SHARE OF FREIGHT
TRANSPORT IS **CARRIED BY ROAD**,
REPRESENTING **3,382 TONS PER**
CAPITA IN EUROPE

9.1% ↑

IN TERMS OF VOLUME
OF FREIGHT TRANSPORTED ON
EUROPE'S ROADS, **FINISHED**
GOODS GREW THE FASTEST
AT 9.1% BETWEEN 2014 AND
2016, SLIGHTLY AHEAD OF
EQUIPMENT (AT 8.5%)

2,300 BILLION

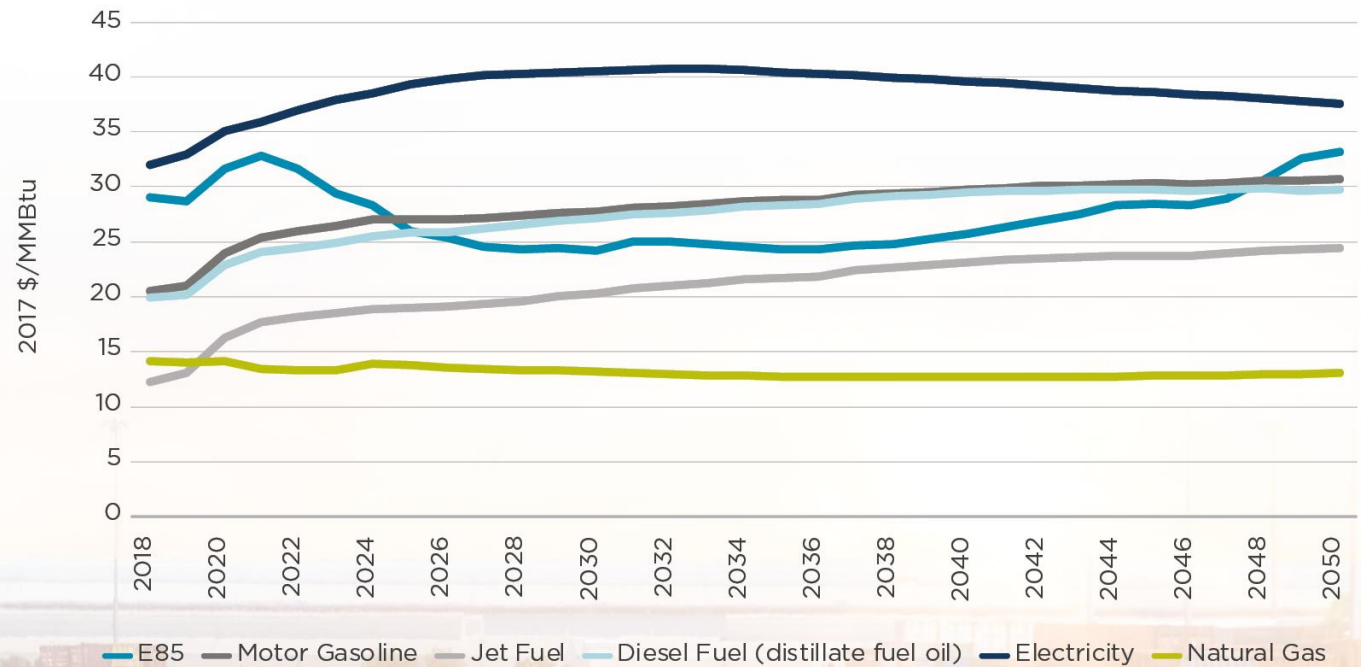
IN EUROPE, ROUGHLY **2,300 BILLION TONS PER**
KILOMETRE OF DOMESTIC AND OUTBOUND
GOODS ARE CURRENTLY BEING MOVED

TIGHTER REGULATIONS TO REPLACE RISING OIL PRICES

ALTERNATIVE FUELS ARE PART OF THE SOLUTION

GLOBAL TRANSPORTATION ENERGY PRICES, 2018 TO 2050

New costs associated with negative environmental impacts will be allocated to users and therefore, will need to be factored into overall transport costs.



Source: Annual Energy Outlook 2018, US Energy Information Administration

LABOUR SHORTAGES ARE A MAJOR BARRIER FOR GROWTH AND A FOCUS FOR LOCATION DECISIONS

Demographic trends are exacerbating already tight labour supplies and leading to increases in the cost of traditional labour.

Share of employees nearing retirement age (i.e. 50-64) in the road transport sector is higher than the average share for other industry sectors.

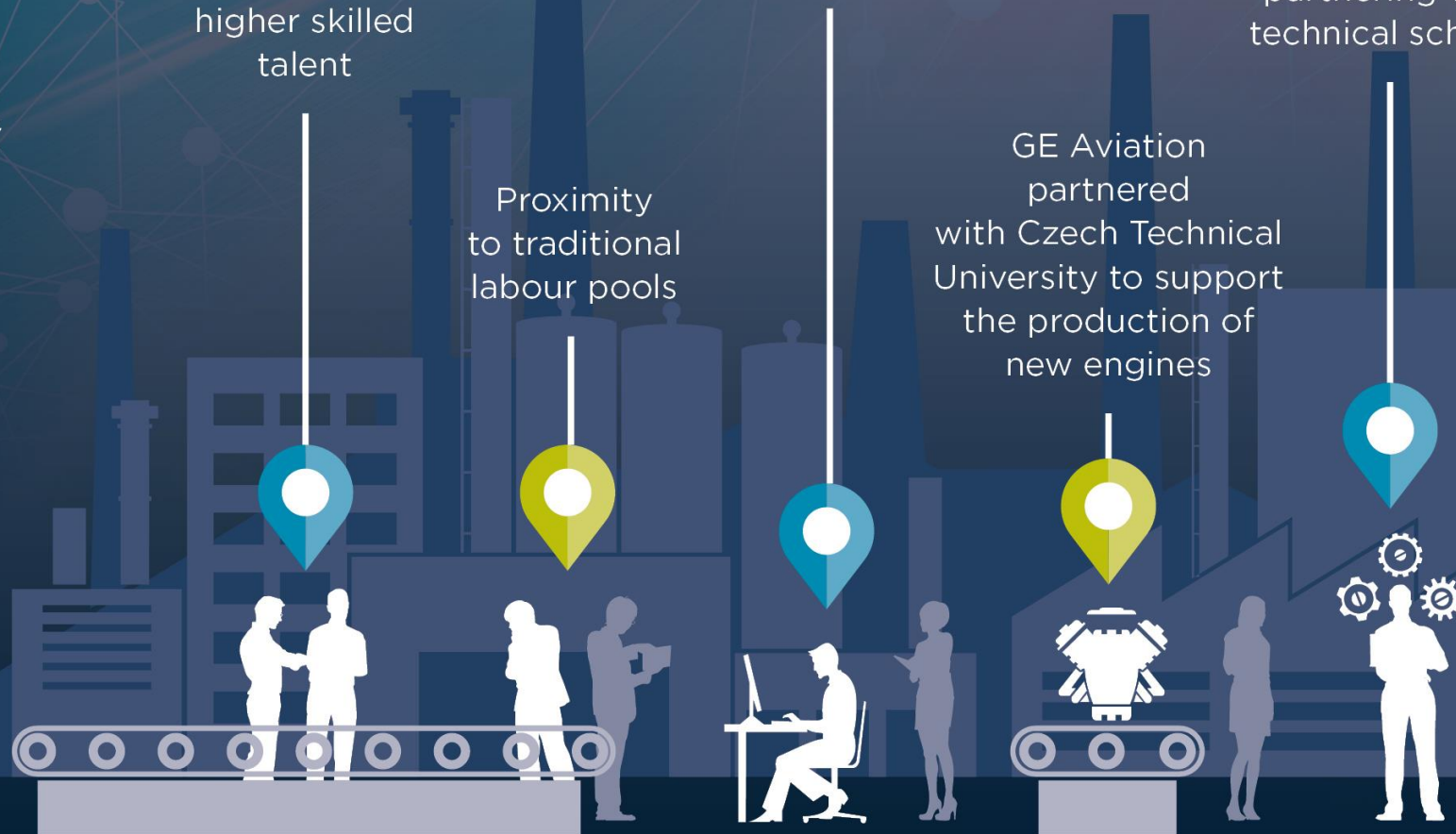
Sourcing higher skilled talent

Proximity to traditional labour pools

Attract IT specialists and data analysts

GE Aviation partnered with Czech Technical University to support the production of new engines

Audi, Boeing and Cisco, are not partnering with technical schools



DOES TECHNOLOGY PROVIDE THE ANSWER?

The manufacturing sector is already successfully integrating automation and Industry 4.0 innovation into their production processes.



REMOTE MONITORING THROUGH THE IoT SUGGESTS THAT A DECENTRALIZED PLANT MODEL.



TECHNOLOGICAL ADOPTION HAS BEEN SLOWER FOR THE LOGISTICS INDUSTRY.



AUTONOMOUS VEHICLES AND VESSELS COULD HAVE AN IMMEDIATE COST BENEFIT FOR ALL FREIGHT TRANSPORT MODES.

**E-BARGE PROTOTYPE
CURRENTLY BEING
TESTED IN EUROPE**



AUTOMATION AND AUTONOMOUS VEHICLES ARE ALREADY INTEGRATED AT EUROPE'S LARGEST SEAPORTS

“

PORTS ARE IDEAL TESTING GROUNDS FOR ROBOTS. IT IS A CONTROLLED AREA WITH LOTS OF SPACE

MARKUS KUECKELHAUS, DHL

“DRONE SHIPS” COMPLEMENT TECHNOLOGY AT SEAPORTS



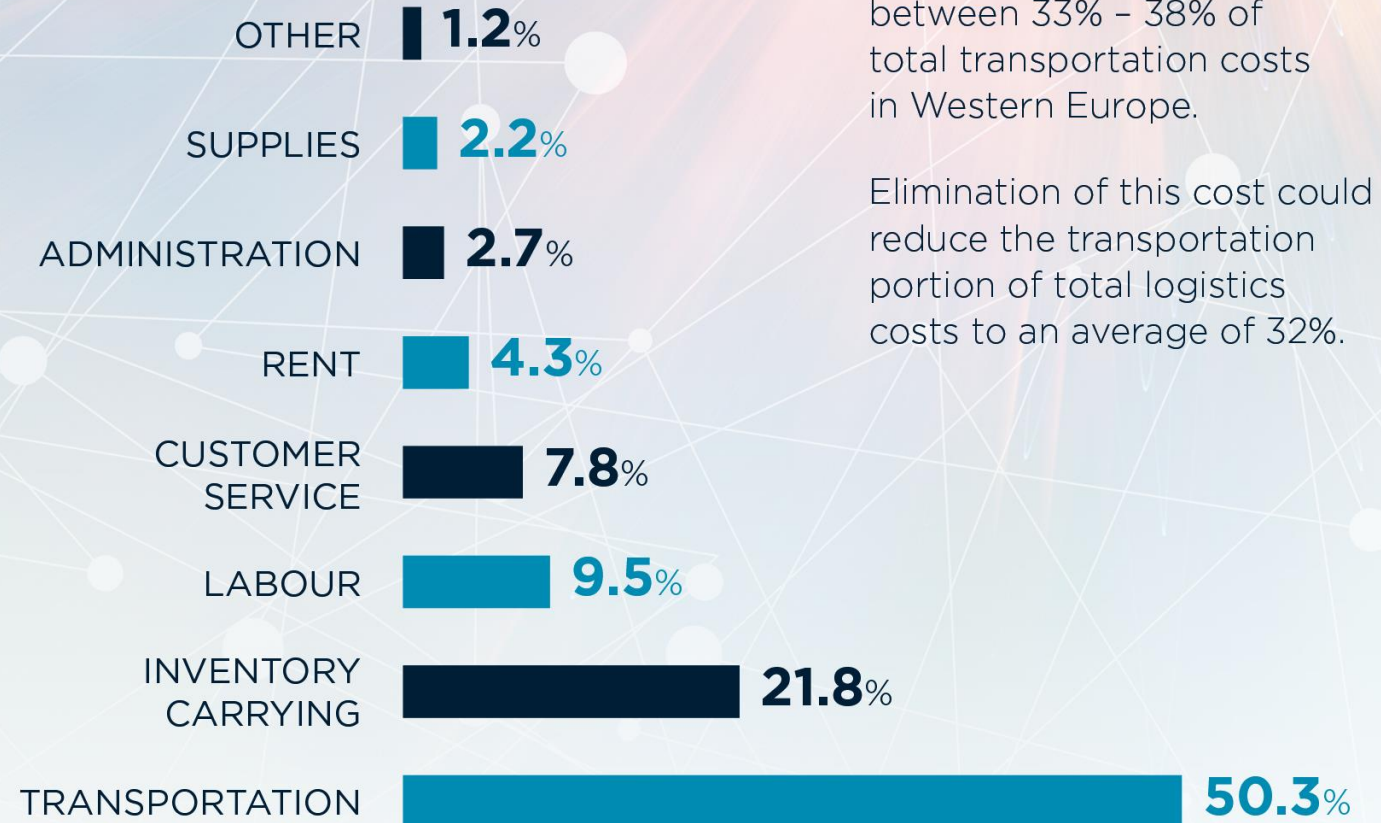
AUTOMATION AND AUTONOMOUS VEHICLES ARE SUCCESSFULLY INTEGRATED AT EUROPE'S LARGEST SEAPORTS



USING TECHNOLOGY TO DRIVE COSTS DOWN

TRANSPORTATION COSTS ACCOUNTING FOR HALF OF TOTAL LOGISTICS COSTS

COMPOSITION OF LOGISTICS COSTS



Wage costs associated with drivers represent between 33% - 38% of total transportation costs in Western Europe.

Elimination of this cost could reduce the transportation portion of total logistics costs to an average of 32%.

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**SELF-DRIVING
VEHICLES WILL BE
A GAME CHANGER
FOR SUPPLY CHAINS**

EVERYTHINGSUPPLYCHAIN.COM

Source: Establish, Inc./HWD & Grubb & Ellis Global Logistics

IS COMBINED TRANSPORT FEASIBLE?

PUBLIC PRIVATE SECTOR PARTNERSHIP IS THE KEY TO MAKING IT AVAILABLE AND RELIABLE

*TEN-T 2007-2013
Core Network Corridor
(CNC) program
already invested €8.013
billion in 30 Priority
Projects to facilitate
the movement of both
goods and people
along Europe's major
transport corridors.*



70% +

OF **ROAD TRANSPORT** FOR
PREDOMINANTLY FINAL LINKS
IN SUPPLY CHAINS, CANNOT
BE REPLACED BY ANOTHER
TRANSPORT MODE



The Eurasia freight train or “**Iron Silk Road**”, began its regular service in July 2014 and now connects **35 Chinese cities** with **34 European cities**.



Duisport is now the European trans-shipment and gateway distribution point for goods traded with China, representing only **1%** of the total **200.3 million TEU of goods** shipped from China.



2030 objective targeting long distance transport (i.e. >300 km), **30% of current road** transport will be **replaced by either rail or barge**.



50% of incoming goods are distributed in the region by road (a significant lower share than the **EU level of 75%**).

THE SHAPE OF THINGS TO COME - THE NEW BANANAS...

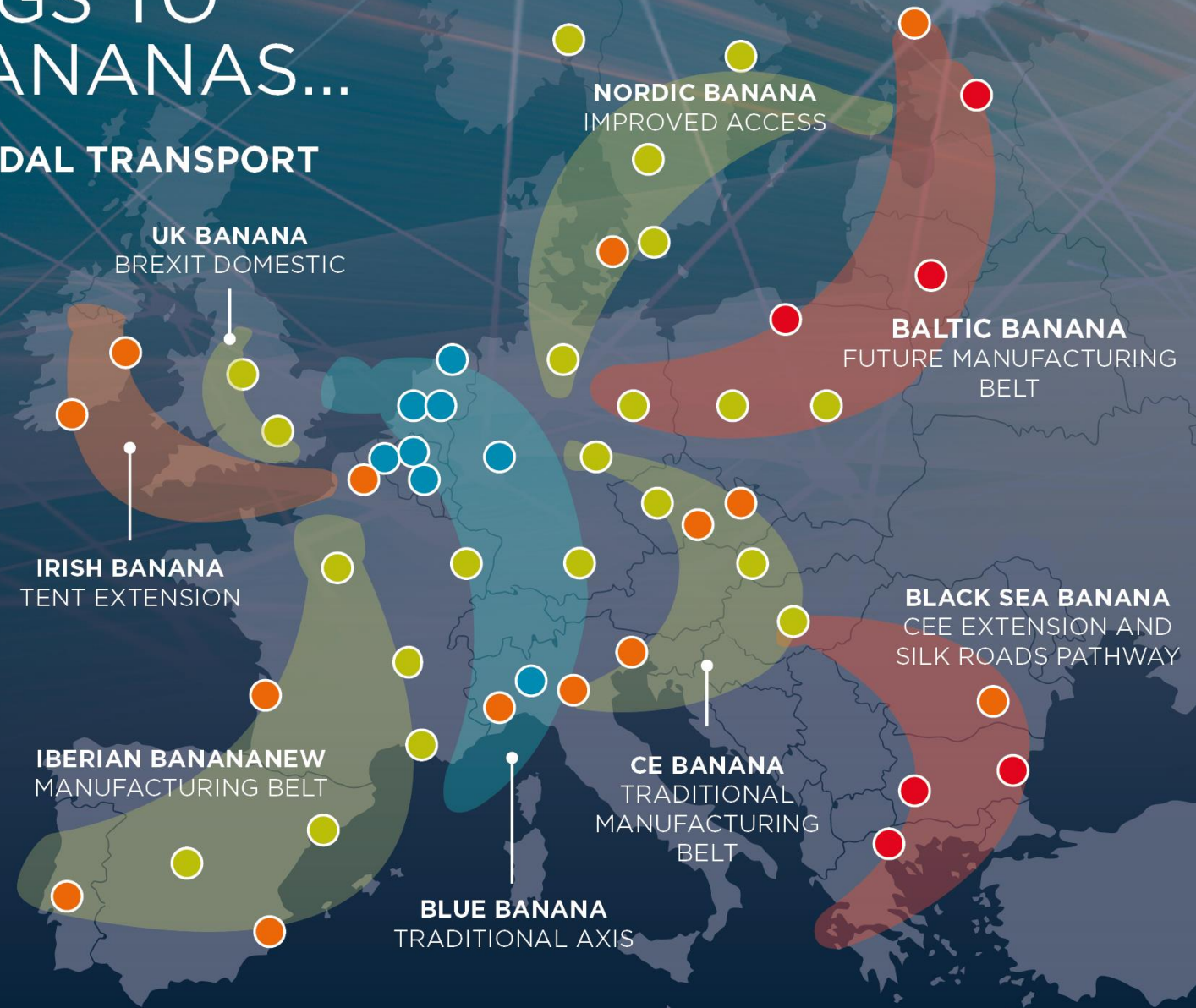
...IF ALTERNATIVE FUELS AND MULTI MODAL TRANSPORT ARE SUCCESSFULLY IMPLEMENTED

● BLUE BANANA MARKETS

● NEW BANANA MARKETS

● 2025 MARKETS

● 2030 MARKETS



DISTRIBUTION CORRIDORS LEADING TO 2030

PUBLIC/PRIVATE



LONG HAUL CARGO
TRANSPORT IS SET TO
EXPLOIT ALTERNATIVE
MODES OF TRANSPORT
AND FUEL



ROAD TRANSPORT WILL
REMAIN TRANSPORT
OF CHOICE FOR
SHORT DISTANCES



DESTINATION FLEXIBILITY
IS KEY FOR FINAL LINKS IN
SUPPLY CHAINS



SECTOR PARTNERSHIP
IS KEY TO SUCCESSFUL
TECHNOLOGICAL ADOPTION
MULTI-MODAL
TRANSPORT: CHARGING
NETWORKS, TEN-T, DUISPORT
AND THE IRON SILK ROAD
AND AUTONOMOUS
VEHICLE TESTING



AUTONOMOUS
TECHNOLOGY WILL
MAKE THE BIGGEST
IMPACT ON **REDUCING**
TRANSPORT COSTS



PEOPLE AND **TRANSPORT**
CONNECTIVITY
DEFINES FUTURE
LOGISTICS HOTSPOTS



LABOUR REMAINS KEY BUT
TECHNOLOGY WILL BEGIN
ERODE RELIANCE